NVIDIA Performance Primitives (NPP)

Version 4.1

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Contents

Chapter 1

NVIDIA Performance Primitives

1.1   What is NPP?

NVIDIA NPP is a library of functions for performing CUDA accelerated processing. The initial set of functionality in the library focuses on imaging and video processing and is widely applicable for developers in these areas. NPP will evolve over time to encompass more of the compute heavy tasks in a variety of problem domains. The NPP library is written to maximize flexibility, while maintaining high performance.

NPP can be used in one of two ways:

- A stand-alone library for adding GPU acceleration to an application with minimal effort. Using this route allows developers to add GPU acceleration to their applications in a matter of hours.

- A cooperative library for interoperating with a developer's GPU code efficiently.

Either route allows developers to harness the massive compute resources of NVIDIA GPUs, while simultaneously reducing development times.

1.2   Documentation

- General API Conventions
- Signal-Processing Specific API Conventions
- Imaging-Processing Specific API Conventions

1.3   Technical Specifications

Supported Platforms:

- Microsoft Windows 7 (64-bit and 32-bit)
- Microsoft Windows Vista (64-bit and 32-bit)
- Microsoft Windows XP (64-bit and 32-bit)
- Linux (Centos & Ubuntu) (64-bit and 32-bit)
- Mac OS X

1.4   Files

NPP is comprises the following files:

1.4.1   Header Files

- npp.h

- nppcore.h

- nppdefs.h

- nppi.h

- npps.h

- nppversion.h

All those header files are located in the CUDA Toolkit's

```
/include/
```

directory.

1.4.2   Library Files

On the Windows platform the NPP stub library is found in the CUDA Toolkit's library directory:

```
/lib/npp.lib
```

The matching DLL is located in the CUDA Toolkit's binary directory:

```
/bin/npp32_32_7.dll      // Dynamic library for 32-bit Windows.
/bin/npp64_32_7.dll      // Dynamic library for 64-bit Windows.
```

On Linux and Mac platforms the dynamic libraries are located in the lib directory

```
/lib/libnpp32.so.3.2.9   // NPP 32-bit dynamic library for Linux
/lib/libnpp64.so.3.2.9   // NPP 64-bit dynamic library for Linux

/lib/libnpp32.3.2.dylib  // NPP 32-bit dynamic library for Mac
/lib/libnpp64.3.2.dylib  // NPP 64-bit dynamic library for Mac
```

1.5   Supported NVIDIA Hardware

NPP   runs   on   all   CUDA   capable   NVIDIA   hardware.   For   details   please   see
http://www.nvidia.com/object/cuda_learn_products.html

Chapter 2

General API Conventions

2.1 Memory Management

The design of all the NPP functions follows the same guidelines as other NVIDIA CUDA libraries like cuFFT and cuBLAS. That is that all pointer arguments in those APIs are device pointers.

This convention enables the individual developer to make smart choices about memory management that minimize the number of memory transfers. It also allows the user the maximum flexibility regarding which of the various memory transfer mechanisms offered by the CUDA runtime is used, e.g. synchronous or asynchronous memory transfers, zero-copy and pinned memory, etc.

The most basic steps involved in using NPP for processing data is as follows:

1. Transfer input data from the host to device using

   ```
   cudaMemCpy(...)
   ```

2. Process data using one or several NPP functions or custom CUDA kernels

3. Transfer the result data from the device to the host using

   ```
   cudaMemCpy(...)
   ```

2.1.1 Scratch Buffer and Host Pointer

Some primitives of NPP require additional device memory buffers (scratch buffers) for calculations, e.g. signal and image reductions (Sum, Max, Min, MinMax, etc.). In order to give the NPP user maximum control regarding memory allocations and performance, it is the user's responsibility to allocate and delete those temporary buffers. For one this has the benefit that the library will not allocate memory unbeknownst to the user. It also allows developers who invoke the same primitive repeatedly to allocate the scratch only once, improving performance and potential device-memory fragmentation .

Scratch-buffer memory is unstructured and may be passed to the primitive in uninitialized form. This allows for reuse of the same scratch buffers with any primitive require scratch memory, as long as it is sufficiently sized.

The minimum scratch-buffer size for a given primitive (e.g. nppsSum_32f()) can be obtained by a companion function (e.g. nppsSumGetBufferSize_32f()). The buffer size is returned via a host pointer as allocation of the scratch-buffer is performed via CUDA runtime host code.

An example to invoke Sum primitive and allocate and free the necessary scratch memory:

```
...
// Compute the appropriate size of the scratch-memory buffer
int nBufferSize;
nppsSumGetBufferSize_32f(nLength, &nBufferSize);
// Allocate the scratch buffer
Npp8u * pDeviceBuffer;
cudaMalloc((void **)& pDeviceBuffer, nBufferSize);
// Call the primitive with the scratch buffer
nppsSum_32f(pSrc, nLength, pSum, nppAlgHintNone, pDeviceBuffer);
// Free the scratch buffer
cudaFree(pDeviceBuffer);
...
```

2.2 Function Naming

Since NPP is a C API and therefore does not allow for function overloading for different data-types the NPP naming convention addresses the need to differentiate between different flavors of the same algorithm

or primitive function but for various data types. This disambiguation of different flavors of a primitive is done via a suffix containing data type and other disambiguating information.

In addition to the flavor suffix, all NPP functions are prefixed with by the letters "npp". Primitives belonging to NPP's image-processing module add the letter "i" to the npp prefix, i.e. are prefixed by "nppi". Similarly signal-processing primitives are prefixed with "npps".

The general naming scheme is:

npp<module info><PrimitiveName>_<data-type info>[_<additional flavor info>](<parameter list>)

The data-type information uses the same names as the Basic NPP Data Types. For example the data-type information "8u" would imply that the primitive operates on Npp8u data.

If a primitive consumes different type data from what it produces, both types will be listed in the order of consumed to produced data type.

Details about the "additional flavor information" is provided for each of the NPP modules, since each problem domain uses different flavor information suffixes.

2.3 Integer Result Scaling

NPP signal processing and imaging primitives often operate on integer data. This integer data is a usually a fixed point fractional representation of some physical magnitue (e.g. luminance). Because of this fixed-point nature of the representation many numerical operations (e.g. addition or multiplication) tend produce results exceeding the original fixed-point range if treated as regular integers.

In cases where the results exceed the original range, these functions clamp the result values back to the valid range. E.g. the maximum positive value for a 16-bit unsigned integer is 32767. A multiplication operation of $4 * 10000 = 40000$ would exceed this range. The result would be clamped to be 32767.

To avoid the level of lost information due to clamping most integer primitives allow for result scaling. Primitives with result scaling have the "Sfs" suffix in their name and provide a parameter "nScaleFactor" that controls the amount of scaling. Before the results of an operation are clamped to the valid output-data range by multiplying them with $2^{\text{-nScaleFactor}}$.

Example: The primitive nppsSqr_8u_Sfs() computes the square of 8-bit unsigned sample values in a signal (1D array of values). The maximum value of a 8-bit value us 255. The square of $255^2 = 65025$ which would be clamped to 255 if no result scaling is performed. In order to map the maximum value of 255 to 255 in the result, one would specify an integer result scaling factor of 8, i.e. multiply each result with $2^{-8} = \frac{1}{2^8} = \frac{1}{256}$. The final result for a signal value of 255 being squared and scaled would be:

$$255^2 \cdot 2^{-8} = 254.00390625$$

which would be rounded to a final result of 254.

A medium gray value of 128 would result in

$$128^2 * 2^{-8} = 64$$

Chapter 3

Signal-Processing Specific API Conventions

3.1   Signal Data

Signal data is passed to and from NPPS primitives via a pointer to the signal's data type.

The general idea behind this fairly low-level way of passing signal data is ease-of-adoption into existing software projects:

- Passing the data pointer rather than a higher- level signal struct allows for easy adoption by not requiring a specific signal representation (that could include total signal size offset, or other additional information). This avoids awkward packing and unpacking of signal data from the host application to an NPP specific signal representation.

3.1.1   Parameter Names for Signal Data

There are three general cases of image-data passing throughout NPP detailed in the following sections.

Those are signals consumed by the algorithm.

3.1.1.1   Source Signal Pointer

The source signal data is generally passed via a pointer named

```
pSrc
```

The source signal pointer is generally defined constant, enforcing that the primitive does not change any image data pointed to by that pointer. E.g.

```
nppsPrimitive_32s(const Npp32s * pSrc, ...)
```

In case the primitive consumes multiple signals as inputs the source pointers are numbered like this:

```
pSrc1, pScr2, ...
```

3.1.1.2   Destination Signal Pointer

The destination signal data is generally passed via a pointer named

```
pDst
```

In case the primitive consumes multiple signals as inputs the source pointers are numbered like this:

```
pDst1, pDst2, ...
```

3.1.1.3   In-Place Signal Pointer

In the case of in-place processing, source and destination are served by the same pointer and thus pointers to in-place signal data are called:

```
pSrcDst
```

3.1.2   Signal Data Alignment Requirements

NPP requires signal sample data to be naturally aligned, i.e. any pointer

```
NppType * p;
```

to a sample in a signal needs to fulfill:

```
assert(p % sizeof(p) == 0);
```

3.1.3   Signal Data Related Error Codes

All NPPI primitives operating on signal data validate the signal-data pointer for proper alignment and test that the point is not null.

Failed validation results in one of the following error codes being returned and the primitive not being executed:

- NPP_NULL_POINTER_ERROR is returned if the image-data pointer is 0 (NULL).

- NPP_ALIGNMENT_ERROR if the signal-data pointer address is not a multiple of the signal's data-type size.

3.2   Signal Length

The vast majority of NPPS functions take a

```
nLength
```

parameter that tells the primitive how many of the signal's samples starting from the given data pointer are to be processed.

3.2.1   Length Related Error Codes

All NPPS primitives taking a length parameter validate this input.

Failed validation results in the following error code being returned and the primitive not being executed:

- NPP_SIZE_ERROR is returned if the length is negative.

Chapter 4

Imaging-Processing Specific API Conventions

4.1 Function Naming

Image processing related functions use a number of suffixes to indicate various different flavors of a primitive beyond just different data types. The flavor suffix uses the following abbreviations:

- "A" if the image is a 4 channel image this indicates the result alpha channel is not affected by the primitive.

- "Cn" the image consists of n channel packed pixels, where n can be 1, 2, 3 or 4.

- "Pn" the image consists of n separate image planes, where n can be 1, 2, 3 or 4.

- "C" (following the channel information) indicates that the primitive only operates on one of the color channels, the "channel-of-interest". All other output channels are not affected by the primitive.

- "I" indicates that the primitive works "in-place". In this case the image-data pointer is usually named "pSrcDst" to indicate that the image data serves as source and destination at the same time.

- "M" indicates "masked operation". These types of primitives have an additional "mask image" as as input. Each pixel in the destination image corresponds to a pixel in the mask image. Only pixels with a corresponding non-zero mask pixel are being processed.

- "R" indicates the primitive operates only on a rectangular "region-of-interest" or "ROI". All ROI primitives take an additional input parameter of type NppiSize, which specifies the width and height of the rectangular region that the primitive should process. For details on how primitives operate on ROIs see: Region-of-Interest (ROI).

- "Sfs" indicates the result values are processed by fixed scaling and saturation before they're written out.

The suffixes above always appear in alphabetical order. E.g. a 4 channel primitive not affecting the alpha channel with masked operation, in place and with scaling/saturation and ROI would have the postfix: "AC4IMRSfs".

4.2 Image Data

Image data is passed to and from NPPI primitives via a pair of parameters:

1. A pointer to the image's underlying data type.

2. A line step in bytes (also sometimes called line stride).

The general idea behind this fairly low-level way of passing image data is ease-of-adoption into existing software projects:

- Passing a raw pointer to the underlying pixel data type, rather than structured (by color) channel pixel data allows usage of the function in a wide variety of situations avoiding risky type cast or expensive image data copies.

- Passing the data pointer and line step individually rather than a higher- level image struct again allows for easy adoption by not requiring a specific image representation and thus avoiding awkward packing and unpacking of image data from the host application to an NPP specific image representation.

4.2.1 Line Step

The line step (also called "line stride" or "row step") allows lines of oddly sized images to start on well-aligned addresses by adding a number of unused bytes at the ends of the lines. This type of line padding has been common practice in digital image processing for a long time and is not particular to GPU image processing.

The line step is the number of bytes in a line **including the padding.** An other way to interpret this number is to say that it is the number of bytes between the first pixel of successive rows in the image, or generally the number of bytes between two neighboring pixels in any column of pixels.

The general reason for the existence of the line step it is that uniformly aligned rows of pixel enable optimizations of memory-access patterns.

Even though all functions in NPP will work with arbitrarily aligned images, best performance can only be achieved with well aligned image data. Any image data allocated with the NPP image allocators or the 2D memory allocators in the CUDA runtime, is well aligned.

Particularly on older CUDA capable GPUs it is likely that the performance decrease for misaligned data is substantial (orders of magnitude).

All image data passed to NPPI primitives requires a line step to be provided. It is important to keep in mind that this line step is always specified in terms of bytes, not pixels.

4.2.2 Parameter Names for Image Data

There are three general cases of image-data passing throughout NPP detailed in the following sections.

4.2.2.1 Passing Source-Image Data

Those are images consumed by the algorithm.

4.2.2.1.1 Source-Image Pointer

The source image data is generally passed via a pointer named

```
pSrc
```

The source image pointer is generally defined constant, enforcing that the primitive does not change any image data pointed to by that pointer. E.g.

```
nppiPrimitive_32s_C1R(const Npp32s * pSrc, ...)
```

In case the primitive consumes multiple images as inputs the source pointers are numbered like this:

```
pSrc1, pScr2, ...
```

4.2.2.1.2 Source-Image Line Step

The source-image line step is the number of bytes between successive rows in the image. The source-image line step parameter is

```
nSrcStep
```

or in the case of multiple source images

```
nSrcStep1, nSrcStep2, ...
```

4.2.2.2   Passing Destination-Image Data

Those are images produced by the algorithm.

4.2.2.2.1   Destination-Image Pointer

The destination image data is generally passed via a pointer named

```
pDst
```

In case the primitive consumes multiple images as inputs the source pointers are numbered like this:

```
pDst1, pDst2, ...
```

4.2.2.2.2   Destination-Image Line Step

The destination-image line step parameter is

```
nDstStep
```

or in the case of multiple destination images

```
nDstStep1, nDstStep2, ...
```

4.2.2.3   Passing In-Place Image Data

4.2.2.3.1   In-Place Image Pointer

In the case of in-place processing, source and destination are served by the same pointer and thus pointers to in-place image data are called:

```
pSrcDst
```

4.2.2.3.2   In-Place-Image Line Step

The in-place line step parameter is

```
nSrcDstStep
```

4.2.2.4   Passing Mask-Image Data

Some image processing primitives have variants supporting Masked Operation.

4.2.2.4.1 Mask-Image Pointer

The mask-image data is generally passed via a pointer named

```
pMask
```

4.2.2.4.2 Mask-Image Line Step

The mask-image line step parameter is

```
nMaskStep
```

4.2.3 Image Data Alignment Requirements

NPP requires pixel data to adhere to certain alignment constraints: For 2 and 4 channel images the following alignment requirement holds: data_pointer % (#channels $*$ sizeof(channel type)) == 0. E.g. a 4 channel image with underlying type Npp8u (8-bit unsigned) would require all pixels to fall on addresses that are multiples of 4 (4 channels $*$ 1 byte size).

As a logical consequence of all pixels being aligned to their natural size the image line steps of 2 and 4 channel images also need to be multiples of the pixel size.

1 and 3 channel images only require that pixel pointers are aligned to the underlying data type, i.e. pData % sizof(data type) == 0. And consequentially line steps are also held to this requirement.

4.2.4 Image Data Related Error Codes

All NPPI primitives operating on image data validate the image-data pointer for proper alignment and test that the point is not null. They also validate the line stride for proper alignment and guard against the step being less or equal to 0. Failed validation results in one of the following error codes being returnd and the primitive not being executed:

- NPP_STEP_ERROR is returned if the data step is 0 or negative.

- NPP_NOT_EVEN_STEP_ERROR is returned if the line step is not a multiple of the pixel size for 2 and 4 channel images.

- NPP_NULL_POINTER_ERROR is returned if the image-data pointer is 0 (NULL).

- NPP_ALIGNMENT_ERROR if the image-data pointer address is not a multiple of the pixel size for 2 and 4 channel images.

4.3 Region-of-Interest (ROI)

In practice processing a rectangular sub-region of an image is often more common than processing complete images. The vast majority of NPP's image-processing primitives allow for processing of such sub regions also referred to as regions-of-interest or ROIs.

All primitives supporting ROI processing are marked by a "R" in their name suffix. Where possible, the ROI a primitive operates on is passed as a single NppiSize struct, which provides the with and height of the ROI. This raises the obvious question how the primitive knows where in the image this rectangle of (width, height) is located. The "start pixel" of the ROI is implicitly given by the image-data pointer. I.e. instead

of explicitly passing a pixel coordinate for the upper-right corner of the ROI the primive's user needs to perform the necessary offset computation on the image data pointers, such that the pointers passed to the primitive thus point to the start of the ROI.

In practice this means that for an image (pSrc, nSrcStep) and the start-pixel of the ROI being given by (xROI, yROI), one would pass

$$pSrcOffset = pSrc + yROI * nSrcStep + xROI * PixelSize;$$

as the image-data source to the primitive. PixelSize is typically computed as

$$PixelSize = NumberOfColorChannels * sizeof(PixelDataType).$$

E.g. for a pimitive like nppiSet_16s_C4R() we would have

- NumberOfColorChannels == 4;

- sizeof(Npp16s) == 2;

- and thus PixelSize = $4 * 2 = 8$;

4.3.1   ROI Related Error Codes

All NPPI primitives operating on ROIs of image data validate the ROI size and image's step size. Failed validation results in one of the following error codes being returned and the primitive not being executed:

- NPP_SIZE_ERROR is returned if either the ROI width or ROI height are negative.

- NPP_STEP_ERROR is returned if the ROI width exceeds the image's line step. In mathematical terms $(widthROI * PixelSize) > nLinStep$ indicates an error.

4.4   Masked Operation

Some primitive support masked operation. An "M" in the suffix of those variants indicates masked operation. Primitives supporting masked operation consume an additional input image provided via a Mask-Image Pointer and Mask-Image Line Step. The mask image is interpreted by these primitives as a boolean image. The values of type Npp8u are interpreted as boolean values where a values of 0 indicates false, any non-zero values true.

Unless otherwise indicated the operation is only performed on pixels where its spatially corresponding mask pixel is true (non-zero). E.g. a masked copy operation would only copy those pixels in the ROI that have corresponding non-zero mask pixels.

4.5   Channel-of-Interest API

Some primitives allow restricting operations to a single channel of interest within a multi-channel image. These primitives are suffixed with the letter "C" (after the channel information, e.g. nppiCopy_-8u_C3CR(...). The channel-of-interest is generally selected by offsetting the image-data pointer to point directly to the channel- of-interest rather than the base of the first pixel in the ROI.

4.5.1   Select-Channel Source-Image Pointer

This is a pointer to the channel-of-interest within the first pixel of the source image. E.g. if pSrc is the pointer to the first pixel inside the ROI of a three channel image. Using the appropriate select-channel copy

primitive one could copy the second channel of this source image into the first channel of a destination image given by pDst by offsetting the pointer by two data items:

```
nppiCopy_8u_C3CR(pSrc + 2, nSrcStep, pDst, nDstStep, oSizeROI);
```

4.5.2   Select-Channel Destination-Image Pointer

This is a pointer to the channel-of-interest within the first pixel of the destination image. E.g. if pDst is the pointer to the first pixel inside the ROI of a three channel image. Using the appropriate select-channel copy primitive one could copy data into the second channel of this destination image from the first channel of a source image given by pSrc by offseting the destination pointer by two data items:

```
nppiCopy_8u_C3CR(pSrc, nSrcStep, pDst + 2, nDstStep, oSizeROI);
```

4.6   Geometric Transform API Specifics

This section covers some of the unique API features common to the geometric transform primitives.

4.6.1   Geometric Transforms and ROIs

Geometric transforms operate on source and destination ROIs. The way these ROIs affect the processing of pixels differs from other (non geometric) image-processing primitives: Only pixels in the intersection of the destination ROI and the transformed source ROI are being processed.

The typical processing proceedes as follows:

1. Transform the rectangular source ROI (given in source image coordinates) into the destination image space. This yields a quadrilateral.

2. Write only pixels in the intersection of the transformed source ROI and the destination ROI.

4.6.2   Pixel Interpolation

The majority of image geometry transform operation need to perform a resampling of the source image as source and destination pixels are not coincident.

NPP supports the following pixel inerpolation modes (in order from fastest to slowest and lowest to highest quality):

- nearest neighbor

- linear interpolation

- cubic convolution

- supersampling

- interpolation using Lanczos window function

4.6.3   Rotate specific Error Codes

- NPP_INTERPOLATION_ERROR if eInterpolation has an illegal value.

- NPP_RECT_ERROR Indicates an error condition if width or height of the intersection of the srcRoi and source image is less than or equal to 1.

- NPP_WRONG_INTERSECTION_ROI_ERROR indicates an error condition if srcROIRect has no intersection with the source image.

- NPP_WRONG_INTERSECTION_QUAD_WARNING indicates a warning that no operation is performed if the transformed source ROI does not intersect the destination ROI.

Chapter 5

Module Index

5.1 Modules

Here is a list of all modules:

Chapter 6

Data Structure Index

6.1 Data Structures

Here are the data structures with brief descriptions:

Chapter 7

Module Documentation

7.1 NPP Core

Basic functions for library management, in particular library version and device property query functions.

Functions

- const NppLibraryVersion ∗ nppGetLibVersion (void)

  Get the NPP library version.

- NppGpuComputeCapability nppGetGpuComputeCapability (void)

  What CUDA compute model is supported by the active CUDA device?

- int nppGetGpuNumSMs (void)

  Get the number of Streaming Multiprocessors (SM) on the active CUDA device.

- int nppGetMaxThreadsPerBlock (void)

  Get the maximum number of threads per block on the active CUDA device.

- int nppGetMaxThreadsPerSM (void)

  Get the maximum number of threads per SM for the active GPU.

- const char ∗ nppGetGpuName (void)

  Get the name of the active CUDA device.

- cudaStream_t nppGetStream (void)

  Get the NPP CUDA stream.

- void nppSetStream (cudaStream_t hStream)

  Set the NPP CUDA stream.

7.1.1 Detailed Description

Basic functions for library management, in particular library version and device property query functions.

7.1.2 Function Documentation

7.1.2.1 NppGpuComputeCapability nppGetGpuComputeCapability (void)

What CUDA compute model is supported by the active CUDA device?

Before trying to call any NPP functions, the user should make a call this function to ensure that the current machine has a CUDA capable device.

Returns:

An enum value representing if a CUDA capable device was found and what level of compute capabilities it supports.

7.1.2.2 const char∗ nppGetGpuName (void)

Get the name of the active CUDA device.

Returns:

Name string of the active graphics-card/compute device in a system.

7.1.2.3 int nppGetGpuNumSMs (void)

Get the number of Streaming Multiprocessors (SM) on the active CUDA device.

Returns:

Number of SMs of the default CUDA device.

7.1.2.4 const NppLibraryVersion∗ nppGetLibVersion (void)

Get the NPP library version.

Returns:

A struct containing separate values for major and minor revision and build number.

7.1.2.5 int nppGetMaxThreadsPerBlock (void)

Get the maximum number of threads per block on the active CUDA device.

Returns:

Maximum number of threads per block on the active CUDA device.

7.1.2.6 int nppGetMaxThreadsPerSM (void)

Get the maximum number of threads per SM for the active GPU.

Returns:

Maximum number of threads per SM for the active GPU

7.1.2.7 cudaStream_t nppGetStream (void)

Get the NPP CUDA stream.

NPP enables concurrent device tasks via a global stream state varible. The NPP stream by default is set to stream 0, i.e. non-concurrent mode. A user can set the NPP stream to any valid CUDA stream. All CUDA commands issued by NPP (e.g. kernels launched by the NPP library) are then issed to that NPP stream.

7.1.2.8 void nppSetStream (cudaStream_t *hStream*)

Set the NPP CUDA stream.

See also:

nppGetStream()

7.2 NPP Type Definitions and Constants

Data Structures

- struct NppLibraryVersion
- struct NppiPoint

    2D Point

- struct NppiSize

    2D Size This struct typically represents the size of a a rectangular region in two space.

- struct NppiRect

    2D Rectangle This struct contains position and size information of a rectangle in two space.

- struct NppiHaarClassifier_32f
- struct NppiHaarBuffer

Modules

- Basic NPP Data Types

Defines

- #define NPP_MIN_8U (0)

    Minimum 8-bit unsigned integer.

- #define NPP_MAX_8U (255)

    Maximum 8-bit unsigned integer.

- #define NPP_MIN_16U (0)

    Minimum 16-bit unsigned integer.

- #define NPP_MAX_16U (65535)

    Maximum 16-bit unsigned integer.

- #define NPP_MIN_32U (0)

    Minimum 32-bit unsigned integer.

- #define NPP_MAX_32U (4294967295)

    Maximum 32-bit unsigned integer.

- #define NPP_MIN_64U (0)

    Minimum 64-bit unsigned integer.

- #define NPP_MAX_64U (18446744073709551615ULL)

    Maximum 64-bit unsigned integer.

- #define NPP_MIN_8S (-128)

    Minimum 8-bit signed integer.

- #define NPP_MAX_8S (127)

    Maximum 8-bit signed integer.

- #define NPP_MIN_16S (-32768)

    Minimum 16-bit signed integer.

- #define NPP_MAX_16S (32767)

    Maximum 16-bit signed integer.

- #define NPP_MIN_32S (-2147483647 - 1)

    Minimum 32-bit signed integer.

- #define NPP_MAX_32S (2147483647)

    Maximum 32-bit signed integer.

- #define NPP_MAX_64S (9223372036854775807LL)

    Minimum 64-bit signed integer.

- #define NPP_MIN_64S (-9223372036854775807LL - 1)

    Maximum 64-bit signed integer.

- #define NPP_MINABS_32F (1.175494351e-38f)

    Smallest positive 32-bit floating point value.

- #define NPP_MAXABS_32F (3.402823466e+38f)

    Largest positive 32-bit floating point value.

- #define NPP_MINABS_64F (2.2250738585072014e-308)

    Smallest positive 64-bit floating point value.

- #define NPP_MAXABS_64F (1.7976931348623158e+308)

    Largest positive 64-bit floating point value.

Enumerations

- enum NppiInterpolationMode {
    NPPI_INTER_UNDEFINED = 0,
    NPPI_INTER_NN = 1,
    NPPI_INTER_LINEAR = 2,
    NPPI_INTER_CUBIC = 4,
    NPPI_INTER_SUPER = 8,
    NPPI_INTER_LANCZOS = 16,
    NPPI_SMOOTH_EDGE = (1 << 31) }

    Filtering methods.

- enum NppStatus {
  NPP_NOT_SUPPORTED_MODE_ERROR = -9999,
  NPP_ROUND_MODE_NOT_SUPPORTED_ERROR = -213,
  NPP_RESIZE_NO_OPERATION_ERROR = -50,
  NPP_NOT_SUFFICIENT_COMPUTE_CAPABILITY = -27,
  NPP_BAD_ARG_ERROR = -26,
  NPP_LUT_NUMBER_OF_LEVELS_ERROR = -25,
  NPP_TEXTURE_BIND_ERROR = -24,
  NPP_COEFF_ERROR = -23,
  NPP_RECT_ERROR = -22,
  NPP_QUAD_ERROR = -21,
  NPP_WRONG_INTERSECTION_ROI_ERROR = -20,
  NPP_NOT_EVEN_STEP_ERROR = -19,
  NPP_INTERPOLATION_ERROR = -18,
  NPP_RESIZE_FACTOR_ERROR = -17,
  NPP_HAAR_CLASSIFIER_PIXEL_MATCH_ERROR = -16,
  NPP_MEMFREE_ERR = -15,
  NPP_MEMSET_ERR = -14,
  NPP_MEMCPY_ERROR = -13,
  NPP_MEM_ALLOC_ERR = -12,
  NPP_HISTO_NUMBER_OF_LEVELS_ERROR = -11,
  NPP_MIRROR_FLIP_ERR = -10,
  NPP_INVALID_INPUT = -9,
  NPP_ALIGNMENT_ERROR = -8,
  NPP_STEP_ERROR = -7,
  NPP_SIZE_ERROR = -6,
  NPP_POINTER_ERROR = -5,
  NPP_NULL_POINTER_ERROR = -4,
  NPP_CUDA_KERNEL_EXECUTION_ERROR = -3,
  NPP_NOT_IMPLEMENTED_ERROR = -2,
  NPP_ERROR = -1,
  NPP_NO_ERROR = 0,
  NPP_SUCCESS = NPP_NO_ERROR,
  NPP_WARNING = 1,
  NPP_WRONG_INTERSECTION_QUAD_WARNING = 2,
  NPP_MISALIGNED_DST_ROI_WARNING = 3,
  NPP_AFFINE_QUAD_INCORRECT_WARNING = 4,
  NPP_DOUBLE_SIZE_WARNING = 5,
  NPP_ODD_ROI_WARNING = 6,
  NPP_WRONG_INTERSECTION_ROI_WARNING = 29 }

  Error Status Codes.

- enum NppGpuComputeCapability {

  NPP_CUDA_UNKNOWN_VERSION = -1,

  NPP_CUDA_NOT_CAPABLE,

  NPP_CUDA_1_0,

  NPP_CUDA_1_1,

  NPP_CUDA_1_2,

  NPP_CUDA_1_3,

  NPP_CUDA_2_0 }
- enum NppiAxis {

  NPP_HORIZONTAL_AXIS,

  NPP_VERTICAL_AXIS,

  NPP_BOTH_AXIS }
- enum NppCmpOp {

  NPP_CMP_LESS,

  NPP_CMP_LESS_EQ,

  NPP_CMP_EQ,

  NPP_CMP_GREATER_EQ,

  NPP_CMP_GREATER }
- enum NppRoundMode {

  NPP_RND_ZERO,

  NPP_RND_NEAR,

  NPP_RND_FINANCIAL }
- enum NppiBorderType {

  NPP_BORDER_UNDEFINED = -1,

  NPP_BORDER_NONE = NPP_BORDER_UNDEFINED,

  NPP_BORDER_CONSTANT = 0,

  NPP_BORDER_REPLICATE = 1,

  NPP_BORDER_WRAP = 2 }
- enum NppHintAlgorithm {

  nppAlgHintNone,

  nppAlgHintFast,

  nppAlgHintAccurate }

7.2.1 Define Documentation

7.2.1.1 #define NPP_MAX_16S (32767)

Maximum 16-bit signed integer.

7.2.1.2 #define NPP_MAX_16U (65535)

Maximum 16-bit unsigned integer.

7.2.1.3   #define NPP_MAX_32S (2147483647)

Maximum 32-bit signed integer.

7.2.1.4   #define NPP_MAX_32U (4294967295)

Maximum 32-bit unsigned integer.

7.2.1.5   #define NPP_MAX_64S (9223372036854775807LL)

Minimum 64-bit signed integer.

7.2.1.6   #define NPP_MAX_64U (18446744073709551615ULL)

Maximum 64-bit unsigned integer.

7.2.1.7   #define NPP_MAX_8S (127)

Maximum 8-bit signed integer.

7.2.1.8   #define NPP_MAX_8U (255)

Maximum 8-bit unsigned integer.

7.2.1.9   #define NPP_MAXABS_32F (3.402823466e+38f)

Largest positive 32-bit floating point value.

7.2.1.10   #define NPP_MAXABS_64F (1.7976931348623158e+308)

Largest positive 64-bit floating point value.

7.2.1.11   #define NPP_MIN_16S (-32768)

Minimum 16-bit signed integer.

7.2.1.12   #define NPP_MIN_16U (0)

Minimum 16-bit unsigned integer.

7.2.1.13   #define NPP_MIN_32S (-2147483647 - 1)

Minimum 32-bit signed integer.

7.2.1.14 #define NPP_MIN_32U (0)

Minimum 32-bit unsigned integer.

7.2.1.15 #define NPP_MIN_64S (-9223372036854775807LL - 1)

Maximum 64-bit signed integer.

7.2.1.16 #define NPP_MIN_64U (0)

Minimum 64-bit unsigned integer.

7.2.1.17 #define NPP_MIN_8S (-128)

Minimum 8-bit signed integer.

7.2.1.18 #define NPP_MIN_8U (0)

Minimum 8-bit unsigned integer.

7.2.1.19 #define NPP_MINABS_32F (1.175494351e-38f)

Smallest positive 32-bit floating point value.

7.2.1.20 #define NPP_MINABS_64F (2.2250738585072014e-308)

Smallest positive 64-bit floating point value.

7.2.2 Enumeration Type Documentation

7.2.2.1 enum NppCmpOp

Enumerator:

NPP_CMP_LESS
NPP_CMP_LESS_EQ
NPP_CMP_EQ
NPP_CMP_GREATER_EQ
NPP_CMP_GREATER

7.2.2.2 enum NppGpuComputeCapability

Enumerator:

NPP_CUDA_UNKNOWN_VERSION Indicates that the compute-capability query failed.
NPP_CUDA_NOT_CAPABLE Indicates that no CUDA capable device was found on machine.

NPP_CUDA_1_0 Indicates that CUDA 1.0 capable device is default device on machine.

NPP_CUDA_1_1 Indicates that CUDA 1.1 capable device.

NPP_CUDA_1_2 Indicates that CUDA 1.2 capable device.

NPP_CUDA_1_3 Indicates that CUDA 1.3 capable device.

NPP_CUDA_2_0 Indicates that CUDA 2.0 or better is default device on machine.

7.2.2.3 enum NppHintAlgorithm

Enumerator:

nppAlgHintNone

nppAlgHintFast

nppAlgHintAccurate

7.2.2.4 enum NppiAxis

Enumerator:

NPP_HORIZONTAL_AXIS

NPP_VERTICAL_AXIS

NPP_BOTH_AXIS

7.2.2.5 enum NppiBorderType

Enumerator:

NPP_BORDER_UNDEFINED

NPP_BORDER_NONE

NPP_BORDER_CONSTANT

NPP_BORDER_REPLICATE

NPP_BORDER_WRAP

7.2.2.6 enum NppiInterpolationMode

Filtering methods.

Enumerator:

NPPI_INTER_UNDEFINED

NPPI_INTER_NN Nearest neighbor filtering.

NPPI_INTER_LINEAR Linear interpolation.

NPPI_INTER_CUBIC Cubic interpolation.

NPPI_INTER_SUPER Super sampling.

NPPI_INTER_LANCZOS Lanczos filtering.

NPPI_SMOOTH_EDGE Smooth edge filtering.

7.2.2.7 enum NppRoundMode

Enumerator:

NPP_RND_ZERO
NPP_RND_NEAR
NPP_RND_FINANCIAL

7.2.2.8 enum NppStatus

Error Status Codes.

Almost all NPP function return error-status information using these return codes. Negative return codes indicate errors, positive return codes indicate warnings, a return code of 0 indicates success.

Enumerator:

NPP_NOT_SUPPORTED_MODE_ERROR
NPP_ROUND_MODE_NOT_SUPPORTED_ERROR
NPP_RESIZE_NO_OPERATION_ERROR
NPP_NOT_SUFFICIENT_COMPUTE_CAPABILITY
NPP_BAD_ARG_ERROR
NPP_LUT_NUMBER_OF_LEVELS_ERROR
NPP_TEXTURE_BIND_ERROR
NPP_COEFF_ERROR
NPP_RECT_ERROR
NPP_QUAD_ERROR
NPP_WRONG_INTERSECTION_ROI_ERROR
NPP_NOT_EVEN_STEP_ERROR
NPP_INTERPOLATION_ERROR
NPP_RESIZE_FACTOR_ERROR
NPP_HAAR_CLASSIFIER_PIXEL_MATCH_ERROR
NPP_MEMFREE_ERR
NPP_MEMSET_ERR
NPP_MEMCPY_ERROR
NPP_MEM_ALLOC_ERR
NPP_HISTO_NUMBER_OF_LEVELS_ERROR
NPP_MIRROR_FLIP_ERR
NPP_INVALID_INPUT
NPP_ALIGNMENT_ERROR
NPP_STEP_ERROR   Step is less or equal zero.
NPP_SIZE_ERROR
NPP_POINTER_ERROR
NPP_NULL_POINTER_ERROR
NPP_CUDA_KERNEL_EXECUTION_ERROR

NPP_NOT_IMPLEMENTED_ERROR

NPP_ERROR

NPP_NO_ERROR Error free operation.

NPP_SUCCESS Successful operation (same as NPP_NO_ERROR).

NPP_WARNING

NPP_WRONG_INTERSECTION_QUAD_WARNING

NPP_MISALIGNED_DST_ROI_WARNING Speed reduction due to uncoalesced memory accesses warning.

NPP_AFFINE_QUAD_INCORRECT_WARNING Indicates that the quadrangle passed to one of affine warping functions doesn't have necessary properties. First 3 vertices are used, the fourth vertex discarded.

NPP_DOUBLE_SIZE_WARNING Indicates that in case of 422/411/420 sampling the ROI width/height was modified for proper processing.

NPP_ODD_ROI_WARNING Indicates that for 422/411/420 sampling the ROI width/height was forced to even value.

NPP_WRONG_INTERSECTION_ROI_WARNING ROI doesn't intersect source or destination ROI/image. No operation performed.

7.3   Basic NPP Data Types

Data Structures

- struct Npp16sc

    Complex Number This struct represents a short complex number.

- struct Npp32sc

    Complex Number This struct represents a signed int complex number.

- struct Npp32fc

    Complex Number This struct represents a single floating-point complex number.

- struct Npp64sc

    Complex Number This struct represents a long long complex number.

- struct Npp64fc

    Complex Number This struct represents a double floating-point complex number.

Typedefs

- typedef unsigned char Npp8u

    8-bit unsigned chars

- typedef signed char Npp8s

    8-bit signed chars

- typedef unsigned short Npp16u

    16-bit unsigned integers

- typedef short Npp16s

    16-bit signed integers

- typedef unsigned int Npp32u

    32-bit unsigned integers

- typedef int Npp32s

    32-bit signed integers

- typedef unsigned long long Npp64u

    64-bit unsigned integers

- typedef long long Npp64s

    64-bit signed integers

- typedef float Npp32f

    32-bit (IEEE) floating-point numbers

- typedef double Npp64f

  64-bit floating-point numbers

7.3.1 Typedef Documentation

7.3.1.1 typedef short Npp16s

16-bit signed integers

7.3.1.2 typedef unsigned short Npp16u

16-bit unsigned integers

7.3.1.3 typedef float Npp32f

32-bit (IEEE) floating-point numbers

7.3.1.4 typedef int Npp32s

32-bit signed integers

7.3.1.5 typedef unsigned int Npp32u

32-bit unsigned integers

7.3.1.6 typedef double Npp64f

64-bit floating-point numbers

7.3.1.7 typedef long long Npp64s

64-bit signed integers

7.3.1.8 typedef unsigned long long Npp64u

64-bit unsigned integers

7.3.1.9 typedef signed char Npp8s

8-bit signed chars

7.3.1.10 typedef unsigned char Npp8u

8-bit unsigned chars

7.4   NPP Image Processing

Modules

- Memory Management

    Routines for allocating and deallocating pitched image storage.

- Data-Exchange and Initialization

    Primitives for initializtion, copying and converting image data.

- Arithmetic and Logical Operations
- Threshold and Compare Operations

    Methods for pixel-wise threshold and compare operations.

- Statistics Functions

    Routines computing statistical image information.

- Filtering Functions

    Linear and non-linear image filtering functions.

- Morphological Operations

    Morphological image operations.

- Image Linear Transforms

    Linear image transformations.

- Compression

    Image compression primitives.

- Geometric Transforms

    Routines manipulating an image's geometry.

- Color Conversion

    Image color space and sample conversion operations.

- Labeling and Segmentation

    Pixel labeling and image segementation operations.

Enumerations

- enum NppiAlphaOp {

    NPPI_OP_ALPHA_OVER,

    NPPI_OP_ALPHA_IN,

    NPPI_OP_ALPHA_OUT,

    NPPI_OP_ALPHA_ATOP,

    NPPI_OP_ALPHA_XOR,

    NPPI_OP_ALPHA_PLUS,

NPPI_OP_ALPHA_OVER_PREMUL,

NPPI_OP_ALPHA_IN_PREMUL,

NPPI_OP_ALPHA_OUT_PREMUL,

NPPI_OP_ALPHA_ATOP_PREMUL,

NPPI_OP_ALPHA_XOR_PREMUL,

NPPI_OP_ALPHA_PLUS_PREMUL,

NPPI_OP_ALPHA_PREMUL }

7.4.1   Enumeration Type Documentation

7.4.1.1   enum NppiAlphaOp

Enumerator:

NPPI_OP_ALPHA_OVER

NPPI_OP_ALPHA_IN

NPPI_OP_ALPHA_OUT

NPPI_OP_ALPHA_ATOP

NPPI_OP_ALPHA_XOR

NPPI_OP_ALPHA_PLUS

NPPI_OP_ALPHA_OVER_PREMUL

NPPI_OP_ALPHA_IN_PREMUL

NPPI_OP_ALPHA_OUT_PREMUL

NPPI_OP_ALPHA_ATOP_PREMUL

NPPI_OP_ALPHA_XOR_PREMUL

NPPI_OP_ALPHA_PLUS_PREMUL

NPPI_OP_ALPHA_PREMUL

7.5 Memory Management

Routines for allocating and deallocating pitched image storage.

Functions

- void nppiFree (void *pData)

    Free method for any 2D allocated memory.

Image-Memory Allocation

ImageAllocator methods for 2D arrays of data.

The allocators have width and height parameters to specify the size of the image data being allocated. They return a pointer to the newly created memory and return the numbers of bytes between successive lines.

If the memory allocation failed due to lack of free device memory or device memory fragmentation the routine returns 0.

All allocators return memory with line strides that are beneficial for performance. It is not mandatory to use these allocators. Any valid CUDA device-memory pointers can be used by the NPP primitives and there are no restrictions on line strides.

- Npp8u * nppiMalloc_8u_C1 (int nWidthPixels, int nHeightPixels, int *pStepBytes)

    8-bit unsigned image memory allocator.

- Npp8u * nppiMalloc_8u_C2 (int nWidthPixels, int nHeightPixels, int *pStepBytes)

    2 channel 8-bit unsigned image memory allocator.

- Npp8u * nppiMalloc_8u_C3 (int nWidthPixels, int nHeightPixels, int *pStepBytes)

    3 channel 8-bit unsigned image memory allocator.

- Npp8u * nppiMalloc_8u_C4 (int nWidthPixels, int nHeightPixels, int *pStepBytes)

    4 channel 8-bit unsigned image memory allocator.

- Npp16u * nppiMalloc_16u_C1 (int nWidthPixels, int nHeightPixels, int *pStepBytes)

    16-bit unsigned image memory allocator.

- Npp16u * nppiMalloc_16u_C2 (int nWidthPixels, int nHeightPixels, int *pStepBytes)

    2 channel 16-bit unsigned image memory allocator.

- Npp16u * nppiMalloc_16u_C3 (int nWidthPixels, int nHeightPixels, int *pStepBytes)

    3 channel 16-bit unsigned image memory allocator.

- Npp16u * nppiMalloc_16u_C4 (int nWidthPixels, int nHeightPixels, int *pStepBytes)

    4 channel 16-bit unsigned image memory allocator.

- Npp16s * nppiMalloc_16s_C1 (int nWidthPixels, int nHeightPixels, int *pStepBytes)

    16-bit signed image memory allocator.

- Npp16s ∗ nppiMalloc_16s_C2 (int nWidthPixels, int nHeightPixels, int ∗pStepBytes)

  2 channel 16-bit signed image memory allocator.

- Npp16s ∗ nppiMalloc_16s_C4 (int nWidthPixels, int nHeightPixels, int ∗pStepBytes)

  4 channel 16-bit signed image memory allocator.

- Npp16sc ∗ nppiMalloc_16sc_C1 (int nWidthPixels, int nHeightPixels, int ∗pStepBytes)

  1 channel 16-bit signed complex image memory allocator.

- Npp16sc ∗ nppiMalloc_16sc_C2 (int nWidthPixels, int nHeightPixels, int ∗pStepBytes)

  2 channel 16-bit signed complex image memory allocator.

- Npp16sc ∗ nppiMalloc_16sc_C3 (int nWidthPixels, int nHeightPixels, int ∗pStepBytes)

  3 channel 16-bit signed complex image memory allocator.

- Npp16sc ∗ nppiMalloc_16sc_C4 (int nWidthPixels, int nHeightPixels, int ∗pStepBytes)

  4 channel 16-bit signed complex image memory allocator.

- Npp32s ∗ nppiMalloc_32s_C1 (int nWidthPixels, int nHeightPixels, int ∗pStepBytes)

  32-bit signed image memory allocator.

- Npp32s ∗ nppiMalloc_32s_C3 (int nWidthPixels, int nHeightPixels, int ∗pStepBytes)

  3 channel 32-bit signed image memory allocator.

- Npp32s ∗ nppiMalloc_32s_C4 (int nWidthPixels, int nHeightPixels, int ∗pStepBytes)

  4 channel 32-bit signed image memory allocator.

- Npp32sc ∗ nppiMalloc_32sc_C1 (int nWidthPixels, int nHeightPixels, int ∗pStepBytes)

  32-bit integer complex image memory allocator.

- Npp32sc ∗ nppiMalloc_32sc_C2 (int nWidthPixels, int nHeightPixels, int ∗pStepBytes)

  2 channel 32-bit integer complex image memory allocator.

- Npp32sc ∗ nppiMalloc_32sc_C3 (int nWidthPixels, int nHeightPixels, int ∗pStepBytes)

  3 channel 32-bit integer complex image memory allocator.

- Npp32sc ∗ nppiMalloc_32sc_C4 (int nWidthPixels, int nHeightPixels, int ∗pStepBytes)

  4 channel 32-bit integer complex image memory allocator.

- Npp32f ∗ nppiMalloc_32f_C1 (int nWidthPixels, int nHeightPixels, int ∗pStepBytes)

  32-bit floating point image memory allocator.

- Npp32f ∗ nppiMalloc_32f_C2 (int nWidthPixels, int nHeightPixels, int ∗pStepBytes)

  2 channel 32-bit floating point image memory allocator.

- Npp32f ∗ nppiMalloc_32f_C3 (int nWidthPixels, int nHeightPixels, int ∗pStepBytes)

  3 channel 32-bit floating point image memory allocator.

- Npp32f ∗ nppiMalloc_32f_C4 (int nWidthPixels, int nHeightPixels, int ∗pStepBytes)

  4 channel 32-bit floating point image memory allocator.

- Npp32fc ∗ nppiMalloc_32fc_C1 (int nWidthPixels, int nHeightPixels, int ∗pStepBytes)

    32-bit float complex image memory allocator.

- Npp32fc ∗ nppiMalloc_32fc_C2 (int nWidthPixels, int nHeightPixels, int ∗pStepBytes)

    2 channel 32-bit float complex image memory allocator.

- Npp32fc ∗ nppiMalloc_32fc_C3 (int nWidthPixels, int nHeightPixels, int ∗pStepBytes)

    3 channel 32-bit float complex image memory allocator.

- Npp32fc ∗ nppiMalloc_32fc_C4 (int nWidthPixels, int nHeightPixels, int ∗pStepBytes)

    4 channel 32-bit float complex image memory allocator.

7.5.1   Detailed Description

Routines for allocating and deallocating pitched image storage.

These methods are provided for convenience. They allocate memory that may contain additional padding bytes at the end of each line of pixels. Though padding is not necessary for any of the NPP image-processing primitives to work correctly, its absense may cause sever performance degradation compared to properly padded images.

7.5.2   Function Documentation

7.5.2.1   void nppiFree (void ∗ *pData*)

Free method for any 2D allocated memory.

This method should be used to free memory allocated with any of the nppiMalloc_<modifier> methods.

Parameters:

   pData A pointer to memory allocated using nppiMalloc_<modifier>.

7.5.2.2   Npp16s∗ nppiMalloc_16s_C1 (int *nWidthPixels*, int *nHeightPixels*, int ∗ *pStepBytes*)

16-bit signed image memory allocator.

Parameters:

   nWidthPixels Image width.

   nHeightPixels Image height.

   pStepBytes Line Step.

Returns:

   Pointer to new image data.

7.5.2.3 Npp16s∗ nppiMalloc_16s_C2 (int *nWidthPixels*, int *nHeightPixels*, int ∗ *pStepBytes*)

2 channel 16-bit signed image memory allocator.

Parameters:

    nWidthPixels Image width.

    nHeightPixels Image height.

    pStepBytes Line Step.

Returns:

    Pointer to new image data.

7.5.2.4 Npp16s∗ nppiMalloc_16s_C4 (int *nWidthPixels*, int *nHeightPixels*, int ∗ *pStepBytes*)

4 channel 16-bit signed image memory allocator.

Parameters:

    nWidthPixels Image width.

    nHeightPixels Image height.

    pStepBytes Line Step.

Returns:

    Pointer to new image data.

7.5.2.5 Npp16sc∗ nppiMalloc_16sc_C1 (int *nWidthPixels*, int *nHeightPixels*, int ∗ *pStepBytes*)

1 channel 16-bit signed complex image memory allocator.

Parameters:

    nWidthPixels Image width.

    nHeightPixels Image height.

    pStepBytes Line Step.

Returns:

    Pointer to new image data.

7.5.2.6 Npp16sc∗ nppiMalloc_16sc_C2 (int *nWidthPixels*, int *nHeightPixels*, int ∗ *pStepBytes*)

2 channel 16-bit signed complex image memory allocator.

Parameters:

    nWidthPixels Image width.

    nHeightPixels Image height.

pStepBytes Line Step.

Returns:

Pointer to new image data.

7.5.2.7   Npp16sc∗ nppiMalloc_16sc_C3 (int *nWidthPixels*, int *nHeightPixels*, int ∗ *pStepBytes*)

3 channel 16-bit signed complex image memory allocator.

Parameters:

nWidthPixels Image width.

nHeightPixels Image height.

pStepBytes Line Step.

Returns:

Pointer to new image data.

7.5.2.8   Npp16sc∗ nppiMalloc_16sc_C4 (int *nWidthPixels*, int *nHeightPixels*, int ∗ *pStepBytes*)

4 channel 16-bit signed complex image memory allocator.

Parameters:

nWidthPixels Image width.

nHeightPixels Image height.

pStepBytes Line Step.

Returns:

Pointer to new image data.

7.5.2.9   Npp16u∗ nppiMalloc_16u_C1 (int *nWidthPixels*, int *nHeightPixels*, int ∗ *pStepBytes*)

16-bit unsigned image memory allocator.

Parameters:

nWidthPixels Image width.

nHeightPixels Image height.

pStepBytes Line Step.

Returns:

Pointer to new image data.

7.5.2.10 Npp16u∗ nppiMalloc_16u_C2 (int *nWidthPixels*, int *nHeightPixels*, int ∗ *pStepBytes*)

2 channel 16-bit unsigned image memory allocator.

Parameters:

> *nWidthPixels* Image width.
>
> *nHeightPixels* Image height.
>
> *pStepBytes* Line Step.

Returns:

> Pointer to new image data.

7.5.2.11 Npp16u∗ nppiMalloc_16u_C3 (int *nWidthPixels*, int *nHeightPixels*, int ∗ *pStepBytes*)

3 channel 16-bit unsigned image memory allocator.

Parameters:

> *nWidthPixels* Image width.
>
> *nHeightPixels* Image height.
>
> *pStepBytes* Line Step.

Returns:

> Pointer to new image data.

7.5.2.12 Npp16u∗ nppiMalloc_16u_C4 (int *nWidthPixels*, int *nHeightPixels*, int ∗ *pStepBytes*)

4 channel 16-bit unsigned image memory allocator.

Parameters:

> *nWidthPixels* Image width.
>
> *nHeightPixels* Image height.
>
> *pStepBytes* Line Step.

Returns:

> Pointer to new image data.

7.5.2.13 Npp32f∗ nppiMalloc_32f_C1 (int *nWidthPixels*, int *nHeightPixels*, int ∗ *pStepBytes*)

32-bit floating point image memory allocator.

Parameters:

> *nWidthPixels* Image width.
>
> *nHeightPixels* Image height.

pStepBytes Line Step.

Returns:

Pointer to new image data.

7.5.2.14 Npp32f∗ nppiMalloc_32f_C2 (int *nWidthPixels*, int *nHeightPixels*, int ∗ *pStepBytes*)

2 channel 32-bit floating point image memory allocator.

Parameters:

nWidthPixels Image width.

nHeightPixels Image height.

pStepBytes Line Step.

Returns:

Pointer to new image data.

7.5.2.15 Npp32f∗ nppiMalloc_32f_C3 (int *nWidthPixels*, int *nHeightPixels*, int ∗ *pStepBytes*)

3 channel 32-bit floating point image memory allocator.

Parameters:

nWidthPixels Image width.

nHeightPixels Image height.

pStepBytes Line Step.

Returns:

Pointer to new image data.

7.5.2.16 Npp32f∗ nppiMalloc_32f_C4 (int *nWidthPixels*, int *nHeightPixels*, int ∗ *pStepBytes*)

4 channel 32-bit floating point image memory allocator.

Parameters:

nWidthPixels Image width.

nHeightPixels Image height.

pStepBytes Line Step.

Returns:

Pointer to new image data.

7.5.2.17 Npp32fc∗ nppiMalloc_32fc_C1 (int *nWidthPixels*, int *nHeightPixels*, int ∗ *pStepBytes*)

32-bit float complex image memory allocator.

Parameters:

> *nWidthPixels* Image width.
>
> *nHeightPixels* Image height.
>
> *pStepBytes* Line Step.

Returns:

> Pointer to new image data.

7.5.2.18 Npp32fc∗ nppiMalloc_32fc_C2 (int *nWidthPixels*, int *nHeightPixels*, int ∗ *pStepBytes*)

2 channel 32-bit float complex image memory allocator.

Parameters:

> *nWidthPixels* Image width.
>
> *nHeightPixels* Image height.
>
> *pStepBytes* Line Step.

Returns:

> Pointer to new image data.

7.5.2.19 Npp32fc∗ nppiMalloc_32fc_C3 (int *nWidthPixels*, int *nHeightPixels*, int ∗ *pStepBytes*)

3 channel 32-bit float complex image memory allocator.

Parameters:

> *nWidthPixels* Image width.
>
> *nHeightPixels* Image height.
>
> *pStepBytes* Line Step.

Returns:

> Pointer to new image data.

7.5.2.20 Npp32fc∗ nppiMalloc_32fc_C4 (int *nWidthPixels*, int *nHeightPixels*, int ∗ *pStepBytes*)

4 channel 32-bit float complex image memory allocator.

Parameters:

> *nWidthPixels* Image width.
>
> *nHeightPixels* Image height.

pStepBytes Line Step.

Returns:

Pointer to new image data.

7.5.2.21   Npp32s∗ nppiMalloc_32s_C1 (int *nWidthPixels*, int *nHeightPixels*, int ∗ *pStepBytes*)

32-bit signed image memory allocator.

Parameters:

nWidthPixels Image width.

nHeightPixels Image height.

pStepBytes Line Step.

Returns:

Pointer to new image data.

7.5.2.22   Npp32s∗ nppiMalloc_32s_C3 (int *nWidthPixels*, int *nHeightPixels*, int ∗ *pStepBytes*)

3 channel 32-bit signed image memory allocator.

Parameters:

nWidthPixels Image width.

nHeightPixels Image height.

pStepBytes Line Step.

Returns:

Pointer to new image data.

7.5.2.23   Npp32s∗ nppiMalloc_32s_C4 (int *nWidthPixels*, int *nHeightPixels*, int ∗ *pStepBytes*)

4 channel 32-bit signed image memory allocator.

Parameters:

nWidthPixels Image width.

nHeightPixels Image height.

pStepBytes Line Step.

Returns:

Pointer to new image data.

7.5.2.24 Npp32sc∗ nppiMalloc_32sc_C1 (int *nWidthPixels*, int *nHeightPixels*, int ∗ *pStepBytes*)

32-bit integer complex image memory allocator.

Parameters:

> *nWidthPixels* Image width.
>
> *nHeightPixels* Image height.
>
> *pStepBytes* Line Step.

Returns:

> Pointer to new image data.

7.5.2.25 Npp32sc∗ nppiMalloc_32sc_C2 (int *nWidthPixels*, int *nHeightPixels*, int ∗ *pStepBytes*)

2 channel 32-bit integer complex image memory allocator.

Parameters:

> *nWidthPixels* Image width.
>
> *nHeightPixels* Image height.
>
> *pStepBytes* Line Step.

Returns:

> Pointer to new image data.

7.5.2.26 Npp32sc∗ nppiMalloc_32sc_C3 (int *nWidthPixels*, int *nHeightPixels*, int ∗ *pStepBytes*)

3 channel 32-bit integer complex image memory allocator.

Parameters:

> *nWidthPixels* Image width.
>
> *nHeightPixels* Image height.
>
> *pStepBytes* Line Step.

Returns:

> Pointer to new image data.

7.5.2.27 Npp32sc∗ nppiMalloc_32sc_C4 (int *nWidthPixels*, int *nHeightPixels*, int ∗ *pStepBytes*)

4 channel 32-bit integer complex image memory allocator.

Parameters:

> *nWidthPixels* Image width.
>
> *nHeightPixels* Image height.

pStepBytes Line Step.

Returns:

Pointer to new image data.

7.5.2.28 Npp8u∗ nppiMalloc_8u_C1 (int *nWidthPixels*, int *nHeightPixels*, int ∗ *pStepBytes*)

8-bit unsigned image memory allocator.

Parameters:

nWidthPixels Image width.

nHeightPixels Image height.

pStepBytes Line Step.

Returns:

Pointer to new image data.

7.5.2.29 Npp8u∗ nppiMalloc_8u_C2 (int *nWidthPixels*, int *nHeightPixels*, int ∗ *pStepBytes*)

2 channel 8-bit unsigned image memory allocator.

Parameters:

nWidthPixels Image width.

nHeightPixels Image height.

pStepBytes Line Step.

Returns:

Pointer to new image data.

7.5.2.30 Npp8u∗ nppiMalloc_8u_C3 (int *nWidthPixels*, int *nHeightPixels*, int ∗ *pStepBytes*)

3 channel 8-bit unsigned image memory allocator.

Parameters:

nWidthPixels Image width.

nHeightPixels Image height.

pStepBytes Line Step.

Returns:

Pointer to new image data.

7.5.2.31 Npp8u∗ nppiMalloc_8u_C4 (int *nWidthPixels*, int *nHeightPixels*, int ∗ *pStepBytes*)

4 channel 8-bit unsigned image memory allocator.

Parameters:

> *nWidthPixels*   Image width.
>
> *nHeightPixels*   Image height.
>
> *pStepBytes*   Line Step.

Returns:

> Pointer to new image data.

7.6 Data-Exchange and Initialization

Primitives for initializtion, copying and converting image data.

Image-Memory Set

Set methods for images of various types.

Images are passed to these primitives via a pointer to the image data (first pixel in the ROI) and a step-width, i.e. the number of bytes between successive lines. The size of the area to be set (region-of-interest, ROI) is specified via a NppiSize struct. In addition to the image data and ROI, all methods have a parameter to specify the value being set. In case of single channel images this is a single value, in case of multi-channel, an array of values is passed.

- NppStatus nppiSet_8s_C1R (Npp8s nValue, Npp8s ∗pDst, int nDstStep, NppiSize oSizeROI)

  8-bit image set.

- NppStatus nppiSet_8s_C2R (Npp8s aValue[2], Npp8s ∗pDst, int nDstStep, NppiSize oSizeROI)

  8-bit two-channel image set.

- NppStatus nppiSet_8s_C3R (Npp8s aValue[3], Npp8s ∗pDst, int nDstStep, NppiSize oSizeROI)

  8-bit three-channel image set.

- NppStatus nppiSet_8s_C4R (Npp8s aValue[4], Npp8s ∗pDst, int nDstStep, NppiSize oSizeROI)

  8-bit four-channel image set.

- NppStatus nppiSet_8s_AC4R (Npp8s aValue[3], Npp8s ∗pDst, int nDstStep, NppiSize oSizeROI)

  8-bit four-channel image set ignoring alpha channel.

- NppStatus nppiSet_8u_C1R (Npp8u nValue, Npp8u ∗pDst, int nDstStep, NppiSize oSizeROI)

  8-bit unsigned image set.

- NppStatus nppiSet_8u_C1MR (Npp8u nValue, Npp8u ∗pDst, int nDstStep, NppiSize oSizeROI, const Npp8u ∗pMask, int nMaskStep)

  Masked 8-bit unsigned image set.

- NppStatus nppiSet_8u_C4R (const Npp8u aValues[4], Npp8u ∗pDst, int nDstStep, NppiSize oSize-ROI)

  4 channel 8-bit unsigned image set.

- NppStatus nppiSet_8u_C4MR (const Npp8u aValues[4], Npp8u ∗pDst, int nDstStep, NppiSize oSizeROI, const Npp8u ∗pMask, int nMaskStep)

  Masked 4 channel 8-bit unsigned image set.

- NppStatus nppiSet_8u_AC4R (const Npp8u aValues[3], Npp8u ∗pDst, int nDstStep, NppiSize oSizeROI)

  4 channel 8-bit unsigned image set method, not affecting Alpha channel.

- NppStatus nppiSet_8u_AC4MR (const Npp8u aValues[3], Npp8u ∗pDst, int nDstStep, NppiSize oSizeROI, const Npp8u ∗pMask, int nMaskStep)

Masked 4 channel 8-bit unsigned image set method, not affecting Alpha channel.

- NppStatus nppiSet_8u_C4CR (Npp8u nValue, Npp8u *pDst, int nDstStep, NppiSize oSizeROI)

    4 channel 8-bit unsigned image set affecting only single channel.

- NppStatus nppiSet_16u_C1R (Npp16u nValue, Npp16u *pDst, int nDstStep, NppiSize oSizeROI)

    16-bit unsigned image set.

- NppStatus nppiSet_16u_C1MR (Npp16u nValue, Npp16u *pDst, int nDstStep, NppiSize oSizeROI, const Npp8u *pMask, int nMaskStep)

    Masked 16-bit unsigned image set.

- NppStatus nppiSet_16u_C2R (const Npp16u aValues[2], Npp16u *pDst, int nDstStep, NppiSize oSizeROI)

    2 channel 16-bit unsigned image set.

- NppStatus nppiSet_16u_C4R (const Npp16u aValues[4], Npp16u *pDst, int nDstStep, NppiSize oSizeROI)

    4 channel 16-bit unsigned image set.

- NppStatus nppiSet_16u_C4MR (const Npp16u aValues[4], Npp16u *pDst, int nDstStep, NppiSize oSizeROI, const Npp8u *pMask, int nMaskStep)

    Masked 4 channel 16-bit unsigned image set.

- NppStatus nppiSet_16u_AC4R (const Npp16u aValues[3], Npp16u *pDst, int nDstStep, NppiSize oSizeROI)

    4 channel 16-bit unsigned image set method, not affecting Alpha channel.

- NppStatus nppiSet_16u_AC4MR (const Npp16u aValues[3], Npp16u *pDst, int nDstStep, NppiSize oSizeROI, const Npp8u *pMask, int nMaskStep)

    Masked 4 channel 16-bit unsigned image set method, not affecting Alpha channel.

- NppStatus nppiSet_16u_C4CR (Npp16u nValue, Npp16u *pDst, int nDstStep, NppiSize oSize-ROI)

    4 channel 16-bit unsigned image set affecting only single channel.

- NppStatus nppiSet_16s_C1R (Npp16s nValue, Npp16s *pDst, int nDstStep, NppiSize oSizeROI)

    16-bit image set.

- NppStatus nppiSet_16s_C1MR (Npp16s nValue, Npp16s *pDst, int nDstStep, NppiSize oSizeROI, const Npp8u *pMask, int nMaskStep)

    Masked 16-bit image set.

- NppStatus nppiSet_16s_C2R (const Npp16s aValues[2], Npp16s *pDst, int nDstStep, NppiSize oSizeROI)

    2 channel 16-bit image set.

- NppStatus nppiSet_16s_C4R (const Npp16s aValues[4], Npp16s *pDst, int nDstStep, NppiSize oSizeROI)

    4 channel 16-bit image set.

- NppStatus nppiSet_16s_C4MR (const Npp16s aValues[4], Npp16s *pDst, int nDstStep, NppiSize oSizeROI, const Npp8u *pMask, int nMaskStep)

    Masked 4 channel 16-bit image set.

- NppStatus nppiSet_16s_AC4R (const Npp16s aValues[3], Npp16s *pDst, int nDstStep, NppiSize oSizeROI)

    4 channel 16-bit image set method, not affecting Alpha channel.

- NppStatus nppiSet_16s_AC4MR (const Npp16s aValues[3], Npp16s *pDst, int nDstStep, NppiSize oSizeROI, const Npp8u *pMask, int nMaskStep)

    Masked 4 channel 16-bit image set method, not affecting Alpha channel.

- NppStatus nppiSet_16s_C4CR (Npp16s nValue, Npp16s *pDst, int nDstStep, NppiSize oSizeROI)

    4 channel 16-bit unsigned image set affecting only single channel.

- NppStatus nppiSet_16sc_C1R (Npp16sc oValue, Npp16sc *pDst, int nDstStep, NppiSize oSize-ROI)

    16-bit complex integer image set.

- NppStatus nppiSet_16sc_C2R (Npp16sc aValue[2], Npp16sc *pDst, int nDstStep, NppiSize oSize-ROI)

    16-bit complex integer two-channel image set.

- NppStatus nppiSet_16sc_C3R (Npp16sc aValue[3], Npp16sc *pDst, int nDstStep, NppiSize oSize-ROI)

    16-bit complex integer three-channel image set.

- NppStatus nppiSet_16sc_AC4R (Npp16sc aValue[3], Npp16sc *pDst, int nDstStep, NppiSize oSizeROI)

    16-bit complex integer four-channel image set ignoring alpha.

- NppStatus nppiSet_16sc_C4R (Npp16sc aValue[4], Npp16sc *pDst, int nDstStep, NppiSize oSize-ROI)

    16-bit complex integer four-channel image set.

- NppStatus nppiSet_32s_C1R (Npp32s nValue, Npp32s *pDst, int nDstStep, NppiSize oSizeROI)

    32-bit image set.

- NppStatus nppiSet_32s_C1MR (Npp32s nValue, Npp32s *pDst, int nDstStep, NppiSize oSizeROI, const Npp8u *pMask, int nMaskStep)

    Masked 32-bit image set.

- NppStatus nppiSet_32s_C4R (const Npp32s aValues[4], Npp32s *pDst, int nDstStep, NppiSize oSizeROI)

    4 channel 32-bit image set.

- NppStatus nppiSet_32s_C4MR (const Npp32s aValues[4], Npp32s *pDst, int nDstStep, NppiSize oSizeROI, const Npp8u *pMask, int nMaskStep)

    Masked 4 channel 32-bit image set.

- NppStatus nppiSet_32s_AC4R (const Npp32s aValues[3], Npp32s *pDst, int nDstStep, NppiSize oSizeROI)

  4 channel 16-bit image set method, not affecting Alpha channel.

- NppStatus nppiSet_32s_AC4MR (const Npp32s aValues[3], Npp32s *pDst, int nDstStep, NppiSize oSizeROI, const Npp8u *pMask, int nMaskStep)

  Masked 4 channel 16-bit image set method, not affecting Alpha channel.

- NppStatus nppiSet_32s_C4CR (Npp32s nValue, Npp32s *pDst, int nDstStep, NppiSize oSizeROI)

  4 channel 32-bit unsigned image set affecting only single channel.

- NppStatus nppiSet_32sc_C1R (Npp32sc oValue, Npp32sc *pDst, int nDstStep, NppiSize oSize-ROI)

  Single channel 32-bit complex integer image set.

- NppStatus nppiSet_32sc_C2R (Npp32sc aValue[2], Npp32sc *pDst, int nDstStep, NppiSize oSize-ROI)

  Two channel 32-bit complex integer image set.

- NppStatus nppiSet_32sc_C3R (Npp32sc aValue[3], Npp32sc *pDst, int nDstStep, NppiSize oSize-ROI)

  Three channel 32-bit complex integer image set.

- NppStatus nppiSet_32sc_C4R (Npp32sc aValue[4], Npp32sc *pDst, int nDstStep, NppiSize oSize-ROI)

  Four channel 32-bit complex integer image set.

- NppStatus nppiSet_32sc_AC4R (Npp32sc aValue[3], Npp32sc *pDst, int nDstStep, NppiSize oS-izeROI)

  32-bit complex integer four-channel image set ignoring alpha.

- NppStatus nppiSet_32f_C1R (Npp32f nValue, Npp32f *pDst, int nDstStep, NppiSize oSizeROI)

  32-bit floating point image set.

- NppStatus nppiSet_32f_C1MR (Npp32f nValue, Npp32f *pDst, int nDstStep, NppiSize oSizeROI, const Npp8u *pMask, int nMaskStep)

  Masked 32-bit floating point image set.

- NppStatus nppiSet_32f_C4R (const Npp32f aValues[4], Npp32f *pDst, int nDstStep, NppiSize oS-izeROI)

  4 channel 32-bit floating point image set.

- NppStatus nppiSet_32f_C4MR (const Npp32f aValues[4], Npp32f *pDst, int nDstStep, NppiSize oSizeROI, const Npp8u *pMask, int nMaskStep)

  Masked 4 channel 32-bit floating point image set.

- NppStatus nppiSet_32f_AC4R (const Npp32f aValues[3], Npp32f *pDst, int nDstStep, NppiSize oSizeROI)

  4 channel 32-bit floating point image set method, not affecting Alpha channel.

- NppStatus nppiSet_32f_AC4MR (const Npp32f aValues[3], Npp32f ∗pDst, int nDstStep, NppiSize oSizeROI, const Npp8u ∗pMask, int nMaskStep)

    Masked 4 channel 32-bit floating point image set method, not affecting Alpha channel.

- NppStatus nppiSet_32f_C4CR (Npp32f nValue, Npp32f ∗pDst, int nDstStep, NppiSize oSizeROI)

    4 channel 32-bit floating point image set affecting only single channel.

- NppStatus nppiSet_32fc_C1R (Npp32fc oValue, Npp32fc ∗pDst, int nDstStep, NppiSize oSize-ROI)

    Single channel 32-bit complex image set.

- NppStatus nppiSet_32fc_C2R (Npp32fc aValue[2], Npp32fc ∗pDst, int nDstStep, NppiSize oSize-ROI)

    Two channel 32-bit complex image set.

- NppStatus nppiSet_32fc_C3R (Npp32fc aValue[3], Npp32fc ∗pDst, int nDstStep, NppiSize oSize-ROI)

    Three channel 32-bit complex image set.

- NppStatus nppiSet_32fc_C4R (Npp32fc aValue[4], Npp32fc ∗pDst, int nDstStep, NppiSize oSize-ROI)

    Four channel 32-bit complex image set.

- NppStatus nppiSet_32fc_AC4R (Npp32fc aValue[3], Npp32fc ∗pDst, int nDstStep, NppiSize oSize-ROI)

    32-bit complex four-channel image set ignoring alpha.

Image-Memory Copy

Copy methods for images of various types.

In addition to routines for copying pixels of identical layout from one image to another, there are copy routines for select channels as well as packed-planar conversions:

- Select channel to multi-channel copy. E.g. given a three-channel source and destination image one may copy the second channel of the source to the third channel of the destination.

- Single channel to multi-channel copy. E.g. given a single-channel source and a four-channel destination, one may copy the contents of the single- channel source to the second channel of the destination.

- Select channel to single-channel copy. E.g. given a three-channel source and a single-channel destination one may copy the third channel of the source to the destination.

- Multi-channel to planar copy. These copy operations split a multi-channel image into a set of single-channel images.

- Planar image to multi-channel copy. These copy routines combine separate color-planes (single channel images) into a single multi-channel image.

- NppStatus nppiCopy_8s_C1R (const Npp8s ∗pSrc, int nSrcStep, Npp8s ∗pDst, int nDstStep, Nppi-Size oSizeROI)

    8-bit image copy.

- NppStatus nppiCopy_8s_C2R (const Npp8s ∗pSrc, int nSrcStep, Npp8s ∗pDst, int nDstStep, Nppi-Size oSizeROI)

    Two-channel 8-bit image copy.

- NppStatus nppiCopy_8s_C3R (const Npp8s ∗pSrc, int nSrcStep, Npp8s ∗pDst, int nDstStep, Nppi-Size oSizeROI)

    Three-channel 8-bit image copy.

- NppStatus nppiCopy_8s_C4R (const Npp8s ∗pSrc, int nSrcStep, Npp8s ∗pDst, int nDstStep, Nppi-Size oSizeROI)

    Four-channel 8-bit image copy.

- NppStatus nppiCopy_8s_AC4R (const Npp8s ∗pSrc, int nSrcStep, Npp8s ∗pDst, int nDstStep, Nppi-Size oSizeROI)

    Four-channel 8-bit image copy, ignoring alpha channel.

- NppStatus nppiCopy_8u_C1R (const Npp8u ∗pSrc, int nSrcStep, Npp8u ∗pDst, int nDstStep, Nppi-Size oSizeROI)

    8-bit unsigned image copy.

- NppStatus nppiCopy_8u_C4R (const Npp8u ∗pSrc, int nSrcStep, Npp8u ∗pDst, int nDstStep, Nppi-Size oSizeROI)

    4 channel 8-bit unsigned image copy.

- NppStatus nppiCopy_8u_AC4R (const Npp8u ∗pSrc, int nSrcStep, Npp8u ∗pDst, int nDstStep, NppiSize oSizeROI)

    4 channel 8-bit unsigned image copy, not affecting Alpha channel.

- NppStatus nppiCopy_16u_C1R (const Npp16u ∗pSrc, int nSrcStep, Npp16u ∗pDst, int nDstStep, NppiSize oSizeROI)

    16-bit unsigned image copy.

- NppStatus nppiCopy_16u_C4R (const Npp16u ∗pSrc, int nSrcStep, Npp16u ∗pDst, int nDstStep, NppiSize oSizeROI)

    4 channel 16-bit unsigned image copy.

- NppStatus nppiCopy_16u_AC4R (const Npp16u ∗pSrc, int nSrcStep, Npp16u ∗pDst, int nDstStep, NppiSize oSizeROI)

    4 channel 16-bit unsigned image copy, not affecting Alpha channel.

- NppStatus nppiCopy_16s_C1R (const Npp16s ∗pSrc, int nSrcStep, Npp16s ∗pDst, int nDstStep, NppiSize oSizeROI)

    16-bit image copy.

- NppStatus nppiCopy_16s_C4R (const Npp16s ∗pSrc, int nSrcStep, Npp16s ∗pDst, int nDstStep, NppiSize oSizeROI)

    4 channel 16-bit image copy.

- NppStatus nppiCopy_16s_AC4R (const Npp16s ∗pSrc, int nSrcStep, Npp16s ∗pDst, int nDstStep, NppiSize oSizeROI)

4 channel 16-bit image copy, not affecting Alpha.

- NppStatus nppiCopy_16sc_C1R (const Npp16sc *pSrc, int nSrcStep, Npp16sc *pDst, int nDstStep, NppiSize oSizeROI)

    16-bit complex image copy.

- NppStatus nppiCopy_16sc_C2R (const Npp16sc *pSrc, int nSrcStep, Npp16sc *pDst, int nDstStep, NppiSize oSizeROI)

    Two-channel 16-bit complex image copy.

- NppStatus nppiCopy_16sc_C3R (const Npp16sc *pSrc, int nSrcStep, Npp16sc *pDst, int nDstStep, NppiSize oSizeROI)

    Three-channel 16-bit complex image copy.

- NppStatus nppiCopy_16sc_C4R (const Npp16sc *pSrc, int nSrcStep, Npp16sc *pDst, int nDstStep, NppiSize oSizeROI)

    Four-channel 16-bit complex image copy.

- NppStatus nppiCopy_16sc_AC4R (const Npp16sc *pSrc, int nSrcStep, Npp16sc *pDst, int nDst-Step, NppiSize oSizeROI)

    Four-channel 16-bit complex image copy, ignoring alpha.

- NppStatus nppiCopy_32s_C1R (const Npp32s *pSrc, int nSrcStep, Npp32s *pDst, int nDstStep, NppiSize oSizeROI)

    32-bit image copy.

- NppStatus nppiCopy_32s_C4R (const Npp32s *pSrc, int nSrcStep, Npp32s *pDst, int nDstStep, NppiSize oSizeROI)

    4 channel 32-bit image copy.

- NppStatus nppiCopy_32s_AC4R (const Npp32s *pSrc, int nSrcStep, Npp32s *pDst, int nDstStep, NppiSize oSizeROI)

    4 channel 32-bit image copy, not affecting Alpha.

- NppStatus nppiCopy_32sc_C1R (const Npp32sc *pSrc, int nSrcStep, Npp32sc *pDst, int nDstStep, NppiSize oSizeROI)

    32-bit complex image copy.

- NppStatus nppiCopy_32sc_C2R (const Npp32sc *pSrc, int nSrcStep, Npp32sc *pDst, int nDstStep, NppiSize oSizeROI)

    Two-channel 32-bit complex image copy.

- NppStatus nppiCopy_32sc_C3R (const Npp32sc *pSrc, int nSrcStep, Npp32sc *pDst, int nDstStep, NppiSize oSizeROI)

    Three-channel 32-bit complex image copy.

- NppStatus nppiCopy_32sc_C4R (const Npp32sc *pSrc, int nSrcStep, Npp32sc *pDst, int nDstStep, NppiSize oSizeROI)

    Four-channel 32-bit complex image copy.

- NppStatus nppiCopy_32sc_AC4R (const Npp32sc ∗pSrc, int nSrcStep, Npp32sc ∗pDst, int nDst-Step, NppiSize oSizeROI)

  Four-channel 32-bit complex image copy, ignoring alpha.

- NppStatus nppiCopy_32f_C1R (const Npp32f ∗pSrc, int nSrcStep, Npp32f ∗pDst, int nDstStep, NppiSize oSizeROI)

  32-bit floating point image copy.

- NppStatus nppiCopy_32f_C4R (const Npp32f ∗pSrc, int nSrcStep, Npp32f ∗pDst, int nDstStep, NppiSize oSizeROI)

  4 channel 32-bit floating point image copy.

- NppStatus nppiCopy_32f_AC4R (const Npp32f ∗pSrc, int nSrcStep, Npp32f ∗pDst, int nDstStep, NppiSize oSizeROI)

  4 channel 32-bit floating point image copy, not affecting Alpha.

- NppStatus nppiCopy_32fc_C1R (const Npp32fc ∗pSrc, int nSrcStep, Npp32fc ∗pDst, int nDstStep, NppiSize oSizeROI)

  32-bit floating-point complex image copy.

- NppStatus nppiCopy_32fc_C2R (const Npp32fc ∗pSrc, int nSrcStep, Npp32fc ∗pDst, int nDstStep, NppiSize oSizeROI)

  Two-channel 32-bit floating-point complex image copy.

- NppStatus nppiCopy_32fc_C3R (const Npp32fc ∗pSrc, int nSrcStep, Npp32fc ∗pDst, int nDstStep, NppiSize oSizeROI)

  Three-channel 32-bit floating-point complex image copy.

- NppStatus nppiCopy_32fc_C4R (const Npp32fc ∗pSrc, int nSrcStep, Npp32fc ∗pDst, int nDstStep, NppiSize oSizeROI)

  Four-channel 32-bit floating-point complex image copy.

- NppStatus nppiCopy_32fc_AC4R (const Npp32fc ∗pSrc, int nSrcStep, Npp32fc ∗pDst, int nDstStep, NppiSize oSizeROI)

  Four-channel 32-bit floating-point complex image copy, ignoring alpha.

- NppStatus nppiCopy_8u_C1MR (const Npp8u ∗pSrc, int nSrcStep, Npp8u ∗pDst, int nDstStep, NppiSize oSizeROI, const Npp8u ∗pMask, int nMaskStep)

  Masked Operation 8-bit unsigned image copy.

- NppStatus nppiCopy_8u_C3MR (const Npp8u ∗pSrc, int nSrcStep, Npp8u ∗pDst, int nDstStep, NppiSize oSizeROI, const Npp8u ∗pMask, int nMaskStep)

  Masked Operation three channel 8-bit unsigned image copy.

- NppStatus nppiCopy_8u_C4MR (const Npp8u ∗pSrc, int nSrcStep, Npp8u ∗pDst, int nDstStep, NppiSize oSizeROI, const Npp8u ∗pMask, int nMaskStep)

  Masked Operation four channel 8-bit unsigned image copy.

- NppStatus nppiCopy_8u_AC4MR (const Npp8u ∗pSrc, int nSrcStep, Npp8u ∗pDst, int nDstStep, NppiSize oSizeROI, const Npp8u ∗pMask, int nMaskStep)

  Masked Operation four channel 8-bit unsigned image copy, ignoring alpha.

- NppStatus nppiCopy_16u_C1MR (const Npp16u ∗pSrc, int nSrcStep, Npp16u ∗pDst, int nDstStep, NppiSize oSizeROI, const Npp8u ∗pMask, int nMaskStep)

    Masked Operation 16-bit unsigned image copy.

- NppStatus nppiCopy_16u_C3MR (const Npp16u ∗pSrc, int nSrcStep, Npp16u ∗pDst, int nDstStep, NppiSize oSizeROI, const Npp8u ∗pMask, int nMaskStep)

    Masked Operation three channel 16-bit unsigned image copy.

- NppStatus nppiCopy_16u_C4MR (const Npp16u ∗pSrc, int nSrcStep, Npp16u ∗pDst, int nDstStep, NppiSize oSizeROI, const Npp8u ∗pMask, int nMaskStep)

    Masked Operation four channel 16-bit unsigned image copy.

- NppStatus nppiCopy_16u_AC4MR (const Npp16u ∗pSrc, int nSrcStep, Npp16u ∗pDst, int nDstStep, NppiSize oSizeROI, const Npp8u ∗pMask, int nMaskStep)

    Masked Operation four channel 16-bit unsigned image copy, ignoring alpha.

- NppStatus nppiCopy_16s_C1MR (const Npp16s ∗pSrc, int nSrcStep, Npp16s ∗pDst, int nDstStep, NppiSize oSizeROI, const Npp8u ∗pMask, int nMaskStep)

    Masked Operation 16-bit signed image copy.

- NppStatus nppiCopy_16s_C3MR (const Npp16s ∗pSrc, int nSrcStep, Npp16s ∗pDst, int nDstStep, NppiSize oSizeROI, const Npp8u ∗pMask, int nMaskStep)

    Masked Operation three channel 16-bit signed image copy.

- NppStatus nppiCopy_16s_C4MR (const Npp16s ∗pSrc, int nSrcStep, Npp16s ∗pDst, int nDstStep, NppiSize oSizeROI, const Npp8u ∗pMask, int nMaskStep)

    Masked Operation four channel 16-bit signed image copy.

- NppStatus nppiCopy_16s_AC4MR (const Npp16s ∗pSrc, int nSrcStep, Npp16s ∗pDst, int nDstStep, NppiSize oSizeROI, const Npp8u ∗pMask, int nMaskStep)

    Masked Operation four channel 16-bit signed image copy, ignoring alpha.

- NppStatus nppiCopy_32s_C1MR (const Npp32s ∗pSrc, int nSrcStep, Npp32s ∗pDst, int nDstStep, NppiSize oSizeROI, const Npp8u ∗pMask, int nMaskStep)

    Masked Operation 32-bit signed image copy.

- NppStatus nppiCopy_32s_C3MR (const Npp32s ∗pSrc, int nSrcStep, Npp32s ∗pDst, int nDstStep, NppiSize oSizeROI, const Npp8u ∗pMask, int nMaskStep)

    Masked Operation three channel 32-bit signed image copy.

- NppStatus nppiCopy_32s_C4MR (const Npp32s ∗pSrc, int nSrcStep, Npp32s ∗pDst, int nDstStep, NppiSize oSizeROI, const Npp8u ∗pMask, int nMaskStep)

    Masked Operation four channel 32-bit signed image copy.

- NppStatus nppiCopy_32s_AC4MR (const Npp32s ∗pSrc, int nSrcStep, Npp32s ∗pDst, int nDstStep, NppiSize oSizeROI, const Npp8u ∗pMask, int nMaskStep)

    Masked Operation four channel 32-bit signed image copy, ignoring alpha.

- NppStatus nppiCopy_32f_C1MR (const Npp32f ∗pSrc, int nSrcStep, Npp32f ∗pDst, int nDstStep, NppiSize oSizeROI, const Npp8u ∗pMask, int nMaskStep)

Masked Operation 32-bit float image copy.

- NppStatus nppiCopy_32f_C3MR (const Npp32f ∗pSrc, int nSrcStep, Npp32f ∗pDst, int nDstStep, NppiSize oSizeROI, const Npp8u ∗pMask, int nMaskStep)

  Masked Operation three channel 32-bit float image copy.

- NppStatus nppiCopy_32f_C4MR (const Npp32f ∗pSrc, int nSrcStep, Npp32f ∗pDst, int nDstStep, NppiSize oSizeROI, const Npp8u ∗pMask, int nMaskStep)

  Masked Operation four channel 32-bit float image copy.

- NppStatus nppiCopy_32f_AC4MR (const Npp32f ∗pSrc, int nSrcStep, Npp32f ∗pDst, int nDstStep, NppiSize oSizeROI, const Npp8u ∗pMask, int nMaskStep)

  Masked Operation four channel 32-bit float image copy, ignoring alpha.

- NppStatus nppiCopy_8u_C3CR (const Npp8u ∗pSrc, int nSrcStep, Npp8u ∗pDst, int nDstStep, NppiSize oSizeROI)

  Select-channel 8-bit unsigned image copy for three-channel images.

- NppStatus nppiCopy_8u_C4CR (const Npp8u ∗pSrc, int nSrcStep, Npp8u ∗pDst, int nDstStep, NppiSize oSizeROI)

  Select-channel 8-bit unsigned image copy for four-channel images.

- NppStatus nppiCopy_16s_C3CR (const Npp16s ∗pSrc, int nSrcStep, Npp16s ∗pDst, int nDstStep, NppiSize oSizeROI)

  Select-channel 16-bit signed image copy for three-channel images.

- NppStatus nppiCopy_16s_C4CR (const Npp16s ∗pSrc, int nSrcStep, Npp16s ∗pDst, int nDstStep, NppiSize oSizeROI)

  Select-channel 16-bit signed image copy for four-channel images.

- NppStatus nppiCopy_16u_C3CR (const Npp16u ∗pSrc, int nSrcStep, Npp16u ∗pDst, int nDstStep, NppiSize oSizeROI)

  Select-channel 16-bit unsigned image copy for three-channel images.

- NppStatus nppiCopy_16u_C4CR (const Npp16u ∗pSrc, int nSrcStep, Npp16u ∗pDst, int nDstStep, NppiSize oSizeROI)

  Select-channel 16-bit unsigned image copy for four-channel images.

- NppStatus nppiCopy_32s_C3CR (const Npp32s ∗pSrc, int nSrcStep, Npp32s ∗pDst, int nDstStep, NppiSize oSizeROI)

  Select-channel 32-bit signed image copy for three-channel images.

- NppStatus nppiCopy_32s_C4CR (const Npp32s ∗pSrc, int nSrcStep, Npp32s ∗pDst, int nDstStep, NppiSize oSizeROI)

  Select-channel 32-bit signed image copy for four-channel images.

- NppStatus nppiCopy_32f_C3CR (const Npp32f ∗pSrc, int nSrcStep, Npp32f ∗pDst, int nDstStep, NppiSize oSizeROI)

  Select-channel 32-bit float image copy for three-channel images.

- NppStatus nppiCopy_32f_C4CR (const Npp32f *pSrc, int nSrcStep, Npp32f *pDst, int nDstStep, NppiSize oSizeROI)

    Select-channel 32-bit float image copy for four-channel images.

- NppStatus nppiCopy_8u_C3C1R (const Npp8u *pSrc, int nSrcStep, Npp8u *pDst, int nDstStep, NppiSize oSizeROI)

    Three-channel to single-channel 8-bit unsigned image copy.

- NppStatus nppiCopy_8u_C4C1R (const Npp8u *pSrc, int nSrcStep, Npp8u *pDst, int nDstStep, NppiSize oSizeROI)

    Four-channel to single-channel 8-bit unsigned image copy.

- NppStatus nppiCopy_16s_C3C1R (const Npp16s *pSrc, int nSrcStep, Npp16s *pDst, int nDstStep, NppiSize oSizeROI)

    Three-channel to single-channel 16-bit signed image copy.

- NppStatus nppiCopy_16s_C4C1R (const Npp16s *pSrc, int nSrcStep, Npp16s *pDst, int nDstStep, NppiSize oSizeROI)

    Four-channel to single-channel 16-bit signed image copy.

- NppStatus nppiCopy_16u_C3C1R (const Npp16u *pSrc, int nSrcStep, Npp16u *pDst, int nDstStep, NppiSize oSizeROI)

    Three-channel to single-channel 16-bit unsigned image copy.

- NppStatus nppiCopy_16u_C4C1R (const Npp16u *pSrc, int nSrcStep, Npp16u *pDst, int nDstStep, NppiSize oSizeROI)

    Four-channel to single-channel 16-bit unsigned image copy.

- NppStatus nppiCopy_32s_C3C1R (const Npp32s *pSrc, int nSrcStep, Npp32s *pDst, int nDstStep, NppiSize oSizeROI)

    Three-channel to single-channel 32-bit signed image copy.

- NppStatus nppiCopy_32s_C4C1R (const Npp32s *pSrc, int nSrcStep, Npp32s *pDst, int nDstStep, NppiSize oSizeROI)

    Four-channel to single-channel 32-bit signed image copy.

- NppStatus nppiCopy_32f_C3C1R (const Npp32f *pSrc, int nSrcStep, Npp32f *pDst, int nDstStep, NppiSize oSizeROI)

    Three-channel to single-channel 32-bit float image copy.

- NppStatus nppiCopy_32f_C4C1R (const Npp32f *pSrc, int nSrcStep, Npp32f *pDst, int nDstStep, NppiSize oSizeROI)

    Four-channel to single-channel 32-bit float image copy.

- NppStatus nppiCopy_8u_C1C3R (const Npp8u *pSrc, int nSrcStep, Npp8u *pDst, int nDstStep, NppiSize oSizeROI)

    Single-channel to three-channel 8-bit unsigned image copy.

- NppStatus nppiCopy_8u_C1C4R (const Npp8u *pSrc, int nSrcStep, Npp8u *pDst, int nDstStep, NppiSize oSizeROI)

    Single-channel to four-channel 8-bit unsigned image copy.

- NppStatus nppiCopy_16s_C1C3R (const Npp16s ∗pSrc, int nSrcStep, Npp16s ∗pDst, int nDstStep, NppiSize oSizeROI)

  Single-channel to three-channel 16-bit signed image copy.

- NppStatus nppiCopy_16s_C1C4R (const Npp16s ∗pSrc, int nSrcStep, Npp16s ∗pDst, int nDstStep, NppiSize oSizeROI)

  Single-channel to four-channel 16-bit signed image copy.

- NppStatus nppiCopy_16u_C1C3R (const Npp16u ∗pSrc, int nSrcStep, Npp16u ∗pDst, int nDstStep, NppiSize oSizeROI)

  Single-channel to three-channel 16-bit unsigned image copy.

- NppStatus nppiCopy_16u_C1C4R (const Npp16u ∗pSrc, int nSrcStep, Npp16u ∗pDst, int nDstStep, NppiSize oSizeROI)

  Single-channel to four-channel 16-bit unsigned image copy.

- NppStatus nppiCopy_32s_C1C3R (const Npp32s ∗pSrc, int nSrcStep, Npp32s ∗pDst, int nDstStep, NppiSize oSizeROI)

  Single-channel to three-channel 32-bit signed image copy.

- NppStatus nppiCopy_32s_C1C4R (const Npp32s ∗pSrc, int nSrcStep, Npp32s ∗pDst, int nDstStep, NppiSize oSizeROI)

  Single-channel to four-channel 32-bit signed image copy.

- NppStatus nppiCopy_32f_C1C3R (const Npp32f ∗pSrc, int nSrcStep, Npp32f ∗pDst, int nDstStep, NppiSize oSizeROI)

  Single-channel to three-channel 32-bit float image copy.

- NppStatus nppiCopy_32f_C1C4R (const Npp32f ∗pSrc, int nSrcStep, Npp32f ∗pDst, int nDstStep, NppiSize oSizeROI)

  Single-channel to four-channel 32-bit float image copy.

- NppStatus nppiCopy_8u_C3P3R (const Npp8u ∗pSrc, int nSrcStep, Npp8u ∗const aDst[3], int nDstStep, NppiSize oSizeROI)

  Three-channel 8-bit unsigned packed to planar image copy.

- NppStatus nppiCopy_8u_C4P4R (const Npp8u ∗pSrc, int nSrcStep, Npp8u ∗const aDst[4], int nDstStep, NppiSize oSizeROI)

  Four-channel 8-bit unsigned packed to planar image copy.

- NppStatus nppiCopy_16s_C3P3R (const Npp16s ∗pSrc, int nSrcStep, Npp16s ∗const aDst[3], int nDstStep, NppiSize oSizeROI)

  Three-channel 16-bit signed packed to planar image copy.

- NppStatus nppiCopy_16s_C4P4R (const Npp16s ∗pSrc, int nSrcStep, Npp16s ∗const aDst[4], int nDstStep, NppiSize oSizeROI)

  Four-channel 16-bit signed packed to planar image copy.

- NppStatus nppiCopy_16u_C3P3R (const Npp16u ∗pSrc, int nSrcStep, Npp16u ∗const aDst[3], int nDstStep, NppiSize oSizeROI)

Three-channel 16-bit unsigned packed to planar image copy.

- NppStatus nppiCopy_16u_C4P4R (const Npp16u *pSrc, int nSrcStep, Npp16u *const aDst[4], int nDstStep, NppiSize oSizeROI)

    Four-channel 16-bit unsigned packed to planar image copy.

- NppStatus nppiCopy_32s_C3P3R (const Npp32s *pSrc, int nSrcStep, Npp32s *const aDst[3], int nDstStep, NppiSize oSizeROI)

    Three-channel 32-bit signed packed to planar image copy.

- NppStatus nppiCopy_32s_C4P4R (const Npp32s *pSrc, int nSrcStep, Npp32s *const aDst[4], int nDstStep, NppiSize oSizeROI)

    Four-channel 32-bit signed packed to planar image copy.

- NppStatus nppiCopy_32f_C3P3R (const Npp32f *pSrc, int nSrcStep, Npp32f *const aDst[3], int nDstStep, NppiSize oSizeROI)

    Three-channel 32-bit float packed to planar image copy.

- NppStatus nppiCopy_32f_C4P4R (const Npp32f *pSrc, int nSrcStep, Npp32f *const aDst[4], int nDstStep, NppiSize oSizeROI)

    Four-channel 32-bit float packed to planar image copy.

- NppStatus nppiCopy_8u_P3C3R (const Npp8u *const aSrc[3], int nSrcStep, Npp8u *pDst, int nDstStep, NppiSize oSizeROI)

    Three-channel 8-bit unsigned planar to packed image copy.

- NppStatus nppiCopy_8u_P4C4R (const Npp8u *const aSrc[4], int nSrcStep, Npp8u *pDst, int nDstStep, NppiSize oSizeROI)

    Four-channel 8-bit unsigned planar to packed image copy.

- NppStatus nppiCopy_16u_P3C3R (const Npp16u *const aSrc[3], int nSrcStep, Npp16u *pDst, int nDstStep, NppiSize oSizeROI)

    Three-channel 16-bit unsigned planar to packed image copy.

- NppStatus nppiCopy_16u_P4C4R (const Npp16u *const aSrc[4], int nSrcStep, Npp16u *pDst, int nDstStep, NppiSize oSizeROI)

    Four-channel 16-bit unsigned planar to packed image copy.

- NppStatus nppiCopy_16s_P3C3R (const Npp16s *const aSrc[3], int nSrcStep, Npp16s *pDst, int nDstStep, NppiSize oSizeROI)

    Three-channel 16-bit signed planar to packed image copy.

- NppStatus nppiCopy_16s_P4C4R (const Npp16s *const aSrc[4], int nSrcStep, Npp16s *pDst, int nDstStep, NppiSize oSizeROI)

    Four-channel 16-bit signed planar to packed image copy.

- NppStatus nppiCopy_32s_P3C3R (const Npp32s *const aSrc[3], int nSrcStep, Npp32s *pDst, int nDstStep, NppiSize oSizeROI)

    Three-channel 32-bit signed planar to packed image copy.

- NppStatus nppiCopy_32s_P4C4R (const Npp32s ∗const aSrc[4], int nSrcStep, Npp32s ∗pDst, int nDstStep, NppiSize oSizeROI)

    Four-channel 32-bit signed planar to packed image copy.

- NppStatus nppiCopy_32f_P3C3R (const Npp32f ∗const aSrc[3], int nSrcStep, Npp32f ∗pDst, int nDstStep, NppiSize oSizeROI)

    Three-channel 32-bit float planar to packed image copy.

- NppStatus nppiCopy_32f_P4C4R (const Npp32f ∗const aSrc[4], int nSrcStep, Npp32f ∗pDst, int nDstStep, NppiSize oSizeROI)

    Four-channel 32-bit float planar to packed image copy.

Bit-Depth Conversion

Convert bit-depth up and down.

The integer conversion methods do not involve any scaling. Conversions that reduce bit-depth saturate values exceeding the reduced range to the range's maximum/minimum value. When converting from floating-point values to integer values, a rounding mode can be specified. After rounding to integer values the values get saturated to the destination data type's range.

- NppStatus nppiConvert_8u16u_C1R (const Npp8u ∗pSrc, int nSrcStep, Npp16u ∗pDst, int nDstStep, NppiSize oSizeROI)

    8-bit unsigned to 16-bit unsigned conversion.

- NppStatus nppiConvert_16u8u_C1R (const Npp16u ∗pSrc, int nSrcStep, Npp8u ∗pDst, int nDstStep, NppiSize oSizeROI)

    16-bit unsigned to 8-bit unsigned conversion.

- NppStatus nppiConvert_8u16u_C4R (const Npp8u ∗pSrc, int nSrcStep, Npp16u ∗pDst, int nDstStep, NppiSize oSizeROI)

    4 channel 8-bit unsigned to 16-bit unsigned conversion.

- NppStatus nppiConvert_16u8u_C4R (const Npp16u ∗pSrc, int nSrcStep, Npp8u ∗pDst, int nDstStep, NppiSize oSizeROI)

    4 channel 16-bit unsigned to 8-bit unsigned conversion.

- NppStatus nppiConvert_8u16u_AC4R (const Npp8u ∗pSrc, int nSrcStep, Npp16u ∗pDst, int nDstStep, NppiSize oSizeROI)

    4 channel 8-bit unsigned to 16-bit unsigned conversion, not affecting Alpha.

- NppStatus nppiConvert_16u8u_AC4R (const Npp16u ∗pSrc, int nSrcStep, Npp8u ∗pDst, int nDstStep, NppiSize oSizeROI)

    4 channel 16-bit unsigned to 8-bit unsigned conversion, not affecting Alpha.

- NppStatus nppiConvert_8u16s_C1R (const Npp8u ∗pSrc, int nSrcStep, Npp16s ∗pDst, int nDstStep, NppiSize oSizeROI)

    8-bit unsigned to 16-bit signed conversion.

- NppStatus nppiConvert_16s8u_C1R (const Npp16s ∗pSrc, int nSrcStep, Npp8u ∗pDst, int nDstStep, NppiSize oSizeROI)

    4 channel 16-bit signed to 8-bit unsigned conversion.

- NppStatus nppiConvert_8u16s_C4R (const Npp8u ∗pSrc, int nSrcStep, Npp16s ∗pDst, int nDstStep, NppiSize oSizeROI)

    4 channel 8-bit unsigned to 16-bit signed conversion.

- NppStatus nppiConvert_16s8u_C4R (const Npp16s ∗pSrc, int nSrcStep, Npp8u ∗pDst, int nDstStep, NppiSize oSizeROI)

    4 channel 16-bit signed to 8-bit unsignedconversion, not affecting Alpha.

- NppStatus nppiConvert_8u16s_AC4R (const Npp8u ∗pSrc, int nSrcStep, Npp16s ∗pDst, int nDst-Step, NppiSize oSizeROI)

    4 channel 8-bit unsigned to 16-bit signed conversion, not affecting Alpha.

- NppStatus nppiConvert_16s8u_AC4R (const Npp16s ∗pSrc, int nSrcStep, Npp8u ∗pDst, int nDst-Step, NppiSize oSizeROI)

    4 channel 16-bit signed to 8-bit unsigned conversion, not affecting Alpha.

- NppStatus nppiConvert_16s32f_C1R (const Npp16s ∗pSrc, int nSrcStep, Npp32f ∗pDst, int nDst-Step, NppiSize oSizeROI)

    16-bit singedto 32-bit floating point conversion.

- NppStatus nppiConvert_32f16s_C1R (const Npp32f ∗pSrc, int nSrcStep, Npp16s ∗pDst, int nDst-Step, NppiSize oSizeROI, NppRoundMode eRoundMode)

    32-bit floating point to 16-bit conversion.

- NppStatus nppiConvert_8u32f_C1R (const Npp8u ∗pSrc, int nSrcStep, Npp32f ∗pDst, int nDstStep, NppiSize oSizeROI)

    8-bit unsigned to 32-bit floating point conversion.

- NppStatus nppiConvert_16u32f_C1R (const Npp16u ∗pSrc, int nSrcStep, Npp32f ∗pDst, int nDst-Step, NppiSize oSizeROI)

    16-bit unsigned to 32-bit floating point conversion.

- NppStatus nppiConvert_32f16u_C1R (const Npp32f ∗pSrc, int nSrcStep, Npp16u ∗pDst, int nDst-Step, NppiSize oSizeROI, NppRoundMode eRoundMode)

    32-bit floating point to 16-bit unsigned conversion.

- NppStatus nppiConvert_32f8u_C1R (const Npp32f ∗pSrc, int nSrcStep, Npp8u ∗pDst, int nDstStep, NppiSize oSizeROI, NppRoundMode eRoundMode)

    32-bit floating point to 8-bit unsigned conversion.

- NppStatus nppiConvert_16u32s_C1R (const Npp16u ∗pSrc, int nSrcStep, Npp32s ∗pDst, int nDst-Step, NppiSize oSizeROI)

    16-bit unsigned to 32-bit signed conversion.

- NppStatus nppiConvert_16s32s_C1R (const Npp16s ∗pSrc, int nSrcStep, Npp32s ∗pDst, int nDst-Step, NppiSize oSizeROI)

    16-bit to 32-bit conversion.

Copy Const Border

Methods for copying images and padding borders with a constant, user-specifiable color.

- NppStatus nppiCopyConstBorder_8u_C1R (const Npp8u *pSrc, int nSrcStep, NppiSize oSrcSize-ROI, Npp8u *pDst, int nDstStep, NppiSize oDstSizeROI, int nTopBorderHeight, int nLeftBorder-Width, Npp8u nValue)

    8-bit unsigned image copy width constant border color.

- NppStatus nppiCopyConstBorder_8u_C4R (const Npp8u *pSrc, int nSrcStep, NppiSize oSrcSize-ROI, Npp8u *pDst, int nDstStep, NppiSize oDstSizeROI, int nTopBorderHeight, int nLeftBorder-Width, const Npp8u aValue[4])

    4channel 8-bit unsigned image copy with constant border color.

- NppStatus nppiCopyConstBorder_8u_AC4R (const Npp8u *pSrc, int nSrcStep, NppiSize oSrcSize-ROI, Npp8u *pDst, int nDstStep, NppiSize oDstSizeROI, int nTopBorderHeight, int nLeftBorder-Width, const Npp8u aValue[3])

    4 channel 8-bit unsigned image copy with constant border color.

- NppStatus nppiCopyConstBorder_32s_C1R (const Npp32s *pSrc, int nSrcStep, NppiSize oSrcSize-ROI, Npp32s *pDst, int nDstStep, NppiSize oDstSizeROI, int nTopBorderHeight, int nLeftBorder-Width, Npp32s nValue)

    32-bit image copy with constant border color.

Image Transpose

Methods for transposing images of various types.

Like matrix transpose, image transpose is a mirror along the image's diagonal (upper-left to lower-right corner).

- NppStatus nppiTranspose_8u_C1R (const Npp8u *pSrc, int nSrcStep, Npp8u *pDst, int nDstStep, NppiSize oROI)

    8-bit image transpose.

Image Color Channel Swap

Methods for exchanging the color channels of an image.

The methods support arbitrary permutations of the original channels, including replication.

- NppStatus nppiSwapChannels_8u_C4IR (Npp8u *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, const int aDstOrder[4])

    4 channel 8-bit unsigned swap channels, in-place.

7.6.1 Detailed Description

Primitives for initializtion, copying and converting image data.

7.6.2 Function Documentation

7.6.2.1 NppStatus nppiConvert_16s32f_C1R (const Npp16s ∗ *pSrc*, int *nSrcStep*, Npp32f ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

16-bit singedto 32-bit floating point conversion.

For detailed documentation see nppiConverte_8u16u_C1R().

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.6.2.2 NppStatus nppiConvert_16s32s_C1R (const Npp16s ∗ *pSrc*, int *nSrcStep*, Npp32s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

16-bit to 32-bit conversion.

For detailed documentation see nppiConvert_8u16u_C1R().

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.6.2.3 NppStatus nppiConvert_16s8u_AC4R (const Npp16s ∗ *pSrc*, int *nSrcStep*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

4 channel 16-bit signed to 8-bit unsigned conversion, not affecting Alpha.

For detailed documentation see nppiConverte_8u16u_C1R().

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.6.2.4 NppStatus nppiConvert_16s8u_C1R (const Npp16s ∗ *pSrc*, int *nSrcStep*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

4 channel 16-bit signed to 8-bit unsigned conversion.

For detailed documentation see nppiConvert_8u16u_C1R().

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.6.2.5 NppStatus nppiConvert_16s8u_C4R (const Npp16s ∗ *pSrc*, int *nSrcStep*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

4 channel 16-bit signed to 8-bit unsignedconversion, not affecting Alpha.

For detailed documentation see nppiConvert_8u16u_C1R().

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.6.2.6 NppStatus nppiConvert_16u32f_C1R (const Npp16u ∗ *pSrc*, int *nSrcStep*, Npp32f ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

16-bit unsigned to 32-bit floating point conversion.

For detailed documentation see nppiConverte_8u16u_C1R().

Parameters:

> *pSrc* Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.6.2.7 NppStatus nppiConvert_16u32s_C1R (const Npp16u ∗ *pSrc*, int *nSrcStep*, Npp32s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

16-bit unsigned to 32-bit signed conversion.

For detailed documentation see nppiConverte_8u16u_C1R().

Parameters:

> *pSrc* Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.6.2.8 NppStatus nppiConvert_16u8u_AC4R (const Npp16u ∗ *pSrc*, int *nSrcStep*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

4 channel 16-bit unsigned to 8-bit unsigned conversion, not affecting Alpha.

For detailed documentation see nppiConvert_8u16u_C1R().

Parameters:

> *pSrc* Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.6.2.9 NppStatus nppiConvert_16u8u_C1R (const Npp16u ∗ pSrc, int nSrcStep, Npp8u ∗ pDst, int nDstStep, NppiSize oSizeROI)

16-bit unsigned to 8-bit unsigned conversion.

For detailed documentation see nppiConvert_8u16u_C1R().

Parameters:

   pSrc Source-Image Pointer.

   nSrcStep Source-Image Line Step.

   pDst Destination-Image Pointer.

   nDstStep Destination-Image Line Step.

   oSizeROI Region-of-Interest (ROI).

Returns:

   Image Data Related Error Codes, ROI Related Error Codes

7.6.2.10 NppStatus nppiConvert_16u8u_C4R (const Npp16u ∗ pSrc, int nSrcStep, Npp8u ∗ pDst, int nDstStep, NppiSize oSizeROI)

4 channel 16-bit unsigned to 8-bit unsigned conversion.

For detailed documentation see nppiConvert_8u16u_C1R().

Parameters:

   pSrc Source-Image Pointer.

   nSrcStep Source-Image Line Step.

   pDst Destination-Image Pointer.

   nDstStep Destination-Image Line Step.

   oSizeROI Region-of-Interest (ROI).

Returns:

   Image Data Related Error Codes, ROI Related Error Codes

7.6.2.11 NppStatus nppiConvert_32f16s_C1R (const Npp32f ∗ pSrc, int nSrcStep, Npp16s ∗ pDst, int nDstStep, NppiSize oSizeROI, NppRoundMode eRoundMode)

32-bit floating point to 16-bit conversion.

For detailed documentation see nppiConverte_8u16u_C1R().

Parameters:

   pSrc Source-Image Pointer.

   nSrcStep Source-Image Line Step.

   pDst Destination-Image Pointer.

   nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

eRoundMode Flag specifying how fractional float values are rounded to integer values.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.6.2.12 NppStatus nppiConvert_32f16u_C1R (const Npp32f ∗ *pSrc*, int *nSrcStep*, Npp16u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, NppRoundMode *eRoundMode*)

32-bit floating point to 16-bit unsigned conversion.

For detailed documentation see nppiConverte_8u16u_C1R().

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

eRoundMode Flag specifying how fractional float values are rounded to integer values.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.6.2.13 NppStatus nppiConvert_32f8u_C1R (const Npp32f ∗ *pSrc*, int *nSrcStep*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, NppRoundMode *eRoundMode*)

32-bit floating point to 8-bit unsigned conversion.

For detailed documentation see nppiConverte_8u16u_C1R().

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

eRoundMode Flag specifying how fractional float values are rounded to integer values.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.6.2.14 NppStatus nppiConvert_8u16s_AC4R (const Npp8u ∗ *pSrc*, **int** *nSrcStep*, **Npp16s** ∗ *pDst*, **int** *nDstStep*, **NppiSize** *oSizeROI***)**

4 channel 8-bit unsigned to 16-bit signed conversion, not affecting Alpha.

For detailed documentation see nppiConverte_8u16u_C1R().

Parameters:

>   *pSrc* Source-Image Pointer.
>
>   *nSrcStep* Source-Image Line Step.
>
>   *pDst* Destination-Image Pointer.
>
>   *nDstStep* Destination-Image Line Step.
>
>   *oSizeROI* Region-of-Interest (ROI).

Returns:

>   Image Data Related Error Codes, ROI Related Error Codes

7.6.2.15 NppStatus nppiConvert_8u16s_C1R (const Npp8u ∗ *pSrc*, **int** *nSrcStep*, **Npp16s** ∗ *pDst*, **int** *nDstStep*, **NppiSize** *oSizeROI***)**

8-bit unsigned to 16-bit signed conversion.

For detailed documentation see nppiConvert_8u16u_C1R().

Parameters:

>   *pSrc* Source-Image Pointer.
>
>   *nSrcStep* Source-Image Line Step.
>
>   *pDst* Destination-Image Pointer.
>
>   *nDstStep* Destination-Image Line Step.
>
>   *oSizeROI* Region-of-Interest (ROI).

Returns:

>   Image Data Related Error Codes, ROI Related Error Codes

7.6.2.16 NppStatus nppiConvert_8u16s_C4R (const Npp8u ∗ *pSrc*, **int** *nSrcStep*, **Npp16s** ∗ *pDst*, **int** *nDstStep*, **NppiSize** *oSizeROI***)**

4 channel 8-bit unsigned to 16-bit signed conversion.

For detailed documentation see nppiConvert_8u16u_C1R().

Parameters:

>   *pSrc* Source-Image Pointer.
>
>   *nSrcStep* Source-Image Line Step.
>
>   *pDst* Destination-Image Pointer.
>
>   *nDstStep* Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.6.2.17 NppStatus nppiConvert_8u16u_AC4R (const Npp8u ∗ *pSrc*, int *nSrcStep*, Npp16u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

4 channel 8-bit unsigned to 16-bit unsigned conversion, not affecting Alpha.

For detailed documentation see nppiConvert_8u16u_C1R().

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.6.2.18 NppStatus nppiConvert_8u16u_C1R (const Npp8u ∗ *pSrc*, int *nSrcStep*, Npp16u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

8-bit unsigned to 16-bit unsigned conversion.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.6.2.19 NppStatus nppiConvert_8u16u_C4R (const Npp8u ∗ *pSrc*, int *nSrcStep*, Npp16u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

4 channel 8-bit unsigned to 16-bit unsigned conversion.

For detailed documentation see nppiConvert_8u16u_C1R().

Parameters:

    pSrc Source-Image Pointer.

    nSrcStep Source-Image Line Step.

    pDst Destination-Image Pointer.

    nDstStep Destination-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.6.2.20 NppStatus nppiConvert_8u32f_C1R (const Npp8u ∗ *pSrc*, int *nSrcStep*, Npp32f ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

8-bit unsigned to 32-bit floating point conversion.

For detailed documentation see nppiConverte_8u16u_C1R().

Parameters:

    pSrc Source-Image Pointer.

    nSrcStep Source-Image Line Step.

    pDst Destination-Image Pointer.

    nDstStep Destination-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.6.2.21 NppStatus nppiCopy_16s_AC4MR (const Npp16s ∗ *pSrc*, int *nSrcStep*, Npp16s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, const Npp8u ∗ *pMask*, int *nMaskStep*)

Masked Operation four channel 16-bit signed image copy, ignoring alpha.

Parameters:

    pSrc Source-Image Pointer.

    nSrcStep Source-Image Line Step.

    pDst Destination-Image Pointer.

    nDstStep Destination-Image Line Step.

    pMask Mask-Image Pointer.

    nMaskStep Mask-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.6.2.22 NppStatus nppiCopy_16s_AC4R (const Npp16s ∗ *pSrc*, int *nSrcStep*, Npp16s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

4 channel 16-bit image copy, not affecting Alpha.

Parameters:

>*pSrc* Source-Image Pointer.
>
>*nSrcStep* Source-Image Line Step.
>
>*pDst* Destination-Image Pointer.
>
>*nDstStep* Destination-Image Line Step.
>
>*oSizeROI* Region-of-Interest (ROI).

Returns:

>Image Data Related Error Codes, ROI Related Error Codes

7.6.2.23 NppStatus nppiCopy_16s_C1C3R (const Npp16s ∗ *pSrc*, int *nSrcStep*, Npp16s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Single-channel to three-channel 16-bit signed image copy.

Parameters:

>*pSrc* Select-Channel Source-Image Pointer.
>
>*nSrcStep* Source-Image Line Step.
>
>*pDst* Destination-Image Pointer.
>
>*nDstStep* Destination-Image Line Step.
>
>*oSizeROI* Region-of-Interest (ROI).

Returns:

>Image Data Related Error Codes, ROI Related Error Codes

7.6.2.24 NppStatus nppiCopy_16s_C1C4R (const Npp16s ∗ *pSrc*, int *nSrcStep*, Npp16s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Single-channel to four-channel 16-bit signed image copy.

Parameters:

>*pSrc* Select-Channel Source-Image Pointer.
>
>*nSrcStep* Source-Image Line Step.
>
>*pDst* Destination-Image Pointer.
>
>*nDstStep* Destination-Image Line Step.
>
>*oSizeROI* Region-of-Interest (ROI).

Returns:

>Image Data Related Error Codes, ROI Related Error Codes

7.6.2.25 NppStatus nppiCopy_16s_C1MR (const Npp16s ∗ *pSrc*, int *nSrcStep*, Npp16s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, const Npp8u ∗ *pMask*, int *nMaskStep*)

Masked Operation 16-bit signed image copy.

Parameters:

> *pSrc* Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *pMask* Mask-Image Pointer.
>
> *nMaskStep* Mask-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.6.2.26 NppStatus nppiCopy_16s_C1R (const Npp16s ∗ *pSrc*, int *nSrcStep*, Npp16s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

16-bit image copy.

Parameters:

> *pSrc* Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.6.2.27 NppStatus nppiCopy_16s_C3C1R (const Npp16s ∗ *pSrc*, int *nSrcStep*, Npp16s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Three-channel to single-channel 16-bit signed image copy.

Parameters:

> *pSrc* Select-Channel Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.6.2.28 NppStatus nppiCopy_16s_C3CR (const Npp16s $*$ ***pSrc***, **int** ***nSrcStep***, **Npp16s** $*$ ***pDst***, **int** ***nDstStep***, **NppiSize** ***oSizeROI*)**

Select-channel 16-bit signed image copy for three-channel images.

Parameters:

> ***pSrc*** Select-Channel Source-Image Pointer.
> ***nSrcStep*** Source-Image Line Step.
> ***pDst*** Select-Channel Destination-Image Pointer.
> ***nDstStep*** Destination-Image Line Step.
> ***oSizeROI*** Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.6.2.29 NppStatus nppiCopy_16s_C3MR (const Npp16s $*$ ***pSrc***, **int** ***nSrcStep***, **Npp16s** $*$ ***pDst***, **int** ***nDstStep***, **NppiSize** ***oSizeROI***, **const Npp8u** $*$ ***pMask***, **int** ***nMaskStep*)**

Masked Operation three channel 16-bit signed image copy.

Parameters:

> ***pSrc*** Source-Image Pointer.
> ***nSrcStep*** Source-Image Line Step.
> ***pDst*** Destination-Image Pointer.
> ***nDstStep*** Destination-Image Line Step.
> ***pMask*** Mask-Image Pointer.
> ***nMaskStep*** Mask-Image Line Step.
> ***oSizeROI*** Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.6.2.30 NppStatus nppiCopy_16s_C3P3R (const Npp16s $*$ ***pSrc***, **int** ***nSrcStep***, **Npp16s** $*$**const** ***aDst*[3]**, **int** ***nDstStep***, **NppiSize** ***oSizeROI*)**

Three-channel 16-bit signed packed to planar image copy.

Parameters:

> ***pSrc*** Source-Image Pointer.
> ***nSrcStep*** Source-Image Line Step.
> ***aDst*** Planar Destination-Image Pointer.
> ***nDstStep*** Destination-Image Line Step.
> ***oSizeROI*** Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.6.2.31   NppStatus nppiCopy_16s_C4C1R (const Npp16s * *pSrc*, int *nSrcStep*, Npp16s * *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Four-channel to single-channel 16-bit signed image copy.

Parameters:

>   *pSrc* Select-Channel Source-Image Pointer.
>   *nSrcStep* Source-Image Line Step.
>   *pDst* Destination-Image Pointer.
>   *nDstStep* Destination-Image Line Step.
>   *oSizeROI* Region-of-Interest (ROI).

Returns:

>   Image Data Related Error Codes, ROI Related Error Codes

7.6.2.32   NppStatus nppiCopy_16s_C4CR (const Npp16s * *pSrc*, int *nSrcStep*, Npp16s * *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Select-channel 16-bit signed image copy for four-channel images.

Parameters:

>   *pSrc* Select-Channel Source-Image Pointer.
>   *nSrcStep* Source-Image Line Step.
>   *pDst* Select-Channel Destination-Image Pointer.
>   *nDstStep* Destination-Image Line Step.
>   *oSizeROI* Region-of-Interest (ROI).

Returns:

>   Image Data Related Error Codes, ROI Related Error Codes

7.6.2.33   NppStatus nppiCopy_16s_C4MR (const Npp16s * *pSrc*, int *nSrcStep*, Npp16s * *pDst*, int *nDstStep*, NppiSize *oSizeROI*, const Npp8u * *pMask*, int *nMaskStep*)

Masked Operation four channel 16-bit signed image copy.

Parameters:

>   *pSrc* Source-Image Pointer.
>   *nSrcStep* Source-Image Line Step.
>   *pDst* Destination-Image Pointer.
>   *nDstStep* Destination-Image Line Step.
>   *pMask* Mask-Image Pointer.
>   *nMaskStep* Mask-Image Line Step.
>   *oSizeROI* Region-of-Interest (ROI).

Returns:

>   Image Data Related Error Codes, ROI Related Error Codes

7.6.2.34 NppStatus nppiCopy_16s_C4P4R (const Npp16s ∗ *pSrc*, int *nSrcStep*, Npp16s ∗const *aDst*[4], int *nDstStep*, NppiSize *oSizeROI*)

Four-channel 16-bit signed packed to planar image copy.

Parameters:

> *pSrc* Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *aDst* Planar Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.6.2.35 NppStatus nppiCopy_16s_C4R (const Npp16s ∗ *pSrc*, int *nSrcStep*, Npp16s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

4 channel 16-bit image copy.

Parameters:

> *pSrc* Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.6.2.36 NppStatus nppiCopy_16s_P3C3R (const Npp16s ∗const *aSrc*[3], int *nSrcStep*, Npp16s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Three-channel 16-bit signed planar to packed image copy.

Parameters:

> *aSrc* Planar Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.6.2.37 NppStatus nppiCopy_16s_P4C4R (const Npp16s ∗const *aSrc*[4], int *nSrcStep*, Npp16s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Four-channel 16-bit signed planar to packed image copy.

Parameters:

> *aSrc* Planar Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.6.2.38 NppStatus nppiCopy_16sc_AC4R (const Npp16sc ∗ *pSrc*, int *nSrcStep*, Npp16sc ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Four-channel 16-bit complex image copy, ignoring alpha.

Parameters:

> *pSrc* Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.6.2.39 NppStatus nppiCopy_16sc_C1R (const Npp16sc ∗ *pSrc*, int *nSrcStep*, Npp16sc ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

16-bit complex image copy.

Parameters:

> *pSrc* Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.6.2.40 NppStatus nppiCopy_16sc_C2R (const Npp16sc ∗ *pSrc*, int *nSrcStep*, Npp16sc ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Two-channel 16-bit complex image copy.

Parameters:

    pSrc Source-Image Pointer.

    nSrcStep Source-Image Line Step.

    pDst Destination-Image Pointer.

    nDstStep Destination-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.6.2.41 NppStatus nppiCopy_16sc_C3R (const Npp16sc ∗ *pSrc*, int *nSrcStep*, Npp16sc ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Three-channel 16-bit complex image copy.

Parameters:

    pSrc Source-Image Pointer.

    nSrcStep Source-Image Line Step.

    pDst Destination-Image Pointer.

    nDstStep Destination-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.6.2.42 NppStatus nppiCopy_16sc_C4R (const Npp16sc ∗ *pSrc*, int *nSrcStep*, Npp16sc ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Four-channel 16-bit complex image copy.

Parameters:

    pSrc Source-Image Pointer.

    nSrcStep Source-Image Line Step.

    pDst Destination-Image Pointer.

    nDstStep Destination-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.6.2.43 NppStatus nppiCopy_16u_AC4MR (const Npp16u ∗ *pSrc*, int *nSrcStep*, Npp16u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, const Npp8u ∗ *pMask*, int *nMaskStep*)

Masked Operation four channel 16-bit unsigned image copy, ignoring alpha.

Parameters:

> *pSrc* Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *pMask* Mask-Image Pointer.
>
> *nMaskStep* Mask-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.6.2.44 NppStatus nppiCopy_16u_AC4R (const Npp16u ∗ *pSrc*, int *nSrcStep*, Npp16u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

4 channel 16-bit unsigned image copy, not affecting Alpha channel.

Parameters:

> *pSrc* Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.6.2.45 NppStatus nppiCopy_16u_C1C3R (const Npp16u ∗ *pSrc*, int *nSrcStep*, Npp16u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Single-channel to three-channel 16-bit unsigned image copy.

Parameters:

> *pSrc* Select-Channel Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.6.2.46 NppStatus nppiCopy_16u_C1C4R (const Npp16u ∗ *pSrc*, int *nSrcStep*, Npp16u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Single-channel to four-channel 16-bit unsigned image copy.

Parameters:

> *pSrc* Select-Channel Source-Image Pointer.
> *nSrcStep* Source-Image Line Step.
> *pDst* Destination-Image Pointer.
> *nDstStep* Destination-Image Line Step.
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.6.2.47 NppStatus nppiCopy_16u_C1MR (const Npp16u ∗ *pSrc*, int *nSrcStep*, Npp16u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, const Npp8u ∗ *pMask*, int *nMaskStep*)

Masked Operation 16-bit unsigned image copy.

Parameters:

> *pSrc* Source-Image Pointer.
> *nSrcStep* Source-Image Line Step.
> *pDst* Destination-Image Pointer.
> *nDstStep* Destination-Image Line Step.
> *pMask* Mask-Image Pointer.
> *nMaskStep* Mask-Image Line Step.
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.6.2.48 NppStatus nppiCopy_16u_C1R (const Npp16u ∗ *pSrc*, int *nSrcStep*, Npp16u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

16-bit unsigned image copy.

Parameters:

> *pSrc* Source-Image Pointer.
> *nSrcStep* Source-Image Line Step.
> *pDst* Destination-Image Pointer.
> *nDstStep* Destination-Image Line Step.
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.6.2.49 NppStatus nppiCopy_16u_C3C1R (const Npp16u ∗ *pSrc*, int *nSrcStep*, Npp16u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Three-channel to single-channel 16-bit unsigned image copy.

Parameters:

> *pSrc* Select-Channel Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.6.2.50 NppStatus nppiCopy_16u_C3CR (const Npp16u ∗ *pSrc*, int *nSrcStep*, Npp16u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Select-channel 16-bit unsigned image copy for three-channel images.

Parameters:

> *pSrc* Select-Channel Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *pDst* Select-Channel Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.6.2.51 NppStatus nppiCopy_16u_C3MR (const Npp16u ∗ *pSrc*, int *nSrcStep*, Npp16u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, const Npp8u ∗ *pMask*, int *nMaskStep*)

Masked Operation three channel 16-bit unsigned image copy.

Parameters:

> *pSrc* Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *pMask* Mask-Image Pointer.
>
> *nMaskStep* Mask-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.6.2.52 NppStatus nppiCopy_16u_C3P3R (const Npp16u ∗ *pSrc*, int *nSrcStep*, Npp16u ∗const *aDst*[3], int *nDstStep*, NppiSize *oSizeROI*)

Three-channel 16-bit unsigned packed to planar image copy.

Parameters:

    pSrc Source-Image Pointer.

    nSrcStep Source-Image Line Step.

    aDst Planar Destination-Image Pointer.

    nDstStep Destination-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.6.2.53 NppStatus nppiCopy_16u_C4C1R (const Npp16u ∗ *pSrc*, int *nSrcStep*, Npp16u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Four-channel to single-channel 16-bit unsigned image copy.

Parameters:

    pSrc Select-Channel Source-Image Pointer.

    nSrcStep Source-Image Line Step.

    pDst Destination-Image Pointer.

    nDstStep Destination-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.6.2.54 NppStatus nppiCopy_16u_C4CR (const Npp16u ∗ *pSrc*, int *nSrcStep*, Npp16u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Select-channel 16-bit unsigned image copy for four-channel images.

Parameters:

    pSrc Select-Channel Source-Image Pointer.

    nSrcStep Source-Image Line Step.

    pDst Select-Channel Destination-Image Pointer.

    nDstStep Destination-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.6.2.55 NppStatus nppiCopy_16u_C4MR (const Npp16u ∗ pSrc, int nSrcStep, Npp16u ∗ pDst, int nDstStep, NppiSize oSizeROI, const Npp8u ∗ pMask, int nMaskStep)

Masked Operation four channel 16-bit unsigned image copy.

Parameters:

> *pSrc* Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *pMask* Mask-Image Pointer.
>
> *nMaskStep* Mask-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.6.2.56 NppStatus nppiCopy_16u_C4P4R (const Npp16u ∗ pSrc, int nSrcStep, Npp16u ∗const aDst[4], int nDstStep, NppiSize oSizeROI)

Four-channel 16-bit unsigned packed to planar image copy.

Parameters:

> *pSrc* Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *aDst* Planar Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.6.2.57 NppStatus nppiCopy_16u_C4R (const Npp16u ∗ pSrc, int nSrcStep, Npp16u ∗ pDst, int nDstStep, NppiSize oSizeROI)

4 channel 16-bit unsigned image copy.

Parameters:

> *pSrc* Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.6.2.58 NppStatus nppiCopy_16u_P3C3R (const Npp16u ∗const *aSrc*[3], int *nSrcStep*, Npp16u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Three-channel 16-bit unsigned planar to packed image copy.

Parameters:

>   *aSrc* Planar Source-Image Pointer.
>   *nSrcStep* Source-Image Line Step.
>   *pDst* Destination-Image Pointer.
>   *nDstStep* Destination-Image Line Step.
>   *oSizeROI* Region-of-Interest (ROI).

Returns:

>   Image Data Related Error Codes, ROI Related Error Codes

7.6.2.59 NppStatus nppiCopy_16u_P4C4R (const Npp16u ∗const *aSrc*[4], int *nSrcStep*, Npp16u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Four-channel 16-bit unsigned planar to packed image copy.

Parameters:

>   *aSrc* Planar Source-Image Pointer.
>   *nSrcStep* Source-Image Line Step.
>   *pDst* Destination-Image Pointer.
>   *nDstStep* Destination-Image Line Step.
>   *oSizeROI* Region-of-Interest (ROI).

Returns:

>   Image Data Related Error Codes, ROI Related Error Codes

7.6.2.60 NppStatus nppiCopy_32f_AC4MR (const Npp32f ∗ *pSrc*, int *nSrcStep*, Npp32f ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, const Npp8u ∗ *pMask*, int *nMaskStep*)

Masked Operation four channel 32-bit float image copy, ignoring alpha.

Parameters:

>   *pSrc* Source-Image Pointer.
>   *nSrcStep* Source-Image Line Step.
>   *pDst* Destination-Image Pointer.
>   *nDstStep* Destination-Image Line Step.
>   *pMask* Mask-Image Pointer.
>   *nMaskStep* Mask-Image Line Step.
>   *oSizeROI* Region-of-Interest (ROI).

Returns:

>   Image Data Related Error Codes, ROI Related Error Codes

7.6.2.61 NppStatus nppiCopy_32f_AC4R (const Npp32f ∗ *pSrc*, int *nSrcStep*, Npp32f ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

4 channel 32-bit floating point image copy, not affecting Alpha.

Parameters:

> *pSrc* Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.6.2.62 NppStatus nppiCopy_32f_C1C3R (const Npp32f ∗ *pSrc*, int *nSrcStep*, Npp32f ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Single-channel to three-channel 32-bit float image copy.

Parameters:

> *pSrc* Select-Channel Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.6.2.63 NppStatus nppiCopy_32f_C1C4R (const Npp32f ∗ *pSrc*, int *nSrcStep*, Npp32f ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Single-channel to four-channel 32-bit float image copy.

Parameters:

> *pSrc* Select-Channel Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.6.2.64 NppStatus nppiCopy_32f_C1MR (const Npp32f ∗ *pSrc*, int *nSrcStep*, Npp32f ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, const Npp8u ∗ *pMask*, int *nMaskStep*)

Masked Operation 32-bit float image copy.

Parameters:

>   *pSrc* Source-Image Pointer.
>   *nSrcStep* Source-Image Line Step.
>   *pDst* Destination-Image Pointer.
>   *nDstStep* Destination-Image Line Step.
>   *pMask* Mask-Image Pointer.
>   *nMaskStep* Mask-Image Line Step.
>   *oSizeROI* Region-of-Interest (ROI).

Returns:

>   Image Data Related Error Codes, ROI Related Error Codes

7.6.2.65 NppStatus nppiCopy_32f_C1R (const Npp32f ∗ *pSrc*, int *nSrcStep*, Npp32f ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

32-bit floating point image copy.

Parameters:

>   *pSrc* Source-Image Pointer.
>   *nSrcStep* Source-Image Line Step.
>   *pDst* Destination-Image Pointer.
>   *nDstStep* Destination-Image Line Step.
>   *oSizeROI* Region-of-Interest (ROI).

Returns:

>   Image Data Related Error Codes, ROI Related Error Codes

7.6.2.66 NppStatus nppiCopy_32f_C3C1R (const Npp32f ∗ *pSrc*, int *nSrcStep*, Npp32f ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Three-channel to single-channel 32-bit float image copy.

Parameters:

>   *pSrc* Select-Channel Source-Image Pointer.
>   *nSrcStep* Source-Image Line Step.
>   *pDst* Destination-Image Pointer.
>   *nDstStep* Destination-Image Line Step.
>   *oSizeROI* Region-of-Interest (ROI).

Returns:

>   Image Data Related Error Codes, ROI Related Error Codes

7.6.2.67 NppStatus nppiCopy_32f_C3CR (const Npp32f ∗ *pSrc*, int *nSrcStep*, Npp32f ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Select-channel 32-bit float image copy for three-channel images.

Parameters:

pSrc Select-Channel Source-Image Pointer.

nSrcStep Source-Image Line Step.

pDst Select-Channel Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.6.2.68 NppStatus nppiCopy_32f_C3MR (const Npp32f ∗ *pSrc*, int *nSrcStep*, Npp32f ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, const Npp8u ∗ *pMask*, int *nMaskStep*)

Masked Operation three channel 32-bit float image copy.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

pMask Mask-Image Pointer.

nMaskStep Mask-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.6.2.69 NppStatus nppiCopy_32f_C3P3R (const Npp32f ∗ *pSrc*, int *nSrcStep*, Npp32f ∗const *aDst*[3], int *nDstStep*, NppiSize *oSizeROI*)

Three-channel 32-bit float packed to planar image copy.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

aDst Planar Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.6.2.70 NppStatus nppiCopy_32f_C4C1R (const Npp32f ∗ *pSrc*, int *nSrcStep*, Npp32f ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Four-channel to single-channel 32-bit float image copy.

Parameters:

> *pSrc* Select-Channel Source-Image Pointer.
> *nSrcStep* Source-Image Line Step.
> *pDst* Destination-Image Pointer.
> *nDstStep* Destination-Image Line Step.
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.6.2.71 NppStatus nppiCopy_32f_C4CR (const Npp32f ∗ *pSrc*, int *nSrcStep*, Npp32f ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Select-channel 32-bit float image copy for four-channel images.

Parameters:

> *pSrc* Select-Channel Source-Image Pointer.
> *nSrcStep* Source-Image Line Step.
> *pDst* Select-Channel Destination-Image Pointer.
> *nDstStep* Destination-Image Line Step.
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.6.2.72 NppStatus nppiCopy_32f_C4MR (const Npp32f ∗ *pSrc*, int *nSrcStep*, Npp32f ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, const Npp8u ∗ *pMask*, int *nMaskStep*)

Masked Operation four channel 32-bit float image copy.

Parameters:

> *pSrc* Source-Image Pointer.
> *nSrcStep* Source-Image Line Step.
> *pDst* Destination-Image Pointer.
> *nDstStep* Destination-Image Line Step.
> *pMask* Mask-Image Pointer.
> *nMaskStep* Mask-Image Line Step.
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.6.2.73 NppStatus nppiCopy_32f_C4P4R (const Npp32f ∗ *pSrc*, int *nSrcStep*, Npp32f ∗const *aDst*[4], int *nDstStep*, NppiSize *oSizeROI*)

Four-channel 32-bit float packed to planar image copy.

Parameters:

    pSrc Source-Image Pointer.

    nSrcStep Source-Image Line Step.

    aDst Planar Destination-Image Pointer.

    nDstStep Destination-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.6.2.74 NppStatus nppiCopy_32f_C4R (const Npp32f ∗ *pSrc*, int *nSrcStep*, Npp32f ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

4 channel 32-bit floating point image copy.

Parameters:

    pSrc Source-Image Pointer.

    nSrcStep Source-Image Line Step.

    pDst Destination-Image Pointer.

    nDstStep Destination-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.6.2.75 NppStatus nppiCopy_32f_P3C3R (const Npp32f ∗const *aSrc*[3], int *nSrcStep*, Npp32f ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Three-channel 32-bit float planar to packed image copy.

Parameters:

    aSrc Planar Source-Image Pointer.

    nSrcStep Source-Image Line Step.

    pDst Destination-Image Pointer.

    nDstStep Destination-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.6.2.76 NppStatus nppiCopy_32f_P4C4R (const Npp32f ∗const *aSrc*[4], int *nSrcStep*, Npp32f ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Four-channel 32-bit float planar to packed image copy.

Parameters:

>   *aSrc* Planar Source-Image Pointer.
>
>   *nSrcStep* Source-Image Line Step.
>
>   *pDst* Destination-Image Pointer.
>
>   *nDstStep* Destination-Image Line Step.
>
>   *oSizeROI* Region-of-Interest (ROI).

Returns:

>   Image Data Related Error Codes, ROI Related Error Codes

7.6.2.77 NppStatus nppiCopy_32fc_AC4R (const Npp32fc ∗ *pSrc*, int *nSrcStep*, Npp32fc ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Four-channel 32-bit floating-point complex image copy, ignoring alpha.

Parameters:

>   *pSrc* Source-Image Pointer.
>
>   *nSrcStep* Source-Image Line Step.
>
>   *pDst* Destination-Image Pointer.
>
>   *nDstStep* Destination-Image Line Step.
>
>   *oSizeROI* Region-of-Interest (ROI).

Returns:

>   Image Data Related Error Codes, ROI Related Error Codes

7.6.2.78 NppStatus nppiCopy_32fc_C1R (const Npp32fc ∗ *pSrc*, int *nSrcStep*, Npp32fc ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

32-bit floating-point complex image copy.

Parameters:

>   *pSrc* Source-Image Pointer.
>
>   *nSrcStep* Source-Image Line Step.
>
>   *pDst* Destination-Image Pointer.
>
>   *nDstStep* Destination-Image Line Step.
>
>   *oSizeROI* Region-of-Interest (ROI).

Returns:

>   Image Data Related Error Codes, ROI Related Error Codes

7.6.2.79 NppStatus nppiCopy_32fc_C2R (const Npp32fc ∗ *pSrc*, int *nSrcStep*, Npp32fc ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Two-channel 32-bit floating-point complex image copy.

Parameters:

> *pSrc* Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.6.2.80 NppStatus nppiCopy_32fc_C3R (const Npp32fc ∗ *pSrc*, int *nSrcStep*, Npp32fc ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Three-channel 32-bit floating-point complex image copy.

Parameters:

> *pSrc* Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.6.2.81 NppStatus nppiCopy_32fc_C4R (const Npp32fc ∗ *pSrc*, int *nSrcStep*, Npp32fc ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Four-channel 32-bit floating-point complex image copy.

Parameters:

> *pSrc* Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.6.2.82 NppStatus nppiCopy_32s_AC4MR (const Npp32s ∗ *pSrc*, int *nSrcStep*, Npp32s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, const Npp8u ∗ *pMask*, int *nMaskStep*)

Masked Operation four channel 32-bit signed image copy, ignoring alpha.

Parameters:

> *pSrc* Source-Image Pointer.
> *nSrcStep* Source-Image Line Step.
> *pDst* Destination-Image Pointer.
> *nDstStep* Destination-Image Line Step.
> *pMask* Mask-Image Pointer.
> *nMaskStep* Mask-Image Line Step.
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.6.2.83 NppStatus nppiCopy_32s_AC4R (const Npp32s ∗ *pSrc*, int *nSrcStep*, Npp32s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

4 channel 32-bit image copy, not affecting Alpha.

Parameters:

> *pSrc* Source-Image Pointer.
> *nSrcStep* Source-Image Line Step.
> *pDst* Destination-Image Pointer.
> *nDstStep* Destination-Image Line Step.
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.6.2.84 NppStatus nppiCopy_32s_C1C3R (const Npp32s ∗ *pSrc*, int *nSrcStep*, Npp32s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Single-channel to three-channel 32-bit signed image copy.

Parameters:

> *pSrc* Select-Channel Source-Image Pointer.
> *nSrcStep* Source-Image Line Step.
> *pDst* Destination-Image Pointer.
> *nDstStep* Destination-Image Line Step.
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.6.2.85 NppStatus nppiCopy_32s_C1C4R (const Npp32s ∗ _pSrc_, int _nSrcStep_, Npp32s ∗ _pDst_, int _nDstStep_, NppiSize _oSizeROI_)

Single-channel to four-channel 32-bit signed image copy.

Parameters:

> _pSrc_ Select-Channel Source-Image Pointer.
>
> _nSrcStep_ Source-Image Line Step.
>
> _pDst_ Destination-Image Pointer.
>
> _nDstStep_ Destination-Image Line Step.
>
> _oSizeROI_ Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.6.2.86 NppStatus nppiCopy_32s_C1MR (const Npp32s ∗ _pSrc_, int _nSrcStep_, Npp32s ∗ _pDst_, int _nDstStep_, NppiSize _oSizeROI_, const Npp8u ∗ _pMask_, int _nMaskStep_)

Masked Operation 32-bit signed image copy.

Parameters:

> _pSrc_ Source-Image Pointer.
>
> _nSrcStep_ Source-Image Line Step.
>
> _pDst_ Destination-Image Pointer.
>
> _nDstStep_ Destination-Image Line Step.
>
> _pMask_ Mask-Image Pointer.
>
> _nMaskStep_ Mask-Image Line Step.
>
> _oSizeROI_ Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.6.2.87 NppStatus nppiCopy_32s_C1R (const Npp32s ∗ _pSrc_, int _nSrcStep_, Npp32s ∗ _pDst_, int _nDstStep_, NppiSize _oSizeROI_)

32-bit image copy.

Parameters:

> _pSrc_ Source-Image Pointer.
>
> _nSrcStep_ Source-Image Line Step.
>
> _pDst_ Destination-Image Pointer.
>
> _nDstStep_ Destination-Image Line Step.
>
> _oSizeROI_ Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.6.2.88 NppStatus nppiCopy_32s_C3C1R (const Npp32s ∗ *pSrc*, int *nSrcStep*, Npp32s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Three-channel to single-channel 32-bit signed image copy.

Parameters:

>*pSrc* Select-Channel Source-Image Pointer.
>
>*nSrcStep* Source-Image Line Step.
>
>*pDst* Destination-Image Pointer.
>
>*nDstStep* Destination-Image Line Step.
>
>*oSizeROI* Region-of-Interest (ROI).

Returns:

>Image Data Related Error Codes, ROI Related Error Codes

7.6.2.89 NppStatus nppiCopy_32s_C3CR (const Npp32s ∗ *pSrc*, int *nSrcStep*, Npp32s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Select-channel 32-bit signed image copy for three-channel images.

Parameters:

>*pSrc* Select-Channel Source-Image Pointer.
>
>*nSrcStep* Source-Image Line Step.
>
>*pDst* Select-Channel Destination-Image Pointer.
>
>*nDstStep* Destination-Image Line Step.
>
>*oSizeROI* Region-of-Interest (ROI).

Returns:

>Image Data Related Error Codes, ROI Related Error Codes

7.6.2.90 NppStatus nppiCopy_32s_C3MR (const Npp32s ∗ *pSrc*, int *nSrcStep*, Npp32s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, const Npp8u ∗ *pMask*, int *nMaskStep*)

Masked Operation three channel 32-bit signed image copy.

Parameters:

>*pSrc* Source-Image Pointer.
>
>*nSrcStep* Source-Image Line Step.
>
>*pDst* Destination-Image Pointer.
>
>*nDstStep* Destination-Image Line Step.
>
>*pMask* Mask-Image Pointer.
>
>*nMaskStep* Mask-Image Line Step.
>
>*oSizeROI* Region-of-Interest (ROI).

Returns:

>Image Data Related Error Codes, ROI Related Error Codes

7.6.2.91   NppStatus nppiCopy_32s_C3P3R (const Npp32s ∗ pSrc, int nSrcStep, Npp32s ∗const aDst[3], int nDstStep, NppiSize oSizeROI)

Three-channel 32-bit signed packed to planar image copy.

Parameters:

    pSrc Source-Image Pointer.

    nSrcStep Source-Image Line Step.

    aDst Planar Destination-Image Pointer.

    nDstStep Destination-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.6.2.92   NppStatus nppiCopy_32s_C4C1R (const Npp32s ∗ pSrc, int nSrcStep, Npp32s ∗ pDst, int nDstStep, NppiSize oSizeROI)

Four-channel to single-channel 32-bit signed image copy.

Parameters:

    pSrc Select-Channel Source-Image Pointer.

    nSrcStep Source-Image Line Step.

    pDst Destination-Image Pointer.

    nDstStep Destination-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.6.2.93   NppStatus nppiCopy_32s_C4CR (const Npp32s ∗ pSrc, int nSrcStep, Npp32s ∗ pDst, int nDstStep, NppiSize oSizeROI)

Select-channel 32-bit signed image copy for four-channel images.

Parameters:

    pSrc Select-Channel Source-Image Pointer.

    nSrcStep Source-Image Line Step.

    pDst Select-Channel Destination-Image Pointer.

    nDstStep Destination-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.6.2.94 NppStatus nppiCopy_32s_C4MR (const Npp32s ∗ *pSrc*, int *nSrcStep*, Npp32s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, const Npp8u ∗ *pMask*, int *nMaskStep*)

Masked Operation four channel 32-bit signed image copy.

Parameters:

> *pSrc* Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *pMask* Mask-Image Pointer.
>
> *nMaskStep* Mask-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.6.2.95 NppStatus nppiCopy_32s_C4P4R (const Npp32s ∗ *pSrc*, int *nSrcStep*, Npp32s ∗const *aDst*[4], int *nDstStep*, NppiSize *oSizeROI*)

Four-channel 32-bit signed packed to planar image copy.

Parameters:

> *pSrc* Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *aDst* Planar Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.6.2.96 NppStatus nppiCopy_32s_C4R (const Npp32s ∗ *pSrc*, int *nSrcStep*, Npp32s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

4 channel 32-bit image copy.

Parameters:

> *pSrc* Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.6.2.97 NppStatus nppiCopy_32s_P3C3R (const Npp32s ∗const *aSrc*[3], int *nSrcStep*, Npp32s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Three-channel 32-bit signed planar to packed image copy.

Parameters:

> *aSrc* Planar Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.6.2.98 NppStatus nppiCopy_32s_P4C4R (const Npp32s ∗const *aSrc*[4], int *nSrcStep*, Npp32s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Four-channel 32-bit signed planar to packed image copy.

Parameters:

> *aSrc* Planar Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.6.2.99 NppStatus nppiCopy_32sc_AC4R (const Npp32sc ∗ *pSrc*, int *nSrcStep*, Npp32sc ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Four-channel 32-bit complex image copy, ignoring alpha.

Parameters:

> *pSrc* Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.6.2.100 NppStatus nppiCopy_32sc_C1R (const Npp32sc ∗ *pSrc*, int *nSrcStep*, Npp32sc ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

32-bit complex image copy.

Parameters:

>   *pSrc* Source-Image Pointer.
>
>   *nSrcStep* Source-Image Line Step.
>
>   *pDst* Destination-Image Pointer.
>
>   *nDstStep* Destination-Image Line Step.
>
>   *oSizeROI* Region-of-Interest (ROI).

Returns:

>   Image Data Related Error Codes, ROI Related Error Codes

7.6.2.101 NppStatus nppiCopy_32sc_C2R (const Npp32sc ∗ *pSrc*, int *nSrcStep*, Npp32sc ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Two-channel 32-bit complex image copy.

Parameters:

>   *pSrc* Source-Image Pointer.
>
>   *nSrcStep* Source-Image Line Step.
>
>   *pDst* Destination-Image Pointer.
>
>   *nDstStep* Destination-Image Line Step.
>
>   *oSizeROI* Region-of-Interest (ROI).

Returns:

>   Image Data Related Error Codes, ROI Related Error Codes

7.6.2.102 NppStatus nppiCopy_32sc_C3R (const Npp32sc ∗ *pSrc*, int *nSrcStep*, Npp32sc ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Three-channel 32-bit complex image copy.

Parameters:

>   *pSrc* Source-Image Pointer.
>
>   *nSrcStep* Source-Image Line Step.
>
>   *pDst* Destination-Image Pointer.
>
>   *nDstStep* Destination-Image Line Step.
>
>   *oSizeROI* Region-of-Interest (ROI).

Returns:

>   Image Data Related Error Codes, ROI Related Error Codes

7.6.2.103 NppStatus nppiCopy_32sc_C4R (const Npp32sc ∗ *pSrc*, int *nSrcStep*, Npp32sc ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Four-channel 32-bit complex image copy.

Parameters:

    pSrc Source-Image Pointer.

    nSrcStep Source-Image Line Step.

    pDst Destination-Image Pointer.

    nDstStep Destination-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.6.2.104 NppStatus nppiCopy_8s_AC4R (const Npp8s ∗ *pSrc*, int *nSrcStep*, Npp8s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Four-channel 8-bit image copy, ignoring alpha channel.

Parameters:

    pSrc Source-Image Pointer.

    nSrcStep Source-Image Line Step.

    pDst Destination-Image Pointer.

    nDstStep Destination-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.6.2.105 NppStatus nppiCopy_8s_C1R (const Npp8s ∗ *pSrc*, int *nSrcStep*, Npp8s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

8-bit image copy.

Parameters:

    pSrc Source-Image Pointer.

    nSrcStep Source-Image Line Step.

    pDst Destination-Image Pointer.

    nDstStep Destination-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.6.2.106 NppStatus nppiCopy_8s_C2R (const Npp8s ∗ *pSrc*, int *nSrcStep*, Npp8s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Two-channel 8-bit image copy.

Parameters:

> *pSrc* Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.6.2.107 NppStatus nppiCopy_8s_C3R (const Npp8s ∗ *pSrc*, int *nSrcStep*, Npp8s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Three-channel 8-bit image copy.

Parameters:

> *pSrc* Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.6.2.108 NppStatus nppiCopy_8s_C4R (const Npp8s ∗ *pSrc*, int *nSrcStep*, Npp8s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Four-channel 8-bit image copy.

Parameters:

> *pSrc* Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.6.2.109 NppStatus nppiCopy_8u_AC4MR (const Npp8u ∗ *pSrc*, int *nSrcStep*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, const Npp8u ∗ *pMask*, int *nMaskStep*)

Masked Operation four channel 8-bit unsigned image copy, ignoring alpha.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

pMask Mask-Image Pointer.

nMaskStep Mask-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.6.2.110 NppStatus nppiCopy_8u_AC4R (const Npp8u ∗ *pSrc*, int *nSrcStep*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

4 channel 8-bit unsigned image copy, not affecting Alpha channel.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.6.2.111 NppStatus nppiCopy_8u_C1C3R (const Npp8u ∗ *pSrc*, int *nSrcStep*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Single-channel to three-channel 8-bit unsigned image copy.

Parameters:

pSrc Select-Channel Source-Image Pointer.

nSrcStep Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.6.2.112   NppStatus nppiCopy_8u_C1C4R (const Npp8u ∗ *pSrc***, int** *nSrcStep***, Npp8u** ∗ *pDst***, int** *nDstStep***, NppiSize** *oSizeROI***)**

Single-channel to four-channel 8-bit unsigned image copy.

Parameters:

> *pSrc* Select-Channel Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.6.2.113   NppStatus nppiCopy_8u_C1MR (const Npp8u ∗ *pSrc***, int** *nSrcStep***, Npp8u** ∗ *pDst***, int** *nDstStep***, NppiSize** *oSizeROI***, const Npp8u** ∗ *pMask***, int** *nMaskStep***)**

Masked Operation 8-bit unsigned image copy.

Parameters:

> *pSrc* Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *pMask* Mask-Image Pointer.
>
> *nMaskStep* Mask-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.6.2.114   NppStatus nppiCopy_8u_C1R (const Npp8u ∗ *pSrc***, int** *nSrcStep***, Npp8u** ∗ *pDst***, int** *nDstStep***, NppiSize** *oSizeROI***)**

8-bit unsigned image copy.

Parameters:

> *pSrc* Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.6.2.115 NppStatus nppiCopy_8u_C3C1R (const Npp8u ∗ *pSrc*, int *nSrcStep*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Three-channel to single-channel 8-bit unsigned image copy.

Parameters:

> *pSrc* Select-Channel Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.6.2.116 NppStatus nppiCopy_8u_C3CR (const Npp8u ∗ *pSrc*, int *nSrcStep*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Select-channel 8-bit unsigned image copy for three-channel images.

Parameters:

> *pSrc* Select-Channel Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *pDst* Select-Channel Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.6.2.117 NppStatus nppiCopy_8u_C3MR (const Npp8u ∗ *pSrc*, int *nSrcStep*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, const Npp8u ∗ *pMask*, int *nMaskStep*)

Masked Operation three channel 8-bit unsigned image copy.

Parameters:

> *pSrc* Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *pMask* Mask-Image Pointer.
>
> *nMaskStep* Mask-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.6.2.118   NppStatus nppiCopy_8u_C3P3R (const Npp8u ∗ *pSrc*, int *nSrcStep*, Npp8u ∗const **aDst[3], int *nDstStep*, NppiSize *oSizeROI*)**

Three-channel 8-bit unsigned packed to planar image copy.

Parameters:

> *pSrc* Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *aDst* Planar Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.6.2.119   NppStatus nppiCopy_8u_C4C1R (const Npp8u ∗ *pSrc*, int *nSrcStep*, Npp8u ∗ *pDst*, int **nDstStep, NppiSize *oSizeROI*)**

Four-channel to single-channel 8-bit unsigned image copy.

Parameters:

> *pSrc* Select-Channel Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.6.2.120   NppStatus nppiCopy_8u_C4CR (const Npp8u ∗ *pSrc*, int *nSrcStep*, Npp8u ∗ *pDst*, int **nDstStep, NppiSize *oSizeROI*)**

Select-channel 8-bit unsigned image copy for four-channel images.

Parameters:

> *pSrc* Select-Channel Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *pDst* Select-Channel Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.6.2.121 NppStatus nppiCopy_8u_C4MR (const Npp8u ∗ *pSrc*, int *nSrcStep*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, const Npp8u ∗ *pMask*, int *nMaskStep*)

Masked Operation four channel 8-bit unsigned image copy.

Parameters:

> *pSrc* Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *pMask* Mask-Image Pointer.
>
> *nMaskStep* Mask-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.6.2.122 NppStatus nppiCopy_8u_C4P4R (const Npp8u ∗ *pSrc*, int *nSrcStep*, Npp8u ∗const *aDst*[4], int *nDstStep*, NppiSize *oSizeROI*)

Four-channel 8-bit unsigned packed to planar image copy.

Parameters:

> *pSrc* Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *aDst* Planar Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.6.2.123 NppStatus nppiCopy_8u_C4R (const Npp8u ∗ *pSrc*, int *nSrcStep*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

4 channel 8-bit unsigned image copy.

Parameters:

> *pSrc* Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.6.2.124 NppStatus nppiCopy_8u_P3C3R (const Npp8u ∗const *aSrc*[3], int *nSrcStep*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Three-channel 8-bit unsigned planar to packed image copy.

Parameters:

    aSrc Planar Source-Image Pointer.

    nSrcStep Source-Image Line Step.

    pDst Destination-Image Pointer.

    nDstStep Destination-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.6.2.125 NppStatus nppiCopy_8u_P4C4R (const Npp8u ∗const *aSrc*[4], int *nSrcStep*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Four-channel 8-bit unsigned planar to packed image copy.

Parameters:

    aSrc Planar Source-Image Pointer.

    nSrcStep Source-Image Line Step.

    pDst Destination-Image Pointer.

    nDstStep Destination-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.6.2.126 NppStatus nppiCopyConstBorder_32s_C1R (const Npp32s ∗ *pSrc*, int *nSrcStep*, NppiSize *oSrcSizeROI*, Npp32s ∗ *pDst*, int *nDstStep*, NppiSize *oDstSizeROI*, int *nTopBorderHeight*, int *nLeftBorderWidth*, Npp32s *nValue*)

32-bit image copy with constant border color.

See nppiCopyConstBorder_8u_C1R() for detailed documentation.

Parameters:

    pSrc Source-Image Pointer.

    nSrcStep Source-Image Line Step.

    oSrcSizeROI Size of the source region-of-interest.

    pDst Destination-Image Pointer.

    nDstStep Destination-Image Line Step.

oDstSizeROI Size of the destination region-of-interest.

nTopBorderHeight Height of top border.

nLeftBorderWidth Width of left border.

nValue Border luminance value.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.6.2.127 NppStatus nppiCopyConstBorder_8u_AC4R (const Npp8u ∗ *pSrc*, int *nSrcStep*, NppiSize *oSrcSizeROI*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oDstSizeROI*, int *nTopBorderHeight*, int *nLeftBorderWidth*, const Npp8u *aValue*[3])

4 channel 8-bit unsigned image copy with constant border color.

See nppiCopyConstBorder_8u_C1R() for detailed documentation.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

oSrcSizeROI Size of the source region-of-interest.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oDstSizeROI Size of the destination region-of-interest.

nTopBorderHeight Height of top border.

nLeftBorderWidth Width of left border.

aValue Vector of the RGB values of the border pixels. Because this method does not affect the destination image's alpha channel, only three components of the border color are needed.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.6.2.128 NppStatus nppiCopyConstBorder_8u_C1R (const Npp8u ∗ *pSrc*, int *nSrcStep*, NppiSize *oSrcSizeROI*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oDstSizeROI*, int *nTopBorderHeight*, int *nLeftBorderWidth*, Npp8u *nValue*)

8-bit unsigned image copy width constant border color.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

oSrcSizeROI Size of the source region of pixels.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oDstSizeROI Size (width, height) of the destination region, i.e. the region that gets filled with data from the source image (inner part) and constant border color (outer part).

nTopBorderHeight Height (in pixels) of the top border. The height of the border at the bottom of the destination ROI is implicitly defined by the size of the source ROI: nBottomBorderHeight = oDstSizeROI.height - nTopBorderHeight - oSrcSizeROI.height.

nLeftBorderWidth Width (in pixels) of the left border. The width of the border at the right side of the destination ROI is implicitly defined by the size of the source ROI: nRightBorderWidth = oDstSizeROI.width - nLeftBorderWidth - oSrcSizeROI.width.

nValue The pixel value to be set for border pixels.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.6.2.129 NppStatus nppiCopyConstBorder_8u_C4R (const Npp8u ∗ *pSrc*, int *nSrcStep*, NppiSize *oSrcSizeROI*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oDstSizeROI*, int *nTopBorderHeight*, int *nLeftBorderWidth*, const Npp8u *aValue*[4])

4channel 8-bit unsigned image copy with constant border color.

See nppiCopyConstBorder_8u_C1R() for detailed documentation.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

oSrcSizeROI Size of the source region-of-interest.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oDstSizeROI Size of the destination region-of-interest.

nTopBorderHeight Height of top border.

nLeftBorderWidth Width of left border.

aValue Vector of the RGBA values of the border pixels to be set.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.6.2.130 NppStatus nppiSet_16s_AC4MR (const Npp16s *aValues*[3], Npp16s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, const Npp8u ∗ *pMask*, int *nMaskStep*)

Masked 4 channel 16-bit image set method, not affecting Alpha channel.

For RGBA images, this method allows setting of the RGB values without changing the contents of the alpha-channel (fourth channel).

Parameters:

aValues Three-channel array containing the pixel-value to be set.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

pMask Pointer to the mask image. This is a single channel 8-bit unsigned int image.

nMaskStep Number of bytes between line starts of successive lines in the mask image.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.6.2.131 NppStatus nppiSet_16s_AC4R (const Npp16s *aValues*[3], Npp16s * *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

4 channel 16-bit image set method, not affecting Alpha channel.

For RGBA images, this method allows setting of the RGB values without changing the contents of the alpha-channel (fourth channel).

Parameters:

aValues Three-channel array containing the pixel-value to be set.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.6.2.132 NppStatus nppiSet_16s_C1MR (Npp16s *nValue*, Npp16s * *pDst*, int *nDstStep*, NppiSize *oSizeROI*, const Npp8u * *pMask*, int *nMaskStep*)

Masked 16-bit image set.

Parameters:

nValue New pixel value.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

pMask Pointer to the mask image. This is a single channel 8-bit unsigned int image.

nMaskStep Number of bytes between line starts of successive lines in the mask image.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.6.2.133 NppStatus nppiSet_16s_C1R (Npp16s *nValue*, Npp16s * *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

16-bit image set.

Parameters:

> **nValue** New pixel value.
>
> **pDst** Destination-Image Pointer.
>
> **nDstStep** Destination-Image Line Step.
>
> **oSizeROI** Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.6.2.134 NppStatus nppiSet_16s_C2R (const Npp16s *aValues*[2], Npp16s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

2 channel 16-bit image set.

Parameters:

> **aValues** New pixel value.
>
> **pDst** Destination-Image Pointer.
>
> **nDstStep** Destination-Image Line Step.
>
> **oSizeROI** Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.6.2.135 NppStatus nppiSet_16s_C4CR (Npp16s *nValue*, Npp16s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

4 channel 16-bit unsigned image set affecting only single channel.

For RGBA images, this method allows setting of a single of the four (RGBA) values without changing the contents of the other three channels. The channel is selected via the pDst pointer. The pointer needs to point to the actual first value to be set, e.g. in order to set the R-channel (first channel), one would pass pDst unmodified, since its value actually points to the r channel. If one wanted to modify the B channel (second channel), one would pass pDst + 2 to the function.

Parameters:

> **nValue** The pixel-value to be set.
>
> **pDst** Destination-Image Pointer.
>
> **nDstStep** Destination-Image Line Step.
>
> **oSizeROI** Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.6.2.136 NppStatus nppiSet_16s_C4MR (const Npp16s *aValues*[4], Npp16s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, const Npp8u ∗ *pMask*, int *nMaskStep*)

Masked 4 channel 16-bit image set.

Parameters:

aValues New pixel value.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

pMask Pointer to the mask image. This is a single channel 8-bit unsigned int image.

nMaskStep Number of bytes between line starts of successive lines in the mask image.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.6.2.137 NppStatus nppiSet_16s_C4R (const Npp16s *aValues*[4], Npp16s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

4 channel 16-bit image set.

Parameters:

aValues New pixel value.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.6.2.138 NppStatus nppiSet_16sc_AC4R (Npp16sc *aValue*[3], Npp16sc ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

16-bit complex integer four-channel image set ignoring alpha.

Parameters:

aValue New pixel value.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.6.2.139 NppStatus nppiSet_16sc_C1R (Npp16sc *oValue*, Npp16sc ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

16-bit complex integer image set.

Parameters:

> *oValue* New pixel value.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.6.2.140 NppStatus nppiSet_16sc_C2R (Npp16sc *aValue*[2], Npp16sc ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

16-bit complex integer two-channel image set.

Parameters:

> *aValue* New pixel value.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.6.2.141 NppStatus nppiSet_16sc_C3R (Npp16sc *aValue*[3], Npp16sc ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

16-bit complex integer three-channel image set.

Parameters:

> *aValue* New pixel value.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.6.2.142   NppStatus nppiSet_16sc_C4R (Npp16sc *aValue*[4], Npp16sc * *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

16-bit complex integer four-channel image set.

Parameters:

    aValue New pixel value.

    pDst Destination-Image Pointer.

    nDstStep Destination-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.6.2.143   NppStatus nppiSet_16u_AC4MR (const Npp16u *aValues*[3], Npp16u * *pDst*, int *nDstStep*, NppiSize *oSizeROI*, const Npp8u * *pMask*, int *nMaskStep*)

Masked 4 channel 16-bit unsigned image set method, not affecting Alpha channel.

For RGBA images, this method allows setting of the RGB values without changing the contents of the alpha-channel (fourth channel).

Parameters:

    aValues Three-channel array containing the pixel-value to be set.

    pDst Destination-Image Pointer.

    nDstStep Destination-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

    pMask Pointer to the mask image. This is a single channel 8-bit unsigned int image.

    nMaskStep Number of bytes between line starts of successive lines in the mask image.

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.6.2.144   NppStatus nppiSet_16u_AC4R (const Npp16u *aValues*[3], Npp16u * *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

4 channel 16-bit unsigned image set method, not affecting Alpha channel.

For RGBA images, this method allows setting of the RGB values without changing the contents of the alpha-channel (fourth channel).

Parameters:

    aValues Three-channel array containing the pixel-value to be set.

    pDst Destination-Image Pointer.

    nDstStep Destination-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.6.2.145 NppStatus nppiSet_16u_C1MR (Npp16u *nValue*, Npp16u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, const Npp8u ∗ *pMask*, int *nMaskStep*)

Masked 16-bit unsigned image set.

Parameters:

nValue New pixel value.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

pMask Pointer to the mask image. This is a single channel 8-bit unsigned int image.

nMaskStep Number of bytes between line starts of successive lines in the mask image.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.6.2.146 NppStatus nppiSet_16u_C1R (Npp16u *nValue*, Npp16u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

16-bit unsigned image set.

Parameters:

nValue New pixel value.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.6.2.147 NppStatus nppiSet_16u_C2R (const Npp16u *aValues*[2], Npp16u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

2 channel 16-bit unsigned image set.

Parameters:

aValues New pixel value.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.6.2.148   NppStatus nppiSet_16u_C4CR (Npp16u *nValue*, Npp16u * *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

4 channel 16-bit unsigned image set affecting only single channel.

For RGBA images, this method allows setting of a single of the four (RGBA) values without changing the contents of the other three channels. The channel is selected via the pDst pointer. The pointer needs to point to the actual first value to be set, e.g. in order to set the R-channel (first channel), one would pass pDst unmodified, since its value actually points to the r channel. If one wanted to modify the B channel (second channel), one would pass pDst + 2 to the function.

Parameters:

> *nValue* The pixel-value to be set.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.6.2.149   NppStatus nppiSet_16u_C4MR (const Npp16u *aValues*[4], Npp16u * *pDst*, int *nDstStep*, NppiSize *oSizeROI*, const Npp8u * *pMask*, int *nMaskStep*)

Masked 4 channel 16-bit unsigned image set.

Parameters:

> *aValues* New pixel value.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *pMask* Pointer to the mask image. This is a single channel 8-bit unsigned int image.
>
> *nMaskStep* Number of bytes between line starts of successive lines in the mask image.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.6.2.150   NppStatus nppiSet_16u_C4R (const Npp16u *aValues*[4], Npp16u * *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

4 channel 16-bit unsigned image set.

Parameters:

> *aValues* New pixel value.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.6.2.151   NppStatus nppiSet_32f_AC4MR (const Npp32f *aValues*[3], Npp32f ∗ *pDst*, int *nDstStep*,   NppiSize *oSizeROI*, const Npp8u ∗ *pMask*, int *nMaskStep*)

Masked 4 channel 32-bit floating point image set method, not affecting Alpha channel.

For RGBA images, this method allows setting of the RGB values without changing the contents of the alpha-channel (fourth channel).

Parameters:

aValues Three-channel array containing the pixel-value to be set.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

pMask Pointer to the mask image. This is a single channel 8-bit unsigned int image.

nMaskStep Number of bytes between line starts of successive lines in the mask image.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.6.2.152   NppStatus nppiSet_32f_AC4R (const Npp32f *aValues*[3], Npp32f ∗ *pDst*, int *nDstStep*,   NppiSize *oSizeROI*)

4 channel 32-bit floating point image set method, not affecting Alpha channel.

For RGBA images, this method allows setting of the RGB values without changing the contents of the alpha-channel (fourth channel).

Parameters:

aValues Three-channel array containing the pixel-value to be set.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.6.2.153 NppStatus nppiSet_32f_C1MR (Npp32f *nValue*, Npp32f ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, const Npp8u ∗ *pMask*, int *nMaskStep*)

Masked 32-bit floating point image set.

Parameters:

> ***nValue*** New pixel value.
>
> ***pDst*** Destination-Image Pointer.
>
> ***nDstStep*** Destination-Image Line Step.
>
> ***oSizeROI*** Region-of-Interest (ROI).
>
> ***pMask*** Pointer to the mask image. This is a single channel 8-bit unsigned int image.
>
> ***nMaskStep*** Number of bytes between line starts of successive lines in the mask image.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.6.2.154 NppStatus nppiSet_32f_C1R (Npp32f *nValue*, Npp32f ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

32-bit floating point image set.

Parameters:

> ***nValue*** New pixel value.
>
> ***pDst*** Destination-Image Pointer.
>
> ***nDstStep*** Destination-Image Line Step.
>
> ***oSizeROI*** Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.6.2.155 NppStatus nppiSet_32f_C4CR (Npp32f *nValue*, Npp32f ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

4 channel 32-bit floating point image set affecting only single channel.

For RGBA images, this method allows setting of a single of the four (RGBA) values without changing the contents of the other three channels. The channel is selected via the pDst pointer. The pointer needs to point to the actual first value to be set, e.g. in order to set the R-channel (first channel), one would pass pDst unmodified, since its value actually points to the r channel. If one wanted to modify the B channel (second channel), one would pass pDst + 2 to the function.

Parameters:

> ***nValue*** The pixel-value to be set.
>
> ***pDst*** Destination-Image Pointer.
>
> ***nDstStep*** Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.6.2.156 NppStatus nppiSet_32f_C4MR (const Npp32f *aValues*[4], Npp32f ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, const Npp8u ∗ *pMask*, int *nMaskStep*)

Masked 4 channel 32-bit floating point image set.

Parameters:

aValues New pixel value.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

pMask Pointer to the mask image. This is a single channel 8-bit unsigned int image.

nMaskStep Number of bytes between line starts of successive lines in the mask image.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.6.2.157 NppStatus nppiSet_32f_C4R (const Npp32f *aValues*[4], Npp32f ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

4 channel 32-bit floating point image set.

Parameters:

aValues New pixel value.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.6.2.158 NppStatus nppiSet_32fc_AC4R (Npp32fc *aValue*[3], Npp32fc ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

32-bit complex four-channel image set ignoring alpha.

Parameters:

aValue New pixel value.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.6.2.159 NppStatus nppiSet_32fc_C1R (Npp32fc *oValue*, Npp32fc ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Single channel 32-bit complex image set.

Parameters:

oValue The pixel-value to be set.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.6.2.160 NppStatus nppiSet_32fc_C2R (Npp32fc *aValue*[2], Npp32fc ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Two channel 32-bit complex image set.

Parameters:

aValue The pixel-value to be set.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.6.2.161 NppStatus nppiSet_32fc_C3R (Npp32fc *aValue*[3], Npp32fc ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Three channel 32-bit complex image set.

Parameters:

aValue The pixel-value to be set.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.6.2.162 NppStatus nppiSet_32fc_C4R (Npp32fc *aValue*[4], Npp32fc ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Four channel 32-bit complex image set.

Parameters:

aValue The pixel-value to be set.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.6.2.163 NppStatus nppiSet_32s_AC4MR (const Npp32s *aValues*[3], Npp32s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, const Npp8u ∗ *pMask*, int *nMaskStep*)

Masked 4 channel 16-bit image set method, not affecting Alpha channel.

For RGBA images, this method allows setting of the RGB values without changing the contents of the alpha-channel (fourth channel).

Parameters:

aValues Three-channel array containing the pixel-value to be set.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

pMask Pointer to the mask image. This is a single channel 8-bit unsigned int image.

nMaskStep Number of bytes between line starts of successive lines in the mask image.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.6.2.164 NppStatus nppiSet_32s_AC4R (const Npp32s *aValues*[3], Npp32s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

4 channel 16-bit image set method, not affecting Alpha channel.

For RGBA images, this method allows setting of the RGB values without changing the contents of the alpha-channel (fourth channel).

Parameters:

>*aValues* Three-channel array containing the pixel-value to be set.

>*pDst* Destination-Image Pointer.

>*nDstStep* Destination-Image Line Step.

>*oSizeROI* Region-of-Interest (ROI).

Returns:

>Image Data Related Error Codes, ROI Related Error Codes

7.6.2.165 NppStatus nppiSet_32s_C1MR (Npp32s *nValue*, Npp32s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, const Npp8u ∗ *pMask*, int *nMaskStep*)

Masked 32-bit image set.

Parameters:

>*nValue* New pixel value.

>*pDst* Destination-Image Pointer.

>*nDstStep* Destination-Image Line Step.

>*oSizeROI* Region-of-Interest (ROI).

>*pMask* Pointer to the mask image. This is a single channel 8-bit unsigned int image.

>*nMaskStep* Number of bytes between line starts of successive lines in the mask image.

Returns:

>Image Data Related Error Codes, ROI Related Error Codes

7.6.2.166 NppStatus nppiSet_32s_C1R (Npp32s *nValue*, Npp32s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

32-bit image set.

Parameters:

>*nValue* New pixel value.

>*pDst* Destination-Image Pointer.

>*nDstStep* Destination-Image Line Step.

>*oSizeROI* Region-of-Interest (ROI).

Returns:

>Image Data Related Error Codes, ROI Related Error Codes

7.6.2.167 NppStatus nppiSet_32s_C4CR (Npp32s *nValue*, Npp32s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

4 channel 32-bit unsigned image set affecting only single channel.

For RGBA images, this method allows setting of a single of the four (RGBA) values without changing the contents of the other three channels. The channel is selected via the pDst pointer. The pointer needs to point to the actual first value to be set, e.g. in order to set the R-channel (first channel), one would pass pDst unmodified, since its value actually points to the r channel. If one wanted to modify the B channel (second channel), one would pass pDst + 2 to the function.

Parameters:

> *nValue* The pixel-value to be set.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.6.2.168 NppStatus nppiSet_32s_C4MR (const Npp32s *aValues*[4], Npp32s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, const Npp8u ∗ *pMask*, int *nMaskStep*)

Masked 4 channel 32-bit image set.

Parameters:

> *aValues* New pixel value.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *pMask* Pointer to the mask image. This is a single channel 8-bit unsigned int image.
>
> *nMaskStep* Number of bytes between line starts of successive lines in the mask image.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.6.2.169 NppStatus nppiSet_32s_C4R (const Npp32s *aValues*[4], Npp32s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

4 channel 32-bit image set.

Parameters:

> *aValues* New pixel value.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.6.2.170 NppStatus nppiSet_32sc_AC4R (Npp32sc *aValue*[3], Npp32sc ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

32-bit complex integer four-channel image set ignoring alpha.

Parameters:

    aValue New pixel value.
    pDst Destination-Image Pointer.
    nDstStep Destination-Image Line Step.
    oSizeROI Region-of-Interest (ROI).

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.6.2.171 NppStatus nppiSet_32sc_C1R (Npp32sc *oValue*, Npp32sc ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Single channel 32-bit complex integer image set.

Parameters:

    oValue The pixel-value to be set.
    pDst Destination-Image Pointer.
    nDstStep Destination-Image Line Step.
    oSizeROI Region-of-Interest (ROI).

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.6.2.172 NppStatus nppiSet_32sc_C2R (Npp32sc *aValue*[2], Npp32sc ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Two channel 32-bit complex integer image set.

Parameters:

    aValue The pixel-value to be set.
    pDst Destination-Image Pointer.
    nDstStep Destination-Image Line Step.
    oSizeROI Region-of-Interest (ROI).

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.6.2.173 NppStatus nppiSet_32sc_C3R (Npp32sc *aValue*[3], Npp32sc ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Three channel 32-bit complex integer image set.

Parameters:

> *aValue* The pixel-value to be set.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.6.2.174 NppStatus nppiSet_32sc_C4R (Npp32sc *aValue*[4], Npp32sc ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Four channel 32-bit complex integer image set.

Parameters:

> *aValue* The pixel-value to be set.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.6.2.175 NppStatus nppiSet_8s_AC4R (Npp8s *aValue*[3], Npp8s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

8-bit four-channel image set ignoring alpha channel.

Parameters:

> *aValue* The pixel value to be set.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.6.2.176 NppStatus nppiSet_8s_C1R (Npp8s *nValue*, Npp8s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

8-bit image set.

Parameters:

    nValue The pixel value to be set.

    pDst Destination-Image Pointer.

    nDstStep Destination-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.6.2.177 NppStatus nppiSet_8s_C2R (Npp8s *aValue*[2], Npp8s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

8-bit two-channel image set.

Parameters:

    aValue The pixel value to be set.

    pDst Destination-Image Pointer.

    nDstStep Destination-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.6.2.178 NppStatus nppiSet_8s_C3R (Npp8s *aValue*[3], Npp8s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

8-bit three-channel image set.

Parameters:

    aValue The pixel value to be set.

    pDst Destination-Image Pointer.

    nDstStep Destination-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.6.2.179 NppStatus nppiSet_8s_C4R (Npp8s *aValue*[4], Npp8s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

8-bit four-channel image set.

Parameters:

> **aValue** The pixel value to be set.
> **pDst** Destination-Image Pointer.
> **nDstStep** Destination-Image Line Step.
> **oSizeROI** Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.6.2.180 NppStatus nppiSet_8u_AC4MR (const Npp8u *aValues*[3], Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, const Npp8u ∗ *pMask*, int *nMaskStep*)

Masked 4 channel 8-bit unsigned image set method, not affecting Alpha channel.

For RGBA images, this method allows setting of the RGB values without changing the contents of the alpha-channel (fourth channel).

Parameters:

> **aValues** Three-channel array containing the pixel-value to be set.
> **pDst** Destination-Image Pointer.
> **nDstStep** Destination-Image Line Step.
> **oSizeROI** Region-of-Interest (ROI).
> **pMask** Pointer to the mask image. This is a single channel 8-bit unsigned int image.
> **nMaskStep** Number of bytes between line starts of successive lines in the mask image.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.6.2.181 NppStatus nppiSet_8u_AC4R (const Npp8u *aValues*[3], Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

4 channel 8-bit unsigned image set method, not affecting Alpha channel.

For RGBA images, this method allows setting of the RGB values without changing the contents of the alpha-channel (fourth channel).

Parameters:

> **aValues** Three-channel array containing the pixel-value to be set.
> **pDst** Destination-Image Pointer.
> **nDstStep** Destination-Image Line Step.
> **oSizeROI** Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.6.2.182 NppStatus nppiSet_8u_C1MR (Npp8u *nValue*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, const Npp8u ∗ *pMask*, int *nMaskStep*)

Masked 8-bit unsigned image set.

The 8-bit mask image affects setting of the respective pixels in the destination image. If the mask value is zero (0) the pixel is not set, if the mask is non-zero, the corresponding destination pixel is set to specified value.

Parameters:

> *nValue* The pixel value to be set.
>
> *pDst* Pointer Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *pMask* Pointer to the mask image. This is a single channel 8-bit unsigned int image.
>
> *nMaskStep* Number of bytes between line starts of successive lines in the mask image.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.6.2.183 NppStatus nppiSet_8u_C1R (Npp8u *nValue*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

8-bit unsigned image set.

Parameters:

> *nValue* The pixel value to be set.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.6.2.184 NppStatus nppiSet_8u_C4CR (Npp8u *nValue*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

4 channel 8-bit unsigned image set affecting only single channel.

For RGBA images, this method allows setting of a single of the four (RGBA) values without changing the contents of the other three channels. The channel is selected via the pDst pointer. The pointer needs to point to the actual first value to be set, e.g. in order to set the R-channel (first channel), one would pass pDst unmodified, since its value actually points to the r channel. If one wanted to modify the B channel (second channel), one would pass pDst + 2 to the function.

Parameters:

> *nValue* The pixel-value to be set.

    pDst Destination-Image Pointer.

    nDstStep Destination-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.6.2.185 NppStatus nppiSet_8u_C4MR (const Npp8u *aValues*[4], Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, const Npp8u ∗ *pMask*, int *nMaskStep*)

Masked 4 channel 8-bit unsigned image set.

Parameters:

    aValues Four-channel array containing the pixel-value to be set.

    pDst Destination-Image Pointer.

    nDstStep Destination-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

    pMask Pointer to the mask image. This is a single channel 8-bit unsigned int image.

    nMaskStep Number of bytes between line starts of successive lines in the mask image.

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.6.2.186 NppStatus nppiSet_8u_C4R (const Npp8u *aValues*[4], Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

4 channel 8-bit unsigned image set.

Parameters:

    aValues Four-channel array containing the pixel-value to be set.

    pDst Destination-Image Pointer.

    nDstStep Destination-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.6.2.187 NppStatus nppiSwapChannels_8u_C4IR (Npp8u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, const int *aDstOrder*[4])

4 channel 8-bit unsigned swap channels, in-place.

Parameters:

    pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

aDstOrder Integer array describing how channel values are permutated. The n-th entry of the array contains the number of the channel that is stored in the n-th channel of the output image. E.g. Given an RGBA image, aDstOrder = [3,2,1,0] converts this to ABGR channel order.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.6.2.188 NppStatus nppiTranspose_8u_C1R (const Npp8u ∗ *pSrc*, int *nSrcStep*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oROI*)

8-bit image transpose.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pDst Pointer to the destination ROI.

nDstStep Destination-Image Line Step.

oROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7 Arithmetic and Logical Operations

AddC

Adds a constant value to each pixel of an image.

- NppStatus nppiAddC_8u_C1RSfs (const Npp8u *pSrc1, int nSrc1Step, const Npp8u nConstant, Npp8u *pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

    One 8-bit unsigned char channel image add constant, scale, then clamp to saturated value.

- NppStatus nppiAddC_8u_C1IRSfs (const Npp8u nConstant, Npp8u *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

    One 8-bit unsigned char channel in place image add constant, scale, then clamp to saturated value.

- NppStatus nppiAddC_8u_C3RSfs (const Npp8u *pSrc1, int nSrc1Step, const Npp8u *pConstants, Npp8u *pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

    Three 8-bit unsigned char channel image add constant, scale, then clamp to saturated value.

- NppStatus nppiAddC_8u_C3IRSfs (const Npp8u *pConstants, Npp8u *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

    Three 8-bit unsigned char channel 8-bit unsigned char in place image add constant, scale, then clamp to saturated value.

- NppStatus nppiAddC_8u_AC4RSfs (const Npp8u *pSrc1, int nSrc1Step, const Npp8u *pConstants, Npp8u *pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

    Four 8-bit unsigned char channel with unmodified alpha image add constant, scale, then clamp to saturated value.

- NppStatus nppiAddC_8u_AC4IRSfs (const Npp8u *pConstants, Npp8u *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

    Four 8-bit unsigned char channel with unmodified alpha in place image add constant, scale, then clamp to saturated value.

- NppStatus nppiAddC_8u_C4RSfs (const Npp8u *pSrc1, int nSrc1Step, const Npp8u *pConstants, Npp8u *pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

    Four 8-bit unsigned char channel image add constant, scale, then clamp to saturated value.

- NppStatus nppiAddC_8u_C4IRSfs (const Npp8u *pConstants, Npp8u *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

    Four 8-bit unsigned char channel in place image add constant, scale, then clamp to saturated value.

- NppStatus nppiAddC_16u_C1RSfs (const Npp16u *pSrc1, int nSrc1Step, const Npp16u nConstant, Npp16u *pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

    One 16-bit unsigned short channel image add constant, scale, then clamp to saturated value.

- NppStatus nppiAddC_16u_C1IRSfs (const Npp16u nConstant, Npp16u *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

    One 16-bit unsigned short channel in place image add constant, scale, then clamp to saturated value.

- NppStatus nppiAddC_16u_C3RSfs (const Npp16u *pSrc1, int nSrc1Step, const Npp16u *pConstants, Npp16u *pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

Three 16-bit unsigned short channel image add constant, scale, then clamp to saturated value.

- NppStatus nppiAddC_16u_C3IRSfs (const Npp16u ∗pConstants, Npp16u ∗pSrcDst, int nSrcDst-Step, NppiSize oSizeROI, int nScaleFactor)

  Three 16-bit unsigned short channel in place image add constant, scale, then clamp to saturated value.

- NppStatus nppiAddC_16u_AC4RSfs (const Npp16u ∗pSrc1, int nSrc1Step, const Npp16u ∗pConstants, Npp16u ∗pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  Four 16-bit unsigned short channel with unmodified alpha image add constant, scale, then clamp to saturated value.

- NppStatus nppiAddC_16u_AC4IRSfs (const Npp16u ∗pConstants, Npp16u ∗pSrcDst, int nSrcDst-Step, NppiSize oSizeROI, int nScaleFactor)

  Four 16-bit unsigned short channel with unmodified alpha in place image add constant, scale, then clamp to saturated value.

- NppStatus nppiAddC_16u_C4RSfs (const Npp16u ∗pSrc1, int nSrc1Step, const Npp16u ∗pConstants, Npp16u ∗pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  Four 16-bit unsigned short channel image add constant, scale, then clamp to saturated value.

- NppStatus nppiAddC_16u_C4IRSfs (const Npp16u ∗pConstants, Npp16u ∗pSrcDst, int nSrcDst-Step, NppiSize oSizeROI, int nScaleFactor)

  Four 16-bit unsigned short channel in place image add constant, scale, then clamp to saturated value.

- NppStatus nppiAddC_16s_C1RSfs (const Npp16s ∗pSrc1, int nSrc1Step, const Npp16s nConstant, Npp16s ∗pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  One 16-bit signed short channel image add constant, scale, then clamp to saturated value.

- NppStatus nppiAddC_16s_C1IRSfs (const Npp16s nConstant, Npp16s ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

  One 16-bit signed short channel in place image add constant, scale, then clamp to saturated value.

- NppStatus nppiAddC_16s_C3RSfs (const Npp16s ∗pSrc1, int nSrc1Step, const Npp16s ∗pConstants, Npp16s ∗pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  Three 16-bit signed short channel image add constant, scale, then clamp to saturated value.

- NppStatus nppiAddC_16s_C3IRSfs (const Npp16s ∗pConstants, Npp16s ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

  Three 16-bit signed short channel in place image add constant, scale, then clamp to saturated value.

- NppStatus nppiAddC_16s_AC4RSfs (const Npp16s ∗pSrc1, int nSrc1Step, const Npp16s ∗pConstants, Npp16s ∗pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  Four 16-bit signed short channel with unmodified alpha image add constant, scale, then clamp to saturated value.

- NppStatus nppiAddC_16s_AC4IRSfs (const Npp16s ∗pConstants, Npp16s ∗pSrcDst, int nSrcDst-Step, NppiSize oSizeROI, int nScaleFactor)

  Four 16-bit signed short channel with unmodified alpha in place image add constant, scale, then clamp to saturated value.

- NppStatus nppiAddC_16s_C4RSfs (const Npp16s ∗pSrc1, int nSrc1Step, const Npp16s ∗pConstants, Npp16s ∗pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

Four 16-bit signed short channel image add constant, scale, then clamp to saturated value.

- NppStatus nppiAddC_16s_C4IRSfs (const Npp16s ∗pConstants, Npp16s ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

  Four 16-bit signed short channel in place image add constant, scale, then clamp to saturated value.

- NppStatus nppiAddC_16sc_C1RSfs (const Npp16sc ∗pSrc1, int nSrc1Step, const Npp16sc nConstant, Npp16sc ∗pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  One 16-bit signed short complex number (16-bit real, 16-bit imaginary) channel image add constant, scale, then clamp to saturated value.

- NppStatus nppiAddC_16sc_C1IRSfs (const Npp16sc nConstant, Npp16sc ∗pSrcDst, int nSrcDst-Step, NppiSize oSizeROI, int nScaleFactor)

  One 16-bit signed short complex number (16-bit real, 16-bit imaginary) channel in place image add constant, scale, then clamp to saturated value.

- NppStatus nppiAddC_16sc_C3RSfs (const Npp16sc ∗pSrc1, int nSrc1Step, const Npp16sc ∗pConstants, Npp16sc ∗pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  Three 16-bit signed short complex number (16-bit real, 16-bit imaginary) channel image add constant, scale, then clamp to saturated value.

- NppStatus nppiAddC_16sc_C3IRSfs (const Npp16sc ∗pConstants, Npp16sc ∗pSrcDst, int nSrcDst-Step, NppiSize oSizeROI, int nScaleFactor)

  Three 16-bit signed short complex number (16-bit real, 16-bit imaginary) channel in place image add constant, scale, then clamp to saturated value.

- NppStatus nppiAddC_16sc_AC4RSfs (const Npp16sc ∗pSrc1, int nSrc1Step, const Npp16sc ∗pConstants, Npp16sc ∗pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  Four 16-bit signed short complex number (16-bit real, 16-bit imaginary) channel with unmodified alpha image add constant, scale, then clamp to saturated value.

- NppStatus nppiAddC_16sc_AC4IRSfs (const Npp16sc ∗pConstants, Npp16sc ∗pSrcDst, int nSrcD-stStep, NppiSize oSizeROI, int nScaleFactor)

  Four 16-bit signed short complex number (16-bit real, 16-bit imaginary) channel with unmodified alpha in place image add constant, scale, then clamp to saturated value.

- NppStatus nppiAddC_32s_C1RSfs (const Npp32s ∗pSrc1, int nSrc1Step, const Npp32s nConstant, Npp32s ∗pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  One 32-bit signed integer channel image add constant, scale, then clamp to saturated value.

- NppStatus nppiAddC_32s_C1IRSfs (const Npp32s nConstant, Npp32s ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

  One 32-bit signed integer channel in place image add constant, scale, then clamp to saturated value.

- NppStatus nppiAddC_32s_C3RSfs (const Npp32s ∗pSrc1, int nSrc1Step, const Npp32s ∗pConstants, Npp32s ∗pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  Three 32-bit signed integer channel image add constant, scale, then clamp to saturated value.

- NppStatus nppiAddC_32s_C3IRSfs (const Npp32s ∗pConstants, Npp32s ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

  Three 32-bit signed integer channel in place image add constant, scale, then clamp to saturated value.

- NppStatus nppiAddC_32sc_C1RSfs (const Npp32sc *pSrc1, int nSrc1Step, const Npp32sc nConstant, Npp32sc *pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  One 32-bit signed complex integer (32-bit real, 32-bit imaginary) channel image add constant, scale, then clamp to saturated value.

- NppStatus nppiAddC_32sc_C1IRSfs (const Npp32sc nConstant, Npp32sc *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

  One 32-bit signed complex integer (32-bit real, 32-bit imaginary) channel in place image add constant, scale, then clamp to saturated value.

- NppStatus nppiAddC_32sc_C3RSfs (const Npp32sc *pSrc1, int nSrc1Step, const Npp32sc *pConstants, Npp32sc *pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  Three 32-bit signed complex integer (32-bit real, 32-bit imaginary) channel image add constant, scale, then clamp to saturated value.

- NppStatus nppiAddC_32sc_C3IRSfs (const Npp32sc *pConstants, Npp32sc *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

  Three 32-bit signed complex integer (32-bit real, 32-bit imaginary) channel in place image add constant, scale, then clamp to saturated value.

- NppStatus nppiAddC_32sc_AC4RSfs (const Npp32sc *pSrc1, int nSrc1Step, const Npp32sc *pConstants, Npp32sc *pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  Four 32-bit signed complex integer (32-bit real, 32-bit imaginary) channel with unmodified alpha image add constant, scale, then clamp to saturated value.

- NppStatus nppiAddC_32sc_AC4IRSfs (const Npp32sc *pConstants, Npp32sc *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

  Four 32-bit signed complex integer (32-bit real, 32-bit imaginary) channel with unmodified alpha in place image add constant, scale, then clamp to saturated value.

- NppStatus nppiAddC_32f_C1R (const Npp32f *pSrc1, int nSrc1Step, const Npp32f nConstant, Npp32f *pDst, int nDstStep, NppiSize oSizeROI)

  One 32-bit floating point channel image add constant.

- NppStatus nppiAddC_32f_C1IR (const Npp32f nConstant, Npp32f *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

  One 32-bit floating point channel in place image add constant.

- NppStatus nppiAddC_32f_C3R (const Npp32f *pSrc1, int nSrc1Step, const Npp32f *pConstants, Npp32f *pDst, int nDstStep, NppiSize oSizeROI)

  Three 32-bit floating point channel image add constant.

- NppStatus nppiAddC_32f_C3IR (const Npp32f *pConstants, Npp32f *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

  Three 32-bit floating point channel in place image add constant.

- NppStatus nppiAddC_32f_AC4R (const Npp32f *pSrc1, int nSrc1Step, const Npp32f *pConstants, Npp32f *pDst, int nDstStep, NppiSize oSizeROI)

  Four 32-bit floating point channel with unmodified alpha image add constant.

- NppStatus nppiAddC_32f_AC4IR (const Npp32f *pConstants, Npp32f *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

Four 32-bit floating point channel with unmodified alpha in place image add constant.

- NppStatus nppiAddC_32f_C4R (const Npp32f ∗pSrc1, int nSrc1Step, const Npp32f ∗pConstants, Npp32f ∗pDst, int nDstStep, NppiSize oSizeROI)

  Four 32-bit floating point channel image add constant.

- NppStatus nppiAddC_32f_C4IR (const Npp32f ∗pConstants, Npp32f ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

  Four 32-bit floating point channel in place image add constant.

- NppStatus nppiAddC_32fc_C1R (const Npp32fc ∗pSrc1, int nSrc1Step, const Npp32fc nConstant, Npp32fc ∗pDst, int nDstStep, NppiSize oSizeROI)

  One 32-bit complex floating point (32-bit floating point real, 32-bit floating point imaginary) channel image add constant.

- NppStatus nppiAddC_32fc_C1IR (const Npp32fc nConstant, Npp32fc ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

  One 32-bit complex floating point (32-bit floating point real, 32-bit floating point imaginary) channel in place image add constant.

- NppStatus nppiAddC_32fc_C3R (const Npp32fc ∗pSrc1, int nSrc1Step, const Npp32fc ∗pConstants, Npp32fc ∗pDst, int nDstStep, NppiSize oSizeROI)

  Three 32-bit complex floating point (32-bit floating point real, 32-bit floating point imaginary) channel image add constant.

- NppStatus nppiAddC_32fc_C3IR (const Npp32fc ∗pConstants, Npp32fc ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

  Three 32-bit complex floating point (32-bit floating point real, 32-bit floating point imaginary) channel in place image add constant.

- NppStatus nppiAddC_32fc_AC4R (const Npp32fc ∗pSrc1, int nSrc1Step, const Npp32fc ∗pConstants, Npp32fc ∗pDst, int nDstStep, NppiSize oSizeROI)

  Four 32-bit complex floating point (32-bit floating point real, 32-bit floating point imaginary) channel with unmodified alpha image add constant.

- NppStatus nppiAddC_32fc_AC4IR (const Npp32fc ∗pConstants, Npp32fc ∗pSrcDst, int nSrcDst-Step, NppiSize oSizeROI)

  Four 32-bit complex floating point (32-bit floating point real, 32-bit floating point imaginary) channel with unmodified alpha in place image add constant.

- NppStatus nppiAddC_32fc_C4R (const Npp32fc ∗pSrc1, int nSrc1Step, const Npp32fc ∗pConstants, Npp32fc ∗pDst, int nDstStep, NppiSize oSizeROI)

  Four 32-bit complex floating point (32-bit floating point real, 32-bit floating point imaginary) channel image add constant.

- NppStatus nppiAddC_32fc_C4IR (const Npp32fc ∗pConstants, Npp32fc ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

  Four 32-bit complex floating point (32-bit floating point real, 32-bit floating point imaginary) channel in place image add constant.

MulC

Multiplies each pixel of an image by a constant value.

- NppStatus nppiMulC_8u_C1RSfs (const Npp8u *pSrc1, int nSrc1Step, const Npp8u nConstant, Npp8u *pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  One 8-bit unsigned char channel image multiply by constant, scale, then clamp to saturated value.

- NppStatus nppiMulC_8u_C1IRSfs (const Npp8u nConstant, Npp8u *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

  One 8-bit unsigned char channel in place image multiply by constant, scale, then clamp to saturated value.

- NppStatus nppiMulC_8u_C3RSfs (const Npp8u *pSrc1, int nSrc1Step, const Npp8u *pConstants, Npp8u *pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  Three 8-bit unsigned char channel image multiply by constant, scale, then clamp to saturated value.

- NppStatus nppiMulC_8u_C3IRSfs (const Npp8u *pConstants, Npp8u *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

  Three 8-bit unsigned char channel 8-bit unsigned char in place image multiply by constant, scale, then clamp to saturated value.

- NppStatus nppiMulC_8u_AC4RSfs (const Npp8u *pSrc1, int nSrc1Step, const Npp8u *pConstants, Npp8u *pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  Four 8-bit unsigned char channel with unmodified alpha image multiply by constant, scale, then clamp to saturated value.

- NppStatus nppiMulC_8u_AC4IRSfs (const Npp8u *pConstants, Npp8u *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

  Four 8-bit unsigned char channel with unmodified alpha in place image multiply by constant, scale, then clamp to saturated value.

- NppStatus nppiMulC_8u_C4RSfs (const Npp8u *pSrc1, int nSrc1Step, const Npp8u *pConstants, Npp8u *pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  Four 8-bit unsigned char channel image multiply by constant, scale, then clamp to saturated value.

- NppStatus nppiMulC_8u_C4IRSfs (const Npp8u *pConstants, Npp8u *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

  Four 8-bit unsigned char channel in place image multiply by constant, scale, then clamp to saturated value.

- NppStatus nppiMulC_16u_C1RSfs (const Npp16u *pSrc1, int nSrc1Step, const Npp16u nConstant, Npp16u *pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  One 16-bit unsigned short channel image multiply by constant, scale, then clamp to saturated value.

- NppStatus nppiMulC_16u_C1IRSfs (const Npp16u nConstant, Npp16u *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

  One 16-bit unsigned short channel in place image multiply by constant, scale, then clamp to saturated value.

- NppStatus nppiMulC_16u_C3RSfs (const Npp16u *pSrc1, int nSrc1Step, const Npp16u *pConstants, Npp16u *pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  Three 16-bit unsigned short channel image multiply by constant, scale, then clamp to saturated value.

- NppStatus nppiMulC_16u_C3IRSfs (const Npp16u ∗pConstants, Npp16u ∗pSrcDst, int nSrcDst-Step, NppiSize oSizeROI, int nScaleFactor)

  Three 16-bit unsigned short channel in place image multiply by constant, scale, then clamp to saturated value.

- NppStatus nppiMulC_16u_AC4RSfs (const Npp16u ∗pSrc1, int nSrc1Step, const Npp16u ∗pConstants, Npp16u ∗pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  Four 16-bit unsigned short channel with unmodified alpha image multiply by constant, scale, then clamp to saturated value.

- NppStatus nppiMulC_16u_AC4IRSfs (const Npp16u ∗pConstants, Npp16u ∗pSrcDst, int nSrcDst-Step, NppiSize oSizeROI, int nScaleFactor)

  Four 16-bit unsigned short channel with unmodified alpha in place image multiply by constant, scale, then clamp to saturated value.

- NppStatus nppiMulC_16u_C4RSfs (const Npp16u ∗pSrc1, int nSrc1Step, const Npp16u ∗pConstants, Npp16u ∗pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  Four 16-bit unsigned short channel image multiply by constant, scale, then clamp to saturated value.

- NppStatus nppiMulC_16u_C4IRSfs (const Npp16u ∗pConstants, Npp16u ∗pSrcDst, int nSrcDst-Step, NppiSize oSizeROI, int nScaleFactor)

  Four 16-bit unsigned short channel in place image multiply by constant, scale, then clamp to saturated value.

- NppStatus nppiMulC_16s_C1RSfs (const Npp16s ∗pSrc1, int nSrc1Step, const Npp16s nConstant, Npp16s ∗pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  One 16-bit signed short channel image multiply by constant, scale, then clamp to saturated value.

- NppStatus nppiMulC_16s_C1IRSfs (const Npp16s nConstant, Npp16s ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

  One 16-bit signed short channel in place image multiply by constant, scale, then clamp to saturated value.

- NppStatus nppiMulC_16s_C3RSfs (const Npp16s ∗pSrc1, int nSrc1Step, const Npp16s ∗pConstants, Npp16s ∗pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  Three 16-bit signed short channel image multiply by constant, scale, then clamp to saturated value.

- NppStatus nppiMulC_16s_C3IRSfs (const Npp16s ∗pConstants, Npp16s ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

  Three 16-bit signed short channel in place image multiply by constant, scale, then clamp to saturated value.

- NppStatus nppiMulC_16s_AC4RSfs (const Npp16s ∗pSrc1, int nSrc1Step, const Npp16s ∗pConstants, Npp16s ∗pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  Four 16-bit signed short channel with unmodified alpha image multiply by constant, scale, then clamp to saturated value.

- NppStatus nppiMulC_16s_AC4IRSfs (const Npp16s ∗pConstants, Npp16s ∗pSrcDst, int nSrcDst-Step, NppiSize oSizeROI, int nScaleFactor)

  Four 16-bit signed short channel with unmodified alpha in place image multiply by constant, scale, then clamp to saturated value.

- NppStatus nppiMulC_16s_C4RSfs (const Npp16s ∗pSrc1, int nSrc1Step, const Npp16s ∗pConstants, Npp16s ∗pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

Four 16-bit signed short channel image multiply by constant, scale, then clamp to saturated value.

- NppStatus nppiMulC_16s_C4IRSfs (const Npp16s ∗pConstants, Npp16s ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

  Four 16-bit signed short channel in place image multiply by constant, scale, then clamp to saturated value.

- NppStatus nppiMulC_16sc_C1RSfs (const Npp16sc ∗pSrc1, int nSrc1Step, const Npp16sc nConstant, Npp16sc ∗pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  One 16-bit signed short complex number (16-bit real, 16-bit imaginary) channel image multiply by constant, scale, then clamp to saturated value.

- NppStatus nppiMulC_16sc_C1IRSfs (const Npp16sc nConstant, Npp16sc ∗pSrcDst, int nSrcDst-Step, NppiSize oSizeROI, int nScaleFactor)

  One 16-bit signed short complex number (16-bit real, 16-bit imaginary) channel in place image multiply by constant, scale, then clamp to saturated value.

- NppStatus nppiMulC_16sc_C3RSfs (const Npp16sc ∗pSrc1, int nSrc1Step, const Npp16sc ∗pConstants, Npp16sc ∗pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  Three 16-bit signed short complex number (16-bit real, 16-bit imaginary) channel image multiply by constant, scale, then clamp to saturated value.

- NppStatus nppiMulC_16sc_C3IRSfs (const Npp16sc ∗pConstants, Npp16sc ∗pSrcDst, int nSrcDst-Step, NppiSize oSizeROI, int nScaleFactor)

  Three 16-bit signed short complex number (16-bit real, 16-bit imaginary) channel in place image multiply by constant, scale, then clamp to saturated value.

- NppStatus nppiMulC_16sc_AC4RSfs (const Npp16sc ∗pSrc1, int nSrc1Step, const Npp16sc ∗pConstants, Npp16sc ∗pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  Four 16-bit signed short complex number (16-bit real, 16-bit imaginary) channel with unmodified alpha image multiply by constant, scale, then clamp to saturated value.

- NppStatus nppiMulC_16sc_AC4IRSfs (const Npp16sc ∗pConstants, Npp16sc ∗pSrcDst, int nSrcD-stStep, NppiSize oSizeROI, int nScaleFactor)

  Four 16-bit signed short complex number (16-bit real, 16-bit imaginary) channel with unmodified alpha in place image multiply by constant, scale, then clamp to saturated value.

- NppStatus nppiMulC_32s_C1RSfs (const Npp32s ∗pSrc1, int nSrc1Step, const Npp32s nConstant, Npp32s ∗pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  One 32-bit signed integer channel image multiply by constant, scale, then clamp to saturated value.

- NppStatus nppiMulC_32s_C1IRSfs (const Npp32s nConstant, Npp32s ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

  One 32-bit signed integer channel in place image multiply by constant, scale, then clamp to saturated value.

- NppStatus nppiMulC_32s_C3RSfs (const Npp32s ∗pSrc1, int nSrc1Step, const Npp32s ∗pConstants, Npp32s ∗pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  Three 32-bit signed integer channel image multiply by constant, scale, then clamp to saturated value.

- NppStatus nppiMulC_32s_C3IRSfs (const Npp32s ∗pConstants, Npp32s ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

  Three 32-bit signed integer channel in place image multiply by constant, scale, then clamp to saturated value.

- NppStatus nppiMulC_32sc_C1RSfs (const Npp32sc *pSrc1, int nSrc1Step, const Npp32sc nConstant, Npp32sc *pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

    One 32-bit signed complex integer (32-bit real, 32-bit imaginary) channel image multiply by constant, scale, then clamp to saturated value.

- NppStatus nppiMulC_32sc_C1IRSfs (const Npp32sc nConstant, Npp32sc *pSrcDst, int nSrcDst-Step, NppiSize oSizeROI, int nScaleFactor)

    One 32-bit signed complex integer (32-bit real, 32-bit imaginary) channel in place image multiply by constant, scale, then clamp to saturated value.

- NppStatus nppiMulC_32sc_C3RSfs (const Npp32sc *pSrc1, int nSrc1Step, const Npp32sc *pConstants, Npp32sc *pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

    Three 32-bit signed complex integer (32-bit real, 32-bit imaginary) channel image multiply by constant, scale, then clamp to saturated value.

- NppStatus nppiMulC_32sc_C3IRSfs (const Npp32sc *pConstants, Npp32sc *pSrcDst, int nSrcDst-Step, NppiSize oSizeROI, int nScaleFactor)

    Three 32-bit signed complex integer (32-bit real, 32-bit imaginary) channel in place image multiply by constant, scale, then clamp to saturated value.

- NppStatus nppiMulC_32sc_AC4RSfs (const Npp32sc *pSrc1, int nSrc1Step, const Npp32sc *pConstants, Npp32sc *pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

    Four 32-bit signed complex integer (32-bit real, 32-bit imaginary) channel with unmodified alpha image multiply by constant, scale, then clamp to saturated value.

- NppStatus nppiMulC_32sc_AC4IRSfs (const Npp32sc *pConstants, Npp32sc *pSrcDst, int nSrcD-stStep, NppiSize oSizeROI, int nScaleFactor)

    Four 32-bit signed complex integer (32-bit real, 32-bit imaginary) channel with unmodified alpha in place image multiply by constant, scale, then clamp to saturated value.

- NppStatus nppiMulC_32f_C1R (const Npp32f *pSrc1, int nSrc1Step, const Npp32f nConstant, Npp32f *pDst, int nDstStep, NppiSize oSizeROI)

    One 32-bit floating point channel image multiply by constant.

- NppStatus nppiMulC_32f_C1IR (const Npp32f nConstant, Npp32f *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

    One 32-bit floating point channel in place image multiply by constant.

- NppStatus nppiMulC_32f_C3R (const Npp32f *pSrc1, int nSrc1Step, const Npp32f *pConstants, Npp32f *pDst, int nDstStep, NppiSize oSizeROI)

    Three 32-bit floating point channel image multiply by constant.

- NppStatus nppiMulC_32f_C3IR (const Npp32f *pConstants, Npp32f *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

    Three 32-bit floating point channel in place image multiply by constant.

- NppStatus nppiMulC_32f_AC4R (const Npp32f *pSrc1, int nSrc1Step, const Npp32f *pConstants, Npp32f *pDst, int nDstStep, NppiSize oSizeROI)

    Four 32-bit floating point channel with unmodified alpha image multiply by constant.

- NppStatus nppiMulC_32f_AC4IR (const Npp32f *pConstants, Npp32f *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

    Four 32-bit floating point channel with unmodified alpha in place image multiply by constant.

- NppStatus nppiMulC_32f_C4R (const Npp32f *pSrc1, int nSrc1Step, const Npp32f *pConstants, Npp32f *pDst, int nDstStep, NppiSize oSizeROI)

    Four 32-bit floating point channel image multiply by constant.

- NppStatus nppiMulC_32f_C4IR (const Npp32f *pConstants, Npp32f *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

    Four 32-bit floating point channel in place image multiply by constant.

- NppStatus nppiMulC_32fc_C1R (const Npp32fc *pSrc1, int nSrc1Step, const Npp32fc nConstant, Npp32fc *pDst, int nDstStep, NppiSize oSizeROI)

    One 32-bit complex floating point (32-bit floating point real, 32-bit floating point imaginary) channel image multiply by constant.

- NppStatus nppiMulC_32fc_C1IR (const Npp32fc nConstant, Npp32fc *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

    One 32-bit complex floating point (32-bit floating point real, 32-bit floating point imaginary) channel in place image multiply by constant.

- NppStatus nppiMulC_32fc_C3R (const Npp32fc *pSrc1, int nSrc1Step, const Npp32fc *pConstants, Npp32fc *pDst, int nDstStep, NppiSize oSizeROI)

    Three 32-bit complex floating point (32-bit floating point real, 32-bit floating point imaginary) channel image multiply by constant.

- NppStatus nppiMulC_32fc_C3IR (const Npp32fc *pConstants, Npp32fc *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

    Three 32-bit complex floating point (32-bit floating point real, 32-bit floating point imaginary) channel in place image multiply by constant.

- NppStatus nppiMulC_32fc_AC4R (const Npp32fc *pSrc1, int nSrc1Step, const Npp32fc *pConstants, Npp32fc *pDst, int nDstStep, NppiSize oSizeROI)

    Four 32-bit complex floating point (32-bit floating point real, 32-bit floating point imaginary) channel with unmodified alpha image multiply by constant.

- NppStatus nppiMulC_32fc_AC4IR (const Npp32fc *pConstants, Npp32fc *pSrcDst, int nSrcDst-Step, NppiSize oSizeROI)

    Four 32-bit complex floating point (32-bit floating point real, 32-bit floating point imaginary) channel with unmodified alpha in place image multiply by constant.

- NppStatus nppiMulC_32fc_C4R (const Npp32fc *pSrc1, int nSrc1Step, const Npp32fc *pConstants, Npp32fc *pDst, int nDstStep, NppiSize oSizeROI)

    Four 32-bit complex floating point (32-bit floating point real, 32-bit floating point imaginary) channel image multiply by constant.

- NppStatus nppiMulC_32fc_C4IR (const Npp32fc *pConstants, Npp32fc *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

    Four 32-bit complex floating point (32-bit floating point real, 32-bit floating point imaginary) channel in place image multiply by constant.

MulCScale

Multiplies each pixel of an image by a constant value then scales the result by the maximum value for the data bit width.

- NppStatus nppiMulCScale_8u_C1R (const Npp8u *pSrc1, int nSrc1Step, const Npp8u nConstant, Npp8u *pDst, int nDstStep, NppiSize oSizeROI)

  One 8-bit unsigned char channel image multiply by constant and scale by max bit width value.

- NppStatus nppiMulCScale_8u_C1IR (const Npp8u nConstant, Npp8u *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

  One 8-bit unsigned char channel in place image multiply by constant and scale by max bit width value.

- NppStatus nppiMulCScale_8u_C3R (const Npp8u *pSrc1, int nSrc1Step, const Npp8u *pConstants, Npp8u *pDst, int nDstStep, NppiSize oSizeROI)

  Three 8-bit unsigned char channel image multiply by constant and scale by max bit width value.

- NppStatus nppiMulCScale_8u_C3IR (const Npp8u *pConstants, Npp8u *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

  Three 8-bit unsigned char channel 8-bit unsigned char in place image multiply by constant and scale by max bit width value.

- NppStatus nppiMulCScale_8u_AC4R (const Npp8u *pSrc1, int nSrc1Step, const Npp8u *pConstants, Npp8u *pDst, int nDstStep, NppiSize oSizeROI)

  Four 8-bit unsigned char channel with unmodified alpha image multiply by constant and scale by max bit width value.

- NppStatus nppiMulCScale_8u_AC4IR (const Npp8u *pConstants, Npp8u *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

  Four 8-bit unsigned char channel with unmodified alpha in place image multiply by constant, scale and scale by max bit width value.

- NppStatus nppiMulCScale_8u_C4R (const Npp8u *pSrc1, int nSrc1Step, const Npp8u *pConstants, Npp8u *pDst, int nDstStep, NppiSize oSizeROI)

  Four 8-bit unsigned char channel image multiply by constant and scale by max bit width value.

- NppStatus nppiMulCScale_8u_C4IR (const Npp8u *pConstants, Npp8u *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

  Four 8-bit unsigned char channel in place image multiply by constant and scale by max bit width value.

- NppStatus nppiMulCScale_16u_C1R (const Npp16u *pSrc1, int nSrc1Step, const Npp16u nConstant, Npp16u *pDst, int nDstStep, NppiSize oSizeROI)

  One 16-bit unsigned short channel image multiply by constant and scale by max bit width value.

- NppStatus nppiMulCScale_16u_C1IR (const Npp16u nConstant, Npp16u *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

  One 16-bit unsigned short channel in place image multiply by constant and scale by max bit width value.

- NppStatus nppiMulCScale_16u_C3R (const Npp16u *pSrc1, int nSrc1Step, const Npp16u *pConstants, Npp16u *pDst, int nDstStep, NppiSize oSizeROI)

  Three 16-bit unsigned short channel image multiply by constant and scale by max bit width value.

- NppStatus nppiMulCScale_16u_C3IR (const Npp16u ∗pConstants, Npp16u ∗pSrcDst, int nSrcDst-Step, NppiSize oSizeROI)

  Three 16-bit unsigned short channel in place image multiply by constant and scale by max bit width value.

- NppStatus nppiMulCScale_16u_AC4R (const Npp16u ∗pSrc1, int nSrc1Step, const Npp16u ∗pConstants, Npp16u ∗pDst, int nDstStep, NppiSize oSizeROI)

  Four 16-bit unsigned short channel with unmodified alpha image multiply by constant and scale by max bit width value.

- NppStatus nppiMulCScale_16u_AC4IR (const Npp16u ∗pConstants, Npp16u ∗pSrcDst, int nSrcD-stStep, NppiSize oSizeROI)

  Four 16-bit unsigned short channel with unmodified alpha in place image multiply by constant and scale by max bit width value.

- NppStatus nppiMulCScale_16u_C4R (const Npp16u ∗pSrc1, int nSrc1Step, const Npp16u ∗pConstants, Npp16u ∗pDst, int nDstStep, NppiSize oSizeROI)

  Four 16-bit unsigned short channel image multiply by constant and scale by max bit width value.

- NppStatus nppiMulCScale_16u_C4IR (const Npp16u ∗pConstants, Npp16u ∗pSrcDst, int nSrcDst-Step, NppiSize oSizeROI)

  Four 16-bit unsigned short channel in place image multiply by constant and scale by max bit width value.

SubC

Subtracts a constant value from each pixel of an image.

- NppStatus nppiSubC_8u_C1RSfs (const Npp8u ∗pSrc1, int nSrc1Step, const Npp8u nConstant, Npp8u ∗pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  One 8-bit unsigned char channel image subtract constant, scale, then clamp to saturated value.

- NppStatus nppiSubC_8u_C1IRSfs (const Npp8u nConstant, Npp8u ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

  One 8-bit unsigned char channel in place image subtract constant, scale, then clamp to saturated value.

- NppStatus nppiSubC_8u_C3RSfs (const Npp8u ∗pSrc1, int nSrc1Step, const Npp8u ∗pConstants, Npp8u ∗pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  Three 8-bit unsigned char channel image subtract constant, scale, then clamp to saturated value.

- NppStatus nppiSubC_8u_C3IRSfs (const Npp8u ∗pConstants, Npp8u ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

  Three 8-bit unsigned char channel 8-bit unsigned char in place image subtract constant, scale, then clamp to saturated value.

- NppStatus nppiSubC_8u_AC4RSfs (const Npp8u ∗pSrc1, int nSrc1Step, const Npp8u ∗pConstants, Npp8u ∗pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  Four 8-bit unsigned char channel with unmodified alpha image subtract constant, scale, then clamp to saturated value.

- NppStatus nppiSubC_8u_AC4IRSfs (const Npp8u *pConstants, Npp8u *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

  Four 8-bit unsigned char channel with unmodified alpha in place image subtract constant, scale, then clamp to saturated value.

- NppStatus nppiSubC_8u_C4RSfs (const Npp8u *pSrc1, int nSrc1Step, const Npp8u *pConstants, Npp8u *pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  Four 8-bit unsigned char channel image subtract constant, scale, then clamp to saturated value.

- NppStatus nppiSubC_8u_C4IRSfs (const Npp8u *pConstants, Npp8u *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

  Four 8-bit unsigned char channel in place image subtract constant, scale, then clamp to saturated value.

- NppStatus nppiSubC_16u_C1RSfs (const Npp16u *pSrc1, int nSrc1Step, const Npp16u nConstant, Npp16u *pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  One 16-bit unsigned short channel image subtract constant, scale, then clamp to saturated value.

- NppStatus nppiSubC_16u_C1IRSfs (const Npp16u nConstant, Npp16u *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

  One 16-bit unsigned short channel in place image subtract constant, scale, then clamp to saturated value.

- NppStatus nppiSubC_16u_C3RSfs (const Npp16u *pSrc1, int nSrc1Step, const Npp16u *pConstants, Npp16u *pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  Three 16-bit unsigned short channel image subtract constant, scale, then clamp to saturated value.

- NppStatus nppiSubC_16u_C3IRSfs (const Npp16u *pConstants, Npp16u *pSrcDst, int nSrcDst-Step, NppiSize oSizeROI, int nScaleFactor)

  Three 16-bit unsigned short channel in place image subtract constant, scale, then clamp to saturated value.

- NppStatus nppiSubC_16u_AC4RSfs (const Npp16u *pSrc1, int nSrc1Step, const Npp16u *pConstants, Npp16u *pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  Four 16-bit unsigned short channel with unmodified alpha image subtract constant, scale, then clamp to saturated value.

- NppStatus nppiSubC_16u_AC4IRSfs (const Npp16u *pConstants, Npp16u *pSrcDst, int nSrcDst-Step, NppiSize oSizeROI, int nScaleFactor)

  Four 16-bit unsigned short channel with unmodified alpha in place image subtract constant, scale, then clamp to saturated value.

- NppStatus nppiSubC_16u_C4RSfs (const Npp16u *pSrc1, int nSrc1Step, const Npp16u *pConstants, Npp16u *pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  Four 16-bit unsigned short channel image subtract constant, scale, then clamp to saturated value.

- NppStatus nppiSubC_16u_C4IRSfs (const Npp16u *pConstants, Npp16u *pSrcDst, int nSrcDst-Step, NppiSize oSizeROI, int nScaleFactor)

  Four 16-bit unsigned short channel in place image subtract constant, scale, then clamp to saturated value.

- NppStatus nppiSubC_16s_C1RSfs (const Npp16s *pSrc1, int nSrc1Step, const Npp16s nConstant, Npp16s *pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  One 16-bit signed short channel image subtract constant, scale, then clamp to saturated value.

- NppStatus nppiSubC_16s_C1IRSfs (const Npp16s nConstant, Npp16s ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

    One 16-bit signed short channel in place image subtract constant, scale, then clamp to saturated value.

- NppStatus nppiSubC_16s_C3RSfs (const Npp16s ∗pSrc1, int nSrc1Step, const Npp16s ∗pConstants, Npp16s ∗pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

    Three 16-bit signed short channel image subtract constant, scale, then clamp to saturated value.

- NppStatus nppiSubC_16s_C3IRSfs (const Npp16s ∗pConstants, Npp16s ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

    Three 16-bit signed short channel in place image subtract constant, scale, then clamp to saturated value.

- NppStatus nppiSubC_16s_AC4RSfs (const Npp16s ∗pSrc1, int nSrc1Step, const Npp16s ∗pConstants, Npp16s ∗pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

    Four 16-bit signed short channel with unmodified alpha image subtract constant, scale, then clamp to saturated value.

- NppStatus nppiSubC_16s_AC4IRSfs (const Npp16s ∗pConstants, Npp16s ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

    Four 16-bit signed short channel with unmodified alpha in place image subtract constant, scale, then clamp to saturated value.

- NppStatus nppiSubC_16s_C4RSfs (const Npp16s ∗pSrc1, int nSrc1Step, const Npp16s ∗pConstants, Npp16s ∗pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

    Four 16-bit signed short channel image subtract constant, scale, then clamp to saturated value.

- NppStatus nppiSubC_16s_C4IRSfs (const Npp16s ∗pConstants, Npp16s ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

    Four 16-bit signed short channel in place image subtract constant, scale, then clamp to saturated value.

- NppStatus nppiSubC_16sc_C1RSfs (const Npp16sc ∗pSrc1, int nSrc1Step, const Npp16sc nConstant, Npp16sc ∗pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

    One 16-bit signed short complex number (16-bit real, 16-bit imaginary) channel image subtract constant, scale, then clamp to saturated value.

- NppStatus nppiSubC_16sc_C1IRSfs (const Npp16sc nConstant, Npp16sc ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

    One 16-bit signed short complex number (16-bit real, 16-bit imaginary) channel in place image subtract constant, scale, then clamp to saturated value.

- NppStatus nppiSubC_16sc_C3RSfs (const Npp16sc ∗pSrc1, int nSrc1Step, const Npp16sc ∗pConstants, Npp16sc ∗pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

    Three 16-bit signed short complex number (16-bit real, 16-bit imaginary) channel image subtract constant, scale, then clamp to saturated value.

- NppStatus nppiSubC_16sc_C3IRSfs (const Npp16sc ∗pConstants, Npp16sc ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

    Three 16-bit signed short complex number (16-bit real, 16-bit imaginary) channel in place image subtract constant, scale, then clamp to saturated value.

- NppStatus nppiSubC_16sc_AC4RSfs (const Npp16sc ∗pSrc1, int nSrc1Step, const Npp16sc ∗pConstants, Npp16sc ∗pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

Four 16-bit signed short complex number (16-bit real, 16-bit imaginary) channel with unmodified alpha image subtract constant, scale, then clamp to saturated value.

- NppStatus nppiSubC_16sc_AC4IRSfs (const Npp16sc ∗pConstants, Npp16sc ∗pSrcDst, int nSrcD-stStep, NppiSize oSizeROI, int nScaleFactor)

  Four 16-bit signed short complex number (16-bit real, 16-bit imaginary) channel with unmodified alpha in place image subtract constant, scale, then clamp to saturated value.

- NppStatus nppiSubC_32s_C1RSfs (const Npp32s ∗pSrc1, int nSrc1Step, const Npp32s nConstant, Npp32s ∗pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  One 32-bit signed integer channel image subtract constant, scale, then clamp to saturated value.

- NppStatus nppiSubC_32s_C1IRSfs (const Npp32s nConstant, Npp32s ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

  One 32-bit signed integer channel in place image subtract constant, scale, then clamp to saturated value.

- NppStatus nppiSubC_32s_C3RSfs (const Npp32s ∗pSrc1, int nSrc1Step, const Npp32s ∗pConstants, Npp32s ∗pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  Three 32-bit signed integer channel image subtract constant, scale, then clamp to saturated value.

- NppStatus nppiSubC_32s_C3IRSfs (const Npp32s ∗pConstants, Npp32s ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

  Three 32-bit signed integer channel in place image subtract constant, scale, then clamp to saturated value.

- NppStatus nppiSubC_32sc_C1RSfs (const Npp32sc ∗pSrc1, int nSrc1Step, const Npp32sc nConstant, Npp32sc ∗pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  One 32-bit signed complex integer (32-bit real, 32-bit imaginary) channel image subtract constant, scale, then clamp to saturated value.

- NppStatus nppiSubC_32sc_C1IRSfs (const Npp32sc nConstant, Npp32sc ∗pSrcDst, int nSrcDst-Step, NppiSize oSizeROI, int nScaleFactor)

  One 32-bit signed complex integer (32-bit real, 32-bit imaginary) channel in place image subtract constant, scale, then clamp to saturated value.

- NppStatus nppiSubC_32sc_C3RSfs (const Npp32sc ∗pSrc1, int nSrc1Step, const Npp32sc ∗pConstants, Npp32sc ∗pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  Three 32-bit signed complex integer (32-bit real, 32-bit imaginary) channel image subtract constant, scale, then clamp to saturated value.

- NppStatus nppiSubC_32sc_C3IRSfs (const Npp32sc ∗pConstants, Npp32sc ∗pSrcDst, int nSrcDst-Step, NppiSize oSizeROI, int nScaleFactor)

  Three 32-bit signed complex integer (32-bit real, 32-bit imaginary) channel in place image subtract constant, scale, then clamp to saturated value.

- NppStatus nppiSubC_32sc_AC4RSfs (const Npp32sc ∗pSrc1, int nSrc1Step, const Npp32sc ∗pConstants, Npp32sc ∗pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  Four 32-bit signed complex integer (32-bit real, 32-bit imaginary) channel with unmodified alpha image subtract constant, scale, then clamp to saturated value.

- NppStatus nppiSubC_32sc_AC4IRSfs (const Npp32sc ∗pConstants, Npp32sc ∗pSrcDst, int nSrcD-stStep, NppiSize oSizeROI, int nScaleFactor)

Four 32-bit signed complex integer (32-bit real, 32-bit imaginary) channel with unmodified alpha in place image subtract constant, scale, then clamp to saturated value.

- NppStatus nppiSubC_32f_C1R (const Npp32f *pSrc1, int nSrc1Step, const Npp32f nConstant, Npp32f *pDst, int nDstStep, NppiSize oSizeROI)

   One 32-bit floating point channel image subtract constant.

- NppStatus nppiSubC_32f_C1IR (const Npp32f nConstant, Npp32f *pSrcDst, int nSrcDstStep, Nppi-Size oSizeROI)

   One 32-bit floating point channel in place image subtract constant.

- NppStatus nppiSubC_32f_C3R (const Npp32f *pSrc1, int nSrc1Step, const Npp32f *pConstants, Npp32f *pDst, int nDstStep, NppiSize oSizeROI)

   Three 32-bit floating point channel image subtract constant.

- NppStatus nppiSubC_32f_C3IR (const Npp32f *pConstants, Npp32f *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

   Three 32-bit floating point channel in place image subtract constant.

- NppStatus nppiSubC_32f_AC4R (const Npp32f *pSrc1, int nSrc1Step, const Npp32f *pConstants, Npp32f *pDst, int nDstStep, NppiSize oSizeROI)

   Four 32-bit floating point channel with unmodified alpha image subtract constant.

- NppStatus nppiSubC_32f_AC4IR (const Npp32f *pConstants, Npp32f *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

   Four 32-bit floating point channel with unmodified alpha in place image subtract constant.

- NppStatus nppiSubC_32f_C4R (const Npp32f *pSrc1, int nSrc1Step, const Npp32f *pConstants, Npp32f *pDst, int nDstStep, NppiSize oSizeROI)

   Four 32-bit floating point channel image subtract constant.

- NppStatus nppiSubC_32f_C4IR (const Npp32f *pConstants, Npp32f *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

   Four 32-bit floating point channel in place image subtract constant.

- NppStatus nppiSubC_32fc_C1R (const Npp32fc *pSrc1, int nSrc1Step, const Npp32fc nConstant, Npp32fc *pDst, int nDstStep, NppiSize oSizeROI)

   One 32-bit complex floating point (32-bit floating point real, 32-bit floating point imaginary) channel image subtract constant.

- NppStatus nppiSubC_32fc_C1IR (const Npp32fc nConstant, Npp32fc *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

   One 32-bit complex floating point (32-bit floating point real, 32-bit floating point imaginary) channel in place image subtract constant.

- NppStatus nppiSubC_32fc_C3R (const Npp32fc *pSrc1, int nSrc1Step, const Npp32fc *pConstants, Npp32fc *pDst, int nDstStep, NppiSize oSizeROI)

   Three 32-bit complex floating point (32-bit floating point real, 32-bit floating point imaginary) channel image subtract constant.

- NppStatus nppiSubC_32fc_C3IR (const Npp32fc *pConstants, Npp32fc *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

Three 32-bit complex floating point (32-bit floating point real, 32-bit floating point imaginary) channel in place image subtract constant.

- NppStatus nppiSubC_32fc_AC4R (const Npp32fc *pSrc1, int nSrc1Step, const Npp32fc *pConstants, Npp32fc *pDst, int nDstStep, NppiSize oSizeROI)

    Four 32-bit complex floating point (32-bit floating point real, 32-bit floating point imaginary) channel with unmodified alpha image subtract constant.

- NppStatus nppiSubC_32fc_AC4IR (const Npp32fc *pConstants, Npp32fc *pSrcDst, int nSrcDst-Step, NppiSize oSizeROI)

    Four 32-bit complex floating point (32-bit floating point real, 32-bit floating point imaginary) channel with unmodified alpha in place image subtract constant.

- NppStatus nppiSubC_32fc_C4R (const Npp32fc *pSrc1, int nSrc1Step, const Npp32fc *pConstants, Npp32fc *pDst, int nDstStep, NppiSize oSizeROI)

    Four 32-bit complex floating point (32-bit floating point real, 32-bit floating point imaginary) channel image subtract constant.

- NppStatus nppiSubC_32fc_C4IR (const Npp32fc *pConstants, Npp32fc *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

    Four 32-bit complex floating point (32-bit floating point real, 32-bit floating point imaginary) channel in place image subtract constant.

DivC

Divides each pixel of an image by a constant value.

- NppStatus nppiDivC_8u_C1RSfs (const Npp8u *pSrc1, int nSrc1Step, const Npp8u nConstant, Npp8u *pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

    One 8-bit unsigned char channel image divided by constant, scale, then clamp to saturated value.

- NppStatus nppiDivC_8u_C1IRSfs (const Npp8u nConstant, Npp8u *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

    One 8-bit unsigned char channel in place image divided by constant, scale, then clamp to saturated value.

- NppStatus nppiDivC_8u_C3RSfs (const Npp8u *pSrc1, int nSrc1Step, const Npp8u *pConstants, Npp8u *pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

    Three 8-bit unsigned char channel image divided by constant, scale, then clamp to saturated value.

- NppStatus nppiDivC_8u_C3IRSfs (const Npp8u *pConstants, Npp8u *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

    Three 8-bit unsigned char channel 8-bit unsigned char in place image divided by constant, scale, then clamp to saturated value.

- NppStatus nppiDivC_8u_AC4RSfs (const Npp8u *pSrc1, int nSrc1Step, const Npp8u *pConstants, Npp8u *pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

    Four 8-bit unsigned char channel with unmodified alpha image divided by constant, scale, then clamp to saturated value.

- NppStatus nppiDivC_8u_AC4IRSfs (const Npp8u *pConstants, Npp8u *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

Four 8-bit unsigned char channel with unmodified alpha in place image divided by constant, scale, then clamp to saturated value.

- NppStatus nppiDivC_8u_C4RSfs (const Npp8u ∗pSrc1, int nSrc1Step, const Npp8u ∗pConstants, Npp8u ∗pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  Four 8-bit unsigned char channel image divided by constant, scale, then clamp to saturated value.

- NppStatus nppiDivC_8u_C4IRSfs (const Npp8u ∗pConstants, Npp8u ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

  Four 8-bit unsigned char channel in place image divided by constant, scale, then clamp to saturated value.

- NppStatus nppiDivC_16u_C1RSfs (const Npp16u ∗pSrc1, int nSrc1Step, const Npp16u nConstant, Npp16u ∗pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  One 16-bit unsigned short channel image divided by constant, scale, then clamp to saturated value.

- NppStatus nppiDivC_16u_C1IRSfs (const Npp16u nConstant, Npp16u ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

  One 16-bit unsigned short channel in place image divided by constant, scale, then clamp to saturated value.

- NppStatus nppiDivC_16u_C3RSfs (const Npp16u ∗pSrc1, int nSrc1Step, const Npp16u ∗pConstants, Npp16u ∗pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  Three 16-bit unsigned short channel image divided by constant, scale, then clamp to saturated value.

- NppStatus nppiDivC_16u_C3IRSfs (const Npp16u ∗pConstants, Npp16u ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

  Three 16-bit unsigned short channel in place image divided by constant, scale, then clamp to saturated value.

- NppStatus nppiDivC_16u_AC4RSfs (const Npp16u ∗pSrc1, int nSrc1Step, const Npp16u ∗pConstants, Npp16u ∗pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  Four 16-bit unsigned short channel with unmodified alpha image divided by constant, scale, then clamp to saturated value.

- NppStatus nppiDivC_16u_AC4IRSfs (const Npp16u ∗pConstants, Npp16u ∗pSrcDst, int nSrcDst-Step, NppiSize oSizeROI, int nScaleFactor)

  Four 16-bit unsigned short channel with unmodified alpha in place image divided by constant, scale, then clamp to saturated value.

- NppStatus nppiDivC_16u_C4RSfs (const Npp16u ∗pSrc1, int nSrc1Step, const Npp16u ∗pConstants, Npp16u ∗pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  Four 16-bit unsigned short channel image divided by constant, scale, then clamp to saturated value.

- NppStatus nppiDivC_16u_C4IRSfs (const Npp16u ∗pConstants, Npp16u ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

  Four 16-bit unsigned short channel in place image divided by constant, scale, then clamp to saturated value.

- NppStatus nppiDivC_16s_C1RSfs (const Npp16s ∗pSrc1, int nSrc1Step, const Npp16s nConstant, Npp16s ∗pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  One 16-bit signed short channel image divided by constant, scale, then clamp to saturated value.

- NppStatus nppiDivC_16s_C1IRSfs (const Npp16s nConstant, Npp16s ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

One 16-bit signed short channel in place image divided by constant, scale, then clamp to saturated value.

- NppStatus nppiDivC_16s_C3RSfs (const Npp16s *pSrc1, int nSrc1Step, const Npp16s *pConstants, Npp16s *pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

    Three 16-bit signed short channel image divided by constant, scale, then clamp to saturated value.

- NppStatus nppiDivC_16s_C3IRSfs (const Npp16s *pConstants, Npp16s *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

    Three 16-bit signed short channel in place image divided by constant, scale, then clamp to saturated value.

- NppStatus nppiDivC_16s_AC4RSfs (const Npp16s *pSrc1, int nSrc1Step, const Npp16s *pConstants, Npp16s *pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

    Four 16-bit signed short channel with unmodified alpha image divided by constant, scale, then clamp to saturated value.

- NppStatus nppiDivC_16s_AC4IRSfs (const Npp16s *pConstants, Npp16s *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

    Four 16-bit signed short channel with unmodified alpha in place image divided by constant, scale, then clamp to saturated value.

- NppStatus nppiDivC_16s_C4RSfs (const Npp16s *pSrc1, int nSrc1Step, const Npp16s *pConstants, Npp16s *pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

    Four 16-bit signed short channel image divided by constant, scale, then clamp to saturated value.

- NppStatus nppiDivC_16s_C4IRSfs (const Npp16s *pConstants, Npp16s *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

    Four 16-bit signed short channel in place image divided by constant, scale, then clamp to saturated value.

- NppStatus nppiDivC_16sc_C1RSfs (const Npp16sc *pSrc1, int nSrc1Step, const Npp16sc nConstant, Npp16sc *pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

    One 16-bit signed short complex number (16-bit real, 16-bit imaginary) channel image divided by constant, scale, then clamp to saturated value.

- NppStatus nppiDivC_16sc_C1IRSfs (const Npp16sc nConstant, Npp16sc *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

    One 16-bit signed short complex number (16-bit real, 16-bit imaginary) channel in place image divided by constant, scale, then clamp to saturated value.

- NppStatus nppiDivC_16sc_C3RSfs (const Npp16sc *pSrc1, int nSrc1Step, const Npp16sc *pConstants, Npp16sc *pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

    Three 16-bit signed short complex number (16-bit real, 16-bit imaginary) channel image divided by constant, scale, then clamp to saturated value.

- NppStatus nppiDivC_16sc_C3IRSfs (const Npp16sc *pConstants, Npp16sc *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

    Three 16-bit signed short complex number (16-bit real, 16-bit imaginary) channel in place image divided by constant, scale, then clamp to saturated value.

- NppStatus nppiDivC_16sc_AC4RSfs (const Npp16sc *pSrc1, int nSrc1Step, const Npp16sc *pConstants, Npp16sc *pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

    Four 16-bit signed short complex number (16-bit real, 16-bit imaginary) channel with unmodified alpha image divided by constant, scale, then clamp to saturated value.

- NppStatus nppiDivC_16sc_AC4IRSfs (const Npp16sc ∗pConstants, Npp16sc ∗pSrcDst, int nSrcD-stStep, NppiSize oSizeROI, int nScaleFactor)

  Four 16-bit signed short complex number (16-bit real, 16-bit imaginary) channel with unmodified alpha in place image divided by constant, scale, then clamp to saturated value.

- NppStatus nppiDivC_32s_C1RSfs (const Npp32s ∗pSrc1, int nSrc1Step, const Npp32s nConstant, Npp32s ∗pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  One 32-bit signed integer channel image divided by constant, scale, then clamp to saturated value.

- NppStatus nppiDivC_32s_C1IRSfs (const Npp32s nConstant, Npp32s ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

  One 32-bit signed integer channel in place image divided by constant, scale, then clamp to saturated value.

- NppStatus nppiDivC_32s_C3RSfs (const Npp32s ∗pSrc1, int nSrc1Step, const Npp32s ∗pConstants, Npp32s ∗pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  Three 32-bit signed integer channel image divided by constant, scale, then clamp to saturated value.

- NppStatus nppiDivC_32s_C3IRSfs (const Npp32s ∗pConstants, Npp32s ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

  Three 32-bit signed integer channel in place image divided by constant, scale, then clamp to saturated value.

- NppStatus nppiDivC_32sc_C1RSfs (const Npp32sc ∗pSrc1, int nSrc1Step, const Npp32sc nConstant, Npp32sc ∗pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  One 32-bit signed complex integer (32-bit real, 32-bit imaginary) channel image divided by constant, scale, then clamp to saturated value.

- NppStatus nppiDivC_32sc_C1IRSfs (const Npp32sc nConstant, Npp32sc ∗pSrcDst, int nSrcDst-Step, NppiSize oSizeROI, int nScaleFactor)

  One 32-bit signed complex integer (32-bit real, 32-bit imaginary) channel in place image divided by constant, scale, then clamp to saturated value.

- NppStatus nppiDivC_32sc_C3RSfs (const Npp32sc ∗pSrc1, int nSrc1Step, const Npp32sc ∗pConstants, Npp32sc ∗pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  Three 32-bit signed complex integer (32-bit real, 32-bit imaginary) channel image divided by constant, scale, then clamp to saturated value.

- NppStatus nppiDivC_32sc_C3IRSfs (const Npp32sc ∗pConstants, Npp32sc ∗pSrcDst, int nSrcDst-Step, NppiSize oSizeROI, int nScaleFactor)

  Three 32-bit signed complex integer (32-bit real, 32-bit imaginary) channel in place image divided by constant, scale, then clamp to saturated value.

- NppStatus nppiDivC_32sc_AC4RSfs (const Npp32sc ∗pSrc1, int nSrc1Step, const Npp32sc ∗pConstants, Npp32sc ∗pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  Four 32-bit signed complex integer (32-bit real, 32-bit imaginary) channel with unmodified alpha image divided by constant, scale, then clamp to saturated value.

- NppStatus nppiDivC_32sc_AC4IRSfs (const Npp32sc ∗pConstants, Npp32sc ∗pSrcDst, int nSrcD-stStep, NppiSize oSizeROI, int nScaleFactor)

  Four 32-bit signed complex integer (32-bit real, 32-bit imaginary) channel with unmodified alpha in place image divided by constant, scale, then clamp to saturated value.

- NppStatus nppiDivC_32f_C1R (const Npp32f ∗pSrc1, int nSrc1Step, const Npp32f nConstant, Npp32f ∗pDst, int nDstStep, NppiSize oSizeROI)

  One 32-bit floating point channel image divided by constant.

- NppStatus nppiDivC_32f_C1IR (const Npp32f nConstant, Npp32f ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

  One 32-bit floating point channel in place image divided by constant.

- NppStatus nppiDivC_32f_C3R (const Npp32f ∗pSrc1, int nSrc1Step, const Npp32f ∗pConstants, Npp32f ∗pDst, int nDstStep, NppiSize oSizeROI)

  Three 32-bit floating point channel image divided by constant.

- NppStatus nppiDivC_32f_C3IR (const Npp32f ∗pConstants, Npp32f ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

  Three 32-bit floating point channel in place image divided by constant.

- NppStatus nppiDivC_32f_AC4R (const Npp32f ∗pSrc1, int nSrc1Step, const Npp32f ∗pConstants, Npp32f ∗pDst, int nDstStep, NppiSize oSizeROI)

  Four 32-bit floating point channel with unmodified alpha image divided by constant.

- NppStatus nppiDivC_32f_AC4IR (const Npp32f ∗pConstants, Npp32f ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

  Four 32-bit floating point channel with unmodified alpha in place image divided by constant.

- NppStatus nppiDivC_32f_C4R (const Npp32f ∗pSrc1, int nSrc1Step, const Npp32f ∗pConstants, Npp32f ∗pDst, int nDstStep, NppiSize oSizeROI)

  Four 32-bit floating point channel image divided by constant.

- NppStatus nppiDivC_32f_C4IR (const Npp32f ∗pConstants, Npp32f ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

  Four 32-bit floating point channel in place image divided by constant.

- NppStatus nppiDivC_32fc_C1R (const Npp32fc ∗pSrc1, int nSrc1Step, const Npp32fc nConstant, Npp32fc ∗pDst, int nDstStep, NppiSize oSizeROI)

  One 32-bit complex floating point (32-bit floating point real, 32-bit floating point imaginary) channel image divided by constant.

- NppStatus nppiDivC_32fc_C1IR (const Npp32fc nConstant, Npp32fc ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

  One 32-bit complex floating point (32-bit floating point real, 32-bit floating point imaginary) channel in place image divided by constant.

- NppStatus nppiDivC_32fc_C3R (const Npp32fc ∗pSrc1, int nSrc1Step, const Npp32fc ∗pConstants, Npp32fc ∗pDst, int nDstStep, NppiSize oSizeROI)

  Three 32-bit complex floating point (32-bit floating point real, 32-bit floating point imaginary) channel image divided by constant.

- NppStatus nppiDivC_32fc_C3IR (const Npp32fc ∗pConstants, Npp32fc ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

  Three 32-bit complex floating point (32-bit floating point real, 32-bit floating point imaginary) channel in place image divided by constant.

- NppStatus nppiDivC_32fc_AC4R (const Npp32fc *pSrc1, int nSrc1Step, const Npp32fc *pConstants, Npp32fc *pDst, int nDstStep, NppiSize oSizeROI)

    Four 32-bit complex floating point (32-bit floating point real, 32-bit floating point imaginary) channel with unmodified alpha image divided by constant.

- NppStatus nppiDivC_32fc_AC4IR (const Npp32fc *pConstants, Npp32fc *pSrcDst, int nSrcDst-Step, NppiSize oSizeROI)

    Four 32-bit complex floating point (32-bit floating point real, 32-bit floating point imaginary) channel with unmodified alpha in place image divided by constant.

- NppStatus nppiDivC_32fc_C4R (const Npp32fc *pSrc1, int nSrc1Step, const Npp32fc *pConstants, Npp32fc *pDst, int nDstStep, NppiSize oSizeROI)

    Four 32-bit complex floating point (32-bit floating point real, 32-bit floating point imaginary) channel image divided by constant.

- NppStatus nppiDivC_32fc_C4IR (const Npp32fc *pConstants, Npp32fc *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

    Four 32-bit complex floating point (32-bit floating point real, 32-bit floating point imaginary) channel in place image divided by constant.

AbsDiffC

Determines absolute difference between each pixel of an image and a constant value.

- NppStatus nppiAbsDiffC_8u_C1R (const Npp8u *pSrc1, int nSrc1Step, Npp8u *pDst, int nDstStep, NppiSize oSizeROI, Npp8u nConstant)

    One 8-bit unsigned char channel image absolute difference with constant.

- NppStatus nppiAbsDiffC_16u_C1R (const Npp16u *pSrc1, int nSrc1Step, Npp16u *pDst, int nDst-Step, NppiSize oSizeROI, Npp32u nConstant)

    One 16-bit unsigned short channel image absolute difference with constant.

- NppStatus nppiAbsDiffC_32f_C1R (const Npp32f *pSrc1, int nSrc1Step, Npp32f *pDst, int nDst-Step, NppiSize oSizeROI, Npp32f nConstant)

    One 32-bit floating point channel image absolute difference with constant.

Add Image

Pixel by pixel addition of two images.

- NppStatus nppiAdd_8u_C1RSfs (const Npp8u *pSrc1, int nSrc1Step, const Npp8u *pSrc2, int nSrc2Step, Npp8u *pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

    One 8-bit unsigned char channel image addition, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

- NppStatus nppiAdd_8u_C1IRSfs (const Npp8u *pSrc, int nSrcStep, Npp8u *pSrcDst, int nSrcDst-Step, NppiSize oSizeROI, int nScaleFactor)

One 8-bit unsigned char channel in place image addition, scale by $2^{\wedge}(-nScaleFactor)$, then clamp to saturated value.

- NppStatus nppiAdd_8u_C3RSfs (const Npp8u ∗pSrc1, int nSrc1Step, const Npp8u ∗pSrc2, int nSrc2Step, Npp8u ∗pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  Three 8-bit unsigned char channel image addition, scale by $2^{\wedge}(-nScaleFactor)$, then clamp to saturated value.

- NppStatus nppiAdd_8u_C3IRSfs (const Npp8u ∗pSrc, int nSrcStep, Npp8u ∗pSrcDst, int nSrcDst-Step, NppiSize oSizeROI, int nScaleFactor)

  One 8-bit unsigned char channel in place image addition, scale by $2^{\wedge}(-nScaleFactor)$, then clamp to saturated value.

- NppStatus nppiAdd_8u_AC4RSfs (const Npp8u ∗pSrc1, int nSrc1Step, const Npp8u ∗pSrc2, int nSrc2Step, Npp8u ∗pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  Four 8-bit unsigned char channel with unmodified alpha image addition, scale by $2^{\wedge}(-nScaleFactor)$, then clamp to saturated value.

- NppStatus nppiAdd_8u_AC4IRSfs (const Npp8u ∗pSrc, int nSrcStep, Npp8u ∗pSrcDst, int nSrcD-stStep, NppiSize oSizeROI, int nScaleFactor)

  Four 8-bit unsigned char channel with unmodified alpha in place image addition, scale by $2^{\wedge}(-nScaleFactor)$, then clamp to saturated value.

- NppStatus nppiAdd_8u_C4RSfs (const Npp8u ∗pSrc1, int nSrc1Step, const Npp8u ∗pSrc2, int nSrc2Step, Npp8u ∗pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  Four 8-bit unsigned char channel image addition, scale by $2^{\wedge}(-nScaleFactor)$, then clamp to saturated value.

- NppStatus nppiAdd_8u_C4IRSfs (const Npp8u ∗pSrc, int nSrcStep, Npp8u ∗pSrcDst, int nSrcDst-Step, NppiSize oSizeROI, int nScaleFactor)

  Four 8-bit unsigned char channel in place image addition, scale by $2^{\wedge}(-nScaleFactor)$, then clamp to saturated value.

- NppStatus nppiAdd_16u_C1RSfs (const Npp16u ∗pSrc1, int nSrc1Step, const Npp16u ∗pSrc2, int nSrc2Step, Npp16u ∗pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  One 16-bit unsigned short channel image addition, scale by $2^{\wedge}(-nScaleFactor)$, then clamp to saturated value.

- NppStatus nppiAdd_16u_C1IRSfs (const Npp16u ∗pSrc, int nSrcStep, Npp16u ∗pSrcDst, int nSr-cDstStep, NppiSize oSizeROI, int nScaleFactor)

  One 16-bit unsigned short channel in place image addition, scale by $2^{\wedge}(-nScaleFactor)$, then clamp to saturated value.

- NppStatus nppiAdd_16u_C3RSfs (const Npp16u ∗pSrc1, int nSrc1Step, const Npp16u ∗pSrc2, int nSrc2Step, Npp16u ∗pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  Three 16-bit unsigned short channel image addition, scale by $2^{\wedge}(-nScaleFactor)$, then clamp to saturated value.

- NppStatus nppiAdd_16u_C3IRSfs (const Npp16u ∗pSrc, int nSrcStep, Npp16u ∗pSrcDst, int nSr-cDstStep, NppiSize oSizeROI, int nScaleFactor)

  One 16-bit unsigned short channel in place image addition, scale by $2^{\wedge}(-nScaleFactor)$, then clamp to saturated value.

- NppStatus nppiAdd_16u_AC4RSfs (const Npp16u *pSrc1, int nSrc1Step, const Npp16u *pSrc2, int nSrc2Step, Npp16u *pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  Four 16-bit unsigned short channel with unmodified alpha image addition, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiAdd_16u_AC4IRSfs (const Npp16u *pSrc, int nSrcStep, Npp16u *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

  Four 16-bit unsigned short channel with unmodified alpha in place image addition, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiAdd_16u_C4RSfs (const Npp16u *pSrc1, int nSrc1Step, const Npp16u *pSrc2, int nSrc2Step, Npp16u *pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  Four 16-bit unsigned short channel image addition, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiAdd_16u_C4IRSfs (const Npp16u *pSrc, int nSrcStep, Npp16u *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

  Four 16-bit unsigned short channel in place image addition, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiAdd_16s_C1RSfs (const Npp16s *pSrc1, int nSrc1Step, const Npp16s *pSrc2, int nSrc2Step, Npp16s *pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  One 16-bit signed short channel image addition, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiAdd_16s_C1IRSfs (const Npp16s *pSrc, int nSrcStep, Npp16s *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

  One 16-bit signed short channel in place image addition, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiAdd_16s_C3RSfs (const Npp16s *pSrc1, int nSrc1Step, const Npp16s *pSrc2, int nSrc2Step, Npp16s *pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  Three 16-bit signed short channel image addition, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiAdd_16s_C3IRSfs (const Npp16s *pSrc, int nSrcStep, Npp16s *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

  One 16-bit signed short channel in place image addition, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiAdd_16s_AC4RSfs (const Npp16s *pSrc1, int nSrc1Step, const Npp16s *pSrc2, int nSrc2Step, Npp16s *pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  Four 16-bit signed short channel with unmodified alpha image addition, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiAdd_16s_AC4IRSfs (const Npp16s *pSrc, int nSrcStep, Npp16s *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

  Four 16-bit signed short channel with unmodified alpha in place image addition, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiAdd_16s_C4RSfs (const Npp16s *pSrc1, int nSrc1Step, const Npp16s *pSrc2, int nSrc2Step, Npp16s *pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

Four 16-bit signed short channel image addition, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

- NppStatus nppiAdd_16s_C4IRSfs (const Npp16s *pSrc, int nSrcStep, Npp16s *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

  Four 16-bit signed short channel in place image addition, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

- NppStatus nppiAdd_16sc_C1RSfs (const Npp16sc *pSrc1, int nSrc1Step, const Npp16sc *pSrc2, int nSrc2Step, Npp16sc *pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  One 16-bit signed short complex number (16-bit real, 16-bit imaginary) channel image addition, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

- NppStatus nppiAdd_16sc_C1IRSfs (const Npp16sc *pSrc, int nSrcStep, Npp16sc *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

  One 16-bit signed short complex number (16-bit real, 16-bit imaginary) channel in place image addition, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

- NppStatus nppiAdd_16sc_C3RSfs (const Npp16sc *pSrc1, int nSrc1Step, const Npp16sc *pSrc2, int nSrc2Step, Npp16sc *pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  Three 16-bit signed short complex number (16-bit real, 16-bit imaginary) channel image addition, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

- NppStatus nppiAdd_16sc_C3IRSfs (const Npp16sc *pSrc, int nSrcStep, Npp16sc *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

  One 16-bit signed short complex number (16-bit real, 16-bit imaginary) channel in place image addition, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

- NppStatus nppiAdd_16sc_AC4RSfs (const Npp16sc *pSrc1, int nSrc1Step, const Npp16sc *pSrc2, int nSrc2Step, Npp16sc *pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  Four 16-bit signed short complex number (16-bit real, 16-bit imaginary) channel with unmodified alpha image addition, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

- NppStatus nppiAdd_16sc_AC4IRSfs (const Npp16sc *pSrc, int nSrcStep, Npp16sc *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

  Four 16-bit signed short complex number (16-bit real, 16-bit imaginary) channel with unmodified alpha in place image addition, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

- NppStatus nppiAdd_32s_C1RSfs (const Npp32s *pSrc1, int nSrc1Step, const Npp32s *pSrc2, int nSrc2Step, Npp32s *pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  One 32-bit signed integer channel image addition, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

- NppStatus nppiAdd_32s_C1R (const Npp32s *pSrc1, int nSrc1Step, const Npp32s *pSrc2, int nSrc2Step, Npp32s *pDst, int nDstStep, NppiSize oSizeROI)

  Note: This function is to be deprecated in future NPP releases, use the function above with a scale factor of 0 instead.

- NppStatus nppiAdd_32s_C1IRSfs (const Npp32s *pSrc, int nSrcStep, Npp32s *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

  One 32-bit signed integer channel in place image addition, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

- NppStatus nppiAdd_32s_C3RSfs (const Npp32s ∗pSrc1, int nSrc1Step, const Npp32s ∗pSrc2, int nSrc2Step, Npp32s ∗pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  Three 32-bit signed integer channel image addition, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiAdd_32s_C3IRSfs (const Npp32s ∗pSrc, int nSrcStep, Npp32s ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

  One 32-bit signed integer channel in place image addition, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiAdd_32sc_C1RSfs (const Npp32sc ∗pSrc1, int nSrc1Step, const Npp32sc ∗pSrc2, int nSrc2Step, Npp32sc ∗pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  One 32-bit signed integer complex number (32-bit real, 32-bit imaginary) channel image addition, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiAdd_32sc_C1IRSfs (const Npp32sc ∗pSrc, int nSrcStep, Npp32sc ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

  One 32-bit signed integer complex number (32-bit real, 32-bit imaginary) channel in place image addition, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiAdd_32sc_C3RSfs (const Npp32sc ∗pSrc1, int nSrc1Step, const Npp32sc ∗pSrc2, int nSrc2Step, Npp32sc ∗pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  Three 32-bit signed integer complex number (32-bit real, 32-bit imaginary) channel image addition, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiAdd_32sc_C3IRSfs (const Npp32sc ∗pSrc, int nSrcStep, Npp32sc ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

  One 32-bit signed integer complex number (32-bit real, 32-bit imaginary) channel in place image addition, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiAdd_32sc_AC4RSfs (const Npp32sc ∗pSrc1, int nSrc1Step, const Npp32sc ∗pSrc2, int nSrc2Step, Npp32sc ∗pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  Four 32-bit signed integer complex number (32-bit real, 32-bit imaginary) channel with unmodified alpha image addition, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiAdd_32sc_AC4IRSfs (const Npp32sc ∗pSrc, int nSrcStep, Npp32sc ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

  Four 32-bit signed integer complex number (32-bit real, 32-bit imaginary) channel with unmodified alpha in place image addition, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiAdd_32f_C1R (const Npp32f ∗pSrc1, int nSrc1Step, const Npp32f ∗pSrc2, int nSrc2Step, Npp32f ∗pDst, int nDstStep, NppiSize oSizeROI)

  One 32-bit floating point channel image addition.

- NppStatus nppiAdd_32f_C1IR (const Npp32f ∗pSrc, int nSrcStep, Npp32f ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

  One 32-bit floating point channel in place image addition.

- NppStatus nppiAdd_32f_C3R (const Npp32f ∗pSrc1, int nSrc1Step, const Npp32f ∗pSrc2, int nSrc2Step, Npp32f ∗pDst, int nDstStep, NppiSize oSizeROI)

  Three 32-bit floating point channel image addition.

- NppStatus nppiAdd_32f_C3IR (const Npp32f ∗pSrc, int nSrcStep, Npp32f ∗pSrcDst, int nSrcDst-Step, NppiSize oSizeROI)

  One 32-bit floating point channel in place image addition.

- NppStatus nppiAdd_32f_AC4R (const Npp32f ∗pSrc1, int nSrc1Step, const Npp32f ∗pSrc2, int nSrc2Step, Npp32f ∗pDst, int nDstStep, NppiSize oSizeROI)

  Four 32-bit floating point channel with unmodified alpha image addition.

- NppStatus nppiAdd_32f_AC4IR (const Npp32f ∗pSrc, int nSrcStep, Npp32f ∗pSrcDst, int nSrcDst-Step, NppiSize oSizeROI)

  Four 32-bit floating point channel with unmodified alpha in place image addition.

- NppStatus nppiAdd_32f_C4R (const Npp32f ∗pSrc1, int nSrc1Step, const Npp32f ∗pSrc2, int nSrc2Step, Npp32f ∗pDst, int nDstStep, NppiSize oSizeROI)

  Four 32-bit floating point channel image addition.

- NppStatus nppiAdd_32f_C4IR (const Npp32f ∗pSrc, int nSrcStep, Npp32f ∗pSrcDst, int nSrcDst-Step, NppiSize oSizeROI)

  Four 32-bit floating point channel in place image addition.

- NppStatus nppiAdd_32fc_C1R (const Npp32fc ∗pSrc1, int nSrc1Step, const Npp32fc ∗pSrc2, int nSrc2Step, Npp32fc ∗pDst, int nDstStep, NppiSize oSizeROI)

  One 32-bit floating point complex number (32-bit real, 32-bit imaginary) channel image addition.

- NppStatus nppiAdd_32fc_C1IR (const Npp32fc ∗pSrc, int nSrcStep, Npp32fc ∗pSrcDst, int nSrcD-stStep, NppiSize oSizeROI)

  One 32-bit floating point complex number (32-bit real, 32-bit imaginary) channel in place image addition.

- NppStatus nppiAdd_32fc_C3R (const Npp32fc ∗pSrc1, int nSrc1Step, const Npp32fc ∗pSrc2, int nSrc2Step, Npp32fc ∗pDst, int nDstStep, NppiSize oSizeROI)

  Three 32-bit floating point complex number (32-bit real, 32-bit imaginary) channel image addition.

- NppStatus nppiAdd_32fc_C3IR (const Npp32fc ∗pSrc, int nSrcStep, Npp32fc ∗pSrcDst, int nSrcD-stStep, NppiSize oSizeROI)

  One 32-bit floating point complex number (32-bit real, 32-bit imaginary) channel in place image addition.

- NppStatus nppiAdd_32fc_AC4R (const Npp32fc ∗pSrc1, int nSrc1Step, const Npp32fc ∗pSrc2, int nSrc2Step, Npp32fc ∗pDst, int nDstStep, NppiSize oSizeROI)

  Four 32-bit floating point complex number (32-bit real, 32-bit imaginary) channel with unmodified alpha image addition.

- NppStatus nppiAdd_32fc_AC4IR (const Npp32fc ∗pSrc, int nSrcStep, Npp32fc ∗pSrcDst, int nSr-cDstStep, NppiSize oSizeROI)

  Four 32-bit floating point complex number (32-bit real, 32-bit imaginary) channel with unmodified alpha in place image addition.

- NppStatus nppiAdd_32fc_C4R (const Npp32fc ∗pSrc1, int nSrc1Step, const Npp32fc ∗pSrc2, int nSrc2Step, Npp32fc ∗pDst, int nDstStep, NppiSize oSizeROI)

  Four 32-bit floating point complex number (32-bit real, 32-bit imaginary) channel image addition.

- NppStatus nppiAdd_32fc_C4IR (const Npp32fc *pSrc, int nSrcStep, Npp32fc *pSrcDst, int nSrcD-stStep, NppiSize oSizeROI)

    Four 32-bit floating point complex number (32-bit real, 32-bit imaginary) channel in place image addition.

Add Square Image

Pixel by pixel addition of squared pixels from source image to floating point pixel values of destination image.

- NppStatus nppiAddSquare_8u32f_C1IMR (const Npp8u *pSrc, int nSrcStep, const Npp8u *pMask, int nMaskStep, Npp32f *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

    One 8-bit unsigned char channel image squared then added to in place floating point destination image using filter mask (updates destination when mask is non-zero).

- NppStatus nppiAddSquare_8u32f_C1IR (const Npp8u *pSrc, int nSrcStep, Npp32f *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

    One 8-bit unsigned char channel image squared then added to in place floating point destination image.

- NppStatus nppiAddSquare_16u32f_C1IMR (const Npp16u *pSrc, int nSrcStep, const Npp8u *pMask, int nMaskStep, Npp32f *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

    One 16-bit unsigned short channel image squared then added to in place floating point destination image using filter mask (updates destination when mask is non-zero).

- NppStatus nppiAddSquare_16u32f_C1IR (const Npp16u *pSrc, int nSrcStep, Npp32f *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

    One 16-bit unsigned short channel image squared then added to in place floating point destination image.

- NppStatus nppiAddSquare_32f_C1IMR (const Npp32f *pSrc, int nSrcStep, const Npp8u *pMask, int nMaskStep, Npp32f *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

    One 32-bit floating point channel image squared then added to in place floating point destination image using filter mask (updates destination when mask is non-zero).

- NppStatus nppiAddSquare_32f_C1IR (const Npp32f *pSrc, int nSrcStep, Npp32f *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

    One 32-bit floating point channel image squared then added to in place floating point destination image.

Add Product Image

Pixel by pixel addition of product of pixels from two source images to floating point pixel values of desti-nation image.

- NppStatus nppiAddProduct_8u32f_C1IMR (const Npp8u *pSrc1, int nSrc1Step, const Npp8u *pSrc2, int nSrc2Step, const Npp8u *pMask, int nMaskStep, Npp32f *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

    One 8-bit unsigned char channel image product added to in place floating point destination image using filter mask (updates destination when mask is non-zero).

- NppStatus nppiAddProduct_8u32f_C1IR (const Npp8u *pSrc1, int nSrc1Step, const Npp8u *pSrc2, int nSrc2Step, Npp32f *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

One 8-bit unsigned char channel image product added to in place floating point destination image.

- NppStatus nppiAddProduct_16u32f_C1IMR (const Npp16u *pSrc1, int nSrc1Step, const Npp16u *pSrc2, int nSrc2Step, const Npp8u *pMask, int nMaskStep, Npp32f *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

    One 16-bit unsigned short channel image product added to in place floating point destination image using filter mask (updates destination when mask is non-zero).

- NppStatus nppiAddProduct_16u32f_C1IR (const Npp16u *pSrc1, int nSrc1Step, const Npp16u *pSrc2, int nSrc2Step, Npp32f *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

    One 16-bit unsigned short channel image product added to in place floating point destination image.

- NppStatus nppiAddProduct_32f_C1IMR (const Npp32f *pSrc1, int nSrc1Step, const Npp32f *pSrc2, int nSrc2Step, const Npp8u *pMask, int nMaskStep, Npp32f *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

    One 32-bit floating point channel image product added to in place floating point destination image using filter mask (updates destination when mask is non-zero).

- NppStatus nppiAddProduct_32f_C1IR (const Npp32f *pSrc1, int nSrc1Step, const Npp32f *pSrc2, int nSrc2Step, Npp32f *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

    One 32-bit floating point channel image product added to in place floating point destination image.

Add Weighted Image

Pixel by pixel addition of alpha weighted pixel values from a source image to floating point pixel values of destination image.

- NppStatus nppiAddWeighted_8u32f_C1IMR (const Npp8u *pSrc, int nSrcStep, const Npp8u *pMask, int nMaskStep, Npp32f *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, Npp32f nAlpha)

    One 8-bit unsigned char channel alpha weighted image added to in place floating point destination image using filter mask (updates destination when mask is non-zero).

- NppStatus nppiAddWeighted_8u32f_C1IR (const Npp8u *pSrc, int nSrcStep, Npp32f *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, Npp32f nAlpha)

    One 8-bit unsigned char channel alpha weighted image added to in place floating point destination image.

- NppStatus nppiAddWeighted_16u32f_C1IMR (const Npp16u *pSrc, int nSrcStep, const Npp8u *pMask, int nMaskStep, Npp32f *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, Npp32f nAlpha)

    One 16-bit unsigned short channel alpha weighted image added to in place floating point destination image using filter mask (updates destination when mask is non-zero).

- NppStatus nppiAddWeighted_16u32f_C1IR (const Npp16u *pSrc, int nSrcStep, Npp32f *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, Npp32f nAlpha)

    One 16-bit unsigned short channel alpha weighted image added to in place floating point destination image.

- NppStatus nppiAddWeighted_32f_C1IMR (const Npp32f *pSrc, int nSrcStep, const Npp8u *pMask, int nMaskStep, Npp32f *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, Npp32f nAlpha)

    One 32-bit floating point channel alpha weighted image added to in place floating point destination image using filter mask (updates destination when mask is non-zero).

- NppStatus nppiAddWeighted_32f_C1IR (const Npp32f *pSrc, int nSrcStep, Npp32f *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, Npp32f nAlpha)

    One 32-bit floating point channel alpha weighted image added to in place floating point destination image.

Mul Image

Pixel by pixel multiply of two images.

- NppStatus nppiMul_8u_C1RSfs (const Npp8u *pSrc1, int nSrc1Step, const Npp8u *pSrc2, int nSrc2Step, Npp8u *pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

    One 8-bit unsigned char channel image multiplication, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiMul_8u_C1IRSfs (const Npp8u *pSrc, int nSrcStep, Npp8u *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

    One 8-bit unsigned char channel in place image multiplication, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiMul_8u_C3RSfs (const Npp8u *pSrc1, int nSrc1Step, const Npp8u *pSrc2, int nSrc2Step, Npp8u *pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

    Three 8-bit unsigned char channel image multiplication, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiMul_8u_C3IRSfs (const Npp8u *pSrc, int nSrcStep, Npp8u *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

    One 8-bit unsigned char channel in place image multiplication, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiMul_8u_AC4RSfs (const Npp8u *pSrc1, int nSrc1Step, const Npp8u *pSrc2, int nSrc2Step, Npp8u *pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

    Four 8-bit unsigned char channel with unmodified alpha image multiplication, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiMul_8u_AC4IRSfs (const Npp8u *pSrc, int nSrcStep, Npp8u *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

    Four 8-bit unsigned char channel with unmodified alpha in place image multiplication, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiMul_8u_C4RSfs (const Npp8u *pSrc1, int nSrc1Step, const Npp8u *pSrc2, int nSrc2Step, Npp8u *pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

    Four 8-bit unsigned char channel image multiplication, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiMul_8u_C4IRSfs (const Npp8u *pSrc, int nSrcStep, Npp8u *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

    Four 8-bit unsigned char channel in place image multiplication, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiMul_16u_C1RSfs (const Npp16u *pSrc1, int nSrc1Step, const Npp16u *pSrc2, int nSrc2Step, Npp16u *pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

One 16-bit unsigned short channel image multiplication, scale by $2^{\wedge}(-nScaleFactor)$, then clamp to saturated value.

- NppStatus nppiMul_16u_C1IRSfs (const Npp16u *pSrc, int nSrcStep, Npp16u *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

  One 16-bit unsigned short channel in place image multiplication, scale by $2^{\wedge}(-nScaleFactor)$, then clamp to saturated value.

- NppStatus nppiMul_16u_C3RSfs (const Npp16u *pSrc1, int nSrc1Step, const Npp16u *pSrc2, int nSrc2Step, Npp16u *pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  Three 16-bit unsigned short channel image multiplication, scale by $2^{\wedge}(-nScaleFactor)$, then clamp to saturated value.

- NppStatus nppiMul_16u_C3IRSfs (const Npp16u *pSrc, int nSrcStep, Npp16u *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

  One 16-bit unsigned short channel in place image multiplication, scale by $2^{\wedge}(-nScaleFactor)$, then clamp to saturated value.

- NppStatus nppiMul_16u_AC4RSfs (const Npp16u *pSrc1, int nSrc1Step, const Npp16u *pSrc2, int nSrc2Step, Npp16u *pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  Four 16-bit unsigned short channel with unmodified alpha image multiplication, scale by $2^{\wedge}(-nScaleFactor)$, then clamp to saturated value.

- NppStatus nppiMul_16u_AC4IRSfs (const Npp16u *pSrc, int nSrcStep, Npp16u *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

  Four 16-bit unsigned short channel with unmodified alpha in place image multiplication, scale by $2^{\wedge}(-nScaleFactor)$, then clamp to saturated value.

- NppStatus nppiMul_16u_C4RSfs (const Npp16u *pSrc1, int nSrc1Step, const Npp16u *pSrc2, int nSrc2Step, Npp16u *pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  Four 16-bit unsigned short channel image multiplication, scale by $2^{\wedge}(-nScaleFactor)$, then clamp to saturated value.

- NppStatus nppiMul_16u_C4IRSfs (const Npp16u *pSrc, int nSrcStep, Npp16u *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

  Four 16-bit unsigned short channel in place image multiplication, scale by $2^{\wedge}(-nScaleFactor)$, then clamp to saturated value.

- NppStatus nppiMul_16s_C1RSfs (const Npp16s *pSrc1, int nSrc1Step, const Npp16s *pSrc2, int nSrc2Step, Npp16s *pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  One 16-bit signed short channel image multiplication, scale by $2^{\wedge}(-nScaleFactor)$, then clamp to saturated value.

- NppStatus nppiMul_16s_C1IRSfs (const Npp16s *pSrc, int nSrcStep, Npp16s *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

  One 16-bit signed short channel in place image multiplication, scale by $2^{\wedge}(-nScaleFactor)$, then clamp to saturated value.

- NppStatus nppiMul_16s_C3RSfs (const Npp16s *pSrc1, int nSrc1Step, const Npp16s *pSrc2, int nSrc2Step, Npp16s *pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  Three 16-bit signed short channel image multiplication, scale by $2^{\wedge}(-nScaleFactor)$, then clamp to saturated value.

- NppStatus nppiMul_16s_C3IRSfs (const Npp16s *pSrc, int nSrcStep, Npp16s *pSrcDst, int nSrcD-stStep, NppiSize oSizeROI, int nScaleFactor)

  One 16-bit signed short channel in place image multiplication, scale by $2^{\wedge}(-nScaleFactor)$, then clamp to saturated value.

- NppStatus nppiMul_16s_AC4RSfs (const Npp16s *pSrc1, int nSrc1Step, const Npp16s *pSrc2, int nSrc2Step, Npp16s *pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  Four 16-bit signed short channel with unmodified alpha image multiplication, scale by $2^{\wedge}(-nScaleFactor)$, then clamp to saturated value.

- NppStatus nppiMul_16s_AC4IRSfs (const Npp16s *pSrc, int nSrcStep, Npp16s *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

  Four 16-bit signed short channel with unmodified alpha in place image multiplication, scale by $2^{\wedge}(-nScaleFactor)$, then clamp to saturated value.

- NppStatus nppiMul_16s_C4RSfs (const Npp16s *pSrc1, int nSrc1Step, const Npp16s *pSrc2, int nSrc2Step, Npp16s *pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  Four 16-bit signed short channel image multiplication, scale by $2^{\wedge}(-nScaleFactor)$, then clamp to saturated value.

- NppStatus nppiMul_16s_C4IRSfs (const Npp16s *pSrc, int nSrcStep, Npp16s *pSrcDst, int nSrcD-stStep, NppiSize oSizeROI, int nScaleFactor)

  Four 16-bit signed short channel in place image multiplication, scale by $2^{\wedge}(-nScaleFactor)$, then clamp to saturated value.

- NppStatus nppiMul_16sc_C1RSfs (const Npp16sc *pSrc1, int nSrc1Step, const Npp16sc *pSrc2, int nSrc2Step, Npp16sc *pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  One 16-bit signed short complex number (16-bit real, 16-bit imaginary) channel image multiplication, scale by $2^{\wedge}(-nScaleFactor)$, then clamp to saturated value.

- NppStatus nppiMul_16sc_C1IRSfs (const Npp16sc *pSrc, int nSrcStep, Npp16sc *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

  One 16-bit signed short complex number (16-bit real, 16-bit imaginary) channel in place image multiplication, scale by $2^{\wedge}(-nScaleFactor)$, then clamp to saturated value.

- NppStatus nppiMul_16sc_C3RSfs (const Npp16sc *pSrc1, int nSrc1Step, const Npp16sc *pSrc2, int nSrc2Step, Npp16sc *pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  Three 16-bit signed short complex number (16-bit real, 16-bit imaginary) channel image multiplication, scale by $2^{\wedge}(-nScaleFactor)$, then clamp to saturated value.

- NppStatus nppiMul_16sc_C3IRSfs (const Npp16sc *pSrc, int nSrcStep, Npp16sc *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

  One 16-bit signed short complex number (16-bit real, 16-bit imaginary) channel in place image multiplication, scale by $2^{\wedge}(-nScaleFactor)$, then clamp to saturated value.

- NppStatus nppiMul_16sc_AC4RSfs (const Npp16sc *pSrc1, int nSrc1Step, const Npp16sc *pSrc2, int nSrc2Step, Npp16sc *pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  Four 16-bit signed short complex number (16-bit real, 16-bit imaginary) channel with unmodified alpha image multiplication, scale by $2^{\wedge}(-nScaleFactor)$, then clamp to saturated value.

- NppStatus nppiMul_16sc_AC4IRSfs (const Npp16sc ∗pSrc, int nSrcStep, Npp16sc ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

    Four 16-bit signed short complex number (16-bit real, 16-bit imaginary) channel with unmodified alpha in place image multiplication, scale by $2^{\wedge}(-nScaleFactor)$, then clamp to saturated value.

- NppStatus nppiMul_32s_C1RSfs (const Npp32s ∗pSrc1, int nSrc1Step, const Npp32s ∗pSrc2, int nSrc2Step, Npp32s ∗pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

    One 32-bit signed integer channel image multiplication, scale by $2^{\wedge}(-nScaleFactor)$, then clamp to saturated value.

- NppStatus nppiMul_32s_C1R (const Npp32s ∗pSrc1, int nSrc1Step, const Npp32s ∗pSrc2, int nSrc2Step, Npp32s ∗pDst, int nDstStep, NppiSize oSizeROI)

    Note: This function is to be deprecated in future NPP releases, use the function above with a scale factor of 0 instead.

- NppStatus nppiMul_32s_C1IRSfs (const Npp32s ∗pSrc, int nSrcStep, Npp32s ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

    One 32-bit signed integer channel in place image multiplication, scale by $2^{\wedge}(-nScaleFactor)$, then clamp to saturated value.

- NppStatus nppiMul_32s_C3RSfs (const Npp32s ∗pSrc1, int nSrc1Step, const Npp32s ∗pSrc2, int nSrc2Step, Npp32s ∗pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

    Three 32-bit signed integer channel image multiplication, scale by $2^{\wedge}(-nScaleFactor)$, then clamp to saturated value.

- NppStatus nppiMul_32s_C3IRSfs (const Npp32s ∗pSrc, int nSrcStep, Npp32s ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

    One 32-bit signed integer channel in place image multiplication, scale by $2^{\wedge}(-nScaleFactor)$, then clamp to saturated value.

- NppStatus nppiMul_32sc_C1RSfs (const Npp32sc ∗pSrc1, int nSrc1Step, const Npp32sc ∗pSrc2, int nSrc2Step, Npp32sc ∗pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

    One 32-bit signed integer complex number (32-bit real, 32-bit imaginary) channel image multiplication, scale by $2^{\wedge}(-nScaleFactor)$, then clamp to saturated value.

- NppStatus nppiMul_32sc_C1IRSfs (const Npp32sc ∗pSrc, int nSrcStep, Npp32sc ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

    One 32-bit signed integer complex number (32-bit real, 32-bit imaginary) channel in place image multiplication, scale by $2^{\wedge}(-nScaleFactor)$, then clamp to saturated value.

- NppStatus nppiMul_32sc_C3RSfs (const Npp32sc ∗pSrc1, int nSrc1Step, const Npp32sc ∗pSrc2, int nSrc2Step, Npp32sc ∗pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

    Three 32-bit signed integer complex number (32-bit real, 32-bit imaginary) channel image multiplication, scale by $2^{\wedge}(-nScaleFactor)$, then clamp to saturated value.

- NppStatus nppiMul_32sc_C3IRSfs (const Npp32sc ∗pSrc, int nSrcStep, Npp32sc ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

    One 32-bit signed integer complex number (32-bit real, 32-bit imaginary) channel in place image multiplication, scale by $2^{\wedge}(-nScaleFactor)$, then clamp to saturated value.

- NppStatus nppiMul_32sc_AC4RSfs (const Npp32sc ∗pSrc1, int nSrc1Step, const Npp32sc ∗pSrc2, int nSrc2Step, Npp32sc ∗pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

Four 32-bit signed integer complex number (32-bit real, 32-bit imaginary) channel with unmodified alpha image multiplication, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

- NppStatus nppiMul_32sc_AC4IRSfs (const Npp32sc ∗pSrc, int nSrcStep, Npp32sc ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

  Four 32-bit signed integer complex number (32-bit real, 32-bit imaginary) channel with unmodified alpha in place image multiplication, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

- NppStatus nppiMul_32f_C1R (const Npp32f ∗pSrc1, int nSrc1Step, const Npp32f ∗pSrc2, int nSrc2Step, Npp32f ∗pDst, int nDstStep, NppiSize oSizeROI)

  One 32-bit floating point channel image multiplication.

- NppStatus nppiMul_32f_C1IR (const Npp32f ∗pSrc, int nSrcStep, Npp32f ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

  One 32-bit floating point channel in place image multiplication.

- NppStatus nppiMul_32f_C3R (const Npp32f ∗pSrc1, int nSrc1Step, const Npp32f ∗pSrc2, int nSrc2Step, Npp32f ∗pDst, int nDstStep, NppiSize oSizeROI)

  Three 32-bit floating point channel image multiplication.

- NppStatus nppiMul_32f_C3IR (const Npp32f ∗pSrc, int nSrcStep, Npp32f ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

  One 32-bit floating point channel in place image multiplication.

- NppStatus nppiMul_32f_AC4R (const Npp32f ∗pSrc1, int nSrc1Step, const Npp32f ∗pSrc2, int nSrc2Step, Npp32f ∗pDst, int nDstStep, NppiSize oSizeROI)

  Four 32-bit floating point channel with unmodified alpha image multiplication.

- NppStatus nppiMul_32f_AC4IR (const Npp32f ∗pSrc, int nSrcStep, Npp32f ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

  Four 32-bit floating point channel with unmodified alpha in place image multiplication.

- NppStatus nppiMul_32f_C4R (const Npp32f ∗pSrc1, int nSrc1Step, const Npp32f ∗pSrc2, int nSrc2Step, Npp32f ∗pDst, int nDstStep, NppiSize oSizeROI)

  Four 32-bit floating point channel image multiplication.

- NppStatus nppiMul_32f_C4IR (const Npp32f ∗pSrc, int nSrcStep, Npp32f ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

  Four 32-bit floating point channel in place image multiplication.

- NppStatus nppiMul_32fc_C1R (const Npp32fc ∗pSrc1, int nSrc1Step, const Npp32fc ∗pSrc2, int nSrc2Step, Npp32fc ∗pDst, int nDstStep, NppiSize oSizeROI)

  One 32-bit floating point complex number (32-bit real, 32-bit imaginary) channel image multiplication.

- NppStatus nppiMul_32fc_C1IR (const Npp32fc ∗pSrc, int nSrcStep, Npp32fc ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

  One 32-bit floating point complex number (32-bit real, 32-bit imaginary) channel in place image multiplication.

- NppStatus nppiMul_32fc_C3R (const Npp32fc ∗pSrc1, int nSrc1Step, const Npp32fc ∗pSrc2, int nSrc2Step, Npp32fc ∗pDst, int nDstStep, NppiSize oSizeROI)

Three 32-bit floating point complex number (32-bit real, 32-bit imaginary) channel image multiplication.

- NppStatus nppiMul_32fc_C3IR (const Npp32fc ∗pSrc, int nSrcStep, Npp32fc ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

  One 32-bit floating point complex number (32-bit real, 32-bit imaginary) channel in place image multiplication.

- NppStatus nppiMul_32fc_AC4R (const Npp32fc ∗pSrc1, int nSrc1Step, const Npp32fc ∗pSrc2, int nSrc2Step, Npp32fc ∗pDst, int nDstStep, NppiSize oSizeROI)

  Four 32-bit floating point complex number (32-bit real, 32-bit imaginary) channel with unmodified alpha image multiplication.

- NppStatus nppiMul_32fc_AC4IR (const Npp32fc ∗pSrc, int nSrcStep, Npp32fc ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

  Four 32-bit floating point complex number (32-bit real, 32-bit imaginary) channel with unmodified alpha in place image multiplication.

- NppStatus nppiMul_32fc_C4R (const Npp32fc ∗pSrc1, int nSrc1Step, const Npp32fc ∗pSrc2, int nSrc2Step, Npp32fc ∗pDst, int nDstStep, NppiSize oSizeROI)

  Four 32-bit floating point complex number (32-bit real, 32-bit imaginary) channel image multiplication.

- NppStatus nppiMul_32fc_C4IR (const Npp32fc ∗pSrc, int nSrcStep, Npp32fc ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

  Four 32-bit floating point complex number (32-bit real, 32-bit imaginary) channel in place image multiplication.

MulScale Image

Pixel by pixel multiplies each pixel of two images then scales the result by the maximum value for the data bit width.

- NppStatus nppiMulScale_8u_C1R (const Npp8u ∗pSrc1, int nSrc1Step, const Npp8u ∗pSrc2, int nSrc2Step, Npp8u ∗pDst, int nDstStep, NppiSize oSizeROI)

  One 8-bit unsigned char channel image multiplication then scale by maximum value for pixel bit width.

- NppStatus nppiMulScale_8u_C1IR (const Npp8u ∗pSrc, int nSrcStep, Npp8u ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

  One 8-bit unsigned char channel in place image multiplication then scale by maximum value for pixel bit width.

- NppStatus nppiMulScale_8u_C3R (const Npp8u ∗pSrc1, int nSrc1Step, const Npp8u ∗pSrc2, int nSrc2Step, Npp8u ∗pDst, int nDstStep, NppiSize oSizeROI)

  Three 8-bit unsigned char channel image multiplication then scale by maximum value for pixel bit width.

- NppStatus nppiMulScale_8u_C3IR (const Npp8u ∗pSrc, int nSrcStep, Npp8u ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

  One 8-bit unsigned char channel in place image multiplication then scale by maximum value for pixel bit width.

- NppStatus nppiMulScale_8u_AC4R (const Npp8u ∗pSrc1, int nSrc1Step, const Npp8u ∗pSrc2, int nSrc2Step, Npp8u ∗pDst, int nDstStep, NppiSize oSizeROI)

Four 8-bit unsigned char channel with unmodified alpha image multiplication then scale by maximum value for pixel bit width.

- NppStatus nppiMulScale_8u_AC4IR (const Npp8u *pSrc, int nSrcStep, Npp8u *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

  Four 8-bit unsigned char channel with unmodified alpha in place image multiplication then scale by maximum value for pixel bit width.

- NppStatus nppiMulScale_8u_C4R (const Npp8u *pSrc1, int nSrc1Step, const Npp8u *pSrc2, int nSrc2Step, Npp8u *pDst, int nDstStep, NppiSize oSizeROI)

  Four 8-bit unsigned char channel image multiplication then scale by maximum value for pixel bit width.

- NppStatus nppiMulScale_8u_C4IR (const Npp8u *pSrc, int nSrcStep, Npp8u *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

  Four 8-bit unsigned char channel in place image multiplication then scale by maximum value for pixel bit width.

- NppStatus nppiMulScale_16u_C1R (const Npp16u *pSrc1, int nSrc1Step, const Npp16u *pSrc2, int nSrc2Step, Npp16u *pDst, int nDstStep, NppiSize oSizeROI)

  One 16-bit unsigned short channel image multiplication then scale by maximum value for pixel bit width.

- NppStatus nppiMulScale_16u_C1IR (const Npp16u *pSrc, int nSrcStep, Npp16u *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

  One 16-bit unsigned short channel in place image multiplication then scale by maximum value for pixel bit width.

- NppStatus nppiMulScale_16u_C3R (const Npp16u *pSrc1, int nSrc1Step, const Npp16u *pSrc2, int nSrc2Step, Npp16u *pDst, int nDstStep, NppiSize oSizeROI)

  Three 16-bit unsigned short channel image multiplication then scale by maximum value for pixel bit width.

- NppStatus nppiMulScale_16u_C3IR (const Npp16u *pSrc, int nSrcStep, Npp16u *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

  One 16-bit unsigned short channel in place image multiplication then scale by maximum value for pixel bit width.

- NppStatus nppiMulScale_16u_AC4R (const Npp16u *pSrc1, int nSrc1Step, const Npp16u *pSrc2, int nSrc2Step, Npp16u *pDst, int nDstStep, NppiSize oSizeROI)

  Four 16-bit unsigned short channel with unmodified alpha image multiplication then scale by maximum value for pixel bit width.

- NppStatus nppiMulScale_16u_AC4IR (const Npp16u *pSrc, int nSrcStep, Npp16u *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

  Four 16-bit unsigned short channel with unmodified alpha in place image multiplication then scale by maximum value for pixel bit width.

- NppStatus nppiMulScale_16u_C4R (const Npp16u *pSrc1, int nSrc1Step, const Npp16u *pSrc2, int nSrc2Step, Npp16u *pDst, int nDstStep, NppiSize oSizeROI)

  Four 16-bit unsigned short channel image multiplication then scale by maximum value for pixel bit width.

- NppStatus nppiMulScale_16u_C4IR (const Npp16u *pSrc, int nSrcStep, Npp16u *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

Four 16-bit unsigned short channel in place image multiplication then scale by maximum value for pixel bit width.

Sub Image

Pixel by pixel subtraction of two images.

- NppStatus nppiSub_8u_C1RSfs (const Npp8u ∗pSrc1, int nSrc1Step, const Npp8u ∗pSrc2, int nSrc2Step, Npp8u ∗pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  One 8-bit unsigned char channel image subtraction, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

- NppStatus nppiSub_8u_C1IRSfs (const Npp8u ∗pSrc, int nSrcStep, Npp8u ∗pSrcDst, int nSrcDst-Step, NppiSize oSizeROI, int nScaleFactor)

  One 8-bit unsigned char channel in place image subtraction, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

- NppStatus nppiSub_8u_C3RSfs (const Npp8u ∗pSrc1, int nSrc1Step, const Npp8u ∗pSrc2, int nSrc2Step, Npp8u ∗pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  Three 8-bit unsigned char channel image subtraction, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

- NppStatus nppiSub_8u_C3IRSfs (const Npp8u ∗pSrc, int nSrcStep, Npp8u ∗pSrcDst, int nSrcDst-Step, NppiSize oSizeROI, int nScaleFactor)

  One 8-bit unsigned char channel in place image subtraction, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

- NppStatus nppiSub_8u_AC4RSfs (const Npp8u ∗pSrc1, int nSrc1Step, const Npp8u ∗pSrc2, int nSrc2Step, Npp8u ∗pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  Four 8-bit unsigned char channel with unmodified alpha image subtraction, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

- NppStatus nppiSub_8u_AC4IRSfs (const Npp8u ∗pSrc, int nSrcStep, Npp8u ∗pSrcDst, int nSrcDst-Step, NppiSize oSizeROI, int nScaleFactor)

  Four 8-bit unsigned char channel with unmodified alpha in place image subtraction, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

- NppStatus nppiSub_8u_C4RSfs (const Npp8u ∗pSrc1, int nSrc1Step, const Npp8u ∗pSrc2, int nSrc2Step, Npp8u ∗pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  Four 8-bit unsigned char channel image subtraction, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

- NppStatus nppiSub_8u_C4IRSfs (const Npp8u ∗pSrc, int nSrcStep, Npp8u ∗pSrcDst, int nSrcDst-Step, NppiSize oSizeROI, int nScaleFactor)

  Four 8-bit unsigned char channel in place image subtraction, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

- NppStatus nppiSub_16u_C1RSfs (const Npp16u ∗pSrc1, int nSrc1Step, const Npp16u ∗pSrc2, int nSrc2Step, Npp16u ∗pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  One 16-bit unsigned short channel image subtraction, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

- NppStatus nppiSub_16u_C1IRSfs (const Npp16u *pSrc, int nSrcStep, Npp16u *pSrcDst, int nSrcD-stStep, NppiSize oSizeROI, int nScaleFactor)

  One 16-bit unsigned short channel in place image subtraction, scale by $2^{\wedge}(-nScaleFactor)$, then clamp to saturated value.

- NppStatus nppiSub_16u_C3RSfs (const Npp16u *pSrc1, int nSrc1Step, const Npp16u *pSrc2, int nSrc2Step, Npp16u *pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  Three 16-bit unsigned short channel image subtraction, scale by $2^{\wedge}(-nScaleFactor)$, then clamp to saturated value.

- NppStatus nppiSub_16u_C3IRSfs (const Npp16u *pSrc, int nSrcStep, Npp16u *pSrcDst, int nSrcD-stStep, NppiSize oSizeROI, int nScaleFactor)

  One 16-bit unsigned short channel in place image subtraction, scale by $2^{\wedge}(-nScaleFactor)$, then clamp to saturated value.

- NppStatus nppiSub_16u_AC4RSfs (const Npp16u *pSrc1, int nSrc1Step, const Npp16u *pSrc2, int nSrc2Step, Npp16u *pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  Four 16-bit unsigned short channel with unmodified alpha image subtraction, scale by $2^{\wedge}(-nScaleFactor)$, then clamp to saturated value.

- NppStatus nppiSub_16u_AC4IRSfs (const Npp16u *pSrc, int nSrcStep, Npp16u *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

  Four 16-bit unsigned short channel with unmodified alpha in place image subtraction, scale by $2^{\wedge}(-nScaleFactor)$, then clamp to saturated value.

- NppStatus nppiSub_16u_C4RSfs (const Npp16u *pSrc1, int nSrc1Step, const Npp16u *pSrc2, int nSrc2Step, Npp16u *pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  Four 16-bit unsigned short channel image subtraction, scale by $2^{\wedge}(-nScaleFactor)$, then clamp to saturated value.

- NppStatus nppiSub_16u_C4IRSfs (const Npp16u *pSrc, int nSrcStep, Npp16u *pSrcDst, int nSrcD-stStep, NppiSize oSizeROI, int nScaleFactor)

  Four 16-bit unsigned short channel in place image subtraction, scale by $2^{\wedge}(-nScaleFactor)$, then clamp to saturated value.

- NppStatus nppiSub_16s_C1RSfs (const Npp16s *pSrc1, int nSrc1Step, const Npp16s *pSrc2, int nSrc2Step, Npp16s *pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  One 16-bit signed short channel image subtraction, scale by $2^{\wedge}(-nScaleFactor)$, then clamp to saturated value.

- NppStatus nppiSub_16s_C1IRSfs (const Npp16s *pSrc, int nSrcStep, Npp16s *pSrcDst, int nSrcD-stStep, NppiSize oSizeROI, int nScaleFactor)

  One 16-bit signed short channel in place image subtraction, scale by $2^{\wedge}(-nScaleFactor)$, then clamp to saturated value.

- NppStatus nppiSub_16s_C3RSfs (const Npp16s *pSrc1, int nSrc1Step, const Npp16s *pSrc2, int nSrc2Step, Npp16s *pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  Three 16-bit signed short channel image subtraction, scale by $2^{\wedge}(-nScaleFactor)$, then clamp to saturated value.

- NppStatus nppiSub_16s_C3IRSfs (const Npp16s *pSrc, int nSrcStep, Npp16s *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

  One 16-bit signed short channel in place image subtraction, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiSub_16s_AC4RSfs (const Npp16s *pSrc1, int nSrc1Step, const Npp16s *pSrc2, int nSrc2Step, Npp16s *pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  Four 16-bit signed short channel with unmodified alpha image subtraction, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiSub_16s_AC4IRSfs (const Npp16s *pSrc, int nSrcStep, Npp16s *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

  Four 16-bit signed short channel with unmodified alpha in place image subtraction, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiSub_16s_C4RSfs (const Npp16s *pSrc1, int nSrc1Step, const Npp16s *pSrc2, int nSrc2Step, Npp16s *pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  Four 16-bit signed short channel image subtraction, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiSub_16s_C4IRSfs (const Npp16s *pSrc, int nSrcStep, Npp16s *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

  Four 16-bit signed short channel in place image subtraction, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiSub_16sc_C1RSfs (const Npp16sc *pSrc1, int nSrc1Step, const Npp16sc *pSrc2, int nSrc2Step, Npp16sc *pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  One 16-bit signed short complex number (16-bit real, 16-bit imaginary) channel image subtraction, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiSub_16sc_C1IRSfs (const Npp16sc *pSrc, int nSrcStep, Npp16sc *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

  One 16-bit signed short complex number (16-bit real, 16-bit imaginary) channel in place image subtraction, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiSub_16sc_C3RSfs (const Npp16sc *pSrc1, int nSrc1Step, const Npp16sc *pSrc2, int nSrc2Step, Npp16sc *pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  Three 16-bit signed short complex number (16-bit real, 16-bit imaginary) channel image subtraction, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiSub_16sc_C3IRSfs (const Npp16sc *pSrc, int nSrcStep, Npp16sc *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

  One 16-bit signed short complex number (16-bit real, 16-bit imaginary) channel in place image subtraction, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiSub_16sc_AC4RSfs (const Npp16sc *pSrc1, int nSrc1Step, const Npp16sc *pSrc2, int nSrc2Step, Npp16sc *pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  Four 16-bit signed short complex number (16-bit real, 16-bit imaginary) channel with unmodified alpha image subtraction, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiSub_16sc_AC4IRSfs (const Npp16sc *pSrc, int nSrcStep, Npp16sc *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

Four 16-bit signed short complex number (16-bit real, 16-bit imaginary) channel with unmodified alpha in place image subtraction, scale by 2^(-nScaleFactor), then clamp to saturated value.

- NppStatus nppiSub_32s_C1RSfs (const Npp32s ∗pSrc1, int nSrc1Step, const Npp32s ∗pSrc2, int nSrc2Step, Npp32s ∗pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  One 32-bit signed integer channel image subtraction, scale by 2^(-nScaleFactor), then clamp to saturated value.

- NppStatus nppiSub_32s_C1R (const Npp32s ∗pSrc1, int nSrc1Step, const Npp32s ∗pSrc2, int nSrc2Step, Npp32s ∗pDst, int nDstStep, NppiSize oSizeROI)

  Note: This function is to be deprecated in future NPP releases, use the function above with a scale factor of 0 instead.

- NppStatus nppiSub_32s_C1IRSfs (const Npp32s ∗pSrc, int nSrcStep, Npp32s ∗pSrcDst, int nSrcD-stStep, NppiSize oSizeROI, int nScaleFactor)

  One 32-bit signed integer channel in place image subtraction, scale by 2^(-nScaleFactor), then clamp to saturated value.

- NppStatus nppiSub_32s_C3RSfs (const Npp32s ∗pSrc1, int nSrc1Step, const Npp32s ∗pSrc2, int nSrc2Step, Npp32s ∗pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  Three 32-bit signed integer channel image subtraction, scale by 2^(-nScaleFactor), then clamp to saturated value.

- NppStatus nppiSub_32s_C3IRSfs (const Npp32s ∗pSrc, int nSrcStep, Npp32s ∗pSrcDst, int nSrcD-stStep, NppiSize oSizeROI, int nScaleFactor)

  One 32-bit signed integer channel in place image subtraction, scale by 2^(-nScaleFactor), then clamp to saturated value.

- NppStatus nppiSub_32sc_C1RSfs (const Npp32sc ∗pSrc1, int nSrc1Step, const Npp32sc ∗pSrc2, int nSrc2Step, Npp32sc ∗pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  One 32-bit signed integer complex number (32-bit real, 32-bit imaginary) channel image subtraction, scale by 2^(-nScaleFactor), then clamp to saturated value.

- NppStatus nppiSub_32sc_C1IRSfs (const Npp32sc ∗pSrc, int nSrcStep, Npp32sc ∗pSrcDst, int nSr-cDstStep, NppiSize oSizeROI, int nScaleFactor)

  One 32-bit signed integer complex number (32-bit real, 32-bit imaginary) channel in place image subtraction, scale by 2^(-nScaleFactor), then clamp to saturated value.

- NppStatus nppiSub_32sc_C3RSfs (const Npp32sc ∗pSrc1, int nSrc1Step, const Npp32sc ∗pSrc2, int nSrc2Step, Npp32sc ∗pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  Three 32-bit signed integer complex number (32-bit real, 32-bit imaginary) channel image subtraction, scale by 2^(-nScaleFactor), then clamp to saturated value.

- NppStatus nppiSub_32sc_C3IRSfs (const Npp32sc ∗pSrc, int nSrcStep, Npp32sc ∗pSrcDst, int nSr-cDstStep, NppiSize oSizeROI, int nScaleFactor)

  One 32-bit signed integer complex number (32-bit real, 32-bit imaginary) channel in place image subtraction, scale by 2^(-nScaleFactor), then clamp to saturated value.

- NppStatus nppiSub_32sc_AC4RSfs (const Npp32sc ∗pSrc1, int nSrc1Step, const Npp32sc ∗pSrc2, int nSrc2Step, Npp32sc ∗pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  Four 32-bit signed integer complex number (32-bit real, 32-bit imaginary) channel with unmodified alpha image subtraction, scale by 2^(-nScaleFactor), then clamp to saturated value.

- NppStatus nppiSub_32sc_AC4IRSfs (const Npp32sc *pSrc, int nSrcStep, Npp32sc *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

  Four 32-bit signed integer complex number (32-bit real, 32-bit imaginary) channel with unmodified alpha in place image subtraction, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

- NppStatus nppiSub_32f_C1R (const Npp32f *pSrc1, int nSrc1Step, const Npp32f *pSrc2, int nSrc2Step, Npp32f *pDst, int nDstStep, NppiSize oSizeROI)

  One 32-bit floating point channel image subtraction.

- NppStatus nppiSub_32f_C1IR (const Npp32f *pSrc, int nSrcStep, Npp32f *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

  One 32-bit floating point channel in place image subtraction.

- NppStatus nppiSub_32f_C3R (const Npp32f *pSrc1, int nSrc1Step, const Npp32f *pSrc2, int nSrc2Step, Npp32f *pDst, int nDstStep, NppiSize oSizeROI)

  Three 32-bit floating point channel image subtraction.

- NppStatus nppiSub_32f_C3IR (const Npp32f *pSrc, int nSrcStep, Npp32f *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

  One 32-bit floating point channel in place image subtraction.

- NppStatus nppiSub_32f_AC4R (const Npp32f *pSrc1, int nSrc1Step, const Npp32f *pSrc2, int nSrc2Step, Npp32f *pDst, int nDstStep, NppiSize oSizeROI)

  Four 32-bit floating point channel with unmodified alpha image subtraction.

- NppStatus nppiSub_32f_AC4IR (const Npp32f *pSrc, int nSrcStep, Npp32f *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

  Four 32-bit floating point channel with unmodified alpha in place image subtraction.

- NppStatus nppiSub_32f_C4R (const Npp32f *pSrc1, int nSrc1Step, const Npp32f *pSrc2, int nSrc2Step, Npp32f *pDst, int nDstStep, NppiSize oSizeROI)

  Four 32-bit floating point channel image subtraction.

- NppStatus nppiSub_32f_C4IR (const Npp32f *pSrc, int nSrcStep, Npp32f *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

  Four 32-bit floating point channel in place image subtraction.

- NppStatus nppiSub_32fc_C1R (const Npp32fc *pSrc1, int nSrc1Step, const Npp32fc *pSrc2, int nSrc2Step, Npp32fc *pDst, int nDstStep, NppiSize oSizeROI)

  One 32-bit floating point complex number (32-bit real, 32-bit imaginary) channel image subtraction.

- NppStatus nppiSub_32fc_C1IR (const Npp32fc *pSrc, int nSrcStep, Npp32fc *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

  One 32-bit floating point complex number (32-bit real, 32-bit imaginary) channel in place image subtraction.

- NppStatus nppiSub_32fc_C3R (const Npp32fc *pSrc1, int nSrc1Step, const Npp32fc *pSrc2, int nSrc2Step, Npp32fc *pDst, int nDstStep, NppiSize oSizeROI)

  Three 32-bit floating point complex number (32-bit real, 32-bit imaginary) channel image subtraction.

- NppStatus nppiSub_32fc_C3IR (const Npp32fc *pSrc, int nSrcStep, Npp32fc *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

  One 32-bit floating point complex number (32-bit real, 32-bit imaginary) channel in place image subtraction.

- NppStatus nppiSub_32fc_AC4R (const Npp32fc *pSrc1, int nSrc1Step, const Npp32fc *pSrc2, int nSrc2Step, Npp32fc *pDst, int nDstStep, NppiSize oSizeROI)

  Four 32-bit floating point complex number (32-bit real, 32-bit imaginary) channel with unmodified alpha image subtraction.

- NppStatus nppiSub_32fc_AC4IR (const Npp32fc *pSrc, int nSrcStep, Npp32fc *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

  Four 32-bit floating point complex number (32-bit real, 32-bit imaginary) channel with unmodified alpha in place image subtraction.

- NppStatus nppiSub_32fc_C4R (const Npp32fc *pSrc1, int nSrc1Step, const Npp32fc *pSrc2, int nSrc2Step, Npp32fc *pDst, int nDstStep, NppiSize oSizeROI)

  Four 32-bit floating point complex number (32-bit real, 32-bit imaginary) channel image subtraction.

- NppStatus nppiSub_32fc_C4IR (const Npp32fc *pSrc, int nSrcStep, Npp32fc *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

  Four 32-bit floating point complex number (32-bit real, 32-bit imaginary) channel in place image subtraction.

Div Image

Pixel by pixel division of two images.

- NppStatus nppiDiv_8u_C1RSfs (const Npp8u *pSrc1, int nSrc1Step, const Npp8u *pSrc2, int nSrc2Step, Npp8u *pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  One 8-bit unsigned char channel image division, scale by $2^{\wedge}(-nScaleFactor)$, then clamp to saturated value.

- NppStatus nppiDiv_8u_C1IRSfs (const Npp8u *pSrc, int nSrcStep, Npp8u *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

  One 8-bit unsigned char channel in place image division, scale by $2^{\wedge}(-nScaleFactor)$, then clamp to saturated value.

- NppStatus nppiDiv_8u_C3RSfs (const Npp8u *pSrc1, int nSrc1Step, const Npp8u *pSrc2, int nSrc2Step, Npp8u *pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  Three 8-bit unsigned char channel image division, scale by $2^{\wedge}(-nScaleFactor)$, then clamp to saturated value.

- NppStatus nppiDiv_8u_C3IRSfs (const Npp8u *pSrc, int nSrcStep, Npp8u *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

  One 8-bit unsigned char channel in place image division, scale by $2^{\wedge}(-nScaleFactor)$, then clamp to saturated value.

- NppStatus nppiDiv_8u_AC4RSfs (const Npp8u *pSrc1, int nSrc1Step, const Npp8u *pSrc2, int nSrc2Step, Npp8u *pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

Four 8-bit unsigned char channel with unmodified alpha image division, scale by $2^{\wedge}(-nScaleFactor)$, then clamp to saturated value.

- NppStatus nppiDiv_8u_AC4IRSfs (const Npp8u ∗pSrc, int nSrcStep, Npp8u ∗pSrcDst, int nSrcDst-Step, NppiSize oSizeROI, int nScaleFactor)

  Four 8-bit unsigned char channel with unmodified alpha in place image division, scale by $2^{\wedge}(-nScaleFactor)$, then clamp to saturated value.

- NppStatus nppiDiv_8u_C4RSfs (const Npp8u ∗pSrc1, int nSrc1Step, const Npp8u ∗pSrc2, int nSrc2Step, Npp8u ∗pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  Four 8-bit unsigned char channel image division, scale by $2^{\wedge}(-nScaleFactor)$, then clamp to saturated value.

- NppStatus nppiDiv_8u_C4IRSfs (const Npp8u ∗pSrc, int nSrcStep, Npp8u ∗pSrcDst, int nSrcDst-Step, NppiSize oSizeROI, int nScaleFactor)

  Four 8-bit unsigned char channel in place image division, scale by $2^{\wedge}(-nScaleFactor)$, then clamp to saturated value.

- NppStatus nppiDiv_16u_C1RSfs (const Npp16u ∗pSrc1, int nSrc1Step, const Npp16u ∗pSrc2, int nSrc2Step, Npp16u ∗pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  One 16-bit unsigned short channel image division, scale by $2^{\wedge}(-nScaleFactor)$, then clamp to saturated value.

- NppStatus nppiDiv_16u_C1IRSfs (const Npp16u ∗pSrc, int nSrcStep, Npp16u ∗pSrcDst, int nSrcD-stStep, NppiSize oSizeROI, int nScaleFactor)

  One 16-bit unsigned short channel in place image division, scale by $2^{\wedge}(-nScaleFactor)$, then clamp to saturated value.

- NppStatus nppiDiv_16u_C3RSfs (const Npp16u ∗pSrc1, int nSrc1Step, const Npp16u ∗pSrc2, int nSrc2Step, Npp16u ∗pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  Three 16-bit unsigned short channel image division, scale by $2^{\wedge}(-nScaleFactor)$, then clamp to saturated value.

- NppStatus nppiDiv_16u_C3IRSfs (const Npp16u ∗pSrc, int nSrcStep, Npp16u ∗pSrcDst, int nSrcD-stStep, NppiSize oSizeROI, int nScaleFactor)

  One 16-bit unsigned short channel in place image division, scale by $2^{\wedge}(-nScaleFactor)$, then clamp to saturated value.

- NppStatus nppiDiv_16u_AC4RSfs (const Npp16u ∗pSrc1, int nSrc1Step, const Npp16u ∗pSrc2, int nSrc2Step, Npp16u ∗pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  Four 16-bit unsigned short channel with unmodified alpha image division, scale by $2^{\wedge}(-nScaleFactor)$, then clamp to saturated value.

- NppStatus nppiDiv_16u_AC4IRSfs (const Npp16u ∗pSrc, int nSrcStep, Npp16u ∗pSrcDst, int nSr-cDstStep, NppiSize oSizeROI, int nScaleFactor)

  Four 16-bit unsigned short channel with unmodified alpha in place image division, scale by $2^{\wedge}(-nScaleFactor)$, then clamp to saturated value.

- NppStatus nppiDiv_16u_C4RSfs (const Npp16u ∗pSrc1, int nSrc1Step, const Npp16u ∗pSrc2, int nSrc2Step, Npp16u ∗pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  Four 16-bit unsigned short channel image division, scale by $2^{\wedge}(-nScaleFactor)$, then clamp to saturated value.

- NppStatus nppiDiv_16u_C4IRSfs (const Npp16u *pSrc, int nSrcStep, Npp16u *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

  Four 16-bit unsigned short channel in place image division, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiDiv_16s_C1RSfs (const Npp16s *pSrc1, int nSrc1Step, const Npp16s *pSrc2, int nSrc2Step, Npp16s *pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  One 16-bit signed short channel image division, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiDiv_16s_C1IRSfs (const Npp16s *pSrc, int nSrcStep, Npp16s *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

  One 16-bit signed short channel in place image division, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiDiv_16s_C3RSfs (const Npp16s *pSrc1, int nSrc1Step, const Npp16s *pSrc2, int nSrc2Step, Npp16s *pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  Three 16-bit signed short channel image division, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiDiv_16s_C3IRSfs (const Npp16s *pSrc, int nSrcStep, Npp16s *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

  One 16-bit signed short channel in place image division, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiDiv_16s_AC4RSfs (const Npp16s *pSrc1, int nSrc1Step, const Npp16s *pSrc2, int nSrc2Step, Npp16s *pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  Four 16-bit signed short channel with unmodified alpha image division, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiDiv_16s_AC4IRSfs (const Npp16s *pSrc, int nSrcStep, Npp16s *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

  Four 16-bit signed short channel with unmodified alpha in place image division, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiDiv_16s_C4RSfs (const Npp16s *pSrc1, int nSrc1Step, const Npp16s *pSrc2, int nSrc2Step, Npp16s *pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  Four 16-bit signed short channel image division, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiDiv_16s_C4IRSfs (const Npp16s *pSrc, int nSrcStep, Npp16s *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

  Four 16-bit signed short channel in place image division, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiDiv_16sc_C1RSfs (const Npp16sc *pSrc1, int nSrc1Step, const Npp16sc *pSrc2, int nSrc2Step, Npp16sc *pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  One 16-bit signed short complex number (16-bit real, 16-bit imaginary) channel image division, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiDiv_16sc_C1IRSfs (const Npp16sc *pSrc, int nSrcStep, Npp16sc *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

  One 16-bit signed short complex number (16-bit real, 16-bit imaginary) channel in place image division, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiDiv_16sc_C3RSfs (const Npp16sc *pSrc1, int nSrc1Step, const Npp16sc *pSrc2, int nSrc2Step, Npp16sc *pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  Three 16-bit signed short complex number (16-bit real, 16-bit imaginary) channel image division, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiDiv_16sc_C3IRSfs (const Npp16sc *pSrc, int nSrcStep, Npp16sc *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

  One 16-bit signed short complex number (16-bit real, 16-bit imaginary) channel in place image division, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiDiv_16sc_AC4RSfs (const Npp16sc *pSrc1, int nSrc1Step, const Npp16sc *pSrc2, int nSrc2Step, Npp16sc *pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  Four 16-bit signed short complex number (16-bit real, 16-bit imaginary) channel with unmodified alpha image division, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiDiv_16sc_AC4IRSfs (const Npp16sc *pSrc, int nSrcStep, Npp16sc *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

  Four 16-bit signed short complex number (16-bit real, 16-bit imaginary) channel with unmodified alpha in place image division, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiDiv_32s_C1RSfs (const Npp32s *pSrc1, int nSrc1Step, const Npp32s *pSrc2, int nSrc2Step, Npp32s *pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  One 32-bit signed integer channel image division, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiDiv_32s_C1R (const Npp32s *pSrc1, int nSrc1Step, const Npp32s *pSrc2, int nSrc2Step, Npp32s *pDst, int nDstStep, NppiSize oSizeROI)

  Note: This function is to be deprecated in future NPP releases, use the function above with a scale factor of 0 instead.

- NppStatus nppiDiv_32s_C1IRSfs (const Npp32s *pSrc, int nSrcStep, Npp32s *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

  One 32-bit signed integer channel in place image division, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiDiv_32s_C3RSfs (const Npp32s *pSrc1, int nSrc1Step, const Npp32s *pSrc2, int nSrc2Step, Npp32s *pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  Three 32-bit signed integer channel image division, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiDiv_32s_C3IRSfs (const Npp32s *pSrc, int nSrcStep, Npp32s *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

  One 32-bit signed integer channel in place image division, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiDiv_32sc_C1RSfs (const Npp32sc *pSrc1, int nSrc1Step, const Npp32sc *pSrc2, int nSrc2Step, Npp32sc *pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  One 32-bit signed integer complex number (32-bit real, 32-bit imaginary) channel image division, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiDiv_32sc_C1IRSfs (const Npp32sc *pSrc, int nSrcStep, Npp32sc *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

  One 32-bit signed integer complex number (32-bit real, 32-bit imaginary) channel in place image division, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiDiv_32sc_C3RSfs (const Npp32sc *pSrc1, int nSrc1Step, const Npp32sc *pSrc2, int nSrc2Step, Npp32sc *pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  Three 32-bit signed integer complex number (32-bit real, 32-bit imaginary) channel image division, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiDiv_32sc_C3IRSfs (const Npp32sc *pSrc, int nSrcStep, Npp32sc *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

  One 32-bit signed integer complex number (32-bit real, 32-bit imaginary) channel in place image division, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiDiv_32sc_AC4RSfs (const Npp32sc *pSrc1, int nSrc1Step, const Npp32sc *pSrc2, int nSrc2Step, Npp32sc *pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  Four 32-bit signed integer complex number (32-bit real, 32-bit imaginary) channel with unmodified alpha image division, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiDiv_32sc_AC4IRSfs (const Npp32sc *pSrc, int nSrcStep, Npp32sc *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

  Four 32-bit signed integer complex number (32-bit real, 32-bit imaginary) channel with unmodified alpha in place image division, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiDiv_32f_C1R (const Npp32f *pSrc1, int nSrc1Step, const Npp32f *pSrc2, int nSrc2Step, Npp32f *pDst, int nDstStep, NppiSize oSizeROI)

  One 32-bit floating point channel image division.

- NppStatus nppiDiv_32f_C1IR (const Npp32f *pSrc, int nSrcStep, Npp32f *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

  One 32-bit floating point channel in place image division.

- NppStatus nppiDiv_32f_C3R (const Npp32f *pSrc1, int nSrc1Step, const Npp32f *pSrc2, int nSrc2Step, Npp32f *pDst, int nDstStep, NppiSize oSizeROI)

  Three 32-bit floating point channel image division.

- NppStatus nppiDiv_32f_C3IR (const Npp32f *pSrc, int nSrcStep, Npp32f *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

  One 32-bit floating point channel in place image division.

- NppStatus nppiDiv_32f_AC4R (const Npp32f *pSrc1, int nSrc1Step, const Npp32f *pSrc2, int nSrc2Step, Npp32f *pDst, int nDstStep, NppiSize oSizeROI)

  Four 32-bit floating point channel with unmodified alpha image division.

- NppStatus nppiDiv_32f_AC4IR (const Npp32f *pSrc, int nSrcStep, Npp32f *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

  Four 32-bit floating point channel with unmodified alpha in place image division.

- NppStatus nppiDiv_32f_C4R (const Npp32f *pSrc1, int nSrc1Step, const Npp32f *pSrc2, int nSrc2Step, Npp32f *pDst, int nDstStep, NppiSize oSizeROI)

Four 32-bit floating point channel image division.

- NppStatus nppiDiv_32f_C4IR (const Npp32f ∗pSrc, int nSrcStep, Npp32f ∗pSrcDst, int nSrcDst-Step, NppiSize oSizeROI)

  Four 32-bit floating point channel in place image division.

- NppStatus nppiDiv_32fc_C1R (const Npp32fc ∗pSrc1, int nSrc1Step, const Npp32fc ∗pSrc2, int nSrc2Step, Npp32fc ∗pDst, int nDstStep, NppiSize oSizeROI)

  One 32-bit floating point complex number (32-bit real, 32-bit imaginary) channel image division.

- NppStatus nppiDiv_32fc_C1IR (const Npp32fc ∗pSrc, int nSrcStep, Npp32fc ∗pSrcDst, int nSrcD-stStep, NppiSize oSizeROI)

  One 32-bit floating point complex number (32-bit real, 32-bit imaginary) channel in place image division.

- NppStatus nppiDiv_32fc_C3R (const Npp32fc ∗pSrc1, int nSrc1Step, const Npp32fc ∗pSrc2, int nSrc2Step, Npp32fc ∗pDst, int nDstStep, NppiSize oSizeROI)

  Three 32-bit floating point complex number (32-bit real, 32-bit imaginary) channel image division.

- NppStatus nppiDiv_32fc_C3IR (const Npp32fc ∗pSrc, int nSrcStep, Npp32fc ∗pSrcDst, int nSrcD-stStep, NppiSize oSizeROI)

  One 32-bit floating point complex number (32-bit real, 32-bit imaginary) channel in place image division.

- NppStatus nppiDiv_32fc_AC4R (const Npp32fc ∗pSrc1, int nSrc1Step, const Npp32fc ∗pSrc2, int nSrc2Step, Npp32fc ∗pDst, int nDstStep, NppiSize oSizeROI)

  Four 32-bit floating point complex number (32-bit real, 32-bit imaginary) channel with unmodified alpha image division.

- NppStatus nppiDiv_32fc_AC4IR (const Npp32fc ∗pSrc, int nSrcStep, Npp32fc ∗pSrcDst, int nSr-cDstStep, NppiSize oSizeROI)

  Four 32-bit floating point complex number (32-bit real, 32-bit imaginary) channel with unmodified alpha in place image division.

- NppStatus nppiDiv_32fc_C4R (const Npp32fc ∗pSrc1, int nSrc1Step, const Npp32fc ∗pSrc2, int nSrc2Step, Npp32fc ∗pDst, int nDstStep, NppiSize oSizeROI)

  Four 32-bit floating point complex number (32-bit real, 32-bit imaginary) channel image division.

- NppStatus nppiDiv_32fc_C4IR (const Npp32fc ∗pSrc, int nSrcStep, Npp32fc ∗pSrcDst, int nSrcD-stStep, NppiSize oSizeROI)

  Four 32-bit floating point complex number (32-bit real, 32-bit imaginary) channel in place image division.

Div_Round Image

Pixel by pixel division of two images using result rounding modes.

- NppStatus nppiDiv_Round_8u_C1RSfs (const Npp8u ∗pSrc1, int nSrc1Step, const Npp8u ∗pSrc2, int nSrc2Step, Npp8u ∗pDst, int nDstStep, NppiSize oSizeROI, NppRoundMode rndMode, int nScaleFactor)

  One 8-bit unsigned char channel image division, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiDiv_Round_8u_C1IRSfs (const Npp8u *pSrc, int nSrcStep, Npp8u *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, NppRoundMode rndMode, int nScaleFactor)

  One 8-bit unsigned char channel in place image division, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiDiv_Round_8u_C3RSfs (const Npp8u *pSrc1, int nSrc1Step, const Npp8u *pSrc2, int nSrc2Step, Npp8u *pDst, int nDstStep, NppiSize oSizeROI, NppRoundMode rndMode, int nScaleFactor)

  Three 8-bit unsigned char channel image division, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiDiv_Round_8u_C3IRSfs (const Npp8u *pSrc, int nSrcStep, Npp8u *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, NppRoundMode rndMode, int nScaleFactor)

  Three 8-bit unsigned char channel in place image division, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiDiv_Round_8u_AC4RSfs (const Npp8u *pSrc1, int nSrc1Step, const Npp8u *pSrc2, int nSrc2Step, Npp8u *pDst, int nDstStep, NppiSize oSizeROI, NppRoundMode rndMode, int nScaleFactor)

  Four 8-bit unsigned char channel image division with unmodified alpha, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiDiv_Round_8u_AC4IRSfs (const Npp8u *pSrc, int nSrcStep, Npp8u *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, NppRoundMode rndMode, int nScaleFactor)

  Four 8-bit unsigned char channel in place image division with unmodified alpha, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiDiv_Round_8u_C4RSfs (const Npp8u *pSrc1, int nSrc1Step, const Npp8u *pSrc2, int nSrc2Step, Npp8u *pDst, int nDstStep, NppiSize oSizeROI, NppRoundMode rndMode, int nScaleFactor)

  Four 8-bit unsigned char channel image division, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiDiv_Round_8u_C4IRSfs (const Npp8u *pSrc, int nSrcStep, Npp8u *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, NppRoundMode rndMode, int nScaleFactor)

  Four 8-bit unsigned char channel in place image division, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiDiv_Round_16u_C1RSfs (const Npp16u *pSrc1, int nSrc1Step, const Npp16u *pSrc2, int nSrc2Step, Npp16u *pDst, int nDstStep, NppiSize oSizeROI, NppRoundMode rndMode, int nScaleFactor)

  One 16-bit unsigned short channel image division, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiDiv_Round_16u_C1IRSfs (const Npp16u *pSrc, int nSrcStep, Npp16u *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, NppRoundMode rndMode, int nScaleFactor)

  One 16-bit unsigned short channel in place image division, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiDiv_Round_16u_C3RSfs (const Npp16u *pSrc1, int nSrc1Step, const Npp16u *pSrc2, int nSrc2Step, Npp16u *pDst, int nDstStep, NppiSize oSizeROI, NppRoundMode rndMode, int nScaleFactor)

  Three 16-bit unsigned short channel image division, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiDiv_Round_16u_C3IRSfs (const Npp16u *pSrc, int nSrcStep, Npp16u *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, NppRoundMode rndMode, int nScaleFactor)

  Three 16-bit unsigned short channel in place image division, scale by $2^{\wedge}(-nScaleFactor)$, then clamp to saturated value.

- NppStatus nppiDiv_Round_16u_AC4RSfs (const Npp16u *pSrc1, int nSrc1Step, const Npp16u *pSrc2, int nSrc2Step, Npp16u *pDst, int nDstStep, NppiSize oSizeROI, NppRoundMode rndMode, int nScaleFactor)

  Four 16-bit unsigned short channel image division with unmodified alpha, scale by $2^{\wedge}(-nScaleFactor)$, then clamp to saturated value.

- NppStatus nppiDiv_Round_16u_AC4IRSfs (const Npp16u *pSrc, int nSrcStep, Npp16u *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, NppRoundMode rndMode, int nScaleFactor)

  Four 16-bit unsigned short channel in place image division with unmodified alpha, scale by $2^{\wedge}(-nScaleFactor)$, then clamp to saturated value.

- NppStatus nppiDiv_Round_16u_C4RSfs (const Npp16u *pSrc1, int nSrc1Step, const Npp16u *pSrc2, int nSrc2Step, Npp16u *pDst, int nDstStep, NppiSize oSizeROI, NppRoundMode rndMode, int nScaleFactor)

  Four 16-bit unsigned short channel image division, scale by $2^{\wedge}(-nScaleFactor)$, then clamp to saturated value.

- NppStatus nppiDiv_Round_16u_C4IRSfs (const Npp16u *pSrc, int nSrcStep, Npp16u *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, NppRoundMode rndMode, int nScaleFactor)

  Four 16-bit unsigned short channel in place image division, scale by $2^{\wedge}(-nScaleFactor)$, then clamp to saturated value.

- NppStatus nppiDiv_Round_16s_C1RSfs (const Npp16s *pSrc1, int nSrc1Step, const Npp16s *pSrc2, int nSrc2Step, Npp16s *pDst, int nDstStep, NppiSize oSizeROI, NppRoundMode rndMode, int nScaleFactor)

  One 16-bit signed short channel image division, scale by $2^{\wedge}(-nScaleFactor)$, then clamp to saturated value.

- NppStatus nppiDiv_Round_16s_C1IRSfs (const Npp16s *pSrc, int nSrcStep, Npp16s *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, NppRoundMode rndMode, int nScaleFactor)

  One 16-bit signed short channel in place image division, scale by $2^{\wedge}(-nScaleFactor)$, then clamp to saturated value.

- NppStatus nppiDiv_Round_16s_C3RSfs (const Npp16s *pSrc1, int nSrc1Step, const Npp16s *pSrc2, int nSrc2Step, Npp16s *pDst, int nDstStep, NppiSize oSizeROI, NppRoundMode rndMode, int nScaleFactor)

  Three 16-bit signed short channel image division, scale by $2^{\wedge}(-nScaleFactor)$, then clamp to saturated value.

- NppStatus nppiDiv_Round_16s_C3IRSfs (const Npp16s *pSrc, int nSrcStep, Npp16s *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, NppRoundMode rndMode, int nScaleFactor)

  Three 16-bit signed short channel in place image division, scale by $2^{\wedge}(-nScaleFactor)$, then clamp to saturated value.

- NppStatus nppiDiv_Round_16s_AC4RSfs (const Npp16s *pSrc1, int nSrc1Step, const Npp16s *pSrc2, int nSrc2Step, Npp16s *pDst, int nDstStep, NppiSize oSizeROI, NppRoundMode rndMode, int nScaleFactor)

Four 16-bit signed short channel image division with unmodified alpha, scale by 2$^\wedge$(-nScaleFactor), then clamp to saturated value.

- NppStatus nppiDiv_Round_16s_AC4IRSfs (const Npp16s ∗pSrc, int nSrcStep, Npp16s ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI, NppRoundMode rndMode, int nScaleFactor)

    Four 16-bit signed short channel in place image division with unmodified alpha, scale by 2$^\wedge$(-nScaleFactor), then clamp to saturated value.

- NppStatus nppiDiv_Round_16s_C4RSfs (const Npp16s ∗pSrc1, int nSrc1Step, const Npp16s ∗pSrc2, int nSrc2Step, Npp16s ∗pDst, int nDstStep, NppiSize oSizeROI, NppRoundMode rndMode, int nScaleFactor)

    Four 16-bit signed short channel image division, scale by 2$^\wedge$(-nScaleFactor), then clamp to saturated value.

- NppStatus nppiDiv_Round_16s_C4IRSfs (const Npp16s ∗pSrc, int nSrcStep, Npp16s ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI, NppRoundMode rndMode, int nScaleFactor)

    Four 16-bit signed short channel in place image division, scale by 2$^\wedge$(-nScaleFactor), then clamp to saturated value.

Abs Image

Absolute value of each pixel value in an image.

- NppStatus nppiAbs_16s_C1R (const Npp16s ∗pSrc, int nSrcStep, Npp16s ∗pDst, int nDstStep, NppiSize oSizeROI)

    One 16-bit signed short channel image absolute value.

- NppStatus nppiAbs_16s_C1IR (Npp16s ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

    One 16-bit signed short channel in place image absolute value.

- NppStatus nppiAbs_16s_C3R (const Npp16s ∗pSrc, int nSrcStep, Npp16s ∗pDst, int nDstStep, NppiSize oSizeROI)

    Three 16-bit signed short channel image absolute value.

- NppStatus nppiAbs_16s_C3IR (Npp16s ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

    Three 16-bit signed short channel in place image absolute value.

- NppStatus nppiAbs_16s_AC4R (const Npp16s ∗pSrc, int nSrcStep, Npp16s ∗pDst, int nDstStep, NppiSize oSizeROI)

    Four 16-bit signed short channel image absolute value with unmodified alpha.

- NppStatus nppiAbs_16s_AC4IR (Npp16s ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

    Four 16-bit signed short channel in place image absolute value with unmodified alpha.

- NppStatus nppiAbs_16s_C4R (const Npp16s ∗pSrc, int nSrcStep, Npp16s ∗pDst, int nDstStep, NppiSize oSizeROI)

    Four 16-bit signed short channel image absolute value.

- NppStatus nppiAbs_16s_C4IR (Npp16s ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

    Four 16-bit signed short channel in place image absolute value.

- NppStatus nppiAbs_32f_C1R (const Npp32f *pSrc, int nSrcStep, Npp32f *pDst, int nDstStep, Nppi-Size oSizeROI)

  One 32-bit floating point channel image absolute value.

- NppStatus nppiAbs_32f_C1IR (Npp32f *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

  One 32-bit floating point channel in place image absolute value.

- NppStatus nppiAbs_32f_C3R (const Npp32f *pSrc, int nSrcStep, Npp32f *pDst, int nDstStep, Nppi-Size oSizeROI)

  Three 32-bit floating point channel image absolute value.

- NppStatus nppiAbs_32f_C3IR (Npp32f *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

  Three 32-bit floating point channel in place image absolute value.

- NppStatus nppiAbs_32f_AC4R (const Npp32f *pSrc, int nSrcStep, Npp32f *pDst, int nDstStep, NppiSize oSizeROI)

  Four 32-bit floating point channel image absolute value with unmodified alpha.

- NppStatus nppiAbs_32f_AC4IR (Npp32f *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

  Four 32-bit floating point channel in place image absolute value with unmodified alpha.

- NppStatus nppiAbs_32f_C4R (const Npp32f *pSrc, int nSrcStep, Npp32f *pDst, int nDstStep, Nppi-Size oSizeROI)

  Four 32-bit floating point channel image absolute value.

- NppStatus nppiAbs_32f_C4IR (Npp32f *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

  Four 32-bit floating point channel in place image absolute value.

AbsDiff Image

Pixel by pixel absolute difference between two images.

- NppStatus nppiAbsDiff_8u_C1R (const Npp8u *pSrc1, int nSrc1Step, const Npp8u *pSrc2, int nSrc2Step, Npp8u *pDst, int nDstStep, NppiSize oSizeROI)

  One 8-bit unsigned char channel absolute difference of image1 minus image2.

- NppStatus nppiAbsDiff_16u_C1R (const Npp16u *pSrc1, int nSrc1Step, const Npp16u *pSrc2, int nSrc2Step, Npp16u *pDst, int nDstStep, NppiSize oSizeROI)

  One 16-bit unsigned short channel absolute difference of image1 minus image2.

- NppStatus nppiAbsDiff_32f_C1R (const Npp32f *pSrc1, int nSrc1Step, const Npp32f *pSrc2, int nSrc2Step, Npp32f *pDst, int nDstStep, NppiSize oSizeROI)

  One 32-bit floating point channel absolute difference of image1 minus image2.

Sqr Image

Square each pixel in an image.

- NppStatus nppiSqr_8u_C1RSfs (const Npp8u ∗pSrc, int nSrcStep, Npp8u ∗pDst, int nDstStep, Nppi-Size oSizeROI, int nScaleFactor)

  One 8-bit unsigned char channel image squared, scale by $2^\wedge$(-nScaleFactor), then clamp to saturated value.

- NppStatus nppiSqr_8u_C1IRSfs (Npp8u ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScale-Factor)

  One 8-bit unsigned char channel in place image squared, scale by $2^\wedge$(-nScaleFactor), then clamp to saturated value.

- NppStatus nppiSqr_8u_C3RSfs (const Npp8u ∗pSrc, int nSrcStep, Npp8u ∗pDst, int nDstStep, Nppi-Size oSizeROI, int nScaleFactor)

  Three 8-bit unsigned char channel image squared, scale by $2^\wedge$(-nScaleFactor), then clamp to saturated value.

- NppStatus nppiSqr_8u_C3IRSfs (Npp8u ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScale-Factor)

  Three 8-bit unsigned char channel in place image squared, scale by $2^\wedge$(-nScaleFactor), then clamp to saturated value.

- NppStatus nppiSqr_8u_AC4RSfs (const Npp8u ∗pSrc, int nSrcStep, Npp8u ∗pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  Four 8-bit unsigned char channel image squared with unmodified alpha, scale by $2^\wedge$(-nScaleFactor), then clamp to saturated value.

- NppStatus nppiSqr_8u_AC4IRSfs (Npp8u ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

  Four 8-bit unsigned char channel in place image squared with unmodified alpha, scale by $2^\wedge$(-nScaleFactor), then clamp to saturated value.

- NppStatus nppiSqr_8u_C4RSfs (const Npp8u ∗pSrc, int nSrcStep, Npp8u ∗pDst, int nDstStep, Nppi-Size oSizeROI, int nScaleFactor)

  Four 8-bit unsigned char channel image squared, scale by $2^\wedge$(-nScaleFactor), then clamp to saturated value.

- NppStatus nppiSqr_8u_C4IRSfs (Npp8u ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScale-Factor)

  Four 8-bit unsigned char channel in place image squared, scale by $2^\wedge$(-nScaleFactor), then clamp to saturated value.

- NppStatus nppiSqr_16u_C1RSfs (const Npp16u ∗pSrc, int nSrcStep, Npp16u ∗pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  One 16-bit unsigned short channel image squared, scale by $2^\wedge$(-nScaleFactor), then clamp to saturated value.

- NppStatus nppiSqr_16u_C1IRSfs (Npp16u ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

  One 16-bit unsigned short channel in place image squared, scale by $2^\wedge$(-nScaleFactor), then clamp to saturated value.

- NppStatus nppiSqr_16u_C3RSfs (const Npp16u ∗pSrc, int nSrcStep, Npp16u ∗pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  Three 16-bit unsigned short channel image squared, scale by $2^\wedge$(-nScaleFactor), then clamp to saturated value.

- NppStatus nppiSqr_16u_C3IRSfs (Npp16u *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

  Three 16-bit unsigned short channel in place image squared, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiSqr_16u_AC4RSfs (const Npp16u *pSrc, int nSrcStep, Npp16u *pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  Four 16-bit unsigned short channel image squared with unmodified alpha, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiSqr_16u_AC4IRSfs (Npp16u *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

  Four 16-bit unsigned short channel in place image squared with unmodified alpha, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiSqr_16u_C4RSfs (const Npp16u *pSrc, int nSrcStep, Npp16u *pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  Four 16-bit unsigned short channel image squared, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiSqr_16u_C4IRSfs (Npp16u *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

  Four 16-bit unsigned short channel in place image squared, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

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  One 16-bit signed short channel image squared, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiSqr_16s_C1IRSfs (Npp16s *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

  One 16-bit signed short channel in place image squared, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiSqr_16s_C3RSfs (const Npp16s *pSrc, int nSrcStep, Npp16s *pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  Three 16-bit signed short channel image squared, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiSqr_16s_C3IRSfs (Npp16s *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

  Three 16-bit signed short channel in place image squared, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiSqr_16s_AC4RSfs (const Npp16s *pSrc, int nSrcStep, Npp16s *pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  Four 16-bit signed short channel image squared with unmodified alpha, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiSqr_16s_AC4IRSfs (Npp16s *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

Four 16-bit signed short channel in place image squared with unmodified alpha, scale by $2^\wedge(-nScaleFactor)$, then clamp to saturated value.

- NppStatus nppiSqr_16s_C4RSfs (const Npp16s *pSrc, int nSrcStep, Npp16s *pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  Four 16-bit signed short channel image squared, scale by $2^\wedge(-nScaleFactor)$, then clamp to saturated value.

- NppStatus nppiSqr_16s_C4IRSfs (Npp16s *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

  Four 16-bit signed short channel in place image squared, scale by $2^\wedge(-nScaleFactor)$, then clamp to saturated value.

- NppStatus nppiSqr_32f_C1R (const Npp32f *pSrc, int nSrcStep, Npp32f *pDst, int nDstStep, NppiSize oSizeROI)

  One 32-bit floating point channel image squared.

- NppStatus nppiSqr_32f_C1IR (Npp32f *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

  One 32-bit floating point channel in place image squared.

- NppStatus nppiSqr_32f_C3R (const Npp32f *pSrc, int nSrcStep, Npp32f *pDst, int nDstStep, NppiSize oSizeROI)

  Three 32-bit floating point channel image squared.

- NppStatus nppiSqr_32f_C3IR (Npp32f *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

  Three 32-bit floating point channel in place image squared.

- NppStatus nppiSqr_32f_AC4R (const Npp32f *pSrc, int nSrcStep, Npp32f *pDst, int nDstStep, NppiSize oSizeROI)

  Four 32-bit floating point channel image squared with unmodified alpha.

- NppStatus nppiSqr_32f_AC4IR (Npp32f *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

  Four 32-bit floating point channel in place image squared with unmodified alpha.

- NppStatus nppiSqr_32f_C4R (const Npp32f *pSrc, int nSrcStep, Npp32f *pDst, int nDstStep, NppiSize oSizeROI)

  Four 32-bit floating point channel image squared.

- NppStatus nppiSqr_32f_C4IR (Npp32f *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

  Four 32-bit floating point channel in place image squared.

Sqrt Image

Pixel by pixel square root of each pixel in an image.

- NppStatus nppiSqrt_8u_C1RSfs (const Npp8u *pSrc, int nSrcStep, Npp8u *pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  One 8-bit unsigned char channel image square root, scale by $2^\wedge(-nScaleFactor)$, then clamp to saturated value.

- NppStatus nppiSqrt_8u_C1IRSfs (Npp8u *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

    One 8-bit unsigned char channel in place image square root, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiSqrt_8u_C3RSfs (const Npp8u *pSrc, int nSrcStep, Npp8u *pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

    Three 8-bit unsigned char channel image square root, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiSqrt_8u_C3IRSfs (Npp8u *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

    Three 8-bit unsigned char channel in place image square root, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiSqrt_8u_AC4RSfs (const Npp8u *pSrc, int nSrcStep, Npp8u *pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

    Four 8-bit unsigned char channel image square root with unmodified alpha, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiSqrt_8u_AC4IRSfs (Npp8u *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

    Four 8-bit unsigned char channel in place image square root with unmodified alpha, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiSqrt_16u_C1RSfs (const Npp16u *pSrc, int nSrcStep, Npp16u *pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

    One 16-bit unsigned short channel image square root, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiSqrt_16u_C1IRSfs (Npp16u *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

    One 16-bit unsigned short channel in place image square root, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiSqrt_16u_C3RSfs (const Npp16u *pSrc, int nSrcStep, Npp16u *pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

    Three 16-bit unsigned short channel image square root, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiSqrt_16u_C3IRSfs (Npp16u *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

    Three 16-bit unsigned short channel in place image square root, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiSqrt_16u_AC4RSfs (const Npp16u *pSrc, int nSrcStep, Npp16u *pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

    Four 16-bit unsigned short channel image square root with unmodified alpha, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiSqrt_16u_AC4IRSfs (Npp16u *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

Four 16-bit unsigned short channel in place image square root with unmodified alpha, scale by 2^(-nScaleFactor), then clamp to saturated value.

- NppStatus nppiSqrt_16s_C1RSfs (const Npp16s *pSrc, int nSrcStep, Npp16s *pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  One 16-bit signed short channel image square root, scale by 2^(-nScaleFactor), then clamp to saturated value.

- NppStatus nppiSqrt_16s_C1IRSfs (Npp16s *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

  One 16-bit signed short channel in place image square root, scale by 2^(-nScaleFactor), then clamp to saturated value.

- NppStatus nppiSqrt_16s_C3RSfs (const Npp16s *pSrc, int nSrcStep, Npp16s *pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  Three 16-bit signed short channel image square root, scale by 2^(-nScaleFactor), then clamp to saturated value.

- NppStatus nppiSqrt_16s_C3IRSfs (Npp16s *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

  Three 16-bit signed short channel in place image square root, scale by 2^(-nScaleFactor), then clamp to saturated value.

- NppStatus nppiSqrt_16s_AC4RSfs (const Npp16s *pSrc, int nSrcStep, Npp16s *pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  Four 16-bit signed short channel image square root with unmodified alpha, scale by 2^(-nScaleFactor), then clamp to saturated value.

- NppStatus nppiSqrt_16s_AC4IRSfs (Npp16s *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

  Four 16-bit signed short channel in place image square root with unmodified alpha, scale by 2^(-nScaleFactor), then clamp to saturated value.

- NppStatus nppiSqrt_32f_C1R (const Npp32f *pSrc, int nSrcStep, Npp32f *pDst, int nDstStep, NppiSize oSizeROI)

  One 32-bit floating point channel image square root.

- NppStatus nppiSqrt_32f_C1IR (Npp32f *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

  One 32-bit floating point channel in place image square root.

- NppStatus nppiSqrt_32f_C3R (const Npp32f *pSrc, int nSrcStep, Npp32f *pDst, int nDstStep, NppiSize oSizeROI)

  Three 32-bit floating point channel image square root.

- NppStatus nppiSqrt_32f_C3IR (Npp32f *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

  Three 32-bit floating point channel in place image square root.

- NppStatus nppiSqrt_32f_AC4R (const Npp32f *pSrc, int nSrcStep, Npp32f *pDst, int nDstStep, NppiSize oSizeROI)

  Four 32-bit floating point channel image square root with unmodified alpha.

- NppStatus nppiSqrt_32f_AC4IR (Npp32f *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

Four 32-bit floating point channel in place image square root with unmodified alpha.

- NppStatus nppiSqrt_32f_C4R (const Npp32f ∗pSrc, int nSrcStep, Npp32f ∗pDst, int nDstStep, Nppi-Size oSizeROI)

  Four 32-bit floating point channel image square root.

- NppStatus nppiSqrt_32f_C4IR (Npp32f ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

  Four 32-bit floating point channel in place image square root.

Ln Image

Pixel by pixel natural logarithm of each pixel in an image.

- NppStatus nppiLn_8u_C1RSfs (const Npp8u ∗pSrc, int nSrcStep, Npp8u ∗pDst, int nDstStep, Nppi-Size oSizeROI, int nScaleFactor)

  One 8-bit unsigned char channel image natural logarithm, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiLn_8u_C1IRSfs (Npp8u ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

  One 8-bit unsigned char channel in place image natural logarithm, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiLn_8u_C3RSfs (const Npp8u ∗pSrc, int nSrcStep, Npp8u ∗pDst, int nDstStep, Nppi-Size oSizeROI, int nScaleFactor)

  Three 8-bit unsigned char channel image natural logarithm, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiLn_8u_C3IRSfs (Npp8u ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

  Three 8-bit unsigned char channel in place image natural logarithm, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiLn_16u_C1RSfs (const Npp16u ∗pSrc, int nSrcStep, Npp16u ∗pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  One 16-bit unsigned short channel image natural logarithm, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiLn_16u_C1IRSfs (Npp16u ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

  One 16-bit unsigned short channel in place image natural logarithm, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiLn_16u_C3RSfs (const Npp16u ∗pSrc, int nSrcStep, Npp16u ∗pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  Three 16-bit unsigned short channel image natural logarithm, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiLn_16u_C3IRSfs (Npp16u ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

Three 16-bit unsigned short channel in place image natural logarithm, scale by 2^(-nScaleFactor), then clamp to saturated value.

- NppStatus nppiLn_16s_C1RSfs (const Npp16s *pSrc, int nSrcStep, Npp16s *pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

    One 16-bit signed short channel image natural logarithm, scale by 2^(-nScaleFactor), then clamp to saturated value.

- NppStatus nppiLn_16s_C1IRSfs (Npp16s *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

    One 16-bit signed short channel in place image natural logarithm, scale by 2^(-nScaleFactor), then clamp to saturated value.

- NppStatus nppiLn_16s_C3RSfs (const Npp16s *pSrc, int nSrcStep, Npp16s *pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

    Three 16-bit signed short channel image natural logarithm, scale by 2^(-nScaleFactor), then clamp to saturated value.

- NppStatus nppiLn_16s_C3IRSfs (Npp16s *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

    Three 16-bit signed short channel in place image natural logarithm, scale by 2^(-nScaleFactor), then clamp to saturated value.

- NppStatus nppiLn_32f_C1R (const Npp32f *pSrc, int nSrcStep, Npp32f *pDst, int nDstStep, NppiSize oSizeROI)

    One 32-bit floating point channel image natural logarithm.

- NppStatus nppiLn_32f_C1IR (Npp32f *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

    One 32-bit floating point channel in place image natural logarithm.

- NppStatus nppiLn_32f_C3R (const Npp32f *pSrc, int nSrcStep, Npp32f *pDst, int nDstStep, NppiSize oSizeROI)

    Three 32-bit floating point channel image natural logarithm.

- NppStatus nppiLn_32f_C3IR (Npp32f *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

    Three 32-bit floating point channel in place image natural logarithm.

Exp Image

Exponential value of each pixel in an image.

- NppStatus nppiExp_8u_C1RSfs (const Npp8u *pSrc, int nSrcStep, Npp8u *pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

    One 8-bit unsigned char channel image exponential, scale by 2^(-nScaleFactor), then clamp to saturated value.

- NppStatus nppiExp_8u_C1IRSfs (Npp8u *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

    One 8-bit unsigned char channel in place image exponential, scale by 2^(-nScaleFactor), then clamp to saturated value.

- NppStatus nppiExp_8u_C3RSfs (const Npp8u *pSrc, int nSrcStep, Npp8u *pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  Three 8-bit unsigned char channel image exponential, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiExp_8u_C3IRSfs (Npp8u *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

  Three 8-bit unsigned char channel in place image exponential, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiExp_16u_C1RSfs (const Npp16u *pSrc, int nSrcStep, Npp16u *pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  One 16-bit unsigned short channel image exponential, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiExp_16u_C1IRSfs (Npp16u *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

  One 16-bit unsigned short channel in place image exponential, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiExp_16u_C3RSfs (const Npp16u *pSrc, int nSrcStep, Npp16u *pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  Three 16-bit unsigned short channel image exponential, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiExp_16u_C3IRSfs (Npp16u *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

  Three 16-bit unsigned short channel in place image exponential, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiExp_16s_C1RSfs (const Npp16s *pSrc, int nSrcStep, Npp16s *pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  One 16-bit signed short channel image exponential, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiExp_16s_C1IRSfs (Npp16s *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

  One 16-bit signed short channel in place image exponential, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiExp_16s_C3RSfs (const Npp16s *pSrc, int nSrcStep, Npp16s *pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  Three 16-bit signed short channel image exponential, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiExp_16s_C3IRSfs (Npp16s *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

  Three 16-bit signed short channel in place image exponential, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiExp_32f_C1R (const Npp32f *pSrc, int nSrcStep, Npp32f *pDst, int nDstStep, Nppi-Size oSizeROI)

  One 32-bit floating point channel image exponential.

- NppStatus nppiExp_32f_C1IR (Npp32f *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

  One 32-bit floating point channel in place image exponential.

- NppStatus nppiExp_32f_C3R (const Npp32f *pSrc, int nSrcStep, Npp32f *pDst, int nDstStep, Nppi-Size oSizeROI)

  Three 32-bit floating point channel image exponential.

- NppStatus nppiExp_32f_C3IR (Npp32f *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

  Three 32-bit floating point channel in place image exponential.

AndC Image

Pixel by pixel logical and of an image with a constant.

- NppStatus nppiAndC_8u_C1R (const Npp8u *pSrc1, int nSrc1Step, const Npp8u nConstant, Npp8u *pDst, int nDstStep, NppiSize oSizeROI)

  One 8-bit unsigned char channel image logical and with constant.

- NppStatus nppiAndC_8u_C1IR (const Npp8u nConstant, Npp8u *pSrcDst, int nSrcDstStep, Nppi-Size oSizeROI)

  One 8-bit unsigned char channel in place image logical and with constant.

- NppStatus nppiAndC_8u_C3R (const Npp8u *pSrc1, int nSrc1Step, const Npp8u *pConstants, Npp8u *pDst, int nDstStep, NppiSize oSizeROI)

  Three 8-bit unsigned char channel image logical and with constant.

- NppStatus nppiAndC_8u_C3IR (const Npp8u *pConstants, Npp8u *pSrcDst, int nSrcDstStep, Nppi-Size oSizeROI)

  Three 8-bit unsigned char channel in place image logical and with constant.

- NppStatus nppiAndC_8u_AC4R (const Npp8u *pSrc1, int nSrc1Step, const Npp8u *pConstants, Npp8u *pDst, int nDstStep, NppiSize oSizeROI)

  Four 8-bit unsigned char channel image logical and with constant with unmodified alpha.

- NppStatus nppiAndC_8u_AC4IR (const Npp8u *pConstants, Npp8u *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

  Four 8-bit unsigned char channel in place image logical and with constant with unmodified alpha.

- NppStatus nppiAndC_8u_C4R (const Npp8u *pSrc1, int nSrc1Step, const Npp8u *pConstants, Npp8u *pDst, int nDstStep, NppiSize oSizeROI)

  Four 8-bit unsigned char channel image logical and with constant.

- NppStatus nppiAndC_8u_C4IR (const Npp8u *pConstants, Npp8u *pSrcDst, int nSrcDstStep, Nppi-Size oSizeROI)

  Four 8-bit unsigned char channel in place image logical and with constant.

- NppStatus nppiAndC_16u_C1R (const Npp16u *pSrc1, int nSrc1Step, const Npp16u nConstant, Npp16u *pDst, int nDstStep, NppiSize oSizeROI)

     One 16-bit unsigned short channel image logical and with constant.

- NppStatus nppiAndC_16u_C1IR (const Npp16u nConstant, Npp16u *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

     One 16-bit unsigned short channel in place image logical and with constant.

- NppStatus nppiAndC_16u_C3R (const Npp16u *pSrc1, int nSrc1Step, const Npp16u *pConstants, Npp16u *pDst, int nDstStep, NppiSize oSizeROI)

     Three 16-bit unsigned short channel image logical and with constant.

- NppStatus nppiAndC_16u_C3IR (const Npp16u *pConstants, Npp16u *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

     Three 16-bit unsigned short channel in place image logical and with constant.

- NppStatus nppiAndC_16u_AC4R (const Npp16u *pSrc1, int nSrc1Step, const Npp16u *pConstants, Npp16u *pDst, int nDstStep, NppiSize oSizeROI)

     Four 16-bit unsigned short channel image logical and with constant with unmodified alpha.

- NppStatus nppiAndC_16u_AC4IR (const Npp16u *pConstants, Npp16u *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

     Four 16-bit unsigned short channel in place image logical and with constant with unmodified alpha.

- NppStatus nppiAndC_16u_C4R (const Npp16u *pSrc1, int nSrc1Step, const Npp16u *pConstants, Npp16u *pDst, int nDstStep, NppiSize oSizeROI)

     Four 16-bit unsigned short channel image logical and with constant.

- NppStatus nppiAndC_16u_C4IR (const Npp16u *pConstants, Npp16u *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

     Four 16-bit unsigned short channel in place image logical and with constant.

- NppStatus nppiAndC_32s_C1R (const Npp32s *pSrc1, int nSrc1Step, const Npp32s nConstant, Npp32s *pDst, int nDstStep, NppiSize oSizeROI)

     One 32-bit signed integer channel image logical and with constant.

- NppStatus nppiAndC_32s_C1IR (const Npp32s nConstant, Npp32s *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

     One 32-bit signed integer channel in place image logical and with constant.

- NppStatus nppiAndC_32s_C3R (const Npp32s *pSrc1, int nSrc1Step, const Npp32s *pConstants, Npp32s *pDst, int nDstStep, NppiSize oSizeROI)

     Three 32-bit signed integer channel image logical and with constant.

- NppStatus nppiAndC_32s_C3IR (const Npp32s *pConstants, Npp32s *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

     Three 32-bit signed integer channel in place image logical and with constant.

- NppStatus nppiAndC_32s_AC4R (const Npp32s *pSrc1, int nSrc1Step, const Npp32s *pConstants, Npp32s *pDst, int nDstStep, NppiSize oSizeROI)

Four 32-bit signed integer channel image logical and with constant with unmodified alpha.

- NppStatus nppiAndC_32s_AC4IR (const Npp32s ∗pConstants, Npp32s ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

  Four 32-bit signed integer channel in place image logical and with constant with unmodified alpha.

- NppStatus nppiAndC_32s_C4R (const Npp32s ∗pSrc1, int nSrc1Step, const Npp32s ∗pConstants, Npp32s ∗pDst, int nDstStep, NppiSize oSizeROI)

  Four 32-bit signed integer channel image logical and with constant.

- NppStatus nppiAndC_32s_C4IR (const Npp32s ∗pConstants, Npp32s ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

  Four 32-bit signed integer channel in place image logical and with constant.

OrC Image

Pixel by pixel logical or of an image with a constant.

- NppStatus nppiOrC_8u_C1R (const Npp8u ∗pSrc1, int nSrc1Step, const Npp8u nConstant, Npp8u ∗pDst, int nDstStep, NppiSize oSizeROI)

  One 8-bit unsigned char channel image logical or with constant.

- NppStatus nppiOrC_8u_C1IR (const Npp8u nConstant, Npp8u ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

  One 8-bit unsigned char channel in place image logical or with constant.

- NppStatus nppiOrC_8u_C3R (const Npp8u ∗pSrc1, int nSrc1Step, const Npp8u ∗pConstants, Npp8u ∗pDst, int nDstStep, NppiSize oSizeROI)

  Three 8-bit unsigned char channel image logical or with constant.

- NppStatus nppiOrC_8u_C3IR (const Npp8u ∗pConstants, Npp8u ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

  Three 8-bit unsigned char channel in place image logical or with constant.

- NppStatus nppiOrC_8u_AC4R (const Npp8u ∗pSrc1, int nSrc1Step, const Npp8u ∗pConstants, Npp8u ∗pDst, int nDstStep, NppiSize oSizeROI)

  Four 8-bit unsigned char channel image logical or with constant with unmodified alpha.

- NppStatus nppiOrC_8u_AC4IR (const Npp8u ∗pConstants, Npp8u ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

  Four 8-bit unsigned char channel in place image logical or with constant with unmodified alpha.

- NppStatus nppiOrC_8u_C4R (const Npp8u ∗pSrc1, int nSrc1Step, const Npp8u ∗pConstants, Npp8u ∗pDst, int nDstStep, NppiSize oSizeROI)

  Four 8-bit unsigned char channel image logical or with constant.

- NppStatus nppiOrC_8u_C4IR (const Npp8u ∗pConstants, Npp8u ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

  Four 8-bit unsigned char channel in place image logical or with constant.

- NppStatus nppiOrC_16u_C1R (const Npp16u ∗pSrc1, int nSrc1Step, const Npp16u nConstant, Npp16u ∗pDst, int nDstStep, NppiSize oSizeROI)

  One 16-bit unsigned short channel image logical or with constant.

- NppStatus nppiOrC_16u_C1IR (const Npp16u nConstant, Npp16u ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

  One 16-bit unsigned short channel in place image logical or with constant.

- NppStatus nppiOrC_16u_C3R (const Npp16u ∗pSrc1, int nSrc1Step, const Npp16u ∗pConstants, Npp16u ∗pDst, int nDstStep, NppiSize oSizeROI)

  Three 16-bit unsigned short channel image logical or with constant.

- NppStatus nppiOrC_16u_C3IR (const Npp16u ∗pConstants, Npp16u ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

  Three 16-bit unsigned short channel in place image logical or with constant.

- NppStatus nppiOrC_16u_AC4R (const Npp16u ∗pSrc1, int nSrc1Step, const Npp16u ∗pConstants, Npp16u ∗pDst, int nDstStep, NppiSize oSizeROI)

  Four 16-bit unsigned short channel image logical or with constant with unmodified alpha.

- NppStatus nppiOrC_16u_AC4IR (const Npp16u ∗pConstants, Npp16u ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

  Four 16-bit unsigned short channel in place image logical or with constant with unmodified alpha.

- NppStatus nppiOrC_16u_C4R (const Npp16u ∗pSrc1, int nSrc1Step, const Npp16u ∗pConstants, Npp16u ∗pDst, int nDstStep, NppiSize oSizeROI)

  Four 16-bit unsigned short channel image logical or with constant.

- NppStatus nppiOrC_16u_C4IR (const Npp16u ∗pConstants, Npp16u ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

  Four 16-bit unsigned short channel in place image logical or with constant.

- NppStatus nppiOrC_32s_C1R (const Npp32s ∗pSrc1, int nSrc1Step, const Npp32s nConstant, Npp32s ∗pDst, int nDstStep, NppiSize oSizeROI)

  One 32-bit signed integer channel image logical or with constant.

- NppStatus nppiOrC_32s_C1IR (const Npp32s nConstant, Npp32s ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

  One 32-bit signed integer channel in place image logical or with constant.

- NppStatus nppiOrC_32s_C3R (const Npp32s ∗pSrc1, int nSrc1Step, const Npp32s ∗pConstants, Npp32s ∗pDst, int nDstStep, NppiSize oSizeROI)

  Three 32-bit signed integer channel image logical or with constant.

- NppStatus nppiOrC_32s_C3IR (const Npp32s ∗pConstants, Npp32s ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

  Three 32-bit signed integer channel in place image logical or with constant.

- NppStatus nppiOrC_32s_AC4R (const Npp32s ∗pSrc1, int nSrc1Step, const Npp32s ∗pConstants, Npp32s ∗pDst, int nDstStep, NppiSize oSizeROI)

Four 32-bit signed integer channel image logical or with constant with unmodified alpha.

- NppStatus nppiOrC_32s_AC4IR (const Npp32s ∗pConstants, Npp32s ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

  Four 32-bit signed integer channel in place image logical or with constant with unmodified alpha.

- NppStatus nppiOrC_32s_C4R (const Npp32s ∗pSrc1, int nSrc1Step, const Npp32s ∗pConstants, Npp32s ∗pDst, int nDstStep, NppiSize oSizeROI)

  Four 32-bit signed integer channel image logical or with constant.

- NppStatus nppiOrC_32s_C4IR (const Npp32s ∗pConstants, Npp32s ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

  Four 32-bit signed integer channel in place image logical or with constant.

XorC Image

Pixel by pixel logical exclusive or of an image with a constant.

- NppStatus nppiXorC_8u_C1R (const Npp8u ∗pSrc1, int nSrc1Step, const Npp8u nConstant, Npp8u ∗pDst, int nDstStep, NppiSize oSizeROI)

  One 8-bit unsigned char channel image logical exclusive or with constant.

- NppStatus nppiXorC_8u_C1IR (const Npp8u nConstant, Npp8u ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

  One 8-bit unsigned char channel in place image logical exclusive or with constant.

- NppStatus nppiXorC_8u_C3R (const Npp8u ∗pSrc1, int nSrc1Step, const Npp8u ∗pConstants, Npp8u ∗pDst, int nDstStep, NppiSize oSizeROI)

  Three 8-bit unsigned char channel image logical exclusive or with constant.

- NppStatus nppiXorC_8u_C3IR (const Npp8u ∗pConstants, Npp8u ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

  Three 8-bit unsigned char channel in place image logical exclusive or with constant.

- NppStatus nppiXorC_8u_AC4R (const Npp8u ∗pSrc1, int nSrc1Step, const Npp8u ∗pConstants, Npp8u ∗pDst, int nDstStep, NppiSize oSizeROI)

  Four 8-bit unsigned char channel image logical exclusive or with constant with unmodified alpha.

- NppStatus nppiXorC_8u_AC4IR (const Npp8u ∗pConstants, Npp8u ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

  Four 8-bit unsigned char channel in place image logical exclusive or with constant with unmodified alpha.

- NppStatus nppiXorC_8u_C4R (const Npp8u ∗pSrc1, int nSrc1Step, const Npp8u ∗pConstants, Npp8u ∗pDst, int nDstStep, NppiSize oSizeROI)

  Four 8-bit unsigned char channel image logical exclusive or with constant.

- NppStatus nppiXorC_8u_C4IR (const Npp8u ∗pConstants, Npp8u ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

  Four 8-bit unsigned char channel in place image logical exclusive or with constant.

- NppStatus nppiXorC_16u_C1R (const Npp16u *pSrc1, int nSrc1Step, const Npp16u nConstant, Npp16u *pDst, int nDstStep, NppiSize oSizeROI)

    One 16-bit unsigned short channel image logical exclusive or with constant.

- NppStatus nppiXorC_16u_C1IR (const Npp16u nConstant, Npp16u *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

    One 16-bit unsigned short channel in place image logical exclusive or with constant.

- NppStatus nppiXorC_16u_C3R (const Npp16u *pSrc1, int nSrc1Step, const Npp16u *pConstants, Npp16u *pDst, int nDstStep, NppiSize oSizeROI)

    Three 16-bit unsigned short channel image logical exclusive or with constant.

- NppStatus nppiXorC_16u_C3IR (const Npp16u *pConstants, Npp16u *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

    Three 16-bit unsigned short channel in place image logical exclusive or with constant.

- NppStatus nppiXorC_16u_AC4R (const Npp16u *pSrc1, int nSrc1Step, const Npp16u *pConstants, Npp16u *pDst, int nDstStep, NppiSize oSizeROI)

    Four 16-bit unsigned short channel image logical exclusive or with constant with unmodified alpha.

- NppStatus nppiXorC_16u_AC4IR (const Npp16u *pConstants, Npp16u *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

    Four 16-bit unsigned short channel in place image logical exclusive or with constant with unmodified alpha.

- NppStatus nppiXorC_16u_C4R (const Npp16u *pSrc1, int nSrc1Step, const Npp16u *pConstants, Npp16u *pDst, int nDstStep, NppiSize oSizeROI)

    Four 16-bit unsigned short channel image logical exclusive or with constant.

- NppStatus nppiXorC_16u_C4IR (const Npp16u *pConstants, Npp16u *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

    Four 16-bit unsigned short channel in place image logical exclusive or with constant.

- NppStatus nppiXorC_32s_C1R (const Npp32s *pSrc1, int nSrc1Step, const Npp32s nConstant, Npp32s *pDst, int nDstStep, NppiSize oSizeROI)

    One 32-bit signed integer channel image logical exclusive or with constant.

- NppStatus nppiXorC_32s_C1IR (const Npp32s nConstant, Npp32s *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

    One 32-bit signed integer channel in place image logical exclusive or with constant.

- NppStatus nppiXorC_32s_C3R (const Npp32s *pSrc1, int nSrc1Step, const Npp32s *pConstants, Npp32s *pDst, int nDstStep, NppiSize oSizeROI)

    Three 32-bit signed integer channel image logical exclusive or with constant.

- NppStatus nppiXorC_32s_C3IR (const Npp32s *pConstants, Npp32s *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

    Three 32-bit signed integer channel in place image logical exclusive or with constant.

- NppStatus nppiXorC_32s_AC4R (const Npp32s *pSrc1, int nSrc1Step, const Npp32s *pConstants, Npp32s *pDst, int nDstStep, NppiSize oSizeROI)

Four 32-bit signed integer channel image logical exclusive or with constant with unmodified alpha.

- NppStatus nppiXorC_32s_AC4IR (const Npp32s ∗pConstants, Npp32s ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

    Four 32-bit signed integer channel in place image logical exclusive or with constant with unmodified alpha.

- NppStatus nppiXorC_32s_C4R (const Npp32s ∗pSrc1, int nSrc1Step, const Npp32s ∗pConstants, Npp32s ∗pDst, int nDstStep, NppiSize oSizeROI)

    Four 32-bit signed integer channel image logical exclusive or with constant.

- NppStatus nppiXorC_32s_C4IR (const Npp32s ∗pConstants, Npp32s ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

    Four 32-bit signed integer channel in place image logical exclusive or with constant.

RShiftC Image

Pixel by pixel right shift of an image by a constant value.

- NppStatus nppiRShiftC_8u_C1R (const Npp8u ∗pSrc1, int nSrc1Step, const Npp32u nConstant, Npp8u ∗pDst, int nDstStep, NppiSize oSizeROI)

    One 8-bit unsigned char channel image right shift by constant.

- NppStatus nppiRShiftC_8u_C1IR (const Npp32u nConstant, Npp8u ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

    One 8-bit unsigned char channel in place image right shift by constant.

- NppStatus nppiRShiftC_8u_C3R (const Npp8u ∗pSrc1, int nSrc1Step, const Npp32u ∗pConstants, Npp8u ∗pDst, int nDstStep, NppiSize oSizeROI)

    Three 8-bit unsigned char channel image right shift by constant.

- NppStatus nppiRShiftC_8u_C3IR (const Npp32u ∗pConstants, Npp8u ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

    Three 8-bit unsigned char channel in place image right shift by constant.

- NppStatus nppiRShiftC_8u_AC4R (const Npp8u ∗pSrc1, int nSrc1Step, const Npp32u ∗pConstants, Npp8u ∗pDst, int nDstStep, NppiSize oSizeROI)

    Four 8-bit unsigned char channel image right shift by constant with unmodified alpha.

- NppStatus nppiRShiftC_8u_AC4IR (const Npp32u ∗pConstants, Npp8u ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

    Four 8-bit unsigned char channel in place image right shift by constant with unmodified alpha.

- NppStatus nppiRShiftC_8u_C4R (const Npp8u ∗pSrc1, int nSrc1Step, const Npp32u ∗pConstants, Npp8u ∗pDst, int nDstStep, NppiSize oSizeROI)

    Four 8-bit unsigned char channel image right shift by constant.

- NppStatus nppiRShiftC_8u_C4IR (const Npp32u ∗pConstants, Npp8u ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

    Four 8-bit unsigned char channel in place image right shift by constant.

- NppStatus nppiRShiftC_8s_C1R (const Npp8s ∗pSrc1, int nSrc1Step, const Npp32u nConstant, Npp8s ∗pDst, int nDstStep, NppiSize oSizeROI)

    One 8-bit signed char channel image right shift by constant.

- NppStatus nppiRShiftC_8s_C1IR (const Npp32u nConstant, Npp8s ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

    One 8-bit signed char channel in place image right shift by constant.

- NppStatus nppiRShiftC_8s_C3R (const Npp8s ∗pSrc1, int nSrc1Step, const Npp32u ∗pConstants, Npp8s ∗pDst, int nDstStep, NppiSize oSizeROI)

    Three 8-bit signed char channel image right shift by constant.

- NppStatus nppiRShiftC_8s_C3IR (const Npp32u ∗pConstants, Npp8s ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

    Three 8-bit signed char channel in place image right shift by constant.

- NppStatus nppiRShiftC_8s_AC4R (const Npp8s ∗pSrc1, int nSrc1Step, const Npp32u ∗pConstants, Npp8s ∗pDst, int nDstStep, NppiSize oSizeROI)

    Four 8-bit signed char channel image right shift by constant with unmodified alpha.

- NppStatus nppiRShiftC_8s_AC4IR (const Npp32u ∗pConstants, Npp8s ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

    Four 8-bit signed char channel in place image right shift by constant with unmodified alpha.

- NppStatus nppiRShiftC_8s_C4R (const Npp8s ∗pSrc1, int nSrc1Step, const Npp32u ∗pConstants, Npp8s ∗pDst, int nDstStep, NppiSize oSizeROI)

    Four 8-bit signed char channel image right shift by constant.

- NppStatus nppiRShiftC_8s_C4IR (const Npp32u ∗pConstants, Npp8s ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

    Four 8-bit signed char channel in place image right shift by constant.

- NppStatus nppiRShiftC_16u_C1R (const Npp16u ∗pSrc1, int nSrc1Step, const Npp32u nConstant, Npp16u ∗pDst, int nDstStep, NppiSize oSizeROI)

    One 16-bit unsigned short channel image right shift by constant.

- NppStatus nppiRShiftC_16u_C1IR (const Npp32u nConstant, Npp16u ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

    One 16-bit unsigned short channel in place image right shift by constant.

- NppStatus nppiRShiftC_16u_C3R (const Npp16u ∗pSrc1, int nSrc1Step, const Npp32u ∗pConstants, Npp16u ∗pDst, int nDstStep, NppiSize oSizeROI)

    Three 16-bit unsigned short channel image right shift by constant.

- NppStatus nppiRShiftC_16u_C3IR (const Npp32u ∗pConstants, Npp16u ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

    Three 16-bit unsigned short channel in place image right shift by constant.

- NppStatus nppiRShiftC_16u_AC4R (const Npp16u ∗pSrc1, int nSrc1Step, const Npp32u ∗pConstants, Npp16u ∗pDst, int nDstStep, NppiSize oSizeROI)

Four 16-bit unsigned short channel image right shift by constant with unmodified alpha.

- NppStatus nppiRShiftC_16u_AC4IR (const Npp32u ∗pConstants, Npp16u ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

    Four 16-bit unsigned short channel in place image right shift by constant with unmodified alpha.

- NppStatus nppiRShiftC_16u_C4R (const Npp16u ∗pSrc1, int nSrc1Step, const Npp32u ∗pConstants, Npp16u ∗pDst, int nDstStep, NppiSize oSizeROI)

    Four 16-bit unsigned short channel image right shift by constant.

- NppStatus nppiRShiftC_16u_C4IR (const Npp32u ∗pConstants, Npp16u ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

    Four 16-bit unsigned short channel in place image right shift by constant.

- NppStatus nppiRShiftC_16s_C1R (const Npp16s ∗pSrc1, int nSrc1Step, const Npp32u nConstant, Npp16s ∗pDst, int nDstStep, NppiSize oSizeROI)

    One 16-bit signed short channel image right shift by constant.

- NppStatus nppiRShiftC_16s_C1IR (const Npp32u nConstant, Npp16s ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

    One 16-bit signed short channel in place image right shift by constant.

- NppStatus nppiRShiftC_16s_C3R (const Npp16s ∗pSrc1, int nSrc1Step, const Npp32u ∗pConstants, Npp16s ∗pDst, int nDstStep, NppiSize oSizeROI)

    Three 16-bit signed short channel image right shift by constant.

- NppStatus nppiRShiftC_16s_C3IR (const Npp32u ∗pConstants, Npp16s ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

    Three 16-bit signed short channel in place image right shift by constant.

- NppStatus nppiRShiftC_16s_AC4R (const Npp16s ∗pSrc1, int nSrc1Step, const Npp32u ∗pConstants, Npp16s ∗pDst, int nDstStep, NppiSize oSizeROI)

    Four 16-bit signed short channel image right shift by constant with unmodified alpha.

- NppStatus nppiRShiftC_16s_AC4IR (const Npp32u ∗pConstants, Npp16s ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

    Four 16-bit signed short channel in place image right shift by constant with unmodified alpha.

- NppStatus nppiRShiftC_16s_C4R (const Npp16s ∗pSrc1, int nSrc1Step, const Npp32u ∗pConstants, Npp16s ∗pDst, int nDstStep, NppiSize oSizeROI)

    Four 16-bit signed short channel image right shift by constant.

- NppStatus nppiRShiftC_16s_C4IR (const Npp32u ∗pConstants, Npp16s ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

    Four 16-bit signed short channel in place image right shift by constant.

- NppStatus nppiRShiftC_32s_C1R (const Npp32s ∗pSrc1, int nSrc1Step, const Npp32u nConstant, Npp32s ∗pDst, int nDstStep, NppiSize oSizeROI)

    One 32-bit signed integer channel image right shift by constant.

- NppStatus nppiRShiftC_32s_C1IR (const Npp32u nConstant, Npp32s *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

     One 32-bit signed integer channel in place image right shift by constant.

- NppStatus nppiRShiftC_32s_C3R (const Npp32s *pSrc1, int nSrc1Step, const Npp32u *pConstants, Npp32s *pDst, int nDstStep, NppiSize oSizeROI)

     Three 32-bit signed integer channel image right shift by constant.

- NppStatus nppiRShiftC_32s_C3IR (const Npp32u *pConstants, Npp32s *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

     Three 32-bit signed integer channel in place image right shift by constant.

- NppStatus nppiRShiftC_32s_AC4R (const Npp32s *pSrc1, int nSrc1Step, const Npp32u *pConstants, Npp32s *pDst, int nDstStep, NppiSize oSizeROI)

     Four 32-bit signed integer channel image right shift by constant with unmodified alpha.

- NppStatus nppiRShiftC_32s_AC4IR (const Npp32u *pConstants, Npp32s *pSrcDst, int nSrcDst-Step, NppiSize oSizeROI)

     Four 32-bit signed integer channel in place image right shift by constant with unmodified alpha.

- NppStatus nppiRShiftC_32s_C4R (const Npp32s *pSrc1, int nSrc1Step, const Npp32u *pConstants, Npp32s *pDst, int nDstStep, NppiSize oSizeROI)

     Four 32-bit signed integer channel image right shift by constant.

- NppStatus nppiRShiftC_32s_C4IR (const Npp32u *pConstants, Npp32s *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

     Four 32-bit signed integer channel in place image right shift by constant.

LShiftC Image

Pixel by pixel left shift of an image by a constant value.

- NppStatus nppiLShiftC_8u_C1R (const Npp8u *pSrc1, int nSrc1Step, const Npp32u nConstant, Npp8u *pDst, int nDstStep, NppiSize oSizeROI)

     One 8-bit unsigned char channel image left shift by constant.

- NppStatus nppiLShiftC_8u_C1IR (const Npp32u nConstant, Npp8u *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

     One 8-bit unsigned char channel in place image left shift by constant.

- NppStatus nppiLShiftC_8u_C3R (const Npp8u *pSrc1, int nSrc1Step, const Npp32u *pConstants, Npp8u *pDst, int nDstStep, NppiSize oSizeROI)

     Three 8-bit unsigned char channel image left shift by constant.

- NppStatus nppiLShiftC_8u_C3IR (const Npp32u *pConstants, Npp8u *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

     Three 8-bit unsigned char channel in place image left shift by constant.

- NppStatus nppiLShiftC_8u_AC4R (const Npp8u *pSrc1, int nSrc1Step, const Npp32u *pConstants, Npp8u *pDst, int nDstStep, NppiSize oSizeROI)

Four 8-bit unsigned char channel image left shift by constant with unmodified alpha.

- NppStatus nppiLShiftC_8u_AC4IR (const Npp32u *pConstants, Npp8u *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

    Four 8-bit unsigned char channel in place image left shift by constant with unmodified alpha.

- NppStatus nppiLShiftC_8u_C4R (const Npp8u *pSrc1, int nSrc1Step, const Npp32u *pConstants, Npp8u *pDst, int nDstStep, NppiSize oSizeROI)

    Four 8-bit unsigned char channel image left shift by constant.

- NppStatus nppiLShiftC_8u_C4IR (const Npp32u *pConstants, Npp8u *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

    Four 8-bit unsigned char channel in place image left shift by constant.

- NppStatus nppiLShiftC_16u_C1R (const Npp16u *pSrc1, int nSrc1Step, const Npp32u nConstant, Npp16u *pDst, int nDstStep, NppiSize oSizeROI)

    One 16-bit unsigned short channel image left shift by constant.

- NppStatus nppiLShiftC_16u_C1IR (const Npp32u nConstant, Npp16u *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

    One 16-bit unsigned short channel in place image left shift by constant.

- NppStatus nppiLShiftC_16u_C3R (const Npp16u *pSrc1, int nSrc1Step, const Npp32u *pConstants, Npp16u *pDst, int nDstStep, NppiSize oSizeROI)

    Three 16-bit unsigned short channel image left shift by constant.

- NppStatus nppiLShiftC_16u_C3IR (const Npp32u *pConstants, Npp16u *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

    Three 16-bit unsigned short channel in place image left shift by constant.

- NppStatus nppiLShiftC_16u_AC4R (const Npp16u *pSrc1, int nSrc1Step, const Npp32u *pConstants, Npp16u *pDst, int nDstStep, NppiSize oSizeROI)

    Four 16-bit unsigned short channel image left shift by constant with unmodified alpha.

- NppStatus nppiLShiftC_16u_AC4IR (const Npp32u *pConstants, Npp16u *pSrcDst, int nSrcDst-Step, NppiSize oSizeROI)

    Four 16-bit unsigned short channel in place image left shift by constant with unmodified alpha.

- NppStatus nppiLShiftC_16u_C4R (const Npp16u *pSrc1, int nSrc1Step, const Npp32u *pConstants, Npp16u *pDst, int nDstStep, NppiSize oSizeROI)

    Four 16-bit unsigned short channel image left shift by constant.

- NppStatus nppiLShiftC_16u_C4IR (const Npp32u *pConstants, Npp16u *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

    Four 16-bit unsigned short channel in place image left shift by constant.

- NppStatus nppiLShiftC_32s_C1R (const Npp32s *pSrc1, int nSrc1Step, const Npp32u nConstant, Npp32s *pDst, int nDstStep, NppiSize oSizeROI)

    One 32-bit signed integer channel image left shift by constant.

- NppStatus nppiLShiftC_32s_C1IR (const Npp32u nConstant, Npp32s ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

  One 32-bit signed integer channel in place image left shift by constant.

- NppStatus nppiLShiftC_32s_C3R (const Npp32s ∗pSrc1, int nSrc1Step, const Npp32u ∗pConstants, Npp32s ∗pDst, int nDstStep, NppiSize oSizeROI)

  Three 32-bit signed integer channel image left shift by constant.

- NppStatus nppiLShiftC_32s_C3IR (const Npp32u ∗pConstants, Npp32s ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

  Three 32-bit signed integer channel in place image left shift by constant.

- NppStatus nppiLShiftC_32s_AC4R (const Npp32s ∗pSrc1, int nSrc1Step, const Npp32u ∗pConstants, Npp32s ∗pDst, int nDstStep, NppiSize oSizeROI)

  Four 32-bit signed integer channel image left shift by constant with unmodified alpha.

- NppStatus nppiLShiftC_32s_AC4IR (const Npp32u ∗pConstants, Npp32s ∗pSrcDst, int nSrcDst-Step, NppiSize oSizeROI)

  Four 32-bit signed integer channel in place image left shift by constant with unmodified alpha.

- NppStatus nppiLShiftC_32s_C4R (const Npp32s ∗pSrc1, int nSrc1Step, const Npp32u ∗pConstants, Npp32s ∗pDst, int nDstStep, NppiSize oSizeROI)

  Four 32-bit signed integer channel image left shift by constant.

- NppStatus nppiLShiftC_32s_C4IR (const Npp32u ∗pConstants, Npp32s ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

  Four 32-bit signed integer channel in place image left shift by constant.

And Image

Pixel by pixel logical and of images.

- NppStatus nppiAnd_8u_C1R (const Npp8u ∗pSrc1, int nSrc1Step, const Npp8u ∗pSrc2, int nSrc2Step, Npp8u ∗pDst, int nDstStep, NppiSize oSizeROI)

  One 8-bit unsigned char channel image logical and.

- NppStatus nppiAnd_8u_C1IR (const Npp8u ∗pSrc, int nSrcStep, Npp8u ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

  One 8-bit unsigned char channel in place image logical and.

- NppStatus nppiAnd_8u_C3R (const Npp8u ∗pSrc1, int nSrc1Step, const Npp8u ∗pSrc2, int nSrc2Step, Npp8u ∗pDst, int nDstStep, NppiSize oSizeROI)

  Three 8-bit unsigned char channel image logical and.

- NppStatus nppiAnd_8u_C3IR (const Npp8u ∗pSrc, int nSrcStep, Npp8u ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

  Three 8-bit unsigned char channel in place image logical and.

- NppStatus nppiAnd_8u_AC4R (const Npp8u ∗pSrc1, int nSrc1Step, const Npp8u ∗pSrc2, int nSrc2Step, Npp8u ∗pDst, int nDstStep, NppiSize oSizeROI)

Four 8-bit unsigned char channel image logical and with unmodified alpha.

- NppStatus nppiAnd_8u_AC4IR (const Npp8u ∗pSrc, int nSrcStep, Npp8u ∗pSrcDst, int nSrcDst-Step, NppiSize oSizeROI)

  Four 8-bit unsigned char channel in place image logical and with unmodified alpha.

- NppStatus nppiAnd_8u_C4R (const Npp8u ∗pSrc1, int nSrc1Step, const Npp8u ∗pSrc2, int nSrc2Step, Npp8u ∗pDst, int nDstStep, NppiSize oSizeROI)

  Four 8-bit unsigned char channel image logical and.

- NppStatus nppiAnd_8u_C4IR (const Npp8u ∗pSrc, int nSrcStep, Npp8u ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

  Four 8-bit unsigned char channel in place image logical and.

- NppStatus nppiAnd_16u_C1R (const Npp16u ∗pSrc1, int nSrc1Step, const Npp16u ∗pSrc2, int nSrc2Step, Npp16u ∗pDst, int nDstStep, NppiSize oSizeROI)

  One 16-bit unsigned short channel image logical and.

- NppStatus nppiAnd_16u_C1IR (const Npp16u ∗pSrc, int nSrcStep, Npp16u ∗pSrcDst, int nSrcDst-Step, NppiSize oSizeROI)

  One 16-bit unsigned short channel in place image logical and.

- NppStatus nppiAnd_16u_C3R (const Npp16u ∗pSrc1, int nSrc1Step, const Npp16u ∗pSrc2, int nSrc2Step, Npp16u ∗pDst, int nDstStep, NppiSize oSizeROI)

  Three 16-bit unsigned short channel image logical and.

- NppStatus nppiAnd_16u_C3IR (const Npp16u ∗pSrc, int nSrcStep, Npp16u ∗pSrcDst, int nSrcDst-Step, NppiSize oSizeROI)

  Three 16-bit unsigned short channel in place image logical and.

- NppStatus nppiAnd_16u_AC4R (const Npp16u ∗pSrc1, int nSrc1Step, const Npp16u ∗pSrc2, int nSrc2Step, Npp16u ∗pDst, int nDstStep, NppiSize oSizeROI)

  Four 16-bit unsigned short channel image logical and with unmodified alpha.

- NppStatus nppiAnd_16u_AC4IR (const Npp16u ∗pSrc, int nSrcStep, Npp16u ∗pSrcDst, int nSrcD-stStep, NppiSize oSizeROI)

  Four 16-bit unsigned short channel in place image logical and with unmodified alpha.

- NppStatus nppiAnd_16u_C4R (const Npp16u ∗pSrc1, int nSrc1Step, const Npp16u ∗pSrc2, int nSrc2Step, Npp16u ∗pDst, int nDstStep, NppiSize oSizeROI)

  Four 16-bit unsigned short channel image logical and.

- NppStatus nppiAnd_16u_C4IR (const Npp16u ∗pSrc, int nSrcStep, Npp16u ∗pSrcDst, int nSrcDst-Step, NppiSize oSizeROI)

  Four 16-bit unsigned short channel in place image logical and.

- NppStatus nppiAnd_32s_C1R (const Npp32s ∗pSrc1, int nSrc1Step, const Npp32s ∗pSrc2, int nSrc2Step, Npp32s ∗pDst, int nDstStep, NppiSize oSizeROI)

  One 32-bit signed integer channel image logical and.

- NppStatus nppiAnd_32s_C1IR (const Npp32s ∗pSrc, int nSrcStep, Npp32s ∗pSrcDst, int nSrcDst-Step, NppiSize oSizeROI)

  One 32-bit signed integer channel in place image logical and.

- NppStatus nppiAnd_32s_C3R (const Npp32s ∗pSrc1, int nSrc1Step, const Npp32s ∗pSrc2, int nSrc2Step, Npp32s ∗pDst, int nDstStep, NppiSize oSizeROI)

  Three 32-bit signed integer channel image logical and.

- NppStatus nppiAnd_32s_C3IR (const Npp32s ∗pSrc, int nSrcStep, Npp32s ∗pSrcDst, int nSrcDst-Step, NppiSize oSizeROI)

  Three 32-bit signed integer channel in place image logical and.

- NppStatus nppiAnd_32s_AC4R (const Npp32s ∗pSrc1, int nSrc1Step, const Npp32s ∗pSrc2, int nSrc2Step, Npp32s ∗pDst, int nDstStep, NppiSize oSizeROI)

  Four 32-bit signed integer channel image logical and with unmodified alpha.

- NppStatus nppiAnd_32s_AC4IR (const Npp32s ∗pSrc, int nSrcStep, Npp32s ∗pSrcDst, int nSrcD-stStep, NppiSize oSizeROI)

  Four 32-bit signed integer channel in place image logical and with unmodified alpha.

- NppStatus nppiAnd_32s_C4R (const Npp32s ∗pSrc1, int nSrc1Step, const Npp32s ∗pSrc2, int nSrc2Step, Npp32s ∗pDst, int nDstStep, NppiSize oSizeROI)

  Four 32-bit signed integer channel image logical and.

- NppStatus nppiAnd_32s_C4IR (const Npp32s ∗pSrc, int nSrcStep, Npp32s ∗pSrcDst, int nSrcDst-Step, NppiSize oSizeROI)

  Four 32-bit signed integer channel in place image logical and.

Or Image

Pixel by pixel logical or of images.

- NppStatus nppiOr_8u_C1R (const Npp8u ∗pSrc1, int nSrc1Step, const Npp8u ∗pSrc2, int nSrc2Step, Npp8u ∗pDst, int nDstStep, NppiSize oSizeROI)

  One 8-bit unsigned char channel image logical or.

- NppStatus nppiOr_8u_C1IR (const Npp8u ∗pSrc, int nSrcStep, Npp8u ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

  One 8-bit unsigned char channel in place image logical or.

- NppStatus nppiOr_8u_C3R (const Npp8u ∗pSrc1, int nSrc1Step, const Npp8u ∗pSrc2, int nSrc2Step, Npp8u ∗pDst, int nDstStep, NppiSize oSizeROI)

  Three 8-bit unsigned char channel image logical or.

- NppStatus nppiOr_8u_C3IR (const Npp8u ∗pSrc, int nSrcStep, Npp8u ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

  Three 8-bit unsigned char channel in place image logical or.

- NppStatus nppiOr_8u_AC4R (const Npp8u ∗pSrc1, int nSrc1Step, const Npp8u ∗pSrc2, int nSrc2Step, Npp8u ∗pDst, int nDstStep, NppiSize oSizeROI)

Four 8-bit unsigned char channel image logical or with unmodified alpha.

- NppStatus nppiOr_8u_AC4IR (const Npp8u ∗pSrc, int nSrcStep, Npp8u ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

    Four 8-bit unsigned char channel in place image logical or with unmodified alpha.

- NppStatus nppiOr_8u_C4R (const Npp8u ∗pSrc1, int nSrc1Step, const Npp8u ∗pSrc2, int nSrc2Step, Npp8u ∗pDst, int nDstStep, NppiSize oSizeROI)

    Four 8-bit unsigned char channel image logical or.

- NppStatus nppiOr_8u_C4IR (const Npp8u ∗pSrc, int nSrcStep, Npp8u ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

    Four 8-bit unsigned char channel in place image logical or.

- NppStatus nppiOr_16u_C1R (const Npp16u ∗pSrc1, int nSrc1Step, const Npp16u ∗pSrc2, int nSrc2Step, Npp16u ∗pDst, int nDstStep, NppiSize oSizeROI)

    One 16-bit unsigned short channel image logical or.

- NppStatus nppiOr_16u_C1IR (const Npp16u ∗pSrc, int nSrcStep, Npp16u ∗pSrcDst, int nSrcDst-Step, NppiSize oSizeROI)

    One 16-bit unsigned short channel in place image logical or.

- NppStatus nppiOr_16u_C3R (const Npp16u ∗pSrc1, int nSrc1Step, const Npp16u ∗pSrc2, int nSrc2Step, Npp16u ∗pDst, int nDstStep, NppiSize oSizeROI)

    Three 16-bit unsigned short channel image logical or.

- NppStatus nppiOr_16u_C3IR (const Npp16u ∗pSrc, int nSrcStep, Npp16u ∗pSrcDst, int nSrcDst-Step, NppiSize oSizeROI)

    Three 16-bit unsigned short channel in place image logical or.

- NppStatus nppiOr_16u_AC4R (const Npp16u ∗pSrc1, int nSrc1Step, const Npp16u ∗pSrc2, int nSrc2Step, Npp16u ∗pDst, int nDstStep, NppiSize oSizeROI)

    Four 16-bit unsigned short channel image logical or with unmodified alpha.

- NppStatus nppiOr_16u_AC4IR (const Npp16u ∗pSrc, int nSrcStep, Npp16u ∗pSrcDst, int nSrcDst-Step, NppiSize oSizeROI)

    Four 16-bit unsigned short channel in place image logical or with unmodified alpha.

- NppStatus nppiOr_16u_C4R (const Npp16u ∗pSrc1, int nSrc1Step, const Npp16u ∗pSrc2, int nSrc2Step, Npp16u ∗pDst, int nDstStep, NppiSize oSizeROI)

    Four 16-bit unsigned short channel image logical or.

- NppStatus nppiOr_16u_C4IR (const Npp16u ∗pSrc, int nSrcStep, Npp16u ∗pSrcDst, int nSrcDst-Step, NppiSize oSizeROI)

    Four 16-bit unsigned short channel in place image logical or.

- NppStatus nppiOr_32s_C1R (const Npp32s ∗pSrc1, int nSrc1Step, const Npp32s ∗pSrc2, int nSrc2Step, Npp32s ∗pDst, int nDstStep, NppiSize oSizeROI)

    One 32-bit signed integer channel image logical or.

- NppStatus nppiOr_32s_C1IR (const Npp32s *pSrc, int nSrcStep, Npp32s *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

     One 32-bit signed integer channel in place image logical or.

- NppStatus nppiOr_32s_C3R (const Npp32s *pSrc1, int nSrc1Step, const Npp32s *pSrc2, int nSrc2Step, Npp32s *pDst, int nDstStep, NppiSize oSizeROI)

     Three 32-bit signed integer channel image logical or.

- NppStatus nppiOr_32s_C3IR (const Npp32s *pSrc, int nSrcStep, Npp32s *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

     Three 32-bit signed integer channel in place image logical or.

- NppStatus nppiOr_32s_AC4R (const Npp32s *pSrc1, int nSrc1Step, const Npp32s *pSrc2, int nSrc2Step, Npp32s *pDst, int nDstStep, NppiSize oSizeROI)

     Four 32-bit signed integer channel image logical or with unmodified alpha.

- NppStatus nppiOr_32s_AC4IR (const Npp32s *pSrc, int nSrcStep, Npp32s *pSrcDst, int nSrcDst-Step, NppiSize oSizeROI)

     Four 32-bit signed integer channel in place image logical or with unmodified alpha.

- NppStatus nppiOr_32s_C4R (const Npp32s *pSrc1, int nSrc1Step, const Npp32s *pSrc2, int nSrc2Step, Npp32s *pDst, int nDstStep, NppiSize oSizeROI)

     Four 32-bit signed integer channel image logical or.

- NppStatus nppiOr_32s_C4IR (const Npp32s *pSrc, int nSrcStep, Npp32s *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

     Four 32-bit signed integer channel in place image logical or.

Xor Image

Pixel by pixel logical exclusive or of images.

- NppStatus nppiXor_8u_C1R (const Npp8u *pSrc1, int nSrc1Step, const Npp8u *pSrc2, int nSrc2Step, Npp8u *pDst, int nDstStep, NppiSize oSizeROI)

     One 8-bit unsigned char channel image logical exclusive or.

- NppStatus nppiXor_8u_C1IR (const Npp8u *pSrc, int nSrcStep, Npp8u *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

     One 8-bit unsigned char channel in place image logical exclusive or.

- NppStatus nppiXor_8u_C3R (const Npp8u *pSrc1, int nSrc1Step, const Npp8u *pSrc2, int nSrc2Step, Npp8u *pDst, int nDstStep, NppiSize oSizeROI)

     Three 8-bit unsigned char channel image logical exclusive or.

- NppStatus nppiXor_8u_C3IR (const Npp8u *pSrc, int nSrcStep, Npp8u *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

     Three 8-bit unsigned char channel in place image logical exclusive or.

- NppStatus nppiXor_8u_AC4R (const Npp8u *pSrc1, int nSrc1Step, const Npp8u *pSrc2, int nSrc2Step, Npp8u *pDst, int nDstStep, NppiSize oSizeROI)

Four 8-bit unsigned char channel image logical exclusive or with unmodified alpha.

- NppStatus nppiXor_8u_AC4IR (const Npp8u *pSrc, int nSrcStep, Npp8u *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

    Four 8-bit unsigned char channel in place image logical exclusive or with unmodified alpha.

- NppStatus nppiXor_8u_C4R (const Npp8u *pSrc1, int nSrc1Step, const Npp8u *pSrc2, int nSrc2Step, Npp8u *pDst, int nDstStep, NppiSize oSizeROI)

    Four 8-bit unsigned char channel image logical exclusive or.

- NppStatus nppiXor_8u_C4IR (const Npp8u *pSrc, int nSrcStep, Npp8u *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

    Four 8-bit unsigned char channel in place image logical exclusive or.

- NppStatus nppiXor_16u_C1R (const Npp16u *pSrc1, int nSrc1Step, const Npp16u *pSrc2, int nSrc2Step, Npp16u *pDst, int nDstStep, NppiSize oSizeROI)

    One 16-bit unsigned short channel image logical exclusive or.

- NppStatus nppiXor_16u_C1IR (const Npp16u *pSrc, int nSrcStep, Npp16u *pSrcDst, int nSrcDst-Step, NppiSize oSizeROI)

    One 16-bit unsigned short channel in place image logical exclusive or.

- NppStatus nppiXor_16u_C3R (const Npp16u *pSrc1, int nSrc1Step, const Npp16u *pSrc2, int nSrc2Step, Npp16u *pDst, int nDstStep, NppiSize oSizeROI)

    Three 16-bit unsigned short channel image logical exclusive or.

- NppStatus nppiXor_16u_C3IR (const Npp16u *pSrc, int nSrcStep, Npp16u *pSrcDst, int nSrcDst-Step, NppiSize oSizeROI)

    Three 16-bit unsigned short channel in place image logical exclusive or.

- NppStatus nppiXor_16u_AC4R (const Npp16u *pSrc1, int nSrc1Step, const Npp16u *pSrc2, int nSrc2Step, Npp16u *pDst, int nDstStep, NppiSize oSizeROI)

    Four 16-bit unsigned short channel image logical exclusive or with unmodified alpha.

- NppStatus nppiXor_16u_AC4IR (const Npp16u *pSrc, int nSrcStep, Npp16u *pSrcDst, int nSrcD-stStep, NppiSize oSizeROI)

    Four 16-bit unsigned short channel in place image logical exclusive or with unmodified alpha.

- NppStatus nppiXor_16u_C4R (const Npp16u *pSrc1, int nSrc1Step, const Npp16u *pSrc2, int nSrc2Step, Npp16u *pDst, int nDstStep, NppiSize oSizeROI)

    Four 16-bit unsigned short channel image logical exclusive or.

- NppStatus nppiXor_16u_C4IR (const Npp16u *pSrc, int nSrcStep, Npp16u *pSrcDst, int nSrcDst-Step, NppiSize oSizeROI)

    Four 16-bit unsigned short channel in place image logical exclusive or.

- NppStatus nppiXor_32s_C1R (const Npp32s *pSrc1, int nSrc1Step, const Npp32s *pSrc2, int nSrc2Step, Npp32s *pDst, int nDstStep, NppiSize oSizeROI)

    One 32-bit signed integer channel image logical exclusive or.

- NppStatus nppiXor_32s_C1IR (const Npp32s *pSrc, int nSrcStep, Npp32s *pSrcDst, int nSrcDst-Step, NppiSize oSizeROI)

  One 32-bit signed integer channel in place image logical exclusive or.

- NppStatus nppiXor_32s_C3R (const Npp32s *pSrc1, int nSrc1Step, const Npp32s *pSrc2, int nSrc2Step, Npp32s *pDst, int nDstStep, NppiSize oSizeROI)

  Three 32-bit signed integer channel image logical exclusive or.

- NppStatus nppiXor_32s_C3IR (const Npp32s *pSrc, int nSrcStep, Npp32s *pSrcDst, int nSrcDst-Step, NppiSize oSizeROI)

  Three 32-bit signed integer channel in place image logical exclusive or.

- NppStatus nppiXor_32s_AC4R (const Npp32s *pSrc1, int nSrc1Step, const Npp32s *pSrc2, int nSrc2Step, Npp32s *pDst, int nDstStep, NppiSize oSizeROI)

  Four 32-bit signed integer channel image logical exclusive or with unmodified alpha.

- NppStatus nppiXor_32s_AC4IR (const Npp32s *pSrc, int nSrcStep, Npp32s *pSrcDst, int nSrcDst-Step, NppiSize oSizeROI)

  Four 32-bit signed integer channel in place image logical exclusive or with unmodified alpha.

- NppStatus nppiXor_32s_C4R (const Npp32s *pSrc1, int nSrc1Step, const Npp32s *pSrc2, int nSrc2Step, Npp32s *pDst, int nDstStep, NppiSize oSizeROI)

  Four 32-bit signed integer channel image logical exclusive or.

- NppStatus nppiXor_32s_C4IR (const Npp32s *pSrc, int nSrcStep, Npp32s *pSrcDst, int nSrcDst-Step, NppiSize oSizeROI)

  Four 32-bit signed integer channel in place image logical exclusive or.

Not Image

Pixel by pixel logical not of image.

- NppStatus nppiNot_8u_C1R (const Npp8u *pSrc, int nSrcStep, Npp8u *pDst, int nDstStep, Nppi-Size oSizeROI)

  One 8-bit unsigned char channel image logical not.

- NppStatus nppiNot_8u_C1IR (Npp8u *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

  One 8-bit unsigned char channel in place image logical not.

- NppStatus nppiNot_8u_C3R (const Npp8u *pSrc, int nSrcStep, Npp8u *pDst, int nDstStep, Nppi-Size oSizeROI)

  Three 8-bit unsigned char channel image logical not.

- NppStatus nppiNot_8u_C3IR (Npp8u *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

  Three 8-bit unsigned char channel in place image logical not.

- NppStatus nppiNot_8u_AC4R (const Npp8u *pSrc, int nSrcStep, Npp8u *pDst, int nDstStep, Nppi-Size oSizeROI)

  Four 8-bit unsigned char channel image logical not with unmodified alpha.

- NppStatus nppiNot_8u_AC4IR (Npp8u *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

  Four 8-bit unsigned char channel in place image logical not with unmodified alpha.

- NppStatus nppiNot_8u_C4R (const Npp8u *pSrc, int nSrcStep, Npp8u *pDst, int nDstStep, NppiSize oSizeROI)

  Four 8-bit unsigned char channel image logical not.

- NppStatus nppiNot_8u_C4IR (Npp8u *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

  Four 8-bit unsigned char channel in place image logical not.

AlphaCompC Image

Composite two images using constant alpha values.

- NppStatus nppiAlphaCompC_8u_C1R (const Npp8u *pSrc1, int nSrc1Step, Npp8u nAlpha1, const Npp8u *pSrc2, int nSrc2Step, Npp8u nAlpha2, Npp8u *pDst, int nDstStep, NppiSize oSizeROI, NppiAlphaOp eAlphaOp)

  One 8-bit unsigned char channel image composition using constant alpha.

- NppStatus nppiAlphaCompC_8u_C3R (const Npp8u *pSrc1, int nSrc1Step, Npp8u nAlpha1, const Npp8u *pSrc2, int nSrc2Step, Npp8u nAlpha2, Npp8u *pDst, int nDstStep, NppiSize oSizeROI, NppiAlphaOp eAlphaOp)

  Three 8-bit unsigned char channel image composition using constant alpha.

- NppStatus nppiAlphaCompC_8u_C4R (const Npp8u *pSrc1, int nSrc1Step, Npp8u nAlpha1, const Npp8u *pSrc2, int nSrc2Step, Npp8u nAlpha2, Npp8u *pDst, int nDstStep, NppiSize oSizeROI, NppiAlphaOp eAlphaOp)

  Four 8-bit unsigned char channel image composition using constant alpha.

- NppStatus nppiAlphaCompC_8u_AC4R (const Npp8u *pSrc1, int nSrc1Step, Npp8u nAlpha1, const Npp8u *pSrc2, int nSrc2Step, Npp8u nAlpha2, Npp8u *pDst, int nDstStep, NppiSize oSizeROI, NppiAlphaOp eAlphaOp)

  Four 8-bit unsigned char channel image composition with alpha using constant source alpha.

- NppStatus nppiAlphaCompC_8s_C1R (const Npp8s *pSrc1, int nSrc1Step, Npp8s nAlpha1, const Npp8s *pSrc2, int nSrc2Step, Npp8s nAlpha2, Npp8s *pDst, int nDstStep, NppiSize oSizeROI, NppiAlphaOp eAlphaOp)

  One 8-bit signed char channel image composition using constant alpha.

- NppStatus nppiAlphaCompC_16u_C1R (const Npp16u *pSrc1, int nSrc1Step, Npp16u nAlpha1, const Npp16u *pSrc2, int nSrc2Step, Npp16u nAlpha2, Npp16u *pDst, int nDstStep, NppiSize oSizeROI, NppiAlphaOp eAlphaOp)

  One 16-bit unsigned short channel image composition using constant alpha.

- NppStatus nppiAlphaCompC_16u_C3R (const Npp16u *pSrc1, int nSrc1Step, Npp16u nAlpha1, const Npp16u *pSrc2, int nSrc2Step, Npp16u nAlpha2, Npp16u *pDst, int nDstStep, NppiSize oSizeROI, NppiAlphaOp eAlphaOp)

  Three 16-bit unsigned short channel image composition using constant alpha.

- NppStatus nppiAlphaCompC_16u_C4R (const Npp16u *pSrc1, int nSrc1Step, Npp16u nAlpha1, const Npp16u *pSrc2, int nSrc2Step, Npp16u nAlpha2, Npp16u *pDst, int nDstStep, NppiSize oSizeROI, NppiAlphaOp eAlphaOp)

    Four 16-bit unsigned short channel image composition using constant alpha.

- NppStatus nppiAlphaCompC_16u_AC4R (const Npp16u *pSrc1, int nSrc1Step, Npp16u nAlpha1, const Npp16u *pSrc2, int nSrc2Step, Npp16u nAlpha2, Npp16u *pDst, int nDstStep, NppiSize oSizeROI, NppiAlphaOp eAlphaOp)

    Four 16-bit unsigned short channel image composition with alpha using constant source alpha.

- NppStatus nppiAlphaCompC_16s_C1R (const Npp16s *pSrc1, int nSrc1Step, Npp16s nAlpha1, const Npp16s *pSrc2, int nSrc2Step, Npp16s nAlpha2, Npp16s *pDst, int nDstStep, NppiSize oSizeROI, NppiAlphaOp eAlphaOp)

    One 16-bit signed short channel image composition using constant alpha.

- NppStatus nppiAlphaCompC_32u_C1R (const Npp32u *pSrc1, int nSrc1Step, Npp32u nAlpha1, const Npp32u *pSrc2, int nSrc2Step, Npp32u nAlpha2, Npp32u *pDst, int nDstStep, NppiSize oSizeROI, NppiAlphaOp eAlphaOp)

    One 32-bit unsigned integer channel image composition using constant alpha.

- NppStatus nppiAlphaCompC_32s_C1R (const Npp32s *pSrc1, int nSrc1Step, Npp32s nAlpha1, const Npp32s *pSrc2, int nSrc2Step, Npp32s nAlpha2, Npp32s *pDst, int nDstStep, NppiSize oSizeROI, NppiAlphaOp eAlphaOp)

    One 32-bit signed integer channel image composition using constant alpha.

- NppStatus nppiAlphaCompC_32f_C1R (const Npp32f *pSrc1, int nSrc1Step, Npp32f nAlpha1, const Npp32f *pSrc2, int nSrc2Step, Npp32f nAlpha2, Npp32f *pDst, int nDstStep, NppiSize oSizeROI, NppiAlphaOp eAlphaOp)

    One 32-bit floating point channel image composition using constant alpha.

AlphaPremulC Image

Premultiplies pixels of an image using a constant alpha value.

- NppStatus nppiAlphaPremulC_8u_C1R (const Npp8u *pSrc1, int nSrc1Step, Npp8u nAlpha1, Npp8u *pDst, int nDstStep, NppiSize oSizeROI)

    One 8-bit unsigned char channel image premultiplication using constant alpha.

- NppStatus nppiAlphaPremulC_8u_C1IR (Npp8u nAlpha1, Npp8u *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

    One 8-bit unsigned char channel in place image premultiplication using constant alpha.

- NppStatus nppiAlphaPremulC_8u_C3R (const Npp8u *pSrc1, int nSrc1Step, Npp8u nAlpha1, Npp8u *pDst, int nDstStep, NppiSize oSizeROI)

    Three 8-bit unsigned char channel image premultiplication using constant alpha.

- NppStatus nppiAlphaPremulC_8u_C3IR (Npp8u nAlpha1, Npp8u *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

Three 8-bit unsigned char channel in place image premultiplication using constant alpha.

- NppStatus nppiAlphaPremulC_8u_C4R (const Npp8u *pSrc1, int nSrc1Step, Npp8u nAlpha1, Npp8u *pDst, int nDstStep, NppiSize oSizeROI)

  Four 8-bit unsigned char channel image premultiplication using constant alpha.

- NppStatus nppiAlphaPremulC_8u_C4IR (Npp8u nAlpha1, Npp8u *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

  Four 8-bit unsigned char channel in place image premultiplication using constant alpha.

- NppStatus nppiAlphaPremulC_8u_AC4R (const Npp8u *pSrc1, int nSrc1Step, Npp8u nAlpha1, Npp8u *pDst, int nDstStep, NppiSize oSizeROI)

  Four 8-bit unsigned char channel image premultiplication with alpha using constant alpha.

- NppStatus nppiAlphaPremulC_8u_AC4IR (Npp8u nAlpha1, Npp8u *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

  Four 8-bit unsigned char channel in place image premultiplication with alpha using constant alpha.

- NppStatus nppiAlphaPremulC_16u_C1R (const Npp16u *pSrc1, int nSrc1Step, Npp16u nAlpha1, Npp16u *pDst, int nDstStep, NppiSize oSizeROI)

  One 16-bit unsigned short channel image premultiplication using constant alpha.

- NppStatus nppiAlphaPremulC_16u_C1IR (Npp16u nAlpha1, Npp16u *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

  One 16-bit unsigned short channel in place image premultiplication using constant alpha.

- NppStatus nppiAlphaPremulC_16u_C3R (const Npp16u *pSrc1, int nSrc1Step, Npp16u nAlpha1, Npp16u *pDst, int nDstStep, NppiSize oSizeROI)

  Three 16-bit unsigned short channel image premultiplication using constant alpha.

- NppStatus nppiAlphaPremulC_16u_C3IR (Npp16u nAlpha1, Npp16u *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

  Three 16-bit unsigned short channel in place image premultiplication using constant alpha.

- NppStatus nppiAlphaPremulC_16u_C4R (const Npp16u *pSrc1, int nSrc1Step, Npp16u nAlpha1, Npp16u *pDst, int nDstStep, NppiSize oSizeROI)

  Four 16-bit unsigned short channel image premultiplication using constant alpha.

- NppStatus nppiAlphaPremulC_16u_C4IR (Npp16u nAlpha1, Npp16u *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

  Four 16-bit unsigned short channel in place image premultiplication using constant alpha.

- NppStatus nppiAlphaPremulC_16u_AC4R (const Npp16u *pSrc1, int nSrc1Step, Npp16u nAlpha1, Npp16u *pDst, int nDstStep, NppiSize oSizeROI)

  Four 16-bit unsigned short channel image premultiplication with alpha using constant alpha.

- NppStatus nppiAlphaPremulC_16u_AC4IR (Npp16u nAlpha1, Npp16u *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

  Four 16-bit unsigned short channel in place image premultiplication with alpha using constant alpha.

AlphaComp Image

Composite two images using alpha opacity values contained in each image.

- NppStatus nppiAlphaComp_8u_AC1R (const Npp8u *pSrc1, int nSrc1Step, const Npp8u *pSrc2, int nSrc2Step, Npp8u *pDst, int nDstStep, NppiSize oSizeROI, NppiAlphaOp eAlphaOp)

    One 8-bit unsigned char channel image composition using image alpha values (0 - max channel pixel value).

- NppStatus nppiAlphaComp_8u_AC4R (const Npp8u *pSrc1, int nSrc1Step, const Npp8u *pSrc2, int nSrc2Step, Npp8u *pDst, int nDstStep, NppiSize oSizeROI, NppiAlphaOp eAlphaOp)

    Four 8-bit unsigned char channel image composition using image alpha values (0 - max channel pixel value).

- NppStatus nppiAlphaComp_8s_AC1R (const Npp8s *pSrc1, int nSrc1Step, const Npp8s *pSrc2, int nSrc2Step, Npp8s *pDst, int nDstStep, NppiSize oSizeROI, NppiAlphaOp eAlphaOp)

    One 8-bit signed char channel image composition using image alpha values (0 - max channel pixel value).

- NppStatus nppiAlphaComp_16u_AC1R (const Npp16u *pSrc1, int nSrc1Step, const Npp16u *pSrc2, int nSrc2Step, Npp16u *pDst, int nDstStep, NppiSize oSizeROI, NppiAlphaOp eAlphaOp)

    One 16-bit unsigned short channel image composition using image alpha values (0 - max channel pixel value).

- NppStatus nppiAlphaComp_16u_AC4R (const Npp16u *pSrc1, int nSrc1Step, const Npp16u *pSrc2, int nSrc2Step, Npp16u *pDst, int nDstStep, NppiSize oSizeROI, NppiAlphaOp eAlphaOp)

    Four 16-bit unsigned short channel image composition using image alpha values (0 - max channel pixel value).

- NppStatus nppiAlphaComp_16s_AC1R (const Npp16s *pSrc1, int nSrc1Step, const Npp16s *pSrc2, int nSrc2Step, Npp16s *pDst, int nDstStep, NppiSize oSizeROI, NppiAlphaOp eAlphaOp)

    One 16-bit signed short channel image composition using image alpha values (0 - max channel pixel value).

- NppStatus nppiAlphaComp_32u_AC1R (const Npp32u *pSrc1, int nSrc1Step, const Npp32u *pSrc2, int nSrc2Step, Npp32u *pDst, int nDstStep, NppiSize oSizeROI, NppiAlphaOp eAlphaOp)

    One 32-bit unsigned integer channel image composition using image alpha values (0 - max channel pixel value).

- NppStatus nppiAlphaComp_32u_AC4R (const Npp32u *pSrc1, int nSrc1Step, const Npp32u *pSrc2, int nSrc2Step, Npp32u *pDst, int nDstStep, NppiSize oSizeROI, NppiAlphaOp eAlphaOp)

    Four 32-bit unsigned integer channel image composition using image alpha values (0 - max channel pixel value).

- NppStatus nppiAlphaComp_32s_AC1R (const Npp32s *pSrc1, int nSrc1Step, const Npp32s *pSrc2, int nSrc2Step, Npp32s *pDst, int nDstStep, NppiSize oSizeROI, NppiAlphaOp eAlphaOp)

    One 32-bit signed integer channel image composition using image alpha values (0 - max channel pixel value).

- NppStatus nppiAlphaComp_32s_AC4R (const Npp32s *pSrc1, int nSrc1Step, const Npp32s *pSrc2, int nSrc2Step, Npp32s *pDst, int nDstStep, NppiSize oSizeROI, NppiAlphaOp eAlphaOp)

Four 32-bit signed integer channel image composition using image alpha values (0 - max channel pixel value).

- NppStatus nppiAlphaComp_32f_AC1R (const Npp32f ∗pSrc1, int nSrc1Step, const Npp32f ∗pSrc2, int nSrc2Step, Npp32f ∗pDst, int nDstStep, NppiSize oSizeROI, NppiAlphaOp eAlphaOp)

  One 32-bit floating point channel image composition using image alpha values (0.0 - 1.0).

- NppStatus nppiAlphaComp_32f_AC4R (const Npp32f ∗pSrc1, int nSrc1Step, const Npp32f ∗pSrc2, int nSrc2Step, Npp32f ∗pDst, int nDstStep, NppiSize oSizeROI, NppiAlphaOp eAlphaOp)

  Four 32-bit floating point channel image composition using image alpha values (0.0 - 1.0).

AlphaPremul Image

Premultiplies image pixels by image alpha opacity values.

- NppStatus nppiAlphaPremul_8u_AC4R (const Npp8u ∗pSrc1, int nSrc1Step, Npp8u ∗pDst, int nDstStep, NppiSize oSizeROI)

  Four 8-bit unsigned char channel image premultiplication with pixel alpha (0 - max channel pixel value).

- NppStatus nppiAlphaPremul_8u_AC4IR (Npp8u ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

  Four 8-bit unsigned char channel in place image premultiplication with pixel alpha (0 - max channel pixel value).

- NppStatus nppiAlphaPremul_16u_AC4R (const Npp16u ∗pSrc1, int nSrc1Step, Npp16u ∗pDst, int nDstStep, NppiSize oSizeROI)

  Four 16-bit unsigned short channel image premultiplication with pixel alpha (0 - max channel pixel value).

- NppStatus nppiAlphaPremul_16u_AC4IR (Npp16u ∗pSrcDst, int nSrcDstStep, NppiSize oSize-ROI)

  Four 16-bit unsigned short channel in place image premultiplication with pixel alpha (0 - max channel pixel value).

7.7.1 Function Documentation

7.7.1.1 NppStatus nppiAbs_16s_AC4IR (Npp16s ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 16-bit signed short channel in place image absolute value with unmodified alpha.

Parameters:

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.2 NppStatus nppiAbs_16s_AC4R (const Npp16s ∗ *pSrc*, int *nSrcStep*, Npp16s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Four 16-bit signed short channel image absolute value with unmodified alpha.

Parameters:

    pSrc   Source-Image Pointer.

    nSrcStep   Source-Image Line Step.

    pDst   Destination-Image Pointer.

    nDstStep   Destination-Image Line Step.

    oSizeROI   Region-of-Interest (ROI).

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.3 NppStatus nppiAbs_16s_C1IR (Npp16s ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

One 16-bit signed short channel in place image absolute value.

Parameters:

    pSrcDst   In-Place Image Pointer.

    nSrcDstStep   In-Place-Image Line Step.

    oSizeROI   Region-of-Interest (ROI).

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.4 NppStatus nppiAbs_16s_C1R (const Npp16s ∗ *pSrc*, int *nSrcStep*, Npp16s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

One 16-bit signed short channel image absolute value.

Parameters:

    pSrc   Source-Image Pointer.

    nSrcStep   Source-Image Line Step.

    pDst   Destination-Image Pointer.

    nDstStep   Destination-Image Line Step.

    oSizeROI   Region-of-Interest (ROI).

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.5   NppStatus nppiAbs_16s_C3IR (Npp16s * *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Three 16-bit signed short channel in place image absolute value.

Parameters:

    pSrcDst In-Place Image Pointer.

    nSrcDstStep In-Place-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.6   NppStatus nppiAbs_16s_C3R (const Npp16s * *pSrc*, int *nSrcStep*, Npp16s * *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Three 16-bit signed short channel image absolute value.

Parameters:

    pSrc Source-Image Pointer.

    nSrcStep Source-Image Line Step.

    pDst Destination-Image Pointer.

    nDstStep Destination-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.7   NppStatus nppiAbs_16s_C4IR (Npp16s * *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 16-bit signed short channel in place image absolute value.

Parameters:

    pSrcDst In-Place Image Pointer.

    nSrcDstStep In-Place-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.8 NppStatus nppiAbs_16s_C4R (const Npp16s ∗ *pSrc*, int *nSrcStep*, Npp16s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Four 16-bit signed short channel image absolute value.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.9 NppStatus nppiAbs_32f_AC4IR (Npp32f ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 32-bit floating point channel in place image absolute value with unmodified alpha.

Parameters:

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.10 NppStatus nppiAbs_32f_AC4R (const Npp32f ∗ *pSrc*, int *nSrcStep*, Npp32f ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Four 32-bit floating point channel image absolute value with unmodified alpha.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.11 NppStatus nppiAbs_32f_C1IR (Npp32f ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

One 32-bit floating point channel in place image absolute value.

Parameters:

> *pSrcDst* In-Place Image Pointer.
>
> *nSrcDstStep* In-Place-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.12 NppStatus nppiAbs_32f_C1R (const Npp32f ∗ *pSrc*, int *nSrcStep*, Npp32f ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

One 32-bit floating point channel image absolute value.

Parameters:

> *pSrc* Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.13 NppStatus nppiAbs_32f_C3IR (Npp32f ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Three 32-bit floating point channel in place image absolute value.

Parameters:

> *pSrcDst* In-Place Image Pointer.
>
> *nSrcDstStep* In-Place-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.14 NppStatus nppiAbs_32f_C3R (const Npp32f ∗ *pSrc*, int *nSrcStep*, Npp32f ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Three 32-bit floating point channel image absolute value.

Parameters:

    pSrc Source-Image Pointer.

    nSrcStep Source-Image Line Step.

    pDst Destination-Image Pointer.

    nDstStep Destination-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.15 NppStatus nppiAbs_32f_C4IR (Npp32f ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 32-bit floating point channel in place image absolute value.

Parameters:

    pSrcDst In-Place Image Pointer.

    nSrcDstStep In-Place-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.16 NppStatus nppiAbs_32f_C4R (const Npp32f ∗ *pSrc*, int *nSrcStep*, Npp32f ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Four 32-bit floating point channel image absolute value.

Parameters:

    pSrc Source-Image Pointer.

    nSrcStep Source-Image Line Step.

    pDst Destination-Image Pointer.

    nDstStep Destination-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.17 NppStatus nppiAbsDiff_16u_C1R (const Npp16u ∗ *pSrc1*, int *nSrc1Step*, const Npp16u ∗ *pSrc2*, int *nSrc2Step*, Npp16u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

One 16-bit unsigned short channel absolute difference of image1 minus image2.

Parameters:

> *pSrc1* Source-Image Pointer.
>
> *nSrc1Step* Source-Image Line Step.
>
> *pSrc2* Source-Image Pointer.
>
> *nSrc2Step* Source-Image Line Step.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.18 NppStatus nppiAbsDiff_32f_C1R (const Npp32f ∗ *pSrc1*, int *nSrc1Step*, const Npp32f ∗ *pSrc2*, int *nSrc2Step*, Npp32f ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

One 32-bit floating point channel absolute difference of image1 minus image2.

Parameters:

> *pSrc1* Source-Image Pointer.
>
> *nSrc1Step* Source-Image Line Step.
>
> *pSrc2* Source-Image Pointer.
>
> *nSrc2Step* Source-Image Line Step.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.19 NppStatus nppiAbsDiff_8u_C1R (const Npp8u ∗ *pSrc1*, int *nSrc1Step*, const Npp8u ∗ *pSrc2*, int *nSrc2Step*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

One 8-bit unsigned char channel absolute difference of image1 minus image2.

Parameters:

> *pSrc1* Source-Image Pointer.
>
> *nSrc1Step* Source-Image Line Step.
>
> *pSrc2* Source-Image Pointer.

nSrc2Step Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.20 NppStatus nppiAbsDiffC_16u_C1R (const Npp16u ∗ *pSrc1*, int *nSrc1Step*, Npp16u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, Npp32u *nConstant*)

One 16-bit unsigned short channel image absolute difference with constant.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

nConstant Constant.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.21 NppStatus nppiAbsDiffC_32f_C1R (const Npp32f ∗ *pSrc1*, int *nSrc1Step*, Npp32f ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, Npp32f *nConstant*)

One 32-bit floating point channel image absolute difference with constant.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

nConstant Constant.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.22 NppStatus nppiAbsDiffC_8u_C1R (const Npp8u ∗ *pSrc1*, int *nSrc1Step*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, Npp8u *nConstant*)

One 8-bit unsigned char channel image absolute difference with constant.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

nConstant Constant.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.23 NppStatus nppiAdd_16s_AC4IRSfs (const Npp16s ∗ *pSrc*, int *nSrcStep*, Npp16s ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 16-bit signed short channel with unmodified alpha in place image addition, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.24 NppStatus nppiAdd_16s_AC4RSfs (const Npp16s ∗ *pSrc1*, int *nSrc1Step*, const Npp16s ∗ *pSrc2*, int *nSrc2Step*, Npp16s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 16-bit signed short channel with unmodified alpha image addition, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pSrc2 Source-Image Pointer.

nSrc2Step Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.25   NppStatus nppiAdd_16s_C1IRSfs (const Npp16s ∗ *pSrc***, int** *nSrcStep***, Npp16s** ∗ *pSrcDst***,**
int *nSrcDstStep***, NppiSize** *oSizeROI***, int** *nScaleFactor***)**

One 16-bit signed short channel in place image addition, scale by $2^\wedge$(-nScaleFactor), then clamp to saturated value.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.26   NppStatus nppiAdd_16s_C1RSfs (const Npp16s ∗ *pSrc1***, int** *nSrc1Step***, const Npp16s** ∗
*pSrc2***, int** *nSrc2Step***, Npp16s** ∗ *pDst***, int** *nDstStep***, NppiSize** *oSizeROI***, int** *nScaleFactor***)**

One 16-bit signed short channel image addition, scale by $2^\wedge$(-nScaleFactor), then clamp to saturated value.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pSrc2 Source-Image Pointer.

nSrc2Step Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.27 NppStatus nppiAdd_16s_C3IRSfs (const Npp16s ∗ *pSrc*, int *nSrcStep*, Npp16s ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 16-bit signed short channel in place image addition, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

> *pSrc* Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *pSrcDst* In-Place Image Pointer.
>
> *nSrcDstStep* In-Place-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.28 NppStatus nppiAdd_16s_C3RSfs (const Npp16s ∗ *pSrc1*, int *nSrc1Step*, const Npp16s ∗ *pSrc2*, int *nSrc2Step*, Npp16s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Three 16-bit signed short channel image addition, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

> *pSrc1* Source-Image Pointer.
>
> *nSrc1Step* Source-Image Line Step.
>
> *pSrc2* Source-Image Pointer.
>
> *nSrc2Step* Source-Image Line Step.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.29 NppStatus nppiAdd_16s_C4IRSfs (const Npp16s ∗ *pSrc*, int *nSrcStep*, Npp16s ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 16-bit signed short channel in place image addition, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

> *pSrc* Source-Image Pointer.

nSrcStep Source-Image Line Step.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.30 NppStatus nppiAdd_16s_C4RSfs (const Npp16s ∗ *pSrc1*, int *nSrc1Step*, const Npp16s ∗ *pSrc2*, int *nSrc2Step*, Npp16s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 16-bit signed short channel image addition, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pSrc2 Source-Image Pointer.

nSrc2Step Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.31 NppStatus nppiAdd_16sc_AC4IRSfs (const Npp16sc ∗ *pSrc*, int *nSrcStep*, Npp16sc ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 16-bit signed short complex number (16-bit real, 16-bit imaginary) channel with unmodified alpha in place image addition, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.32 NppStatus nppiAdd_16sc_AC4RSfs (const Npp16sc ∗ *pSrc1*, int *nSrc1Step*, const Npp16sc ∗ *pSrc2*, int *nSrc2Step*, Npp16sc ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 16-bit signed short complex number (16-bit real, 16-bit imaginary) channel with unmodified alpha image addition, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

    pSrc1 Source-Image Pointer.

    nSrc1Step Source-Image Line Step.

    pSrc2 Source-Image Pointer.

    nSrc2Step Source-Image Line Step.

    pDst Destination-Image Pointer.

    nDstStep Destination-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

    nScaleFactor Integer Result Scaling.

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.33 NppStatus nppiAdd_16sc_C1IRSfs (const Npp16sc ∗ *pSrc*, int *nSrcStep*, Npp16sc ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 16-bit signed short complex number (16-bit real, 16-bit imaginary) channel in place image addition, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

    pSrc Source-Image Pointer.

    nSrcStep Source-Image Line Step.

    pSrcDst In-Place Image Pointer.

    nSrcDstStep In-Place-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

    nScaleFactor Integer Result Scaling.

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.34 NppStatus nppiAdd_16sc_C1RSfs (const Npp16sc ∗ *pSrc1*, int *nSrc1Step*, const Npp16sc ∗ *pSrc2*, int *nSrc2Step*, Npp16sc ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 16-bit signed short complex number (16-bit real, 16-bit imaginary) channel image addition, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

> *pSrc1* Source-Image Pointer.
>
> *nSrc1Step* Source-Image Line Step.
>
> *pSrc2* Source-Image Pointer.
>
> *nSrc2Step* Source-Image Line Step.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.35 NppStatus nppiAdd_16sc_C3IRSfs (const Npp16sc ∗ *pSrc*, int *nSrcStep*, Npp16sc ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 16-bit signed short complex number (16-bit real, 16-bit imaginary) channel in place image addition, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

> *pSrc* Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *pSrcDst* In-Place Image Pointer.
>
> *nSrcDstStep* In-Place-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.36 NppStatus nppiAdd_16sc_C3RSfs (const Npp16sc ∗ *pSrc1*, int *nSrc1Step*, const Npp16sc ∗ *pSrc2*, int *nSrc2Step*, Npp16sc ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Three 16-bit signed short complex number (16-bit real, 16-bit imaginary) channel image addition, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

> *pSrc1* Source-Image Pointer.
>
> *nSrc1Step* Source-Image Line Step.
>
> *pSrc2* Source-Image Pointer.
>
> *nSrc2Step* Source-Image Line Step.
>
> *pDst* Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.37 NppStatus nppiAdd_16u_AC4IRSfs (const Npp16u ∗ *pSrc*, int *nSrcStep*, Npp16u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 16-bit unsigned short channel with unmodified alpha in place image addition, scale by $2^\wedge$(-nScaleFactor), then clamp to saturated value.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.38 NppStatus nppiAdd_16u_AC4RSfs (const Npp16u ∗ *pSrc1*, int *nSrc1Step*, const Npp16u ∗ *pSrc2*, int *nSrc2Step*, Npp16u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 16-bit unsigned short channel with unmodified alpha image addition, scale by $2^\wedge$(-nScaleFactor), then clamp to saturated value.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pSrc2 Source-Image Pointer.

nSrc2Step Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.39 NppStatus nppiAdd_16u_C1IRSfs (const Npp16u ∗ *pSrc*, int *nSrcStep*, Npp16u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 16-bit unsigned short channel in place image addition, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.40 NppStatus nppiAdd_16u_C1RSfs (const Npp16u ∗ *pSrc1*, int *nSrc1Step*, const Npp16u ∗ *pSrc2*, int *nSrc2Step*, Npp16u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 16-bit unsigned short channel image addition, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pSrc2 Source-Image Pointer.

nSrc2Step Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.41 NppStatus nppiAdd_16u_C3IRSfs (const Npp16u ∗ *pSrc*, int *nSrcStep*, Npp16u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 16-bit unsigned short channel in place image addition, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.42 NppStatus nppiAdd_16u_C3RSfs (const Npp16u * *pSrc1*, int *nSrc1Step*, const Npp16u * *pSrc2*, int *nSrc2Step*, Npp16u * *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Three 16-bit unsigned short channel image addition, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pSrc2 Source-Image Pointer.

nSrc2Step Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.43 NppStatus nppiAdd_16u_C4IRSfs (const Npp16u * *pSrc*, int *nSrcStep*, Npp16u * *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 16-bit unsigned short channel in place image addition, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.44 NppStatus nppiAdd_16u_C4RSfs (const Npp16u ∗ *pSrc1*, int *nSrc1Step*, const Npp16u ∗ *pSrc2*, int *nSrc2Step*, Npp16u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 16-bit unsigned short channel image addition, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

>*pSrc1* Source-Image Pointer.
>
>*nSrc1Step* Source-Image Line Step.
>
>*pSrc2* Source-Image Pointer.
>
>*nSrc2Step* Source-Image Line Step.
>
>*pDst* Destination-Image Pointer.
>
>*nDstStep* Destination-Image Line Step.
>
>*oSizeROI* Region-of-Interest (ROI).
>
>*nScaleFactor* Integer Result Scaling.

Returns:

>Image Data Related Error Codes, ROI Related Error Codes

7.7.1.45 NppStatus nppiAdd_32f_AC4IR (const Npp32f ∗ *pSrc*, int *nSrcStep*, Npp32f ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 32-bit floating point channel with unmodified alpha in place image addition.

Parameters:

>*pSrc* Source-Image Pointer.
>
>*nSrcStep* Source-Image Line Step.
>
>*pSrcDst* In-Place Image Pointer.
>
>*nSrcDstStep* In-Place-Image Line Step.
>
>*oSizeROI* Region-of-Interest (ROI).

Returns:

>Image Data Related Error Codes, ROI Related Error Codes

7.7.1.46 NppStatus nppiAdd_32f_AC4R (const Npp32f ∗ *pSrc1*, int *nSrc1Step*, const Npp32f ∗ *pSrc2*, int *nSrc2Step*, Npp32f ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Four 32-bit floating point channel with unmodified alpha image addition.

Parameters:

>*pSrc1* Source-Image Pointer.
>
>*nSrc1Step* Source-Image Line Step.
>
>*pSrc2* Source-Image Pointer.

nSrc2Step Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.47 NppStatus nppiAdd_32f_C1IR (const Npp32f ∗ *pSrc*, int *nSrcStep*, Npp32f ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

One 32-bit floating point channel in place image addition.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.48 NppStatus nppiAdd_32f_C1R (const Npp32f ∗ *pSrc1*, int *nSrc1Step*, const Npp32f ∗ *pSrc2*, int *nSrc2Step*, Npp32f ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

One 32-bit floating point channel image addition.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pSrc2 Source-Image Pointer.

nSrc2Step Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.49 NppStatus nppiAdd_32f_C3IR (const Npp32f ∗ *pSrc*, int *nSrcStep*, Npp32f ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

One 32-bit floating point channel in place image addition.

Parameters:

> *pSrc* Source-Image Pointer.
> *nSrcStep* Source-Image Line Step.
> *pSrcDst* In-Place Image Pointer.
> *nSrcDstStep* In-Place-Image Line Step.
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.50 NppStatus nppiAdd_32f_C3R (const Npp32f ∗ *pSrc1*, int *nSrc1Step*, const Npp32f ∗ *pSrc2*, int *nSrc2Step*, Npp32f ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Three 32-bit floating point channel image addition.

Parameters:

> *pSrc1* Source-Image Pointer.
> *nSrc1Step* Source-Image Line Step.
> *pSrc2* Source-Image Pointer.
> *nSrc2Step* Source-Image Line Step.
> *pDst* Destination-Image Pointer.
> *nDstStep* Destination-Image Line Step.
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.51 NppStatus nppiAdd_32f_C4IR (const Npp32f ∗ *pSrc*, int *nSrcStep*, Npp32f ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 32-bit floating point channel in place image addition.

Parameters:

> *pSrc* Source-Image Pointer.
> *nSrcStep* Source-Image Line Step.
> *pSrcDst* In-Place Image Pointer.
> *nSrcDstStep* In-Place-Image Line Step.
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.52 NppStatus nppiAdd_32f_C4R (const Npp32f ∗ *pSrc1*, int *nSrc1Step*, const Npp32f ∗ *pSrc2*, int *nSrc2Step*, Npp32f ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Four 32-bit floating point channel image addition.

Parameters:

  pSrc1 Source-Image Pointer.

  nSrc1Step Source-Image Line Step.

  pSrc2 Source-Image Pointer.

  nSrc2Step Source-Image Line Step.

  pDst Destination-Image Pointer.

  nDstStep Destination-Image Line Step.

  oSizeROI Region-of-Interest (ROI).

Returns:

  Image Data Related Error Codes, ROI Related Error Codes

7.7.1.53 NppStatus nppiAdd_32fc_AC4IR (const Npp32fc ∗ *pSrc*, int *nSrcStep*, Npp32fc ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 32-bit floating point complex number (32-bit real, 32-bit imaginary) channel with unmodified alpha in place image addition.

Parameters:

  pSrc Source-Image Pointer.

  nSrcStep Source-Image Line Step.

  pSrcDst In-Place Image Pointer.

  nSrcDstStep In-Place-Image Line Step.

  oSizeROI Region-of-Interest (ROI).

Returns:

  Image Data Related Error Codes, ROI Related Error Codes

7.7.1.54 NppStatus nppiAdd_32fc_AC4R (const Npp32fc ∗ *pSrc1*, int *nSrc1Step*, const Npp32fc ∗ *pSrc2*, int *nSrc2Step*, Npp32fc ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Four 32-bit floating point complex number (32-bit real, 32-bit imaginary) channel with unmodified alpha image addition.

Parameters:

  pSrc1 Source-Image Pointer.

  nSrc1Step Source-Image Line Step.

  pSrc2 Source-Image Pointer.

  nSrc2Step Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.55 NppStatus nppiAdd_32fc_C1IR (const Npp32fc ∗ *pSrc*, int *nSrcStep*, Npp32fc ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

One 32-bit floating point complex number (32-bit real, 32-bit imaginary) channel in place image addition.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.56 NppStatus nppiAdd_32fc_C1R (const Npp32fc ∗ *pSrc1*, int *nSrc1Step*, const Npp32fc ∗ *pSrc2*, int *nSrc2Step*, Npp32fc ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

One 32-bit floating point complex number (32-bit real, 32-bit imaginary) channel image addition.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pSrc2 Source-Image Pointer.

nSrc2Step Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.57 NppStatus nppiAdd_32fc_C3IR (const Npp32fc ∗ *pSrc*, int *nSrcStep*, Npp32fc ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

One 32-bit floating point complex number (32-bit real, 32-bit imaginary) channel in place image addition.

Parameters:

> *pSrc* Source-Image Pointer.
> *nSrcStep* Source-Image Line Step.
> *pSrcDst* In-Place Image Pointer.
> *nSrcDstStep* In-Place-Image Line Step.
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.58 NppStatus nppiAdd_32fc_C3R (const Npp32fc ∗ *pSrc1*, int *nSrc1Step*, const Npp32fc ∗ *pSrc2*, int *nSrc2Step*, Npp32fc ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Three 32-bit floating point complex number (32-bit real, 32-bit imaginary) channel image addition.

Parameters:

> *pSrc1* Source-Image Pointer.
> *nSrc1Step* Source-Image Line Step.
> *pSrc2* Source-Image Pointer.
> *nSrc2Step* Source-Image Line Step.
> *pDst* Destination-Image Pointer.
> *nDstStep* Destination-Image Line Step.
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.59 NppStatus nppiAdd_32fc_C4IR (const Npp32fc ∗ *pSrc*, int *nSrcStep*, Npp32fc ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 32-bit floating point complex number (32-bit real, 32-bit imaginary) channel in place image addition.

Parameters:

> *pSrc* Source-Image Pointer.
> *nSrcStep* Source-Image Line Step.
> *pSrcDst* In-Place Image Pointer.
> *nSrcDstStep* In-Place-Image Line Step.
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.60 NppStatus nppiAdd_32fc_C4R (const Npp32fc ∗ *pSrc1*, int *nSrc1Step*, const Npp32fc ∗ *pSrc2*, int *nSrc2Step*, Npp32fc ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Four 32-bit floating point complex number (32-bit real, 32-bit imaginary) channel image addition.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pSrc2 Source-Image Pointer.

nSrc2Step Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.61 NppStatus nppiAdd_32s_C1IRSfs (const Npp32s ∗ *pSrc*, int *nSrcStep*, Npp32s ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 32-bit signed integer channel in place image addition, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.62 NppStatus nppiAdd_32s_C1R (const Npp32s ∗ *pSrc1*, int *nSrc1Step*, const Npp32s ∗ *pSrc2*, int *nSrc2Step*, Npp32s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Note: This function is to be deprecated in future NPP releases, use the function above with a scale factor of 0 instead.

32-bit image add. Add the pixel values of corresponding pixels in the ROI and write them to the output image.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pSrc2 Source-Image Pointer.

nSrc2Step Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.63 NppStatus nppiAdd_32s_C1RSfs (const Npp32s ∗ *pSrc1*, int *nSrc1Step*, const Npp32s ∗ *pSrc2*, int *nSrc2Step*, Npp32s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 32-bit signed integer channel image addition, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pSrc2 Source-Image Pointer.

nSrc2Step Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.64 NppStatus nppiAdd_32s_C3IRSfs (const Npp32s ∗ *pSrc*, int *nSrcStep*, Npp32s ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 32-bit signed integer channel in place image addition, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.65 NppStatus nppiAdd_32s_C3RSfs (const Npp32s ∗ *pSrc1*, int *nSrc1Step*, const Npp32s ∗ *pSrc2*, int *nSrc2Step*, Npp32s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Three 32-bit signed integer channel image addition, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

> *pSrc1* Source-Image Pointer.
>
> *nSrc1Step* Source-Image Line Step.
>
> *pSrc2* Source-Image Pointer.
>
> *nSrc2Step* Source-Image Line Step.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.66 NppStatus nppiAdd_32sc_AC4IRSfs (const Npp32sc ∗ *pSrc*, int *nSrcStep*, Npp32sc ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 32-bit signed integer complex number (32-bit real, 32-bit imaginary) channel with unmodified alpha in place image addition, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

> *pSrc* Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *pSrcDst* In-Place Image Pointer.
>
> *nSrcDstStep* In-Place-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.67 NppStatus nppiAdd_32sc_AC4RSfs (const Npp32sc ∗ *pSrc1*, int *nSrc1Step*, const Npp32sc ∗ *pSrc2*, int *nSrc2Step*, Npp32sc ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 32-bit signed integer complex number (32-bit real, 32-bit imaginary) channel with unmodified alpha image addition, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

> *pSrc1* Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pSrc2 Source-Image Pointer.

nSrc2Step Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.68 NppStatus nppiAdd_32sc_C1IRSfs (const Npp32sc ∗ *pSrc*, int *nSrcStep*, Npp32sc ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 32-bit signed integer complex number (32-bit real, 32-bit imaginary) channel in place image addition, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.69 NppStatus nppiAdd_32sc_C1RSfs (const Npp32sc ∗ *pSrc1*, int *nSrc1Step*, const Npp32sc ∗ *pSrc2*, int *nSrc2Step*, Npp32sc ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 32-bit signed integer complex number (32-bit real, 32-bit imaginary) channel image addition, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pSrc2 Source-Image Pointer.

nSrc2Step Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.70 NppStatus nppiAdd_32sc_C3IRSfs (const Npp32sc ∗ *pSrc*, int *nSrcStep*, Npp32sc ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 32-bit signed integer complex number (32-bit real, 32-bit imaginary) channel in place image addition, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

> *pSrc* Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *pSrcDst* In-Place Image Pointer.
>
> *nSrcDstStep* In-Place-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.71 NppStatus nppiAdd_32sc_C3RSfs (const Npp32sc ∗ *pSrc1*, int *nSrc1Step*, const Npp32sc ∗ *pSrc2*, int *nSrc2Step*, Npp32sc ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Three 32-bit signed integer complex number (32-bit real, 32-bit imaginary) channel image addition, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

> *pSrc1* Source-Image Pointer.
>
> *nSrc1Step* Source-Image Line Step.
>
> *pSrc2* Source-Image Pointer.
>
> *nSrc2Step* Source-Image Line Step.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.72 NppStatus nppiAdd_8u_AC4IRSfs (const Npp8u ∗ *pSrc*, int *nSrcStep*, Npp8u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 8-bit unsigned char channel with unmodified alpha in place image addition, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

> *pSrc* Source-Image Pointer.

nSrcStep Source-Image Line Step.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.73 NppStatus nppiAdd_8u_AC4RSfs (const Npp8u ∗ *pSrc1*, int *nSrc1Step*, const Npp8u ∗ *pSrc2*, int *nSrc2Step*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 8-bit unsigned char channel with unmodified alpha image addition, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pSrc2 Source-Image Pointer.

nSrc2Step Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.74 NppStatus nppiAdd_8u_C1IRSfs (const Npp8u ∗ *pSrc*, int *nSrcStep*, Npp8u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 8-bit unsigned char channel in place image addition, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.75 NppStatus nppiAdd_8u_C1RSfs (const Npp8u ∗ *pSrc1*, int *nSrc1Step*, const Npp8u ∗ *pSrc2*, int *nSrc2Step*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 8-bit unsigned char channel image addition, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pSrc2 Source-Image Pointer.

nSrc2Step Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.76 NppStatus nppiAdd_8u_C3IRSfs (const Npp8u ∗ *pSrc*, int *nSrcStep*, Npp8u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 8-bit unsigned char channel in place image addition, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.77 NppStatus nppiAdd_8u_C3RSfs (const Npp8u ∗ *pSrc1*, int *nSrc1Step*, const Npp8u ∗ *pSrc2*, int *nSrc2Step*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Three 8-bit unsigned char channel image addition, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pSrc2 Source-Image Pointer.

nSrc2Step Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.78 NppStatus nppiAdd_8u_C4IRSfs (const Npp8u ∗ *pSrc*, int *nSrcStep*, Npp8u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 8-bit unsigned char channel in place image addition, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.79 NppStatus nppiAdd_8u_C4RSfs (const Npp8u ∗ *pSrc1*, int *nSrc1Step*, const Npp8u ∗ *pSrc2*, int *nSrc2Step*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 8-bit unsigned char channel image addition, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pSrc2 Source-Image Pointer.

nSrc2Step Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.80 NppStatus nppiAddC_16s_AC4IRSfs (const Npp16s ∗ *pConstants*, Npp16s ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 16-bit signed short channel with unmodified alpha in place image add constant, scale, then clamp to saturated value.

Parameters:

    pConstants   pointer to a list of constant values, one per channel.

    pSrcDst   In-Place Image Pointer.

    nSrcDstStep   In-Place-Image Line Step.

    oSizeROI   Region-of-Interest (ROI).

    nScaleFactor   Integer Result Scaling.

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.81 NppStatus nppiAddC_16s_AC4RSfs (const Npp16s ∗ *pSrc1*, int *nSrc1Step*, const Npp16s ∗ *pConstants*, Npp16s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 16-bit signed short channel with unmodified alpha image add constant, scale, then clamp to saturated value.

Parameters:

    pSrc1   Source-Image Pointer.

    nSrc1Step   Source-Image Line Step.

    pConstants   pointer to a list of constant values, one per channel.

    pDst   Destination-Image Pointer.

    nDstStep   Destination-Image Line Step.

    oSizeROI   Region-of-Interest (ROI).

    nScaleFactor   Integer Result Scaling.

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.82 NppStatus nppiAddC_16s_C1IRSfs (const Npp16s *nConstant*, Npp16s ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 16-bit signed short channel in place image add constant, scale, then clamp to saturated value.

Parameters:

    nConstant   Constant.

    pSrcDst   In-Place Image Pointer.

    nSrcDstStep   In-Place-Image Line Step.

    oSizeROI   Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.83 NppStatus nppiAddC_16s_C1RSfs (const Npp16s ∗ *pSrc1*, int *nSrc1Step*, const Npp16s *nConstant*, Npp16s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 16-bit signed short channel image add constant, scale, then clamp to saturated value.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

nConstant Constant.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.84 NppStatus nppiAddC_16s_C3IRSfs (const Npp16s ∗ *pConstants*, Npp16s ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Three 16-bit signed short channel in place image add constant, scale, then clamp to saturated value.

Parameters:

pConstants pointer to a list of constant values, one per channel.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.85 NppStatus nppiAddC_16s_C3RSfs (const Npp16s ∗ *pSrc1*, int *nSrc1Step*, const Npp16s ∗ *pConstants*, Npp16s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Three 16-bit signed short channel image add constant, scale, then clamp to saturated value.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pConstants pointer to a list of constant values, one per channel.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.86 NppStatus nppiAddC_16s_C4IRSfs (const Npp16s ∗ *pConstants*, Npp16s ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 16-bit signed short channel in place image add constant, scale, then clamp to saturated value.

Parameters:

pConstants pointer to a list of constant values, one per channel.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.87 NppStatus nppiAddC_16s_C4RSfs (const Npp16s ∗ *pSrc1*, int *nSrc1Step*, const Npp16s ∗ *pConstants*, Npp16s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 16-bit signed short channel image add constant, scale, then clamp to saturated value.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pConstants pointer to a list of constant values, one per channel.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.88 NppStatus nppiAddC_16sc_AC4IRSfs (const Npp16sc ∗ *pConstants*, Npp16sc ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 16-bit signed short complex number (16-bit real, 16-bit imaginary) channel with unmodified alpha in place image add constant, scale, then clamp to saturated value.

Parameters:

  pConstants pointer to a list of constant values, one per channel.

  pSrcDst In-Place Image Pointer.

  nSrcDstStep In-Place-Image Line Step.

  oSizeROI Region-of-Interest (ROI).

  nScaleFactor Integer Result Scaling.

Returns:

  Image Data Related Error Codes, ROI Related Error Codes

7.7.1.89 NppStatus nppiAddC_16sc_AC4RSfs (const Npp16sc ∗ *pSrc1*, int *nSrc1Step*, const Npp16sc ∗ *pConstants*, Npp16sc ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 16-bit signed short complex number (16-bit real, 16-bit imaginary) channel with unmodified alpha image add constant, scale, then clamp to saturated value.

Parameters:

  pSrc1 Source-Image Pointer.

  nSrc1Step Source-Image Line Step.

  pConstants pointer to a list of constant values, one per channel.

  pDst Destination-Image Pointer.

  nDstStep Destination-Image Line Step.

  oSizeROI Region-of-Interest (ROI).

  nScaleFactor Integer Result Scaling.

Returns:

  Image Data Related Error Codes, ROI Related Error Codes

7.7.1.90 NppStatus nppiAddC_16sc_C1IRSfs (const Npp16sc *nConstant*, Npp16sc ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 16-bit signed short complex number (16-bit real, 16-bit imaginary) channel in place image add constant, scale, then clamp to saturated value.

Parameters:

  nConstant Constant.

  pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.91 NppStatus nppiAddC_16sc_C1RSfs (const Npp16sc ∗ *pSrc1*, int *nSrc1Step*, const Npp16sc *nConstant*, Npp16sc ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 16-bit signed short complex number (16-bit real, 16-bit imaginary) channel image add constant, scale, then clamp to saturated value.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

nConstant Constant.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.92 NppStatus nppiAddC_16sc_C3IRSfs (const Npp16sc ∗ *pConstants*, Npp16sc ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Three 16-bit signed short complex number (16-bit real, 16-bit imaginary) channel in place image add constant, scale, then clamp to saturated value.

Parameters:

pConstants pointer to a list of constant values, one per channel.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.93 NppStatus nppiAddC_16sc_C3RSfs (const Npp16sc * *pSrc1*, int *nSrc1Step*, const Npp16sc * *pConstants*, Npp16sc * *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Three 16-bit signed short complex number (16-bit real, 16-bit imaginary) channel image add constant, scale, then clamp to saturated value.

Parameters:

> *pSrc1* Source-Image Pointer.

> *nSrc1Step* Source-Image Line Step.

> *pConstants* pointer to a list of constant values, one per channel.

> *pDst* Destination-Image Pointer.

> *nDstStep* Destination-Image Line Step.

> *oSizeROI* Region-of-Interest (ROI).

> *nScaleFactor* Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.94 NppStatus nppiAddC_16u_AC4IRSfs (const Npp16u * *pConstants*, Npp16u * *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 16-bit unsigned short channel with unmodified alpha in place image add constant, scale, then clamp to saturated value.

Parameters:

> *pConstants* pointer to a list of constant values, one per channel.

> *pSrcDst* In-Place Image Pointer.

> *nSrcDstStep* In-Place-Image Line Step.

> *oSizeROI* Region-of-Interest (ROI).

> *nScaleFactor* Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.95 NppStatus nppiAddC_16u_AC4RSfs (const Npp16u * *pSrc1*, int *nSrc1Step*, const Npp16u * *pConstants*, Npp16u * *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 16-bit unsigned short channel with unmodified alpha image add constant, scale, then clamp to saturated value.

Parameters:

> *pSrc1* Source-Image Pointer.

> *nSrc1Step* Source-Image Line Step.

pConstants pointer to a list of constant values, one per channel.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.96 NppStatus nppiAddC_16u_C1IRSfs (const Npp16u *nConstant*, Npp16u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 16-bit unsigned short channel in place image add constant, scale, then clamp to saturated value.

Parameters:

nConstant Constant.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.97 NppStatus nppiAddC_16u_C1RSfs (const Npp16u ∗ *pSrc1*, int *nSrc1Step*, const Npp16u *nConstant*, Npp16u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 16-bit unsigned short channel image add constant, scale, then clamp to saturated value.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

nConstant Constant.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.98 NppStatus nppiAddC_16u_C3IRSfs (const Npp16u ∗ *pConstants*, Npp16u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Three 16-bit unsigned short channel in place image add constant, scale, then clamp to saturated value.

Parameters:

    pConstants pointer to a list of constant values, one per channel.

    pSrcDst In-Place Image Pointer.

    nSrcDstStep In-Place-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

    nScaleFactor Integer Result Scaling.

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.99 NppStatus nppiAddC_16u_C3RSfs (const Npp16u ∗ *pSrc1*, int *nSrc1Step*, const Npp16u ∗ *pConstants*, Npp16u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Three 16-bit unsigned short channel image add constant, scale, then clamp to saturated value.

Parameters:

    pSrc1 Source-Image Pointer.

    nSrc1Step Source-Image Line Step.

    pConstants pointer to a list of constant values, one per channel.

    pDst Destination-Image Pointer.

    nDstStep Destination-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

    nScaleFactor Integer Result Scaling.

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.100 NppStatus nppiAddC_16u_C4IRSfs (const Npp16u ∗ *pConstants*, Npp16u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 16-bit unsigned short channel in place image add constant, scale, then clamp to saturated value.

Parameters:

    pConstants pointer to a list of constant values, one per channel.

    pSrcDst In-Place Image Pointer.

    nSrcDstStep In-Place-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

    nScaleFactor Integer Result Scaling.

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.101 NppStatus nppiAddC_16u_C4RSfs (const Npp16u ∗ pSrc1, int nSrc1Step, const Npp16u ∗ pConstants, Npp16u ∗ pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

Four 16-bit unsigned short channel image add constant, scale, then clamp to saturated value.

Parameters:

>*pSrc1* Source-Image Pointer.
>*nSrc1Step* Source-Image Line Step.
>*pConstants* pointer to a list of constant values, one per channel.
>*pDst* Destination-Image Pointer.
>*nDstStep* Destination-Image Line Step.
>*oSizeROI* Region-of-Interest (ROI).
>*nScaleFactor* Integer Result Scaling.

Returns:

>Image Data Related Error Codes, ROI Related Error Codes

7.7.1.102 NppStatus nppiAddC_32f_AC4IR (const Npp32f ∗ pConstants, Npp32f ∗ pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

Four 32-bit floating point channel with unmodified alpha in place image add constant.

Parameters:

>*pConstants* pointer to a list of constant values, one per channel.
>*pSrcDst* In-Place Image Pointer.
>*nSrcDstStep* In-Place-Image Line Step.
>*oSizeROI* Region-of-Interest (ROI).

Returns:

>Image Data Related Error Codes, ROI Related Error Codes

7.7.1.103 NppStatus nppiAddC_32f_AC4R (const Npp32f ∗ pSrc1, int nSrc1Step, const Npp32f ∗ pConstants, Npp32f ∗ pDst, int nDstStep, NppiSize oSizeROI)

Four 32-bit floating point channel with unmodified alpha image add constant.

Parameters:

>*pSrc1* Source-Image Pointer.
>*nSrc1Step* Source-Image Line Step.
>*pConstants* pointer to a list of constant values, one per channel.
>*pDst* Destination-Image Pointer.
>*nDstStep* Destination-Image Line Step.
>*oSizeROI* Region-of-Interest (ROI).

Returns:

>Image Data Related Error Codes, ROI Related Error Codes

7.7.1.104 NppStatus nppiAddC_32f_C1IR (const Npp32f *nConstant*, Npp32f ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

One 32-bit floating point channel in place image add constant.

Parameters:

>*nConstant* Constant.

>*pSrcDst* In-Place Image Pointer.

>*nSrcDstStep* In-Place-Image Line Step.

>*oSizeROI* Region-of-Interest (ROI).

Returns:

>Image Data Related Error Codes, ROI Related Error Codes

7.7.1.105 NppStatus nppiAddC_32f_C1R (const Npp32f ∗ *pSrc1*, int *nSrc1Step*, const Npp32f *nConstant*, Npp32f ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

One 32-bit floating point channel image add constant.

Parameters:

>*pSrc1* Source-Image Pointer.

>*nSrc1Step* Source-Image Line Step.

>*nConstant* Constant.

>*pDst* Destination-Image Pointer.

>*nDstStep* Destination-Image Line Step.

>*oSizeROI* Region-of-Interest (ROI).

Returns:

>Image Data Related Error Codes, ROI Related Error Codes

7.7.1.106 NppStatus nppiAddC_32f_C3IR (const Npp32f ∗ *pConstants*, Npp32f ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Three 32-bit floating point channel in place image add constant.

Parameters:

>*pConstants* pointer to a list of constant values, one per channel.

>*pSrcDst* In-Place Image Pointer.

>*nSrcDstStep* In-Place-Image Line Step.

>*oSizeROI* Region-of-Interest (ROI).

Returns:

>Image Data Related Error Codes, ROI Related Error Codes

7.7.1.107 **NppStatus nppiAddC_32f_C3R (const Npp32f** $*$ **pSrc1, int nSrc1Step, const Npp32f** $*$ **pConstants, Npp32f** $*$ **pDst, int nDstStep, NppiSize oSizeROI)**

Three 32-bit floating point channel image add constant.

Parameters:

> **pSrc1** Source-Image Pointer.
>
> **nSrc1Step** Source-Image Line Step.
>
> **pConstants** pointer to a list of constant values, one per channel.
>
> **pDst** Destination-Image Pointer.
>
> **nDstStep** Destination-Image Line Step.
>
> **oSizeROI** Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.108 **NppStatus nppiAddC_32f_C4IR (const Npp32f** $*$ **pConstants, Npp32f** $*$ **pSrcDst, int nSrcDstStep, NppiSize oSizeROI)**

Four 32-bit floating point channel in place image add constant.

Parameters:

> **pConstants** pointer to a list of constant values, one per channel.
>
> **pSrcDst** In-Place Image Pointer.
>
> **nSrcDstStep** In-Place-Image Line Step.
>
> **oSizeROI** Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.109 **NppStatus nppiAddC_32f_C4R (const Npp32f** $*$ **pSrc1, int nSrc1Step, const Npp32f** $*$ **pConstants, Npp32f** $*$ **pDst, int nDstStep, NppiSize oSizeROI)**

Four 32-bit floating point channel image add constant.

Parameters:

> **pSrc1** Source-Image Pointer.
>
> **nSrc1Step** Source-Image Line Step.
>
> **pConstants** pointer to a list of constant values, one per channel.
>
> **pDst** Destination-Image Pointer.
>
> **nDstStep** Destination-Image Line Step.
>
> **oSizeROI** Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.110 NppStatus nppiAddC_32fc_AC4IR (const Npp32fc ∗ *pConstants*, Npp32fc ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 32-bit complex floating point (32-bit floating point real, 32-bit floating point imaginary) channel with unmodified alpha in place image add constant.

Parameters:

    pConstants pointer to a list of constant values, one per channel.

    pSrcDst In-Place Image Pointer.

    nSrcDstStep In-Place-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.111 NppStatus nppiAddC_32fc_AC4R (const Npp32fc ∗ *pSrc1*, int *nSrc1Step*, const Npp32fc ∗ *pConstants*, Npp32fc ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Four 32-bit complex floating point (32-bit floating point real, 32-bit floating point imaginary) channel with unmodified alpha image add constant.

Parameters:

    pSrc1 Source-Image Pointer.

    nSrc1Step Source-Image Line Step.

    pConstants pointer to a list of constant values, one per channel.

    pDst Destination-Image Pointer.

    nDstStep Destination-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.112 NppStatus nppiAddC_32fc_C1IR (const Npp32fc *nConstant*, Npp32fc ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

One 32-bit complex floating point (32-bit floating point real, 32-bit floating point imaginary) channel in place image add constant.

Parameters:

    nConstant Constant.

    pSrcDst In-Place Image Pointer.

    nSrcDstStep In-Place-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.113 **NppStatus nppiAddC_32fc_C1R (const Npp32fc** ∗ *pSrc1*, **int** *nSrc1Step*, **const Npp32fc** *nConstant*, **Npp32fc** ∗ *pDst*, **int** *nDstStep*, **NppiSize** *oSizeROI*)

One 32-bit complex floating point (32-bit floating point real, 32-bit floating point imaginary) channel image add constant.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

nConstant Constant.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.114 **NppStatus nppiAddC_32fc_C3IR (const Npp32fc** ∗ *pConstants*, **Npp32fc** ∗ *pSrcDst*, **int** *nSrcDstStep*, **NppiSize** *oSizeROI*)

Three 32-bit complex floating point (32-bit floating point real, 32-bit floating point imaginary) channel in place image add constant.

Parameters:

pConstants pointer to a list of constant values, one per channel.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.115 **NppStatus nppiAddC_32fc_C3R (const Npp32fc** ∗ *pSrc1*, **int** *nSrc1Step*, **const Npp32fc** ∗ *pConstants*, **Npp32fc** ∗ *pDst*, **int** *nDstStep*, **NppiSize** *oSizeROI*)

Three 32-bit complex floating point (32-bit floating point real, 32-bit floating point imaginary) channel image add constant.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pConstants pointer to a list of constant values, one per channel.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.116 NppStatus nppiAddC_32fc_C4IR (const Npp32fc ∗ *pConstants*, Npp32fc ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 32-bit complex floating point (32-bit floating point real, 32-bit floating point imaginary) channel in place image add constant.

Parameters:

pConstants pointer to a list of constant values, one per channel.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.117 NppStatus nppiAddC_32fc_C4R (const Npp32fc ∗ *pSrc1*, int *nSrc1Step*, const Npp32fc ∗ *pConstants*, Npp32fc ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Four 32-bit complex floating point (32-bit floating point real, 32-bit floating point imaginary) channel image add constant.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pConstants pointer to a list of constant values, one per channel.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.118 NppStatus nppiAddC_32s_C1IRSfs (const Npp32s *nConstant*, Npp32s ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 32-bit signed integer channel in place image add constant, scale, then clamp to saturated value.

Parameters:

nConstant Constant.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.119 NppStatus nppiAddC_32s_C1RSfs (const Npp32s ∗ *pSrc1*, int *nSrc1Step*, const Npp32s *nConstant*, Npp32s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 32-bit signed integer channel image add constant, scale, then clamp to saturated value.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

nConstant Constant.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.120 NppStatus nppiAddC_32s_C3IRSfs (const Npp32s ∗ *pConstants*, Npp32s ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Three 32-bit signed integer channel in place image add constant, scale, then clamp to saturated value.

Parameters:

pConstants pointer to a list of constant values, one per channel.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.121 NppStatus nppiAddC_32s_C3RSfs (const Npp32s ∗ *pSrc1*, int *nSrc1Step*, const Npp32s ∗ *pConstants*, Npp32s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Three 32-bit signed integer channel image add constant, scale, then clamp to saturated value.

Parameters:

> *pSrc1* Source-Image Pointer.
>
> *nSrc1Step* Source-Image Line Step.
>
> *pConstants* pointer to a list of constant values, one per channel.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.122 NppStatus nppiAddC_32sc_AC4IRSfs (const Npp32sc ∗ *pConstants*, Npp32sc ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 32-bit signed complex integer (32-bit real, 32-bit imaginary) channel with unmodified alpha in place image add constant, scale, then clamp to saturated value.

Parameters:

> *pConstants* pointer to a list of constant values, one per channel.
>
> *pSrcDst* In-Place Image Pointer.
>
> *nSrcDstStep* In-Place-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.123 NppStatus nppiAddC_32sc_AC4RSfs (const Npp32sc ∗ *pSrc1*, int *nSrc1Step*, const Npp32sc ∗ *pConstants*, Npp32sc ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 32-bit signed complex integer (32-bit real, 32-bit imaginary) channel with unmodified alpha image add constant, scale, then clamp to saturated value.

Parameters:

> *pSrc1* Source-Image Pointer.
>
> *nSrc1Step* Source-Image Line Step.
>
> *pConstants* pointer to a list of constant values, one per channel.

> ***pDst*** Destination-Image Pointer.
>
> ***nDstStep*** Destination-Image Line Step.
>
> ***oSizeROI*** Region-of-Interest (ROI).
>
> ***nScaleFactor*** Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.124 NppStatus nppiAddC_32sc_C1IRSfs (const Npp32sc *nConstant*, Npp32sc $*$ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 32-bit signed complex integer (32-bit real, 32-bit imaginary) channel in place image add constant, scale, then clamp to saturated value.

Parameters:

> ***nConstant*** Constant.
>
> ***pSrcDst*** In-Place Image Pointer.
>
> ***nSrcDstStep*** In-Place-Image Line Step.
>
> ***oSizeROI*** Region-of-Interest (ROI).
>
> ***nScaleFactor*** Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.125 NppStatus nppiAddC_32sc_C1RSfs (const Npp32sc $*$ *pSrc1*, int *nSrc1Step*, const Npp32sc *nConstant*, Npp32sc $*$ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 32-bit signed complex integer (32-bit real, 32-bit imaginary) channel image add constant, scale, then clamp to saturated value.

Parameters:

> ***pSrc1*** Source-Image Pointer.
>
> ***nSrc1Step*** Source-Image Line Step.
>
> ***nConstant*** Constant.
>
> ***pDst*** Destination-Image Pointer.
>
> ***nDstStep*** Destination-Image Line Step.
>
> ***oSizeROI*** Region-of-Interest (ROI).
>
> ***nScaleFactor*** Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.126 NppStatus nppiAddC_32sc_C3IRSfs (const Npp32sc ∗ *pConstants*, Npp32sc ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Three 32-bit signed complex integer (32-bit real, 32-bit imaginary) channel in place image add constant, scale, then clamp to saturated value.

Parameters:

>*pConstants* pointer to a list of constant values, one per channel.

>*pSrcDst* In-Place Image Pointer.

>*nSrcDstStep* In-Place-Image Line Step.

>*oSizeROI* Region-of-Interest (ROI).

>*nScaleFactor* Integer Result Scaling.

Returns:

>Image Data Related Error Codes, ROI Related Error Codes

7.7.1.127 NppStatus nppiAddC_32sc_C3RSfs (const Npp32sc ∗ *pSrc1*, int *nSrc1Step*, const Npp32sc ∗ *pConstants*, Npp32sc ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Three 32-bit signed complex integer (32-bit real, 32-bit imaginary) channel image add constant, scale, then clamp to saturated value.

Parameters:

>*pSrc1* Source-Image Pointer.

>*nSrc1Step* Source-Image Line Step.

>*pConstants* pointer to a list of constant values, one per channel.

>*pDst* Destination-Image Pointer.

>*nDstStep* Destination-Image Line Step.

>*oSizeROI* Region-of-Interest (ROI).

>*nScaleFactor* Integer Result Scaling.

Returns:

>Image Data Related Error Codes, ROI Related Error Codes

7.7.1.128 NppStatus nppiAddC_8u_AC4IRSfs (const Npp8u ∗ *pConstants*, Npp8u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 8-bit unsigned char channel with unmodified alpha in place image add constant, scale, then clamp to saturated value.

Parameters:

>*pConstants* pointer to a list of constant values, one per channel..

>*pSrcDst* In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.129   NppStatus nppiAddC_8u_AC4RSfs (const Npp8u ∗ *pSrc1*, int *nSrc1Step*, const Npp8u ∗ *pConstants*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 8-bit unsigned char channel with unmodified alpha image add constant, scale, then clamp to saturated value.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pConstants pointer to a list of constant values, one per channel..

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.130   NppStatus nppiAddC_8u_C1IRSfs (const Npp8u *nConstant*, Npp8u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 8-bit unsigned char channel in place image add constant, scale, then clamp to saturated value.

Parameters:

nConstant Constant.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.131 NppStatus nppiAddC_8u_C1RSfs (const Npp8u ∗ *pSrc1*, int *nSrc1Step*, const Npp8u *nConstant*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 8-bit unsigned char channel image add constant, scale, then clamp to saturated value.

Parameters:

> *pSrc1* Source-Image Pointer.
>
> *nSrc1Step* Source-Image Line Step.
>
> *nConstant* Constant.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.132 NppStatus nppiAddC_8u_C3IRSfs (const Npp8u ∗ *pConstants*, Npp8u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Three 8-bit unsigned char channel 8-bit unsigned char in place image add constant, scale, then clamp to saturated value.

Parameters:

> *pConstants* pointer to a list of constant values, one per channel..
>
> *pSrcDst* In-Place Image Pointer.
>
> *nSrcDstStep* In-Place-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.133 NppStatus nppiAddC_8u_C3RSfs (const Npp8u ∗ *pSrc1*, int *nSrc1Step*, const Npp8u ∗ *pConstants*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Three 8-bit unsigned char channel image add constant, scale, then clamp to saturated value.

Parameters:

> *pSrc1* Source-Image Pointer.
>
> *nSrc1Step* Source-Image Line Step.
>
> *pConstants* pointer to a list of constant values, one per channel..
>
> *pDst* Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.134 NppStatus nppiAddC_8u_C4IRSfs (const Npp8u ∗ *pConstants*, Npp8u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 8-bit unsigned char channel in place image add constant, scale, then clamp to saturated value.

Parameters:

pConstants pointer to a list of constant values, one per channel.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.135 NppStatus nppiAddC_8u_C4RSfs (const Npp8u ∗ *pSrc1*, int *nSrc1Step*, const Npp8u ∗ *pConstants*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 8-bit unsigned char channel image add constant, scale, then clamp to saturated value.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pConstants pointer to a list of constant values, one per channel..

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.136 NppStatus nppiAddProduct_16u32f_C1IMR (const Npp16u ∗ *pSrc1*, int *nSrc1Step*, const Npp16u ∗ *pSrc2*, int *nSrc2Step*, const Npp8u ∗ *pMask*, int *nMaskStep*, Npp32f ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

One 16-bit unsigned short channel image product added to in place floating point destination image using filter mask (updates destination when mask is non-zero).

Parameters:

    pSrc1 Source-Image Pointer.

    nSrc1Step Source-Image Line Step.

    pSrc2 Source-Image Pointer.

    nSrc2Step Source-Image Line Step.

    pMask Mask-Image Pointer.

    nMaskStep Mask-Image Line Step.

    pSrcDst In-Place Image Pointer.

    nSrcDstStep In-Place-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.137 NppStatus nppiAddProduct_16u32f_C1IR (const Npp16u ∗ *pSrc1*, int *nSrc1Step*, const Npp16u ∗ *pSrc2*, int *nSrc2Step*, Npp32f ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

One 16-bit unsigned short channel image product added to in place floating point destination image.

Parameters:

    pSrc1 Source-Image Pointer.

    nSrc1Step Source-Image Line Step.

    pSrc2 Source-Image Pointer.

    nSrc2Step Source-Image Line Step.

    pSrcDst In-Place Image Pointer.

    nSrcDstStep In-Place-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.138 NppStatus nppiAddProduct_32f_C1IMR (const Npp32f ∗ *pSrc1*, int *nSrc1Step*, const Npp32f ∗ *pSrc2*, int *nSrc2Step*, const Npp8u ∗ *pMask*, int *nMaskStep*, Npp32f ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

One 32-bit floating point channel image product added to in place floating point destination image using filter mask (updates destination when mask is non-zero).

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pSrc2 Source-Image Pointer.

nSrc2Step Source-Image Line Step.

pMask Mask-Image Pointer.

nMaskStep Mask-Image Line Step.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.139 NppStatus nppiAddProduct_32f_C1IR (const Npp32f ∗ *pSrc1*, int *nSrc1Step*, const Npp32f ∗ *pSrc2*, int *nSrc2Step*, Npp32f ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

One 32-bit floating point channel image product added to in place floating point destination image.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pSrc2 Source-Image Pointer.

nSrc2Step Source-Image Line Step.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.140 NppStatus nppiAddProduct_8u32f_C1IMR (const Npp8u ∗ *pSrc1*, int *nSrc1Step*, const Npp8u ∗ *pSrc2*, int *nSrc2Step*, const Npp8u ∗ *pMask*, int *nMaskStep*, Npp32f ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

One 8-bit unsigned char channel image product added to in place floating point destination image using filter mask (updates destination when mask is non-zero).

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pSrc2 Source-Image Pointer.

nSrc2Step Source-Image Line Step.

pMask Mask-Image Pointer.

nMaskStep Mask-Image Line Step.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.141 NppStatus nppiAddProduct_8u32f_C1IR (const Npp8u ∗ *pSrc1*, int *nSrc1Step*, const Npp8u ∗ *pSrc2*, int *nSrc2Step*, Npp32f ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

One 8-bit unsigned char channel image product added to in place floating point destination image.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pSrc2 Source-Image Pointer.

nSrc2Step Source-Image Line Step.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.142 NppStatus nppiAddSquare_16u32f_C1IMR (const Npp16u ∗ *pSrc*, int *nSrcStep*, const Npp8u ∗ *pMask*, int *nMaskStep*, Npp32f ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

One 16-bit unsigned short channel image squared then added to in place floating point destination image using filter mask (updates destination when mask is non-zero).

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pMask Mask-Image Pointer.

nMaskStep Mask-Image Line Step.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.143 NppStatus nppiAddSquare_16u32f_C1IR (const Npp16u ∗ *pSrc*, int *nSrcStep*, Npp32f ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

One 16-bit unsigned short channel image squared then added to in place floating point destination image.

Parameters:

pSrc Source-Image Pointer.
nSrcStep Source-Image Line Step.
pSrcDst In-Place Image Pointer.
nSrcDstStep In-Place-Image Line Step.
oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.144 NppStatus nppiAddSquare_32f_C1IMR (const Npp32f ∗ *pSrc*, int *nSrcStep*, const Npp8u ∗ *pMask*, int *nMaskStep*, Npp32f ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

One 32-bit floating point channel image squared then added to in place floating point destination image using filter mask (updates destination when mask is non-zero).

Parameters:

pSrc Source-Image Pointer.
nSrcStep Source-Image Line Step.
pMask Mask-Image Pointer.
nMaskStep Mask-Image Line Step.
pSrcDst In-Place Image Pointer.
nSrcDstStep In-Place-Image Line Step.
oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.145 NppStatus nppiAddSquare_32f_C1IR (const Npp32f ∗ *pSrc*, int *nSrcStep*, Npp32f ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

One 32-bit floating point channel image squared then added to in place floating point destination image.

Parameters:

pSrc Source-Image Pointer.
nSrcStep Source-Image Line Step.
pSrcDst In-Place Image Pointer.
nSrcDstStep In-Place-Image Line Step.
oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.146 NppStatus nppiAddSquare_8u32f_C1IMR (const Npp8u ∗ *pSrc*, int *nSrcStep*, const Npp8u ∗ *pMask*, int *nMaskStep*, Npp32f ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

One 8-bit unsigned char channel image squared then added to in place floating point destination image using filter mask (updates destination when mask is non-zero).

Parameters:

    pSrc Source-Image Pointer.

    nSrcStep Source-Image Line Step.

    pMask Mask-Image Pointer.

    nMaskStep Mask-Image Line Step.

    pSrcDst In-Place Image Pointer.

    nSrcDstStep In-Place-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.147 NppStatus nppiAddSquare_8u32f_C1IR (const Npp8u ∗ *pSrc*, int *nSrcStep*, Npp32f ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

One 8-bit unsigned char channel image squared then added to in place floating point destination image.

Parameters:

    pSrc Source-Image Pointer.

    nSrcStep Source-Image Line Step.

    pSrcDst In-Place Image Pointer.

    nSrcDstStep In-Place-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.148 NppStatus nppiAddWeighted_16u32f_C1IMR (const Npp16u ∗ *pSrc*, int *nSrcStep*, const Npp8u ∗ *pMask*, int *nMaskStep*, Npp32f ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, Npp32f *nAlpha*)

One 16-bit unsigned short channel alpha weighted image added to in place floating point destination image using filter mask (updates destination when mask is non-zero).

Parameters:

    pSrc Source-Image Pointer.

    nSrcStep Source-Image Line Step.

    pMask Mask-Image Pointer.

nMaskStep Mask-Image Line Step.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nAlpha Alpha weight to be applied to source image pixels (0.0F to 1.0F)

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.149   NppStatus nppiAddWeighted_16u32f_C1IR (const Npp16u ∗ *pSrc*, int *nSrcStep*, Npp32f ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, Npp32f *nAlpha*)

One 16-bit unsigned short channel alpha weighted image added to in place floating point destination image.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nAlpha Alpha weight to be applied to source image pixels (0.0F to 1.0F)

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.150   NppStatus nppiAddWeighted_32f_C1IMR (const Npp32f ∗ *pSrc*, int *nSrcStep*, const Npp8u ∗ *pMask*, int *nMaskStep*, Npp32f ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, Npp32f *nAlpha*)

One 32-bit floating point channel alpha weighted image added to in place floating point destination image using filter mask (updates destination when mask is non-zero).

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pMask Mask-Image Pointer.

nMaskStep Mask-Image Line Step.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nAlpha Alpha weight to be applied to source image pixels (0.0F to 1.0F)

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.151 NppStatus nppiAddWeighted_32f_C1IR (const Npp32f ∗ *pSrc*, int *nSrcStep*, Npp32f ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, Npp32f *nAlpha*)

One 32-bit floating point channel alpha weighted image added to in place floating point destination image.

Parameters:

    pSrc Source-Image Pointer.

    nSrcStep Source-Image Line Step.

    pSrcDst In-Place Image Pointer.

    nSrcDstStep In-Place-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

    nAlpha Alpha weight to be applied to source image pixels (0.0F to 1.0F)

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.152 NppStatus nppiAddWeighted_8u32f_C1IMR (const Npp8u ∗ *pSrc*, int *nSrcStep*, const Npp8u ∗ *pMask*, int *nMaskStep*, Npp32f ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, Npp32f *nAlpha*)

One 8-bit unsigned char channel alpha weighted image added to in place floating point destination image using filter mask (updates destination when mask is non-zero).

Parameters:

    pSrc Source-Image Pointer.

    nSrcStep Source-Image Line Step.

    pMask Mask-Image Pointer.

    nMaskStep Mask-Image Line Step.

    pSrcDst In-Place Image Pointer.

    nSrcDstStep In-Place-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

    nAlpha Alpha weight to be applied to source image pixels (0.0F to 1.0F)

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.153 NppStatus nppiAddWeighted_8u32f_C1IR (const Npp8u ∗ *pSrc*, int *nSrcStep*, Npp32f ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, Npp32f *nAlpha*)

One 8-bit unsigned char channel alpha weighted image added to in place floating point destination image.

Parameters:

    pSrc Source-Image Pointer.

    nSrcStep Source-Image Line Step.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nAlpha Alpha weight to be applied to source image pixels (0.0F to 1.0F)

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.154 NppStatus nppiAlphaComp_16s_AC1R (const Npp16s ∗ *pSrc1*, int *nSrc1Step*, const Npp16s ∗ *pSrc2*, int *nSrc2Step*, Npp16s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, NppiAlphaOp *eAlphaOp*)

One 16-bit signed short channel image composition using image alpha values (0 - max channel pixel value).

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pSrc2 Source-Image Pointer.

nSrc2Step Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

eAlphaOp alpha-blending operation..

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.155 NppStatus nppiAlphaComp_16u_AC1R (const Npp16u ∗ *pSrc1*, int *nSrc1Step*, const Npp16u ∗ *pSrc2*, int *nSrc2Step*, Npp16u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, NppiAlphaOp *eAlphaOp*)

One 16-bit unsigned short channel image composition using image alpha values (0 - max channel pixel value).

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pSrc2 Source-Image Pointer.

nSrc2Step Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

eAlphaOp alpha-blending operation..

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.156 NppStatus nppiAlphaComp_16u_AC4R (const Npp16u ∗ *pSrc1*, int *nSrc1Step*, const Npp16u ∗ *pSrc2*, int *nSrc2Step*, Npp16u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, NppiAlphaOp *eAlphaOp*)

Four 16-bit unsigned short channel image composition using image alpha values (0 - max channel pixel value).

Parameters:

    pSrc1 Source-Image Pointer.

    nSrc1Step Source-Image Line Step.

    pSrc2 Source-Image Pointer.

    nSrc2Step Source-Image Line Step.

    pDst Destination-Image Pointer.

    nDstStep Destination-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

    eAlphaOp alpha-blending operation..

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.157 NppStatus nppiAlphaComp_32f_AC1R (const Npp32f ∗ *pSrc1*, int *nSrc1Step*, const Npp32f ∗ *pSrc2*, int *nSrc2Step*, Npp32f ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, NppiAlphaOp *eAlphaOp*)

One 32-bit floating point channel image composition using image alpha values (0.0 - 1.0).

Parameters:

    pSrc1 Source-Image Pointer.

    nSrc1Step Source-Image Line Step.

    pSrc2 Source-Image Pointer.

    nSrc2Step Source-Image Line Step.

    pDst Destination-Image Pointer.

    nDstStep Destination-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

    eAlphaOp alpha-blending operation..

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.158 NppStatus nppiAlphaComp_32f_AC4R (const Npp32f ∗ *pSrc1*, int *nSrc1Step*, const Npp32f ∗ *pSrc2*, int *nSrc2Step*, Npp32f ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, NppiAlphaOp *eAlphaOp*)

Four 32-bit floating point channel image composition using image alpha values (0.0 - 1.0).

Parameters:

> **pSrc1** Source-Image Pointer.
>
> **nSrc1Step** Source-Image Line Step.
>
> **pSrc2** Source-Image Pointer.
>
> **nSrc2Step** Source-Image Line Step.
>
> **pDst** Destination-Image Pointer.
>
> **nDstStep** Destination-Image Line Step.
>
> **oSizeROI** Region-of-Interest (ROI).
>
> **eAlphaOp** alpha-blending operation..

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.159 NppStatus nppiAlphaComp_32s_AC1R (const Npp32s ∗ pSrc1, int nSrc1Step, const Npp32s ∗ pSrc2, int nSrc2Step, Npp32s ∗ pDst, int nDstStep, NppiSize oSizeROI, NppiAlphaOp eAlphaOp)

One 32-bit signed integer channel image composition using image alpha values (0 - max channel pixel value).

Parameters:

> **pSrc1** Source-Image Pointer.
>
> **nSrc1Step** Source-Image Line Step.
>
> **pSrc2** Source-Image Pointer.
>
> **nSrc2Step** Source-Image Line Step.
>
> **pDst** Destination-Image Pointer.
>
> **nDstStep** Destination-Image Line Step.
>
> **oSizeROI** Region-of-Interest (ROI).
>
> **eAlphaOp** alpha-blending operation..

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.160 NppStatus nppiAlphaComp_32s_AC4R (const Npp32s ∗ pSrc1, int nSrc1Step, const Npp32s ∗ pSrc2, int nSrc2Step, Npp32s ∗ pDst, int nDstStep, NppiSize oSizeROI, NppiAlphaOp eAlphaOp)

Four 32-bit signed integer channel image composition using image alpha values (0 - max channel pixel value).

Parameters:

> **pSrc1** Source-Image Pointer.
>
> **nSrc1Step** Source-Image Line Step.

> *pSrc2* Source-Image Pointer.
>
> *nSrc2Step* Source-Image Line Step.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *eAlphaOp* alpha-blending operation..

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.161 NppStatus nppiAlphaComp_32u_AC1R (const Npp32u ∗ *pSrc1*, int *nSrc1Step*, const Npp32u ∗ *pSrc2*, int *nSrc2Step*, Npp32u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, NppiAlphaOp *eAlphaOp*)

One 32-bit unsigned integer channel image composition using image alpha values (0 - max channel pixel value).

Parameters:

> *pSrc1* Source-Image Pointer.
>
> *nSrc1Step* Source-Image Line Step.
>
> *pSrc2* Source-Image Pointer.
>
> *nSrc2Step* Source-Image Line Step.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *eAlphaOp* alpha-blending operation..

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.162 NppStatus nppiAlphaComp_32u_AC4R (const Npp32u ∗ *pSrc1*, int *nSrc1Step*, const Npp32u ∗ *pSrc2*, int *nSrc2Step*, Npp32u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, NppiAlphaOp *eAlphaOp*)

Four 32-bit unsigned integer channel image composition using image alpha values (0 - max channel pixel value).

Parameters:

> *pSrc1* Source-Image Pointer.
>
> *nSrc1Step* Source-Image Line Step.
>
> *pSrc2* Source-Image Pointer.
>
> *nSrc2Step* Source-Image Line Step.
>
> *pDst* Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

eAlphaOp alpha-blending operation..

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.163 NppStatus nppiAlphaComp_8s_AC1R (const Npp8s ∗ *pSrc1*, int *nSrc1Step*, const Npp8s ∗ *pSrc2*, int *nSrc2Step*, Npp8s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, NppiAlphaOp *eAlphaOp*)

One 8-bit signed char channel image composition using image alpha values (0 - max channel pixel value).

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pSrc2 Source-Image Pointer.

nSrc2Step Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

eAlphaOp alpha-blending operation..

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.164 NppStatus nppiAlphaComp_8u_AC1R (const Npp8u ∗ *pSrc1*, int *nSrc1Step*, const Npp8u ∗ *pSrc2*, int *nSrc2Step*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, NppiAlphaOp *eAlphaOp*)

One 8-bit unsigned char channel image composition using image alpha values (0 - max channel pixel value).

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pSrc2 Source-Image Pointer.

nSrc2Step Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

eAlphaOp alpha-blending operation..

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.165   NppStatus nppiAlphaComp_8u_AC4R (const Npp8u ∗ *pSrc1*, int *nSrc1Step*, const Npp8u ∗ *pSrc2*, int *nSrc2Step*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, NppiAlphaOp *eAlphaOp*)

Four 8-bit unsigned char channel image composition using image alpha values (0 - max channel pixel value).

Parameters:

> *pSrc1* Source-Image Pointer.
>
> *nSrc1Step* Source-Image Line Step.
>
> *pSrc2* Source-Image Pointer.
>
> *nSrc2Step* Source-Image Line Step.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *eAlphaOp* alpha-blending operation..

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.166   NppStatus nppiAlphaCompC_16s_C1R (const Npp16s ∗ *pSrc1*, int *nSrc1Step*, Npp16s *nAlpha1*, const Npp16s ∗ *pSrc2*, int *nSrc2Step*, Npp16s *nAlpha2*, Npp16s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, NppiAlphaOp *eAlphaOp*)

One 16-bit signed short channel image composition using constant alpha.

Parameters:

> *pSrc1* Source-Image Pointer.
>
> *nSrc1Step* Source-Image Line Step.
>
> *nAlpha1* Image alpha opacity (0 - max channel pixel value).
>
> *pSrc2* Source-Image Pointer.
>
> *nSrc2Step* Source-Image Line Step.
>
> *nAlpha2* Image alpha opacity (0 - max channel pixel value).
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *eAlphaOp* alpha-blending operation..

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.167 **NppStatus nppiAlphaCompC_16u_AC4R (const Npp16u ∗ *pSrc1*, int *nSrc1Step*, Npp16u *nAlpha1*, const Npp16u ∗ *pSrc2*, int *nSrc2Step*, Npp16u *nAlpha2*, Npp16u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, NppiAlphaOp *eAlphaOp*)**

Four 16-bit unsigned short channel image composition with alpha using constant source alpha.

Parameters:

>   *pSrc1* Source-Image Pointer.
>
>   *nSrc1Step* Source-Image Line Step.
>
>   *nAlpha1* Image alpha opacity (0 - max channel pixel value).
>
>   *pSrc2* Source-Image Pointer.
>
>   *nSrc2Step* Source-Image Line Step.
>
>   *nAlpha2* Image alpha opacity (0 - max channel pixel value).
>
>   *pDst* Destination-Image Pointer.
>
>   *nDstStep* Destination-Image Line Step.
>
>   *oSizeROI* Region-of-Interest (ROI).
>
>   *eAlphaOp* alpha-blending operation..

Returns:

>   Image Data Related Error Codes, ROI Related Error Codes

7.7.1.168 **NppStatus nppiAlphaCompC_16u_C1R (const Npp16u ∗ *pSrc1*, int *nSrc1Step*, Npp16u *nAlpha1*, const Npp16u ∗ *pSrc2*, int *nSrc2Step*, Npp16u *nAlpha2*, Npp16u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, NppiAlphaOp *eAlphaOp*)**

One 16-bit unsigned short channel image composition using constant alpha.

Parameters:

>   *pSrc1* Source-Image Pointer.
>
>   *nSrc1Step* Source-Image Line Step.
>
>   *nAlpha1* Image alpha opacity (0 - max channel pixel value).
>
>   *pSrc2* Source-Image Pointer.
>
>   *nSrc2Step* Source-Image Line Step.
>
>   *nAlpha2* Image alpha opacity (0 - max channel pixel value).
>
>   *pDst* Destination-Image Pointer.
>
>   *nDstStep* Destination-Image Line Step.
>
>   *oSizeROI* Region-of-Interest (ROI).
>
>   *eAlphaOp* alpha-blending operation..

Returns:

>   Image Data Related Error Codes, ROI Related Error Codes

7.7.1.169 NppStatus nppiAlphaCompC_16u_C3R (const Npp16u ∗ *pSrc1*, int *nSrc1Step*, Npp16u *nAlpha1*, const Npp16u ∗ *pSrc2*, int *nSrc2Step*, Npp16u *nAlpha2*, Npp16u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, NppiAlphaOp *eAlphaOp*)

Three 16-bit unsigned short channel image composition using constant alpha.

Parameters:

> *pSrc1* Source-Image Pointer.
>
> *nSrc1Step* Source-Image Line Step.
>
> *nAlpha1* Image alpha opacity (0 - max channel pixel value).
>
> *pSrc2* Source-Image Pointer.
>
> *nSrc2Step* Source-Image Line Step.
>
> *nAlpha2* Image alpha opacity (0 - max channel pixel value).
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *eAlphaOp* alpha-blending operation..

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.170 NppStatus nppiAlphaCompC_16u_C4R (const Npp16u ∗ *pSrc1*, int *nSrc1Step*, Npp16u *nAlpha1*, const Npp16u ∗ *pSrc2*, int *nSrc2Step*, Npp16u *nAlpha2*, Npp16u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, NppiAlphaOp *eAlphaOp*)

Four 16-bit unsigned short channel image composition using constant alpha.

Parameters:

> *pSrc1* Source-Image Pointer.
>
> *nSrc1Step* Source-Image Line Step.
>
> *nAlpha1* Image alpha opacity (0 - max channel pixel value).
>
> *pSrc2* Source-Image Pointer.
>
> *nSrc2Step* Source-Image Line Step.
>
> *nAlpha2* Image alpha opacity (0 - max channel pixel value).
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *eAlphaOp* alpha-blending operation..

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.171   NppStatus nppiAlphaCompC_32f_C1R (const Npp32f ∗ *pSrc1*, int *nSrc1Step*, Npp32f *nAlpha1*, const Npp32f ∗ *pSrc2*, int *nSrc2Step*, Npp32f *nAlpha2*, Npp32f ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, NppiAlphaOp *eAlphaOp*)

One 32-bit floating point channel image composition using constant alpha.

Parameters:

   pSrc1 Source-Image Pointer.

   nSrc1Step Source-Image Line Step.

   nAlpha1 Image alpha opacity (0.0 - 1.0).

   pSrc2 Source-Image Pointer.

   nSrc2Step Source-Image Line Step.

   nAlpha2 Image alpha opacity (0.0 - 1.0).

   pDst Destination-Image Pointer.

   nDstStep Destination-Image Line Step.

   oSizeROI Region-of-Interest (ROI).

   eAlphaOp alpha-blending operation..

Returns:

   Image Data Related Error Codes, ROI Related Error Codes

7.7.1.172   NppStatus nppiAlphaCompC_32s_C1R (const Npp32s ∗ *pSrc1*, int *nSrc1Step*, Npp32s *nAlpha1*, const Npp32s ∗ *pSrc2*, int *nSrc2Step*, Npp32s *nAlpha2*, Npp32s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, NppiAlphaOp *eAlphaOp*)

One 32-bit signed integer channel image composition using constant alpha.

Parameters:

   pSrc1 Source-Image Pointer.

   nSrc1Step Source-Image Line Step.

   nAlpha1 Image alpha opacity (0 - max channel pixel value).

   pSrc2 Source-Image Pointer.

   nSrc2Step Source-Image Line Step.

   nAlpha2 Image alpha opacity (0 - max channel pixel value).

   pDst Destination-Image Pointer.

   nDstStep Destination-Image Line Step.

   oSizeROI Region-of-Interest (ROI).

   eAlphaOp alpha-blending operation..

Returns:

   Image Data Related Error Codes, ROI Related Error Codes

7.7.1.173   NppStatus nppiAlphaCompC_32u_C1R (const Npp32u ∗ _pSrc1_, int _nSrc1Step_, Npp32u _nAlpha1_, const Npp32u ∗ _pSrc2_, int _nSrc2Step_, Npp32u _nAlpha2_, Npp32u ∗ _pDst_, int _nDstStep_, NppiSize _oSizeROI_, NppiAlphaOp _eAlphaOp_)

One 32-bit unsigned integer channel image composition using constant alpha.

Parameters:

>   _pSrc1_ Source-Image Pointer.
>
>   _nSrc1Step_ Source-Image Line Step.
>
>   _nAlpha1_ Image alpha opacity (0 - max channel pixel value).
>
>   _pSrc2_ Source-Image Pointer.
>
>   _nSrc2Step_ Source-Image Line Step.
>
>   _nAlpha2_ Image alpha opacity (0 - max channel pixel value).
>
>   _pDst_ Destination-Image Pointer.
>
>   _nDstStep_ Destination-Image Line Step.
>
>   _oSizeROI_ Region-of-Interest (ROI).
>
>   _eAlphaOp_ alpha-blending operation..

Returns:

>   Image Data Related Error Codes, ROI Related Error Codes

7.7.1.174   NppStatus nppiAlphaCompC_8s_C1R (const Npp8s ∗ _pSrc1_, int _nSrc1Step_, Npp8s _nAlpha1_, const Npp8s ∗ _pSrc2_, int _nSrc2Step_, Npp8s _nAlpha2_, Npp8s ∗ _pDst_, int _nDstStep_, NppiSize _oSizeROI_, NppiAlphaOp _eAlphaOp_)

One 8-bit signed char channel image composition using constant alpha.

Parameters:

>   _pSrc1_ Source-Image Pointer.
>
>   _nSrc1Step_ Source-Image Line Step.
>
>   _nAlpha1_ Image alpha opacity (0 - max channel pixel value).
>
>   _pSrc2_ Source-Image Pointer.
>
>   _nSrc2Step_ Source-Image Line Step.
>
>   _nAlpha2_ Image alpha opacity (0 - max channel pixel value).
>
>   _pDst_ Destination-Image Pointer.
>
>   _nDstStep_ Destination-Image Line Step.
>
>   _oSizeROI_ Region-of-Interest (ROI).
>
>   _eAlphaOp_ alpha-blending operation..

Returns:

>   Image Data Related Error Codes, ROI Related Error Codes

7.7.1.175 NppStatus nppiAlphaCompC_8u_AC4R (const Npp8u ∗ *pSrc1*, int *nSrc1Step*, Npp8u *nAlpha1*, const Npp8u ∗ *pSrc2*, int *nSrc2Step*, Npp8u *nAlpha2*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, NppiAlphaOp *eAlphaOp*)

Four 8-bit unsigned char channel image composition with alpha using constant source alpha.

Parameters:

  pSrc1 Source-Image Pointer.

  nSrc1Step Source-Image Line Step.

  nAlpha1 Image alpha opacity (0 - max channel pixel value).

  pSrc2 Source-Image Pointer.

  nSrc2Step Source-Image Line Step.

  nAlpha2 Image alpha opacity (0 - max channel pixel value).

  pDst Destination-Image Pointer.

  nDstStep Destination-Image Line Step.

  oSizeROI Region-of-Interest (ROI).

  eAlphaOp alpha-blending operation..

Returns:

  Image Data Related Error Codes, ROI Related Error Codes

7.7.1.176 NppStatus nppiAlphaCompC_8u_C1R (const Npp8u ∗ *pSrc1*, int *nSrc1Step*, Npp8u *nAlpha1*, const Npp8u ∗ *pSrc2*, int *nSrc2Step*, Npp8u *nAlpha2*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, NppiAlphaOp *eAlphaOp*)

One 8-bit unsigned char channel image composition using constant alpha.

Parameters:

  pSrc1 Source-Image Pointer.

  nSrc1Step Source-Image Line Step.

  nAlpha1 Image alpha opacity (0 - max channel pixel value).

  pSrc2 Source-Image Pointer.

  nSrc2Step Source-Image Line Step.

  nAlpha2 Image alpha opacity (0 - max channel pixel value).

  pDst Destination-Image Pointer.

  nDstStep Destination-Image Line Step.

  oSizeROI Region-of-Interest (ROI).

  eAlphaOp alpha-blending operation..

Returns:

  Image Data Related Error Codes, ROI Related Error Codes

7.7.1.177 NppStatus nppiAlphaCompC_8u_C3R (const Npp8u ∗ *pSrc1*, int *nSrc1Step*, Npp8u *nAlpha1*, const Npp8u ∗ *pSrc2*, int *nSrc2Step*, Npp8u *nAlpha2*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, NppiAlphaOp *eAlphaOp*)

Three 8-bit unsigned char channel image composition using constant alpha.

Parameters:

> *pSrc1* Source-Image Pointer.
>
> *nSrc1Step* Source-Image Line Step.
>
> *nAlpha1* Image alpha opacity (0 - max channel pixel value).
>
> *pSrc2* Source-Image Pointer.
>
> *nSrc2Step* Source-Image Line Step.
>
> *nAlpha2* Image alpha opacity (0 - max channel pixel value).
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *eAlphaOp* alpha-blending operation..

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.178 NppStatus nppiAlphaCompC_8u_C4R (const Npp8u ∗ *pSrc1*, int *nSrc1Step*, Npp8u *nAlpha1*, const Npp8u ∗ *pSrc2*, int *nSrc2Step*, Npp8u *nAlpha2*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, NppiAlphaOp *eAlphaOp*)

Four 8-bit unsigned char channel image composition using constant alpha.

Parameters:

> *pSrc1* Source-Image Pointer.
>
> *nSrc1Step* Source-Image Line Step.
>
> *nAlpha1* Image alpha opacity (0 - max channel pixel value).
>
> *pSrc2* Source-Image Pointer.
>
> *nSrc2Step* Source-Image Line Step.
>
> *nAlpha2* Image alpha opacity (0 - max channel pixel value).
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *eAlphaOp* alpha-blending operation..

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.179 NppStatus nppiAlphaPremul_16u_AC4IR (Npp16u * *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 16-bit unsigned short channel in place image premultiplication with pixel alpha (0 - max channel pixel value).

Parameters:

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.180 NppStatus nppiAlphaPremul_16u_AC4R (const Npp16u * *pSrc1*, int *nSrc1Step*, Npp16u * *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Four 16-bit unsigned short channel image premultiplication with pixel alpha (0 - max channel pixel value).

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.181 NppStatus nppiAlphaPremul_8u_AC4IR (Npp8u * *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 8-bit unsigned char channel in place image premultiplication with pixel alpha (0 - max channel pixel value).

Parameters:

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.182 NppStatus nppiAlphaPremul_8u_AC4R (const Npp8u ∗ *pSrc1*, int *nSrc1Step*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Four 8-bit unsigned char channel image premultiplication with pixel alpha (0 - max channel pixel value).

Parameters:

   pSrc1 Source-Image Pointer.

   nSrc1Step Source-Image Line Step.

   pDst Destination-Image Pointer.

   nDstStep Destination-Image Line Step.

   oSizeROI Region-of-Interest (ROI).

Returns:

   Image Data Related Error Codes, ROI Related Error Codes

7.7.1.183 NppStatus nppiAlphaPremulC_16u_AC4IR (Npp16u *nAlpha1*, Npp16u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 16-bit unsigned short channel in place image premultiplication with alpha using constant alpha.

Parameters:

   nAlpha1 Image alpha opacity (0 - max channel pixel value).

   pSrcDst In-Place Image Pointer.

   nSrcDstStep In-Place-Image Line Step.

   oSizeROI Region-of-Interest (ROI).

Returns:

   Image Data Related Error Codes, ROI Related Error Codes

7.7.1.184 NppStatus nppiAlphaPremulC_16u_AC4R (const Npp16u ∗ *pSrc1*, int *nSrc1Step*, Npp16u *nAlpha1*, Npp16u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Four 16-bit unsigned short channel image premultiplication with alpha using constant alpha.

Parameters:

   pSrc1 Source-Image Pointer.

   nSrc1Step Source-Image Line Step.

   nAlpha1 Image alpha opacity (0 - max channel pixel value).

   pDst Destination-Image Pointer.

   nDstStep Destination-Image Line Step.

   oSizeROI Region-of-Interest (ROI).

Returns:

   Image Data Related Error Codes, ROI Related Error Codes

7.7.1.185 NppStatus nppiAlphaPremulC_16u_C1IR (Npp16u *nAlpha1*, Npp16u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

One 16-bit unsigned short channel in place image premultiplication using constant alpha.

Parameters:

    nAlpha1 Image alpha opacity (0 - max channel pixel value).

    pSrcDst In-Place Image Pointer.

    nSrcDstStep In-Place-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.186 NppStatus nppiAlphaPremulC_16u_C1R (const Npp16u ∗ *pSrc1*, int *nSrc1Step*, Npp16u *nAlpha1*, Npp16u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

One 16-bit unsigned short channel image premultiplication using constant alpha.

Parameters:

    pSrc1 Source-Image Pointer.

    nSrc1Step Source-Image Line Step.

    nAlpha1 Image alpha opacity (0 - max channel pixel value).

    pDst Destination-Image Pointer.

    nDstStep Destination-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.187 NppStatus nppiAlphaPremulC_16u_C3IR (Npp16u *nAlpha1*, Npp16u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Three 16-bit unsigned short channel in place image premultiplication using constant alpha.

Parameters:

    nAlpha1 Image alpha opacity (0 - max channel pixel value).

    pSrcDst In-Place Image Pointer.

    nSrcDstStep In-Place-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.188 NppStatus nppiAlphaPremulC_16u_C3R (const Npp16u ∗ *pSrc1*, int *nSrc1Step*, Npp16u *nAlpha1*, Npp16u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Three 16-bit unsigned short channel image premultiplication using constant alpha.

Parameters:

> *pSrc1* Source-Image Pointer.
>
> *nSrc1Step* Source-Image Line Step.
>
> *nAlpha1* Image alpha opacity (0 - max channel pixel value).
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.189 NppStatus nppiAlphaPremulC_16u_C4IR (Npp16u *nAlpha1*, Npp16u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 16-bit unsigned short channel in place image premultiplication using constant alpha.

Parameters:

> *nAlpha1* Image alpha opacity (0 - max channel pixel value).
>
> *pSrcDst* In-Place Image Pointer.
>
> *nSrcDstStep* In-Place-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.190 NppStatus nppiAlphaPremulC_16u_C4R (const Npp16u ∗ *pSrc1*, int *nSrc1Step*, Npp16u *nAlpha1*, Npp16u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Four 16-bit unsigned short channel image premultiplication using constant alpha.

Parameters:

> *pSrc1* Source-Image Pointer.
>
> *nSrc1Step* Source-Image Line Step.
>
> *nAlpha1* Image alpha opacity (0 - max channel pixel value).
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.191 **NppStatus nppiAlphaPremulC_8u_AC4IR (Npp8u** *nAlpha1***, Npp8u** ∗ *pSrcDst***, int** *nSrcDstStep***, NppiSize** *oSizeROI***)**

Four 8-bit unsigned char channel in place image premultiplication with alpha using constant alpha.

Parameters:

> *nAlpha1* Image alpha opacity (0 - max channel pixel value).
>
> *pSrcDst* In-Place Image Pointer.
>
> *nSrcDstStep* In-Place-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.192 **NppStatus nppiAlphaPremulC_8u_AC4R (const Npp8u** ∗ *pSrc1***, int** *nSrc1Step***, Npp8u** *nAlpha1***, Npp8u** ∗ *pDst***, int** *nDstStep***, NppiSize** *oSizeROI***)**

Four 8-bit unsigned char channel image premultiplication with alpha using constant alpha.

Parameters:

> *pSrc1* Source-Image Pointer.
>
> *nSrc1Step* Source-Image Line Step.
>
> *nAlpha1* Image alpha opacity (0 - max channel pixel value).
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.193 **NppStatus nppiAlphaPremulC_8u_C1IR (Npp8u** *nAlpha1***, Npp8u** ∗ *pSrcDst***, int** *nSrcDstStep***, NppiSize** *oSizeROI***)**

One 8-bit unsigned char channel in place image premultiplication using constant alpha.

Parameters:

> *nAlpha1* Image alpha opacity (0 - max channel pixel value).
>
> *pSrcDst* In-Place Image Pointer.
>
> *nSrcDstStep* In-Place-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.194   NppStatus nppiAlphaPremulC_8u_C1R (const Npp8u ∗ *pSrc1*, int *nSrc1Step*, Npp8u ***nAlpha1*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)**

One 8-bit unsigned char channel image premultiplication using constant alpha.

Parameters:

> *pSrc1* Source-Image Pointer.
>
> *nSrc1Step* Source-Image Line Step.
>
> *nAlpha1* Image alpha opacity (0 - max channel pixel value).
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.195   NppStatus nppiAlphaPremulC_8u_C3IR (Npp8u *nAlpha1*, Npp8u ∗ *pSrcDst*, int ***nSrcDstStep*, NppiSize *oSizeROI*)**

Three 8-bit unsigned char channel in place image premultiplication using constant alpha.

Parameters:

> *nAlpha1* Image alpha opacity (0 - max channel pixel value).
>
> *pSrcDst* In-Place Image Pointer.
>
> *nSrcDstStep* In-Place-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.196   NppStatus nppiAlphaPremulC_8u_C3R (const Npp8u ∗ *pSrc1*, int *nSrc1Step*, Npp8u ***nAlpha1*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)**

Three 8-bit unsigned char channel image premultiplication using constant alpha.

Parameters:

> *pSrc1* Source-Image Pointer.
>
> *nSrc1Step* Source-Image Line Step.
>
> *nAlpha1* Image alpha opacity (0 - max channel pixel value).
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.197 NppStatus nppiAlphaPremulC_8u_C4IR (Npp8u *nAlpha1*, Npp8u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 8-bit unsigned char channel in place image premultiplication using constant alpha.

Parameters:

nAlpha1 Image alpha opacity (0 - max channel pixel value).

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.198 NppStatus nppiAlphaPremulC_8u_C4R (const Npp8u ∗ *pSrc1*, int *nSrc1Step*, Npp8u *nAlpha1*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Four 8-bit unsigned char channel image premultiplication using constant alpha.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

nAlpha1 Image alpha opacity (0 - max channel pixel value).

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.199 NppStatus nppiAnd_16u_AC4IR (const Npp16u ∗ *pSrc*, int *nSrcStep*, Npp16u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 16-bit unsigned short channel in place image logical and with unmodified alpha.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.200   NppStatus nppiAnd_16u_AC4R (const Npp16u ∗ *pSrc1*, int *nSrc1Step*, const Npp16u ∗ *pSrc2*, int *nSrc2Step*, Npp16u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Four 16-bit unsigned short channel image logical and with unmodified alpha.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pSrc2 Source-Image Pointer.

nSrc2Step Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.201   NppStatus nppiAnd_16u_C1IR (const Npp16u ∗ *pSrc*, int *nSrcStep*, Npp16u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

One 16-bit unsigned short channel in place image logical and.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.202   NppStatus nppiAnd_16u_C1R (const Npp16u ∗ *pSrc1*, int *nSrc1Step*, const Npp16u ∗ *pSrc2*, int *nSrc2Step*, Npp16u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

One 16-bit unsigned short channel image logical and.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pSrc2 Source-Image Pointer.

nSrc2Step Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.203 NppStatus nppiAnd_16u_C3IR (const Npp16u ∗ *pSrc*, int *nSrcStep*, Npp16u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Three 16-bit unsigned short channel in place image logical and.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.204 NppStatus nppiAnd_16u_C3R (const Npp16u ∗ *pSrc1*, int *nSrc1Step*, const Npp16u ∗ *pSrc2*, int *nSrc2Step*, Npp16u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Three 16-bit unsigned short channel image logical and.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pSrc2 Source-Image Pointer.

nSrc2Step Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.205 NppStatus nppiAnd_16u_C4IR (const Npp16u ∗ *pSrc*, int *nSrcStep*, Npp16u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 16-bit unsigned short channel in place image logical and.

Parameters:

> *pSrc* Source-Image Pointer.
> *nSrcStep* Source-Image Line Step.
> *pSrcDst* In-Place Image Pointer.
> *nSrcDstStep* In-Place-Image Line Step.
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.206 NppStatus nppiAnd_16u_C4R (const Npp16u ∗ *pSrc1*, int *nSrc1Step*, const Npp16u ∗ *pSrc2*, int *nSrc2Step*, Npp16u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Four 16-bit unsigned short channel image logical and.

Parameters:

> *pSrc1* Source-Image Pointer.
> *nSrc1Step* Source-Image Line Step.
> *pSrc2* Source-Image Pointer.
> *nSrc2Step* Source-Image Line Step.
> *pDst* Destination-Image Pointer.
> *nDstStep* Destination-Image Line Step.
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.207 NppStatus nppiAnd_32s_AC4IR (const Npp32s ∗ *pSrc*, int *nSrcStep*, Npp32s ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 32-bit signed integer channel in place image logical and with unmodified alpha.

Parameters:

> *pSrc* Source-Image Pointer.
> *nSrcStep* Source-Image Line Step.
> *pSrcDst* In-Place Image Pointer.
> *nSrcDstStep* In-Place-Image Line Step.
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.208 NppStatus nppiAnd_32s_AC4R (const Npp32s ∗ *pSrc1*, int *nSrc1Step*, const Npp32s ∗ *pSrc2*, int *nSrc2Step*, Npp32s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Four 32-bit signed integer channel image logical and with unmodified alpha.

Parameters:

> *pSrc1* Source-Image Pointer.
>
> *nSrc1Step* Source-Image Line Step.
>
> *pSrc2* Source-Image Pointer.
>
> *nSrc2Step* Source-Image Line Step.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.209 NppStatus nppiAnd_32s_C1IR (const Npp32s ∗ *pSrc*, int *nSrcStep*, Npp32s ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

One 32-bit signed integer channel in place image logical and.

Parameters:

> *pSrc* Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *pSrcDst* In-Place Image Pointer.
>
> *nSrcDstStep* In-Place-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.210 NppStatus nppiAnd_32s_C1R (const Npp32s ∗ *pSrc1*, int *nSrc1Step*, const Npp32s ∗ *pSrc2*, int *nSrc2Step*, Npp32s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

One 32-bit signed integer channel image logical and.

Parameters:

> *pSrc1* Source-Image Pointer.
>
> *nSrc1Step* Source-Image Line Step.
>
> *pSrc2* Source-Image Pointer.
>
> *nSrc2Step* Source-Image Line Step.
>
> *pDst* Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.211 NppStatus nppiAnd_32s_C3IR (const Npp32s ∗ *pSrc*, int *nSrcStep*, Npp32s ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Three 32-bit signed integer channel in place image logical and.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.212 NppStatus nppiAnd_32s_C3R (const Npp32s ∗ *pSrc1*, int *nSrc1Step*, const Npp32s ∗ *pSrc2*, int *nSrc2Step*, Npp32s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Three 32-bit signed integer channel image logical and.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pSrc2 Source-Image Pointer.

nSrc2Step Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.213 NppStatus nppiAnd_32s_C4IR (const Npp32s ∗ *pSrc*, int *nSrcStep*, Npp32s ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 32-bit signed integer channel in place image logical and.

Parameters:

> *pSrc* Source-Image Pointer.
> *nSrcStep* Source-Image Line Step.
> *pSrcDst* In-Place Image Pointer.
> *nSrcDstStep* In-Place-Image Line Step.
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.214 NppStatus nppiAnd_32s_C4R (const Npp32s ∗ *pSrc1*, int *nSrc1Step*, const Npp32s ∗ *pSrc2*, int *nSrc2Step*, Npp32s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Four 32-bit signed integer channel image logical and.

Parameters:

> *pSrc1* Source-Image Pointer.
> *nSrc1Step* Source-Image Line Step.
> *pSrc2* Source-Image Pointer.
> *nSrc2Step* Source-Image Line Step.
> *pDst* Destination-Image Pointer.
> *nDstStep* Destination-Image Line Step.
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.215 NppStatus nppiAnd_8u_AC4IR (const Npp8u ∗ *pSrc*, int *nSrcStep*, Npp8u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 8-bit unsigned char channel in place image logical and with unmodified alpha.

Parameters:

> *pSrc* Source-Image Pointer.
> *nSrcStep* Source-Image Line Step.
> *pSrcDst* In-Place Image Pointer.
> *nSrcDstStep* In-Place-Image Line Step.
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.216 NppStatus nppiAnd_8u_AC4R (const Npp8u ∗ *pSrc1*, int *nSrc1Step*, const Npp8u ∗ *pSrc2*, int *nSrc2Step*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Four 8-bit unsigned char channel image logical and with unmodified alpha.

Parameters:

    pSrc1 Source-Image Pointer.

    nSrc1Step Source-Image Line Step.

    pSrc2 Source-Image Pointer.

    nSrc2Step Source-Image Line Step.

    pDst Destination-Image Pointer.

    nDstStep Destination-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.217 NppStatus nppiAnd_8u_C1IR (const Npp8u ∗ *pSrc*, int *nSrcStep*, Npp8u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

One 8-bit unsigned char channel in place image logical and.

Parameters:

    pSrc Source-Image Pointer.

    nSrcStep Source-Image Line Step.

    pSrcDst In-Place Image Pointer.

    nSrcDstStep In-Place-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.218 NppStatus nppiAnd_8u_C1R (const Npp8u ∗ *pSrc1*, int *nSrc1Step*, const Npp8u ∗ *pSrc2*, int *nSrc2Step*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

One 8-bit unsigned char channel image logical and.

Parameters:

    pSrc1 Source-Image Pointer.

    nSrc1Step Source-Image Line Step.

    pSrc2 Source-Image Pointer.

    nSrc2Step Source-Image Line Step.

    pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.219 NppStatus nppiAnd_8u_C3IR (const Npp8u ∗ *pSrc*, int *nSrcStep*, Npp8u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Three 8-bit unsigned char channel in place image logical and.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.220 NppStatus nppiAnd_8u_C3R (const Npp8u ∗ *pSrc1*, int *nSrc1Step*, const Npp8u ∗ *pSrc2*, int *nSrc2Step*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Three 8-bit unsigned char channel image logical and.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pSrc2 Source-Image Pointer.

nSrc2Step Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.221   NppStatus nppiAnd_8u_C4IR (const Npp8u ∗ *pSrc*, **int** *nSrcStep*, **Npp8u** ∗ *pSrcDst*, **int** *nSrcDstStep*, **NppiSize** *oSizeROI*)

Four 8-bit unsigned char channel in place image logical and.

Parameters:

>   *pSrc* Source-Image Pointer.
>   *nSrcStep* Source-Image Line Step.
>   *pSrcDst* In-Place Image Pointer.
>   *nSrcDstStep* In-Place-Image Line Step.
>   *oSizeROI* Region-of-Interest (ROI).

Returns:

>   Image Data Related Error Codes, ROI Related Error Codes

7.7.1.222   NppStatus nppiAnd_8u_C4R (const Npp8u ∗ *pSrc1*, **int** *nSrc1Step*, **const Npp8u** ∗ *pSrc2*, **int** *nSrc2Step*, **Npp8u** ∗ *pDst*, **int** *nDstStep*, **NppiSize** *oSizeROI*)

Four 8-bit unsigned char channel image logical and.

Parameters:

>   *pSrc1* Source-Image Pointer.
>   *nSrc1Step* Source-Image Line Step.
>   *pSrc2* Source-Image Pointer.
>   *nSrc2Step* Source-Image Line Step.
>   *pDst* Destination-Image Pointer.
>   *nDstStep* Destination-Image Line Step.
>   *oSizeROI* Region-of-Interest (ROI).

Returns:

>   Image Data Related Error Codes, ROI Related Error Codes

7.7.1.223   NppStatus nppiAndC_16u_AC4IR (const Npp16u ∗ *pConstants*, **Npp16u** ∗ *pSrcDst*, **int** *nSrcDstStep*, **NppiSize** *oSizeROI*)

Four 16-bit unsigned short channel in place image logical and with constant with unmodified alpha.

Parameters:

>   *pConstants* pointer to a list of constant values, one per channel.
>   *pSrcDst* In-Place Image Pointer.
>   *nSrcDstStep* In-Place-Image Line Step.
>   *oSizeROI* Region-of-Interest (ROI).

Returns:

>   Image Data Related Error Codes, ROI Related Error Codes

7.7.1.224 NppStatus nppiAndC_16u_AC4R (const Npp16u $*$ pSrc1, int nSrc1Step, const Npp16u $*$ pConstants, Npp16u $*$ pDst, int nDstStep, NppiSize oSizeROI)

Four 16-bit unsigned short channel image logical and with constant with unmodified alpha.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pConstants pointer to a list of constant values, one per channel.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.225 NppStatus nppiAndC_16u_C1IR (const Npp16u nConstant, Npp16u $*$ pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

One 16-bit unsigned short channel in place image logical and with constant.

Parameters:

nConstant Constant.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.226 NppStatus nppiAndC_16u_C1R (const Npp16u $*$ pSrc1, int nSrc1Step, const Npp16u nConstant, Npp16u $*$ pDst, int nDstStep, NppiSize oSizeROI)

One 16-bit unsigned short channel image logical and with constant.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

nConstant Constant.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.227   NppStatus nppiAndC_16u_C3IR (const Npp16u ∗ *pConstants*, Npp16u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Three 16-bit unsigned short channel in place image logical and with constant.

Parameters:

> *pConstants* pointer to a list of constant values, one per channel.
>
> *pSrcDst* In-Place Image Pointer.
>
> *nSrcDstStep* In-Place-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.228   NppStatus nppiAndC_16u_C3R (const Npp16u ∗ *pSrc1*, int *nSrc1Step*, const Npp16u ∗ *pConstants*, Npp16u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Three 16-bit unsigned short channel image logical and with constant.

Parameters:

> *pSrc1* Source-Image Pointer.
>
> *nSrc1Step* Source-Image Line Step.
>
> *pConstants* pointer to a list of constant values, one per channel.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.229   NppStatus nppiAndC_16u_C4IR (const Npp16u ∗ *pConstants*, Npp16u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 16-bit unsigned short channel in place image logical and with constant.

Parameters:

> *pConstants* pointer to a list of constant values, one per channel.
>
> *pSrcDst* In-Place Image Pointer.
>
> *nSrcDstStep* In-Place-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.230 NppStatus nppiAndC_16u_C4R (const Npp16u * pSrc1, int nSrc1Step, const Npp16u * pConstants, Npp16u * pDst, int nDstStep, NppiSize oSizeROI)

Four 16-bit unsigned short channel image logical and with constant.

Parameters:

> *pSrc1* Source-Image Pointer.
> *nSrc1Step* Source-Image Line Step.
> *pConstants* pointer to a list of constant values, one per channel.
> *pDst* Destination-Image Pointer.
> *nDstStep* Destination-Image Line Step.
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.231 NppStatus nppiAndC_32s_AC4IR (const Npp32s * pConstants, Npp32s * pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

Four 32-bit signed integer channel in place image logical and with constant with unmodified alpha.

Parameters:

> *pConstants* pointer to a list of constant values, one per channel.
> *pSrcDst* In-Place Image Pointer.
> *nSrcDstStep* In-Place-Image Line Step.
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.232 NppStatus nppiAndC_32s_AC4R (const Npp32s * pSrc1, int nSrc1Step, const Npp32s * pConstants, Npp32s * pDst, int nDstStep, NppiSize oSizeROI)

Four 32-bit signed integer channel image logical and with constant with unmodified alpha.

Parameters:

> *pSrc1* Source-Image Pointer.
> *nSrc1Step* Source-Image Line Step.
> *pConstants* pointer to a list of constant values, one per channel.
> *pDst* Destination-Image Pointer.
> *nDstStep* Destination-Image Line Step.
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.233 NppStatus nppiAndC_32s_C1IR (const Npp32s *nConstant*, Npp32s * *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

One 32-bit signed integer channel in place image logical and with constant.

Parameters:

>   *nConstant* Constant.
>
>   *pSrcDst* In-Place Image Pointer.
>
>   *nSrcDstStep* In-Place-Image Line Step.
>
>   *oSizeROI* Region-of-Interest (ROI).

Returns:

>   Image Data Related Error Codes, ROI Related Error Codes

7.7.1.234 NppStatus nppiAndC_32s_C1R (const Npp32s * *pSrc1*, int *nSrc1Step*, const Npp32s *nConstant*, Npp32s * *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

One 32-bit signed integer channel image logical and with constant.

Parameters:

>   *pSrc1* Source-Image Pointer.
>
>   *nSrc1Step* Source-Image Line Step.
>
>   *nConstant* Constant.
>
>   *pDst* Destination-Image Pointer.
>
>   *nDstStep* Destination-Image Line Step.
>
>   *oSizeROI* Region-of-Interest (ROI).

Returns:

>   Image Data Related Error Codes, ROI Related Error Codes

7.7.1.235 NppStatus nppiAndC_32s_C3IR (const Npp32s * *pConstants*, Npp32s * *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Three 32-bit signed integer channel in place image logical and with constant.

Parameters:

>   *pConstants* pointer to a list of constant values, one per channel.
>
>   *pSrcDst* In-Place Image Pointer.
>
>   *nSrcDstStep* In-Place-Image Line Step.
>
>   *oSizeROI* Region-of-Interest (ROI).

Returns:

>   Image Data Related Error Codes, ROI Related Error Codes

7.7.1.236 **NppStatus nppiAndC_32s_C3R (const Npp32s ∗ pSrc1, int nSrc1Step, const Npp32s ∗ pConstants, Npp32s ∗ pDst, int nDstStep, NppiSize oSizeROI)**

Three 32-bit signed integer channel image logical and with constant.

Parameters:

>*pSrc1* Source-Image Pointer.
>
>*nSrc1Step* Source-Image Line Step.
>
>*pConstants* pointer to a list of constant values, one per channel.
>
>*pDst* Destination-Image Pointer.
>
>*nDstStep* Destination-Image Line Step.
>
>*oSizeROI* Region-of-Interest (ROI).

Returns:

>Image Data Related Error Codes, ROI Related Error Codes

7.7.1.237 **NppStatus nppiAndC_32s_C4IR (const Npp32s ∗ pConstants, Npp32s ∗ pSrcDst, int nSrcDstStep, NppiSize oSizeROI)**

Four 32-bit signed integer channel in place image logical and with constant.

Parameters:

>*pConstants* pointer to a list of constant values, one per channel.
>
>*pSrcDst* In-Place Image Pointer.
>
>*nSrcDstStep* In-Place-Image Line Step.
>
>*oSizeROI* Region-of-Interest (ROI).

Returns:

>Image Data Related Error Codes, ROI Related Error Codes

7.7.1.238 **NppStatus nppiAndC_32s_C4R (const Npp32s ∗ pSrc1, int nSrc1Step, const Npp32s ∗ pConstants, Npp32s ∗ pDst, int nDstStep, NppiSize oSizeROI)**

Four 32-bit signed integer channel image logical and with constant.

Parameters:

>*pSrc1* Source-Image Pointer.
>
>*nSrc1Step* Source-Image Line Step.
>
>*pConstants* pointer to a list of constant values, one per channel.
>
>*pDst* Destination-Image Pointer.
>
>*nDstStep* Destination-Image Line Step.
>
>*oSizeROI* Region-of-Interest (ROI).

Returns:

>Image Data Related Error Codes, ROI Related Error Codes

7.7.1.239 NppStatus nppiAndC_8u_AC4IR (const Npp8u ∗ *pConstants*, Npp8u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 8-bit unsigned char channel in place image logical and with constant with unmodified alpha.

Parameters:

    pConstants pointer to a list of constant values, one per channel.

    pSrcDst In-Place Image Pointer.

    nSrcDstStep In-Place-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.240 NppStatus nppiAndC_8u_AC4R (const Npp8u ∗ *pSrc1*, int *nSrc1Step*, const Npp8u ∗ *pConstants*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Four 8-bit unsigned char channel image logical and with constant with unmodified alpha.

Parameters:

    pSrc1 Source-Image Pointer.

    nSrc1Step Source-Image Line Step.

    pConstants pointer to a list of constant values, one per channel.

    pDst Destination-Image Pointer.

    nDstStep Destination-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.241 NppStatus nppiAndC_8u_C1IR (const Npp8u *nConstant*, Npp8u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

One 8-bit unsigned char channel in place image logical and with constant.

Parameters:

    nConstant Constant.

    pSrcDst In-Place Image Pointer.

    nSrcDstStep In-Place-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.242 NppStatus nppiAndC_8u_C1R (const Npp8u ∗ *pSrc1*, int *nSrc1Step*, const Npp8u *nConstant*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

One 8-bit unsigned char channel image logical and with constant.

Parameters:

> *pSrc1* Source-Image Pointer.
>
> *nSrc1Step* Source-Image Line Step.
>
> *nConstant* Constant.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.243 NppStatus nppiAndC_8u_C3IR (const Npp8u ∗ *pConstants*, Npp8u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Three 8-bit unsigned char channel in place image logical and with constant.

Parameters:

> *pConstants* pointer to a list of constant values, one per channel.
>
> *pSrcDst* In-Place Image Pointer.
>
> *nSrcDstStep* In-Place-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.244 NppStatus nppiAndC_8u_C3R (const Npp8u ∗ *pSrc1*, int *nSrc1Step*, const Npp8u ∗ *pConstants*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Three 8-bit unsigned char channel image logical and with constant.

Parameters:

> *pSrc1* Source-Image Pointer.
>
> *nSrc1Step* Source-Image Line Step.
>
> *pConstants* pointer to a list of constant values, one per channel.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.245   NppStatus nppiAndC_8u_C4IR (const Npp8u ∗ *pConstants*, Npp8u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 8-bit unsigned char channel in place image logical and with constant.

Parameters:

>   *pConstants* pointer to a list of constant values, one per channel.
>
>   *pSrcDst* In-Place Image Pointer.
>
>   *nSrcDstStep* In-Place-Image Line Step.
>
>   *oSizeROI* Region-of-Interest (ROI).

Returns:

>   Image Data Related Error Codes, ROI Related Error Codes

7.7.1.246   NppStatus nppiAndC_8u_C4R (const Npp8u ∗ *pSrc1*, int *nSrc1Step*, const Npp8u ∗ *pConstants*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Four 8-bit unsigned char channel image logical and with constant.

Parameters:

>   *pSrc1* Source-Image Pointer.
>
>   *nSrc1Step* Source-Image Line Step.
>
>   *pConstants* pointer to a list of constant values, one per channel.
>
>   *pDst* Destination-Image Pointer.
>
>   *nDstStep* Destination-Image Line Step.
>
>   *oSizeROI* Region-of-Interest (ROI).

Returns:

>   Image Data Related Error Codes, ROI Related Error Codes

7.7.1.247   NppStatus nppiDiv_16s_AC4IRSfs (const Npp16s ∗ *pSrc*, int *nSrcStep*, Npp16s ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 16-bit signed short channel with unmodified alpha in place image division, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

Parameters:

>   *pSrc* Source-Image Pointer.
>
>   *nSrcStep* Source-Image Line Step.
>
>   *pSrcDst* In-Place Image Pointer.
>
>   *nSrcDstStep* In-Place-Image Line Step.
>
>   *oSizeROI* Region-of-Interest (ROI).
>
>   *nScaleFactor* Integer Result Scaling.

Returns:

>   Image Data Related Error Codes, ROI Related Error Codes

7.7.1.248 NppStatus nppiDiv_16s_AC4RSfs (const Npp16s ∗ *pSrc1*, int *nSrc1Step*, const Npp16s ∗ *pSrc2*, int *nSrc2Step*, Npp16s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 16-bit signed short channel with unmodified alpha image division, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

> *pSrc1* Source-Image Pointer.
>
> *nSrc1Step* Source-Image Line Step.
>
> *pSrc2* Source-Image Pointer.
>
> *nSrc2Step* Source-Image Line Step.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.249 NppStatus nppiDiv_16s_C1IRSfs (const Npp16s ∗ *pSrc*, int *nSrcStep*, Npp16s ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 16-bit signed short channel in place image division, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

> *pSrc* Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *pSrcDst* In-Place Image Pointer.
>
> *nSrcDstStep* In-Place-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.250 NppStatus nppiDiv_16s_C1RSfs (const Npp16s ∗ *pSrc1*, int *nSrc1Step*, const Npp16s ∗ *pSrc2*, int *nSrc2Step*, Npp16s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 16-bit signed short channel image division, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

> *pSrc1* Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pSrc2 Source-Image Pointer.

nSrc2Step Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.251 NppStatus nppiDiv_16s_C3IRSfs (const Npp16s ∗ *pSrc*, int *nSrcStep*, Npp16s ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 16-bit signed short channel in place image division, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.252 NppStatus nppiDiv_16s_C3RSfs (const Npp16s ∗ *pSrc1*, int *nSrc1Step*, const Npp16s ∗ *pSrc2*, int *nSrc2Step*, Npp16s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Three 16-bit signed short channel image division, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pSrc2 Source-Image Pointer.

nSrc2Step Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.253 NppStatus nppiDiv_16s_C4IRSfs (const Npp16s ∗ *pSrc*, int *nSrcStep*, Npp16s ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 16-bit signed short channel in place image division, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

> *pSrc* Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *pSrcDst* In-Place Image Pointer.
>
> *nSrcDstStep* In-Place-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.254 NppStatus nppiDiv_16s_C4RSfs (const Npp16s ∗ *pSrc1*, int *nSrc1Step*, const Npp16s ∗ *pSrc2*, int *nSrc2Step*, Npp16s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 16-bit signed short channel image division, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

> *pSrc1* Source-Image Pointer.
>
> *nSrc1Step* Source-Image Line Step.
>
> *pSrc2* Source-Image Pointer.
>
> *nSrc2Step* Source-Image Line Step.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.255 NppStatus nppiDiv_16sc_AC4IRSfs (const Npp16sc ∗ *pSrc*, int *nSrcStep*, Npp16sc ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 16-bit signed short complex number (16-bit real, 16-bit imaginary) channel with unmodified alpha in place image division, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

> *pSrc* Source-Image Pointer.

nSrcStep Source-Image Line Step.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.256 NppStatus nppiDiv_16sc_AC4RSfs (const Npp16sc ∗ *pSrc1*, int *nSrc1Step*, const Npp16sc ∗ *pSrc2*, int *nSrc2Step*, Npp16sc ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 16-bit signed short complex number (16-bit real, 16-bit imaginary) channel with unmodified alpha image division, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pSrc2 Source-Image Pointer.

nSrc2Step Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.257 NppStatus nppiDiv_16sc_C1IRSfs (const Npp16sc ∗ *pSrc*, int *nSrcStep*, Npp16sc ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 16-bit signed short complex number (16-bit real, 16-bit imaginary) channel in place image division, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.258 NppStatus nppiDiv_16sc_C1RSfs (const Npp16sc ∗ *pSrc1*, int *nSrc1Step*, const Npp16sc ∗ *pSrc2*, int *nSrc2Step*, Npp16sc ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 16-bit signed short complex number (16-bit real, 16-bit imaginary) channel image division, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pSrc2 Source-Image Pointer.

nSrc2Step Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.259 NppStatus nppiDiv_16sc_C3IRSfs (const Npp16sc ∗ *pSrc*, int *nSrcStep*, Npp16sc ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 16-bit signed short complex number (16-bit real, 16-bit imaginary) channel in place image division, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.260 NppStatus nppiDiv_16sc_C3RSfs (const Npp16sc ∗ *pSrc1*, int *nSrc1Step*, const Npp16sc ∗ *pSrc2*, int *nSrc2Step*, Npp16sc ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Three 16-bit signed short complex number (16-bit real, 16-bit imaginary) channel image division, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

    pSrc1 Source-Image Pointer.

    nSrc1Step Source-Image Line Step.

    pSrc2 Source-Image Pointer.

    nSrc2Step Source-Image Line Step.

    pDst Destination-Image Pointer.

    nDstStep Destination-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

    nScaleFactor Integer Result Scaling.

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.261 NppStatus nppiDiv_16u_AC4IRSfs (const Npp16u $*$ *pSrc*, int *nSrcStep*, Npp16u $*$ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 16-bit unsigned short channel with unmodified alpha in place image division, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

    pSrc Source-Image Pointer.

    nSrcStep Source-Image Line Step.

    pSrcDst In-Place Image Pointer.

    nSrcDstStep In-Place-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

    nScaleFactor Integer Result Scaling.

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.262 NppStatus nppiDiv_16u_AC4RSfs (const Npp16u $*$ *pSrc1*, int *nSrc1Step*, const Npp16u $*$ *pSrc2*, int *nSrc2Step*, Npp16u $*$ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 16-bit unsigned short channel with unmodified alpha image division, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

    pSrc1 Source-Image Pointer.

    nSrc1Step Source-Image Line Step.

    pSrc2 Source-Image Pointer.

    nSrc2Step Source-Image Line Step.

    pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.263 NppStatus nppiDiv_16u_C1IRSfs (const Npp16u ∗ *pSrc*, int *nSrcStep*, Npp16u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 16-bit unsigned short channel in place image division, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.264 NppStatus nppiDiv_16u_C1RSfs (const Npp16u ∗ *pSrc1*, int *nSrc1Step*, const Npp16u ∗ *pSrc2*, int *nSrc2Step*, Npp16u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 16-bit unsigned short channel image division, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pSrc2 Source-Image Pointer.

nSrc2Step Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.265 NppStatus nppiDiv_16u_C3IRSfs (const Npp16u ∗ *pSrc*, int *nSrcStep*, Npp16u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 16-bit unsigned short channel in place image division, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

> *pSrc* Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *pSrcDst* In-Place Image Pointer.
>
> *nSrcDstStep* In-Place-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.266 NppStatus nppiDiv_16u_C3RSfs (const Npp16u ∗ *pSrc1*, int *nSrc1Step*, const Npp16u ∗ *pSrc2*, int *nSrc2Step*, Npp16u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Three 16-bit unsigned short channel image division, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

> *pSrc1* Source-Image Pointer.
>
> *nSrc1Step* Source-Image Line Step.
>
> *pSrc2* Source-Image Pointer.
>
> *nSrc2Step* Source-Image Line Step.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.267 NppStatus nppiDiv_16u_C4IRSfs (const Npp16u ∗ *pSrc*, int *nSrcStep*, Npp16u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 16-bit unsigned short channel in place image division, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

> *pSrc* Source-Image Pointer.

nSrcStep Source-Image Line Step.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.268 NppStatus nppiDiv_16u_C4RSfs (const Npp16u ∗ *pSrc1*, int *nSrc1Step*, const Npp16u ∗ *pSrc2*, int *nSrc2Step*, Npp16u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 16-bit unsigned short channel image division, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pSrc2 Source-Image Pointer.

nSrc2Step Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.269 NppStatus nppiDiv_32f_AC4IR (const Npp32f ∗ *pSrc*, int *nSrcStep*, Npp32f ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 32-bit floating point channel with unmodified alpha in place image division.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.270 NppStatus nppiDiv_32f_AC4R (const Npp32f ∗ *pSrc1*, int *nSrc1Step*, const Npp32f ∗ *pSrc2*, int *nSrc2Step*, Npp32f ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Four 32-bit floating point channel with unmodified alpha image division.

Parameters:

> *pSrc1* Source-Image Pointer.
>
> *nSrc1Step* Source-Image Line Step.
>
> *pSrc2* Source-Image Pointer.
>
> *nSrc2Step* Source-Image Line Step.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.271 NppStatus nppiDiv_32f_C1IR (const Npp32f ∗ *pSrc*, int *nSrcStep*, Npp32f ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

One 32-bit floating point channel in place image division.

Parameters:

> *pSrc* Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *pSrcDst* In-Place Image Pointer.
>
> *nSrcDstStep* In-Place-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.272 NppStatus nppiDiv_32f_C1R (const Npp32f ∗ *pSrc1*, int *nSrc1Step*, const Npp32f ∗ *pSrc2*, int *nSrc2Step*, Npp32f ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

One 32-bit floating point channel image division.

Parameters:

> *pSrc1* Source-Image Pointer.
>
> *nSrc1Step* Source-Image Line Step.
>
> *pSrc2* Source-Image Pointer.
>
> *nSrc2Step* Source-Image Line Step.
>
> *pDst* Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.273 NppStatus nppiDiv_32f_C3IR (const Npp32f ∗ *pSrc*, int *nSrcStep*, Npp32f ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

One 32-bit floating point channel in place image division.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.274 NppStatus nppiDiv_32f_C3R (const Npp32f ∗ *pSrc1*, int *nSrc1Step*, const Npp32f ∗ *pSrc2*, int *nSrc2Step*, Npp32f ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Three 32-bit floating point channel image division.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pSrc2 Source-Image Pointer.

nSrc2Step Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.275 NppStatus nppiDiv_32f_C4IR (const Npp32f ∗ *pSrc*, int *nSrcStep*, Npp32f ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 32-bit floating point channel in place image division.

Parameters:

    pSrc Source-Image Pointer.

    nSrcStep Source-Image Line Step.

    pSrcDst In-Place Image Pointer.

    nSrcDstStep In-Place-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.276 NppStatus nppiDiv_32f_C4R (const Npp32f ∗ *pSrc1*, int *nSrc1Step*, const Npp32f ∗ *pSrc2*, int *nSrc2Step*, Npp32f ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Four 32-bit floating point channel image division.

Parameters:

    pSrc1 Source-Image Pointer.

    nSrc1Step Source-Image Line Step.

    pSrc2 Source-Image Pointer.

    nSrc2Step Source-Image Line Step.

    pDst Destination-Image Pointer.

    nDstStep Destination-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.277 NppStatus nppiDiv_32fc_AC4IR (const Npp32fc ∗ *pSrc*, int *nSrcStep*, Npp32fc ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 32-bit floating point complex number (32-bit real, 32-bit imaginary) channel with unmodified alpha in place image division.

Parameters:

    pSrc Source-Image Pointer.

    nSrcStep Source-Image Line Step.

    pSrcDst In-Place Image Pointer.

    nSrcDstStep In-Place-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.278 NppStatus nppiDiv_32fc_AC4R (const Npp32fc ∗ *pSrc1*, int *nSrc1Step*, const Npp32fc ∗ *pSrc2*, int *nSrc2Step*, Npp32fc ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Four 32-bit floating point complex number (32-bit real, 32-bit imaginary) channel with unmodified alpha image division.

Parameters:

    pSrc1 Source-Image Pointer.

    nSrc1Step Source-Image Line Step.

    pSrc2 Source-Image Pointer.

    nSrc2Step Source-Image Line Step.

    pDst Destination-Image Pointer.

    nDstStep Destination-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.279 NppStatus nppiDiv_32fc_C1IR (const Npp32fc ∗ *pSrc*, int *nSrcStep*, Npp32fc ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

One 32-bit floating point complex number (32-bit real, 32-bit imaginary) channel in place image division.

Parameters:

    pSrc Source-Image Pointer.

    nSrcStep Source-Image Line Step.

    pSrcDst In-Place Image Pointer.

    nSrcDstStep In-Place-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.280 NppStatus nppiDiv_32fc_C1R (const Npp32fc ∗ *pSrc1*, int *nSrc1Step*, const Npp32fc ∗ *pSrc2*, int *nSrc2Step*, Npp32fc ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

One 32-bit floating point complex number (32-bit real, 32-bit imaginary) channel image division.

Parameters:

    pSrc1 Source-Image Pointer.

    nSrc1Step Source-Image Line Step.

    pSrc2 Source-Image Pointer.

    nSrc2Step Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.281 NppStatus nppiDiv_32fc_C3IR (const Npp32fc ∗ *pSrc*, int *nSrcStep*, Npp32fc ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

One 32-bit floating point complex number (32-bit real, 32-bit imaginary) channel in place image division.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.282 NppStatus nppiDiv_32fc_C3R (const Npp32fc ∗ *pSrc1*, int *nSrc1Step*, const Npp32fc ∗ *pSrc2*, int *nSrc2Step*, Npp32fc ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Three 32-bit floating point complex number (32-bit real, 32-bit imaginary) channel image division.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pSrc2 Source-Image Pointer.

nSrc2Step Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.283 NppStatus nppiDiv_32fc_C4IR (const Npp32fc ∗ *pSrc*, int *nSrcStep*, Npp32fc ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 32-bit floating point complex number (32-bit real, 32-bit imaginary) channel in place image division.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.284 NppStatus nppiDiv_32fc_C4R (const Npp32fc ∗ *pSrc1*, int *nSrc1Step*, const Npp32fc ∗ *pSrc2*, int *nSrc2Step*, Npp32fc ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Four 32-bit floating point complex number (32-bit real, 32-bit imaginary) channel image division.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pSrc2 Source-Image Pointer.

nSrc2Step Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.285 NppStatus nppiDiv_32s_C1IRSfs (const Npp32s ∗ *pSrc*, int *nSrcStep*, Npp32s ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 32-bit signed integer channel in place image division, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.286 NppStatus nppiDiv_32s_C1R (const Npp32s ∗ *pSrc1*, int *nSrc1Step*, const Npp32s ∗ *pSrc2*, int *nSrc2Step*, Npp32s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Note: This function is to be deprecated in future NPP releases, use the function above with a scale factor of 0 instead.

32-bit image division. Divide pixels in pSrc2 by pSrc1's pixels.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pSrc2 Source-Image Pointer.

nSrc2Step Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.287 NppStatus nppiDiv_32s_C1RSfs (const Npp32s ∗ *pSrc1*, int *nSrc1Step*, const Npp32s ∗ *pSrc2*, int *nSrc2Step*, Npp32s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 32-bit signed integer channel image division, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pSrc2 Source-Image Pointer.

nSrc2Step Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.288   NppStatus nppiDiv_32s_C3IRSfs (const Npp32s ∗ *pSrc*, int *nSrcStep*, Npp32s ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 32-bit signed integer channel in place image division, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

Parameters:

> *pSrc* Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *pSrcDst* In-Place Image Pointer.
>
> *nSrcDstStep* In-Place-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.289   NppStatus nppiDiv_32s_C3RSfs (const Npp32s ∗ *pSrc1*, int *nSrc1Step*, const Npp32s ∗ *pSrc2*, int *nSrc2Step*, Npp32s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Three 32-bit signed integer channel image division, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

Parameters:

> *pSrc1* Source-Image Pointer.
>
> *nSrc1Step* Source-Image Line Step.
>
> *pSrc2* Source-Image Pointer.
>
> *nSrc2Step* Source-Image Line Step.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.290   NppStatus nppiDiv_32sc_AC4IRSfs (const Npp32sc ∗ *pSrc*, int *nSrcStep*, Npp32sc ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 32-bit signed integer complex number (32-bit real, 32-bit imaginary) channel with unmodified alpha in place image division, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

Parameters:

> *pSrc* Source-Image Pointer.

nSrcStep Source-Image Line Step.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.291 NppStatus nppiDiv_32sc_AC4RSfs (const Npp32sc ∗ *pSrc1*, int *nSrc1Step*, const Npp32sc ∗ *pSrc2*, int *nSrc2Step*, Npp32sc ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 32-bit signed integer complex number (32-bit real, 32-bit imaginary) channel with unmodified alpha image division, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pSrc2 Source-Image Pointer.

nSrc2Step Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.292 NppStatus nppiDiv_32sc_C1IRSfs (const Npp32sc ∗ *pSrc*, int *nSrcStep*, Npp32sc ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 32-bit signed integer complex number (32-bit real, 32-bit imaginary) channel in place image division, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.293 NppStatus nppiDiv_32sc_C1RSfs (const Npp32sc ∗ *pSrc1*, int *nSrc1Step*, const Npp32sc ∗ *pSrc2*, int *nSrc2Step*, Npp32sc ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 32-bit signed integer complex number (32-bit real, 32-bit imaginary) channel image division, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

> *pSrc1* Source-Image Pointer.
>
> *nSrc1Step* Source-Image Line Step.
>
> *pSrc2* Source-Image Pointer.
>
> *nSrc2Step* Source-Image Line Step.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.294 NppStatus nppiDiv_32sc_C3IRSfs (const Npp32sc ∗ *pSrc*, int *nSrcStep*, Npp32sc ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 32-bit signed integer complex number (32-bit real, 32-bit imaginary) channel in place image division, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

> *pSrc* Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *pSrcDst* In-Place Image Pointer.
>
> *nSrcDstStep* In-Place-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.295 NppStatus nppiDiv_32sc_C3RSfs (const Npp32sc ∗ *pSrc1*, int *nSrc1Step*, const Npp32sc ∗ *pSrc2*, int *nSrc2Step*, Npp32sc ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Three 32-bit signed integer complex number (32-bit real, 32-bit imaginary) channel image division, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

>*pSrc1* Source-Image Pointer.
>
>*nSrc1Step* Source-Image Line Step.
>
>*pSrc2* Source-Image Pointer.
>
>*nSrc2Step* Source-Image Line Step.
>
>*pDst* Destination-Image Pointer.
>
>*nDstStep* Destination-Image Line Step.
>
>*oSizeROI* Region-of-Interest (ROI).
>
>*nScaleFactor* Integer Result Scaling.

Returns:

>Image Data Related Error Codes, ROI Related Error Codes

7.7.1.296 NppStatus nppiDiv_8u_AC4IRSfs (const Npp8u ∗ *pSrc*, int *nSrcStep*, Npp8u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 8-bit unsigned char channel with unmodified alpha in place image division, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

>*pSrc* Source-Image Pointer.
>
>*nSrcStep* Source-Image Line Step.
>
>*pSrcDst* In-Place Image Pointer.
>
>*nSrcDstStep* In-Place-Image Line Step.
>
>*oSizeROI* Region-of-Interest (ROI).
>
>*nScaleFactor* Integer Result Scaling.

Returns:

>Image Data Related Error Codes, ROI Related Error Codes

7.7.1.297 NppStatus nppiDiv_8u_AC4RSfs (const Npp8u ∗ *pSrc1*, int *nSrc1Step*, const Npp8u ∗ *pSrc2*, int *nSrc2Step*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 8-bit unsigned char channel with unmodified alpha image division, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

>*pSrc1* Source-Image Pointer.
>
>*nSrc1Step* Source-Image Line Step.
>
>*pSrc2* Source-Image Pointer.
>
>*nSrc2Step* Source-Image Line Step.
>
>*pDst* Destination-Image Pointer.
>
>*nDstStep* Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.298 NppStatus nppiDiv_8u_C1IRSfs (const Npp8u ∗ *pSrc*, int *nSrcStep*, Npp8u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 8-bit unsigned char channel in place image division, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.299 NppStatus nppiDiv_8u_C1RSfs (const Npp8u ∗ *pSrc1*, int *nSrc1Step*, const Npp8u ∗ *pSrc2*, int *nSrc2Step*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 8-bit unsigned char channel image division, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pSrc2 Source-Image Pointer.

nSrc2Step Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.300 NppStatus nppiDiv_8u_C3IRSfs (const Npp8u ∗ *pSrc***, int** *nSrcStep***, Npp8u** ∗ *pSrcDst***,**
int *nSrcDstStep***, NppiSize** *oSizeROI***, int** *nScaleFactor***)**

One 8-bit unsigned char channel in place image division, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

> *pSrc* Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *pSrcDst* In-Place Image Pointer.
>
> *nSrcDstStep* In-Place-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.301 NppStatus nppiDiv_8u_C3RSfs (const Npp8u ∗ *pSrc1***, int** *nSrc1Step***, const Npp8u** ∗
*pSrc2***, int** *nSrc2Step***, Npp8u** ∗ *pDst***, int** *nDstStep***, NppiSize** *oSizeROI***, int** *nScaleFactor***)**

Three 8-bit unsigned char channel image division, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

> *pSrc1* Source-Image Pointer.
>
> *nSrc1Step* Source-Image Line Step.
>
> *pSrc2* Source-Image Pointer.
>
> *nSrc2Step* Source-Image Line Step.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.302 NppStatus nppiDiv_8u_C4IRSfs (const Npp8u ∗ *pSrc***, int** *nSrcStep***, Npp8u** ∗ *pSrcDst***,**
int *nSrcDstStep***, NppiSize** *oSizeROI***, int** *nScaleFactor***)**

Four 8-bit unsigned char channel in place image division, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

> *pSrc* Source-Image Pointer.

nSrcStep Source-Image Line Step.
pSrcDst In-Place Image Pointer.
nSrcDstStep In-Place-Image Line Step.
oSizeROI Region-of-Interest (ROI).
nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.303 NppStatus nppiDiv_8u_C4RSfs (const Npp8u ∗ *pSrc1*, int *nSrc1Step*, const Npp8u ∗ *pSrc2*, int *nSrc2Step*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 8-bit unsigned char channel image division, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

pSrc1 Source-Image Pointer.
nSrc1Step Source-Image Line Step.
pSrc2 Source-Image Pointer.
nSrc2Step Source-Image Line Step.
pDst Destination-Image Pointer.
nDstStep Destination-Image Line Step.
oSizeROI Region-of-Interest (ROI).
nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.304 NppStatus nppiDiv_Round_16s_AC4IRSfs (const Npp16s ∗ *pSrc*, int *nSrcStep*, Npp16s ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, NppRoundMode *rndMode*, int *nScaleFactor*)

Four 16-bit signed short channel in place image division with unmodified alpha, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

pSrc Source-Image Pointer.
nSrcStep Source-Image Line Step.
pSrcDst In-Place Image Pointer.
nSrcDstStep In-Place-Image Line Step.
oSizeROI Region-of-Interest (ROI).
rndMode Result Rounding mode to be used (NPP_RND_ZERO, NPP_RND_NEAR, or NP_RND_-FINANCIAL)
nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.305 NppStatus nppiDiv_Round_16s_AC4RSfs (const Npp16s ∗ *pSrc1*, int *nSrc1Step*, const Npp16s ∗ *pSrc2*, int *nSrc2Step*, Npp16s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, NppRoundMode *rndMode*, int *nScaleFactor*)

Four 16-bit signed short channel image division with unmodified alpha, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

> *pSrc1* Source-Image Pointer.
>
> *nSrc1Step* Source-Image Line Step.
>
> *pSrc2* Source-Image Pointer.
>
> *nSrc2Step* Source-Image Line Step.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *rndMode* Result Rounding mode to be used (NPP_RND_ZERO, NPP_RND_NEAR, or NP_RND_-FINANCIAL)
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.306 NppStatus nppiDiv_Round_16s_C1IRSfs (const Npp16s ∗ *pSrc*, int *nSrcStep*, Npp16s ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, NppRoundMode *rndMode*, int *nScaleFactor*)

One 16-bit signed short channel in place image division, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

> *pSrc* Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *pSrcDst* In-Place Image Pointer.
>
> *nSrcDstStep* In-Place-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *rndMode* Result Rounding mode to be used (NPP_RND_ZERO, NPP_RND_NEAR, or NP_RND_-FINANCIAL)
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.307 NppStatus nppiDiv_Round_16s_C1RSfs (const Npp16s ∗ *pSrc1*, int *nSrc1Step*, const Npp16s ∗ *pSrc2*, int *nSrc2Step*, Npp16s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, NppRoundMode *rndMode*, int *nScaleFactor*)

One 16-bit signed short channel image division, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

Parameters:

>*pSrc1* Source-Image Pointer.
>
>*nSrc1Step* Source-Image Line Step.
>
>*pSrc2* Source-Image Pointer.
>
>*nSrc2Step* Source-Image Line Step.
>
>*pDst* Destination-Image Pointer.
>
>*nDstStep* Destination-Image Line Step.
>
>*oSizeROI* Region-of-Interest (ROI).
>
>*rndMode* Result Rounding mode to be used (NPP_RND_ZERO, NPP_RND_NEAR, or NP_RND_-FINANCIAL)
>
>*nScaleFactor* Integer Result Scaling.

Returns:

>Image Data Related Error Codes, ROI Related Error Codes

7.7.1.308 NppStatus nppiDiv_Round_16s_C3IRSfs (const Npp16s ∗ *pSrc*, int *nSrcStep*, Npp16s ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, NppRoundMode *rndMode*, int *nScaleFactor*)

Three 16-bit signed short channel in place image division, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

Parameters:

>*pSrc* Source-Image Pointer.
>
>*nSrcStep* Source-Image Line Step.
>
>*pSrcDst* In-Place Image Pointer.
>
>*nSrcDstStep* In-Place-Image Line Step.
>
>*oSizeROI* Region-of-Interest (ROI).
>
>*rndMode* Result Rounding mode to be used (NPP_RND_ZERO, NPP_RND_NEAR, or NP_RND_-FINANCIAL)
>
>*nScaleFactor* Integer Result Scaling.

Returns:

>Image Data Related Error Codes, ROI Related Error Codes

7.7.1.309 NppStatus nppiDiv_Round_16s_C3RSfs (const Npp16s ∗ *pSrc1*, int *nSrc1Step*, const Npp16s ∗ *pSrc2*, int *nSrc2Step*, Npp16s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, NppRoundMode *rndMode*, int *nScaleFactor*)

Three 16-bit signed short channel image division, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

> *pSrc1* Source-Image Pointer.
>
> *nSrc1Step* Source-Image Line Step.
>
> *pSrc2* Source-Image Pointer.
>
> *nSrc2Step* Source-Image Line Step.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *rndMode* Result Rounding mode to be used (NPP_RND_ZERO, NPP_RND_NEAR, or NP_RND_-FINANCIAL)
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.310 NppStatus nppiDiv_Round_16s_C4IRSfs (const Npp16s ∗ *pSrc*, int *nSrcStep*, Npp16s ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, NppRoundMode *rndMode*, int *nScaleFactor*)

Four 16-bit signed short channel in place image division, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

> *pSrc* Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *pSrcDst* In-Place Image Pointer.
>
> *nSrcDstStep* In-Place-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *rndMode* Result Rounding mode to be used (NPP_RND_ZERO, NPP_RND_NEAR, or NP_RND_-FINANCIAL)
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.311 NppStatus nppiDiv_Round_16s_C4RSfs (const Npp16s ∗ *pSrc1*, int *nSrc1Step*, const Npp16s ∗ *pSrc2*, int *nSrc2Step*, Npp16s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, NppRoundMode *rndMode*, int *nScaleFactor*)

Four 16-bit signed short channel image division, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

> *pSrc1* Source-Image Pointer.
>
> *nSrc1Step* Source-Image Line Step.
>
> *pSrc2* Source-Image Pointer.
>
> *nSrc2Step* Source-Image Line Step.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *rndMode* Result Rounding mode to be used (NPP_RND_ZERO, NPP_RND_NEAR, or NP_RND_-FINANCIAL)
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.312 NppStatus nppiDiv_Round_16u_AC4IRSfs (const Npp16u ∗ *pSrc*, int *nSrcStep*, Npp16u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, NppRoundMode *rndMode*, int *nScaleFactor*)

Four 16-bit unsigned short channel in place image division with unmodified alpha, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

> *pSrc* Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *pSrcDst* In-Place Image Pointer.
>
> *nSrcDstStep* In-Place-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *rndMode* Result Rounding mode to be used (NPP_RND_ZERO, NPP_RND_NEAR, or NP_RND_-FINANCIAL)
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.313 NppStatus nppiDiv_Round_16u_AC4RSfs (const Npp16u ∗ *pSrc1*, int *nSrc1Step*, const Npp16u ∗ *pSrc2*, int *nSrc2Step*, Npp16u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, NppRoundMode *rndMode*, int *nScaleFactor*)

Four 16-bit unsigned short channel image division with unmodified alpha, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

Parameters:

    pSrc1 Source-Image Pointer.

    nSrc1Step Source-Image Line Step.

    pSrc2 Source-Image Pointer.

    nSrc2Step Source-Image Line Step.

    pDst Destination-Image Pointer.

    nDstStep Destination-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

    rndMode Result Rounding mode to be used (NPP_RND_ZERO, NPP_RND_NEAR, or NP_RND_-FINANCIAL)

    nScaleFactor Integer Result Scaling.

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.314 NppStatus nppiDiv_Round_16u_C1IRSfs (const Npp16u ∗ *pSrc*, int *nSrcStep*, Npp16u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, NppRoundMode *rndMode*, int *nScaleFactor*)

One 16-bit unsigned short channel in place image division, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

Parameters:

    pSrc Source-Image Pointer.

    nSrcStep Source-Image Line Step.

    pSrcDst In-Place Image Pointer.

    nSrcDstStep In-Place-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

    rndMode Result Rounding mode to be used (NPP_RND_ZERO, NPP_RND_NEAR, or NP_RND_-FINANCIAL)

    nScaleFactor Integer Result Scaling.

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.315 NppStatus nppiDiv_Round_16u_C1RSfs (const Npp16u ∗ *pSrc1*, int *nSrc1Step*, const Npp16u ∗ *pSrc2*, int *nSrc2Step*, Npp16u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, NppRoundMode *rndMode*, int *nScaleFactor*)

One 16-bit unsigned short channel image division, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pSrc2 Source-Image Pointer.

nSrc2Step Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

rndMode Result Rounding mode to be used (NPP_RND_ZERO, NPP_RND_NEAR, or NP_RND_-FINANCIAL)

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.316 NppStatus nppiDiv_Round_16u_C3IRSfs (const Npp16u ∗ *pSrc*, int *nSrcStep*, Npp16u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, NppRoundMode *rndMode*, int *nScaleFactor*)

Three 16-bit unsigned short channel in place image division, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

rndMode Result Rounding mode to be used (NPP_RND_ZERO, NPP_RND_NEAR, or NP_RND_-FINANCIAL)

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.317 NppStatus nppiDiv_Round_16u_C3RSfs (const Npp16u ∗ *pSrc1*, int *nSrc1Step*, const Npp16u ∗ *pSrc2*, int *nSrc2Step*, Npp16u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, NppRoundMode *rndMode*, int *nScaleFactor*)

Three 16-bit unsigned short channel image division, scale by $2^\wedge$(-nScaleFactor), then clamp to saturated value.

Parameters:

>   *pSrc1* Source-Image Pointer.
>
>   *nSrc1Step* Source-Image Line Step.
>
>   *pSrc2* Source-Image Pointer.
>
>   *nSrc2Step* Source-Image Line Step.
>
>   *pDst* Destination-Image Pointer.
>
>   *nDstStep* Destination-Image Line Step.
>
>   *oSizeROI* Region-of-Interest (ROI).
>
>   *rndMode* Result Rounding mode to be used (NPP_RND_ZERO, NPP_RND_NEAR, or NP_RND_-FINANCIAL)
>
>   *nScaleFactor* Integer Result Scaling.

Returns:

>   Image Data Related Error Codes, ROI Related Error Codes

7.7.1.318 NppStatus nppiDiv_Round_16u_C4IRSfs (const Npp16u ∗ *pSrc*, int *nSrcStep*, Npp16u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, NppRoundMode *rndMode*, int *nScaleFactor*)

Four 16-bit unsigned short channel in place image division, scale by $2^\wedge$(-nScaleFactor), then clamp to saturated value.

Parameters:

>   *pSrc* Source-Image Pointer.
>
>   *nSrcStep* Source-Image Line Step.
>
>   *pSrcDst* In-Place Image Pointer.
>
>   *nSrcDstStep* In-Place-Image Line Step.
>
>   *oSizeROI* Region-of-Interest (ROI).
>
>   *rndMode* Result Rounding mode to be used (NPP_RND_ZERO, NPP_RND_NEAR, or NP_RND_-FINANCIAL)
>
>   *nScaleFactor* Integer Result Scaling.

Returns:

>   Image Data Related Error Codes, ROI Related Error Codes

7.7.1.319 NppStatus nppiDiv_Round_16u_C4RSfs (const Npp16u * *pSrc1*, int *nSrc1Step*, const Npp16u * *pSrc2*, int *nSrc2Step*, Npp16u * *pDst*, int *nDstStep*, NppiSize *oSizeROI*, NppRoundMode *rndMode*, int *nScaleFactor*)

Four 16-bit unsigned short channel image division, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

    pSrc1 Source-Image Pointer.

    nSrc1Step Source-Image Line Step.

    pSrc2 Source-Image Pointer.

    nSrc2Step Source-Image Line Step.

    pDst Destination-Image Pointer.

    nDstStep Destination-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

    rndMode Result Rounding mode to be used (NPP_RND_ZERO, NPP_RND_NEAR, or NP_RND_-FINANCIAL)

    nScaleFactor Integer Result Scaling.

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.320 NppStatus nppiDiv_Round_8u_AC4IRSfs (const Npp8u * *pSrc*, int *nSrcStep*, Npp8u * *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, NppRoundMode *rndMode*, int *nScaleFactor*)

Four 8-bit unsigned char channel in place image division with unmodified alpha, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

    pSrc Source-Image Pointer.

    nSrcStep Source-Image Line Step.

    pSrcDst In-Place Image Pointer.

    nSrcDstStep In-Place-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

    rndMode Result Rounding mode to be used (NPP_RND_ZERO, NPP_RND_NEAR, or NP_RND_-FINANCIAL)

    nScaleFactor Integer Result Scaling.

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.321   NppStatus nppiDiv_Round_8u_AC4RSfs (const Npp8u ∗ *pSrc1*, int *nSrc1Step*, const Npp8u ∗ *pSrc2*, int *nSrc2Step*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, NppRoundMode *rndMode*, int *nScaleFactor*)

Four 8-bit unsigned char channel image division with unmodified alpha, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

> *pSrc1* Source-Image Pointer.
>
> *nSrc1Step* Source-Image Line Step.
>
> *pSrc2* Source-Image Pointer.
>
> *nSrc2Step* Source-Image Line Step.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *rndMode* Result Rounding mode to be used (NPP_RND_ZERO, NPP_RND_NEAR, or NP_RND_-FINANCIAL)
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.322   NppStatus nppiDiv_Round_8u_C1IRSfs (const Npp8u ∗ *pSrc*, int *nSrcStep*, Npp8u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, NppRoundMode *rndMode*, int *nScaleFactor*)

One 8-bit unsigned char channel in place image division, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

> *pSrc* Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *pSrcDst* In-Place Image Pointer.
>
> *nSrcDstStep* In-Place-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *rndMode* Result Rounding mode to be used (NPP_RND_ZERO, NPP_RND_NEAR, or NP_RND_-FINANCIAL)
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.323 NppStatus nppiDiv_Round_8u_C1RSfs (const Npp8u * *pSrc1*, int *nSrc1Step*, const Npp8u * *pSrc2*, int *nSrc2Step*, Npp8u * *pDst*, int *nDstStep*, NppiSize *oSizeROI*, NppRoundMode *rndMode*, int *nScaleFactor*)

One 8-bit unsigned char channel image division, scale by $2^\wedge$(-nScaleFactor), then clamp to saturated value.

Parameters:

> *pSrc1* Source-Image Pointer.
>
> *nSrc1Step* Source-Image Line Step.
>
> *pSrc2* Source-Image Pointer.
>
> *nSrc2Step* Source-Image Line Step.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *rndMode* Result Rounding mode to be used (NPP_RND_ZERO, NPP_RND_NEAR, or NP_RND_-FINANCIAL)
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.324 NppStatus nppiDiv_Round_8u_C3IRSfs (const Npp8u * *pSrc*, int *nSrcStep*, Npp8u * *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, NppRoundMode *rndMode*, int *nScaleFactor*)

Three 8-bit unsigned char channel in place image division, scale by $2^\wedge$(-nScaleFactor), then clamp to saturated value.

Parameters:

> *pSrc* Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *pSrcDst* In-Place Image Pointer.
>
> *nSrcDstStep* In-Place-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *rndMode* Result Rounding mode to be used (NPP_RND_ZERO, NPP_RND_NEAR, or NP_RND_-FINANCIAL)
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.325   NppStatus nppiDiv_Round_8u_C3RSfs (const Npp8u ∗ *pSrc1*, int *nSrc1Step*, const Npp8u ∗ *pSrc2*, int *nSrc2Step*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, NppRoundMode *rndMode*, int *nScaleFactor*)

Three 8-bit unsigned char channel image division, scale by $2^\wedge$(-nScaleFactor), then clamp to saturated value.

Parameters:

>   *pSrc1* Source-Image Pointer.
>
>   *nSrc1Step* Source-Image Line Step.
>
>   *pSrc2* Source-Image Pointer.
>
>   *nSrc2Step* Source-Image Line Step.
>
>   *pDst* Destination-Image Pointer.
>
>   *nDstStep* Destination-Image Line Step.
>
>   *oSizeROI* Region-of-Interest (ROI).
>
>   *rndMode* Result Rounding mode to be used (NPP_RND_ZERO, NPP_RND_NEAR, or NP_RND_-FINANCIAL)
>
>   *nScaleFactor* Integer Result Scaling.

Returns:

>   Image Data Related Error Codes, ROI Related Error Codes

7.7.1.326   NppStatus nppiDiv_Round_8u_C4IRSfs (const Npp8u ∗ *pSrc*, int *nSrcStep*, Npp8u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, NppRoundMode *rndMode*, int *nScaleFactor*)

Four 8-bit unsigned char channel in place image division, scale by $2^\wedge$(-nScaleFactor), then clamp to saturated value.

Parameters:

>   *pSrc* Source-Image Pointer.
>
>   *nSrcStep* Source-Image Line Step.
>
>   *pSrcDst* In-Place Image Pointer.
>
>   *nSrcDstStep* In-Place-Image Line Step.
>
>   *oSizeROI* Region-of-Interest (ROI).
>
>   *rndMode* Result Rounding mode to be used (NPP_RND_ZERO, NPP_RND_NEAR, or NP_RND_-FINANCIAL)
>
>   *nScaleFactor* Integer Result Scaling.

Returns:

>   Image Data Related Error Codes, ROI Related Error Codes

7.7.1.327 NppStatus nppiDiv_Round_8u_C4RSfs (const Npp8u ∗ *pSrc1*, int *nSrc1Step*, const Npp8u ∗ *pSrc2*, int *nSrc2Step*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, NppRoundMode *rndMode*, int *nScaleFactor*)

Four 8-bit unsigned char channel image division, scale by 2^(-nScaleFactor), then clamp to saturated value.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pSrc2 Source-Image Pointer.

nSrc2Step Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

rndMode Result Rounding mode to be used (NPP_RND_ZERO, NPP_RND_NEAR, or NP_RND_-FINANCIAL)

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.328 NppStatus nppiDivC_16s_AC4IRSfs (const Npp16s ∗ *pConstants*, Npp16s ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 16-bit signed short channel with unmodified alpha in place image divided by constant, scale, then clamp to saturated value.

Parameters:

pConstants pointer to a list of constant values, one per channel.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.329 NppStatus nppiDivC_16s_AC4RSfs (const Npp16s ∗ *pSrc1*, int *nSrc1Step*, const Npp16s ∗ *pConstants*, Npp16s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 16-bit signed short channel with unmodified alpha image divided by constant, scale, then clamp to saturated value.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pConstants pointer to a list of constant values, one per channel.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.330 NppStatus nppiDivC_16s_C1IRSfs (const Npp16s *nConstant*, Npp16s ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 16-bit signed short channel in place image divided by constant, scale, then clamp to saturated value.

Parameters:

nConstant Constant.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.331 NppStatus nppiDivC_16s_C1RSfs (const Npp16s ∗ *pSrc1*, int *nSrc1Step*, const Npp16s *nConstant*, Npp16s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 16-bit signed short channel image divided by constant, scale, then clamp to saturated value.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

nConstant Constant.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.332   NppStatus nppiDivC_16s_C3IRSfs (const Npp16s ∗ *pConstants*, Npp16s ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Three 16-bit signed short channel in place image divided by constant, scale, then clamp to saturated value.

Parameters:

    pConstants pointer to a list of constant values, one per channel.

    pSrcDst In-Place Image Pointer.

    nSrcDstStep In-Place-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

    nScaleFactor Integer Result Scaling.

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.333   NppStatus nppiDivC_16s_C3RSfs (const Npp16s ∗ *pSrc1*, int *nSrc1Step*, const Npp16s ∗ *pConstants*, Npp16s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Three 16-bit signed short channel image divided by constant, scale, then clamp to saturated value.

Parameters:

    pSrc1 Source-Image Pointer.

    nSrc1Step Source-Image Line Step.

    pConstants pointer to a list of constant values, one per channel.

    pDst Destination-Image Pointer.

    nDstStep Destination-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

    nScaleFactor Integer Result Scaling.

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.334   NppStatus nppiDivC_16s_C4IRSfs (const Npp16s ∗ *pConstants*, Npp16s ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 16-bit signed short channel in place image divided by constant, scale, then clamp to saturated value.

Parameters:

    pConstants pointer to a list of constant values, one per channel.

    pSrcDst In-Place Image Pointer.

    nSrcDstStep In-Place-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

    nScaleFactor Integer Result Scaling.

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.335   NppStatus nppiDivC_16s_C4RSfs (const Npp16s * *pSrc1*, int *nSrc1Step*, const Npp16s * *pConstants*, Npp16s * *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 16-bit signed short channel image divided by constant, scale, then clamp to saturated value.

Parameters:

> *pSrc1* Source-Image Pointer.
>
> *nSrc1Step* Source-Image Line Step.
>
> *pConstants* pointer to a list of constant values, one per channel.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.336   NppStatus nppiDivC_16sc_AC4IRSfs (const Npp16sc * *pConstants*, Npp16sc * *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 16-bit signed short complex number (16-bit real, 16-bit imaginary) channel with unmodified alpha in place image divided by constant, scale, then clamp to saturated value.

Parameters:

> *pConstants* pointer to a list of constant values, one per channel.
>
> *pSrcDst* In-Place Image Pointer.
>
> *nSrcDstStep* In-Place-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.337   NppStatus nppiDivC_16sc_AC4RSfs (const Npp16sc * *pSrc1*, int *nSrc1Step*, const Npp16sc * *pConstants*, Npp16sc * *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 16-bit signed short complex number (16-bit real, 16-bit imaginary) channel with unmodified alpha image divided by constant, scale, then clamp to saturated value.

Parameters:

> *pSrc1* Source-Image Pointer.
>
> *nSrc1Step* Source-Image Line Step.
>
> *pConstants* pointer to a list of constant values, one per channel.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.338 NppStatus nppiDivC_16sc_C1IRSfs (const Npp16sc *nConstant*, Npp16sc ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 16-bit signed short complex number (16-bit real, 16-bit imaginary) channel in place image divided by constant, scale, then clamp to saturated value.

Parameters:

nConstant Constant.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.339 NppStatus nppiDivC_16sc_C1RSfs (const Npp16sc ∗ *pSrc1*, int *nSrc1Step*, const Npp16sc *nConstant*, Npp16sc ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 16-bit signed short complex number (16-bit real, 16-bit imaginary) channel image divided by constant, scale, then clamp to saturated value.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

nConstant Constant.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.340 NppStatus nppiDivC_16sc_C3IRSfs (const Npp16sc ∗ *pConstants*, Npp16sc ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Three 16-bit signed short complex number (16-bit real, 16-bit imaginary) channel in place image divided by constant, scale, then clamp to saturated value.

Parameters:

> *pConstants* pointer to a list of constant values, one per channel.
>
> *pSrcDst* In-Place Image Pointer.
>
> *nSrcDstStep* In-Place-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.341 NppStatus nppiDivC_16sc_C3RSfs (const Npp16sc ∗ *pSrc1*, int *nSrc1Step*, const Npp16sc ∗ *pConstants*, Npp16sc ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Three 16-bit signed short complex number (16-bit real, 16-bit imaginary) channel image divided by constant, scale, then clamp to saturated value.

Parameters:

> *pSrc1* Source-Image Pointer.
>
> *nSrc1Step* Source-Image Line Step.
>
> *pConstants* pointer to a list of constant values, one per channel.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.342 NppStatus nppiDivC_16u_AC4IRSfs (const Npp16u ∗ *pConstants*, Npp16u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 16-bit unsigned short channel with unmodified alpha in place image divided by constant, scale, then clamp to saturated value.

Parameters:

> *pConstants* pointer to a list of constant values, one per channel.
>
> *pSrcDst* In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.343 NppStatus nppiDivC_16u_AC4RSfs (const Npp16u ∗ *pSrc1*, int *nSrc1Step*, const Npp16u ∗ *pConstants*, Npp16u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 16-bit unsigned short channel with unmodified alpha image divided by constant, scale, then clamp to saturated value.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pConstants pointer to a list of constant values, one per channel.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.344 NppStatus nppiDivC_16u_C1IRSfs (const Npp16u *nConstant*, Npp16u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 16-bit unsigned short channel in place image divided by constant, scale, then clamp to saturated value.

Parameters:

nConstant Constant.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.345 NppStatus nppiDivC_16u_C1RSfs (const Npp16u ∗ pSrc1, int nSrc1Step, const Npp16u nConstant, Npp16u ∗ pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

One 16-bit unsigned short channel image divided by constant, scale, then clamp to saturated value.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

nConstant Constant.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.346 NppStatus nppiDivC_16u_C3IRSfs (const Npp16u ∗ pConstants, Npp16u ∗ pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

Three 16-bit unsigned short channel in place image divided by constant, scale, then clamp to saturated value.

Parameters:

pConstants pointer to a list of constant values, one per channel.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.347 NppStatus nppiDivC_16u_C3RSfs (const Npp16u ∗ pSrc1, int nSrc1Step, const Npp16u ∗ pConstants, Npp16u ∗ pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

Three 16-bit unsigned short channel image divided by constant, scale, then clamp to saturated value.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pConstants pointer to a list of constant values, one per channel.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.348 NppStatus nppiDivC_16u_C4IRSfs (const Npp16u ∗ *pConstants*, Npp16u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 16-bit unsigned short channel in place image divided by constant, scale, then clamp to saturated value.

Parameters:

pConstants pointer to a list of constant values, one per channel.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.349 NppStatus nppiDivC_16u_C4RSfs (const Npp16u ∗ *pSrc1*, int *nSrc1Step*, const Npp16u ∗ *pConstants*, Npp16u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 16-bit unsigned short channel image divided by constant, scale, then clamp to saturated value.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pConstants pointer to a list of constant values, one per channel.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.350 NppStatus nppiDivC_32f_AC4IR (const Npp32f ∗ *pConstants*, Npp32f ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 32-bit floating point channel with unmodified alpha in place image divided by constant.

Parameters:

> *pConstants* pointer to a list of constant values, one per channel.
>
> *pSrcDst* In-Place Image Pointer.
>
> *nSrcDstStep* In-Place-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.351 NppStatus nppiDivC_32f_AC4R (const Npp32f ∗ *pSrc1*, int *nSrc1Step*, const Npp32f ∗ *pConstants*, Npp32f ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Four 32-bit floating point channel with unmodified alpha image divided by constant.

Parameters:

> *pSrc1* Source-Image Pointer.
>
> *nSrc1Step* Source-Image Line Step.
>
> *pConstants* pointer to a list of constant values, one per channel.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.352 NppStatus nppiDivC_32f_C1IR (const Npp32f *nConstant*, Npp32f ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

One 32-bit floating point channel in place image divided by constant.

Parameters:

> *nConstant* Constant.
>
> *pSrcDst* In-Place Image Pointer.
>
> *nSrcDstStep* In-Place-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.353   NppStatus nppiDivC_32f_C1R (const Npp32f ∗ *pSrc1*, int *nSrc1Step*, const Npp32f *nConstant*, Npp32f ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

One 32-bit floating point channel image divided by constant.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

nConstant Constant.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.354   NppStatus nppiDivC_32f_C3IR (const Npp32f ∗ *pConstants*, Npp32f ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Three 32-bit floating point channel in place image divided by constant.

Parameters:

pConstants pointer to a list of constant values, one per channel.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.355   NppStatus nppiDivC_32f_C3R (const Npp32f ∗ *pSrc1*, int *nSrc1Step*, const Npp32f ∗ *pConstants*, Npp32f ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Three 32-bit floating point channel image divided by constant.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pConstants pointer to a list of constant values, one per channel.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.356 NppStatus nppiDivC_32f_C4IR (const Npp32f ∗ *pConstants*, Npp32f ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 32-bit floating point channel in place image divided by constant.

Parameters:

   pConstants pointer to a list of constant values, one per channel.

   pSrcDst In-Place Image Pointer.

   nSrcDstStep In-Place-Image Line Step.

   oSizeROI Region-of-Interest (ROI).

Returns:

   Image Data Related Error Codes, ROI Related Error Codes

7.7.1.357 NppStatus nppiDivC_32f_C4R (const Npp32f ∗ *pSrc1*, int *nSrc1Step*, const Npp32f ∗ *pConstants*, Npp32f ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Four 32-bit floating point channel image divided by constant.

Parameters:

   pSrc1 Source-Image Pointer.

   nSrc1Step Source-Image Line Step.

   pConstants pointer to a list of constant values, one per channel.

   pDst Destination-Image Pointer.

   nDstStep Destination-Image Line Step.

   oSizeROI Region-of-Interest (ROI).

Returns:

   Image Data Related Error Codes, ROI Related Error Codes

7.7.1.358 NppStatus nppiDivC_32fc_AC4IR (const Npp32fc ∗ *pConstants*, Npp32fc ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 32-bit complex floating point (32-bit floating point real, 32-bit floating point imaginary) channel with unmodified alpha in place image divided by constant.

Parameters:

   pConstants pointer to a list of constant values, one per channel.

   pSrcDst In-Place Image Pointer.

   nSrcDstStep In-Place-Image Line Step.

   oSizeROI Region-of-Interest (ROI).

Returns:

   Image Data Related Error Codes, ROI Related Error Codes

7.7.1.359 **NppStatus nppiDivC_32fc_AC4R (const Npp32fc** $*$ *pSrc1*, **int** *nSrc1Step*, **const Npp32fc** $*$ *pConstants*, **Npp32fc** $*$ *pDst*, **int** *nDstStep*, **NppiSize** *oSizeROI***)**

Four 32-bit complex floating point (32-bit floating point real, 32-bit floating point imaginary) channel with unmodified alpha image divided by constant.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pConstants pointer to a list of constant values, one per channel.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.360 **NppStatus nppiDivC_32fc_C1IR (const Npp32fc** *nConstant*, **Npp32fc** $*$ *pSrcDst*, **int** *nSrcDstStep*, **NppiSize** *oSizeROI***)**

One 32-bit complex floating point (32-bit floating point real, 32-bit floating point imaginary) channel in place image divided by constant.

Parameters:

nConstant Constant.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.361 **NppStatus nppiDivC_32fc_C1R (const Npp32fc** $*$ *pSrc1*, **int** *nSrc1Step*, **const Npp32fc** *nConstant*, **Npp32fc** $*$ *pDst*, **int** *nDstStep*, **NppiSize** *oSizeROI***)**

One 32-bit complex floating point (32-bit floating point real, 32-bit floating point imaginary) channel image divided by constant.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

nConstant Constant.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.362 NppStatus nppiDivC_32fc_C3IR (const Npp32fc ∗ *pConstants*, Npp32fc ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Three 32-bit complex floating point (32-bit floating point real, 32-bit floating point imaginary) channel in place image divided by constant.

Parameters:

> *pConstants* pointer to a list of constant values, one per channel.
>
> *pSrcDst* In-Place Image Pointer.
>
> *nSrcDstStep* In-Place-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.363 NppStatus nppiDivC_32fc_C3R (const Npp32fc ∗ *pSrc1*, int *nSrc1Step*, const Npp32fc ∗ *pConstants*, Npp32fc ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Three 32-bit complex floating point (32-bit floating point real, 32-bit floating point imaginary) channel image divided by constant.

Parameters:

> *pSrc1* Source-Image Pointer.
>
> *nSrc1Step* Source-Image Line Step.
>
> *pConstants* pointer to a list of constant values, one per channel.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.364 NppStatus nppiDivC_32fc_C4IR (const Npp32fc ∗ *pConstants*, Npp32fc ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 32-bit complex floating point (32-bit floating point real, 32-bit floating point imaginary) channel in place image divided by constant.

Parameters:

> *pConstants* pointer to a list of constant values, one per channel.
>
> *pSrcDst* In-Place Image Pointer.
>
> *nSrcDstStep* In-Place-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.365   NppStatus nppiDivC_32fc_C4R (const Npp32fc ∗ *pSrc1*, int *nSrc1Step*, const Npp32fc ∗ *pConstants*, Npp32fc ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Four 32-bit complex floating point (32-bit floating point real, 32-bit floating point imaginary) channel image divided by constant.

Parameters:

> *pSrc1* Source-Image Pointer.
>
> *nSrc1Step* Source-Image Line Step.
>
> *pConstants* pointer to a list of constant values, one per channel.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.366   NppStatus nppiDivC_32s_C1IRSfs (const Npp32s *nConstant*, Npp32s ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 32-bit signed integer channel in place image divided by constant, scale, then clamp to saturated value.

Parameters:

> *nConstant* Constant.
>
> *pSrcDst* In-Place Image Pointer.
>
> *nSrcDstStep* In-Place-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.367   NppStatus nppiDivC_32s_C1RSfs (const Npp32s ∗ *pSrc1*, int *nSrc1Step*, const Npp32s *nConstant*, Npp32s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 32-bit signed integer channel image divided by constant, scale, then clamp to saturated value.

Parameters:

> *pSrc1* Source-Image Pointer.
>
> *nSrc1Step* Source-Image Line Step.
>
> *nConstant* Constant.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.368   NppStatus nppiDivC_32s_C3IRSfs (const Npp32s ∗ *pConstants*, Npp32s ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Three 32-bit signed integer channel in place image divided by constant, scale, then clamp to saturated value.

Parameters:

> *pConstants* pointer to a list of constant values, one per channel.
>
> *pSrcDst* In-Place Image Pointer.
>
> *nSrcDstStep* In-Place-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.369   NppStatus nppiDivC_32s_C3RSfs (const Npp32s ∗ *pSrc1*, int *nSrc1Step*, const Npp32s ∗ *pConstants*, Npp32s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Three 32-bit signed integer channel image divided by constant, scale, then clamp to saturated value.

Parameters:

> *pSrc1* Source-Image Pointer.
>
> *nSrc1Step* Source-Image Line Step.
>
> *pConstants* pointer to a list of constant values, one per channel.
>
> *pDst* Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.370 NppStatus nppiDivC_32sc_AC4IRSfs (const Npp32sc ∗ *pConstants*, Npp32sc ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 32-bit signed complex integer (32-bit real, 32-bit imaginary) channel with unmodified alpha in place image divided by constant, scale, then clamp to saturated value.

Parameters:

pConstants pointer to a list of constant values, one per channel.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.371 NppStatus nppiDivC_32sc_AC4RSfs (const Npp32sc ∗ *pSrc1*, int *nSrc1Step*, const Npp32sc ∗ *pConstants*, Npp32sc ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 32-bit signed complex integer (32-bit real, 32-bit imaginary) channel with unmodified alpha image divided by constant, scale, then clamp to saturated value.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pConstants pointer to a list of constant values, one per channel.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.372 NppStatus nppiDivC_32sc_C1IRSfs (const Npp32sc *nConstant*, Npp32sc * *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 32-bit signed complex integer (32-bit real, 32-bit imaginary) channel in place image divided by constant, scale, then clamp to saturated value.

Parameters:

nConstant Constant.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.373 NppStatus nppiDivC_32sc_C1RSfs (const Npp32sc * *pSrc1*, int *nSrc1Step*, const Npp32sc *nConstant*, Npp32sc * *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 32-bit signed complex integer (32-bit real, 32-bit imaginary) channel image divided by constant, scale, then clamp to saturated value.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

nConstant Constant.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.374 NppStatus nppiDivC_32sc_C3IRSfs (const Npp32sc * *pConstants*, Npp32sc * *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Three 32-bit signed complex integer (32-bit real, 32-bit imaginary) channel in place image divided by constant, scale, then clamp to saturated value.

Parameters:

pConstants pointer to a list of constant values, one per channel.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.375 NppStatus nppiDivC_32sc_C3RSfs (const Npp32sc ∗ *pSrc1*, int *nSrc1Step*, const Npp32sc ∗ *pConstants*, Npp32sc ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Three 32-bit signed complex integer (32-bit real, 32-bit imaginary) channel image divided by constant, scale, then clamp to saturated value.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pConstants pointer to a list of constant values, one per channel.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.376 NppStatus nppiDivC_8u_AC4IRSfs (const Npp8u ∗ *pConstants*, Npp8u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 8-bit unsigned char channel with unmodified alpha in place image divided by constant, scale, then clamp to saturated value.

Parameters:

pConstants pointer to a list of constant values, one per channel.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.377 NppStatus nppiDivC_8u_AC4RSfs (const Npp8u ∗ *pSrc1*, int *nSrc1Step*, const Npp8u ∗ *pConstants*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 8-bit unsigned char channel with unmodified alpha image divided by constant, scale, then clamp to saturated value.

Parameters:

> *pSrc1* Source-Image Pointer.
>
> *nSrc1Step* Source-Image Line Step.
>
> *pConstants* pointer to a list of constant values, one per channel.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.378 NppStatus nppiDivC_8u_C1IRSfs (const Npp8u *nConstant*, Npp8u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 8-bit unsigned char channel in place image divided by constant, scale, then clamp to saturated value.

Parameters:

> *nConstant* Constant.
>
> *pSrcDst* In-Place Image Pointer.
>
> *nSrcDstStep* In-Place-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.379 NppStatus nppiDivC_8u_C1RSfs (const Npp8u ∗ *pSrc1*, int *nSrc1Step*, const Npp8u *nConstant*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 8-bit unsigned char channel image divided by constant, scale, then clamp to saturated value.

Parameters:

> *pSrc1* Source-Image Pointer.
>
> *nSrc1Step* Source-Image Line Step.
>
> *nConstant* Constant.
>
> *pDst* Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.380 NppStatus nppiDivC_8u_C3IRSfs (const Npp8u ∗ *pConstants*, Npp8u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Three 8-bit unsigned char channel 8-bit unsigned char in place image divided by constant, scale, then clamp to saturated value.

Parameters:

pConstants pointer to a list of constant values, one per channel.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.381 NppStatus nppiDivC_8u_C3RSfs (const Npp8u ∗ *pSrc1*, int *nSrc1Step*, const Npp8u ∗ *pConstants*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Three 8-bit unsigned char channel image divided by constant, scale, then clamp to saturated value.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pConstants pointer to a list of constant values, one per channel.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.382   NppStatus nppiDivC_8u_C4IRSfs (const Npp8u ∗ *pConstants*, Npp8u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 8-bit unsigned char channel in place image divided by constant, scale, then clamp to saturated value.

Parameters:

> *pConstants* pointer to a list of constant values, one per channel.
>
> *pSrcDst* In-Place Image Pointer.
>
> *nSrcDstStep* In-Place-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.383   NppStatus nppiDivC_8u_C4RSfs (const Npp8u ∗ *pSrc1*, int *nSrc1Step*, const Npp8u ∗ *pConstants*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 8-bit unsigned char channel image divided by constant, scale, then clamp to saturated value.

Parameters:

> *pSrc1* Source-Image Pointer.
>
> *nSrc1Step* Source-Image Line Step.
>
> *pConstants* pointer to a list of constant values, one per channel.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.384   NppStatus nppiExp_16s_C1IRSfs (Npp16s ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 16-bit signed short channel in place image exponential, scale by $2^\wedge$(-nScaleFactor), then clamp to saturated value.

Parameters:

> *pSrcDst* In-Place Image Pointer.
>
> *nSrcDstStep* In-Place-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.385   NppStatus nppiExp_16s_C1RSfs (const Npp16s ∗ *pSrc*, int *nSrcStep*, Npp16s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 16-bit signed short channel image exponential, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

> *pSrc* Source-Image Pointer.
> *nSrcStep* Source-Image Line Step.
> *pDst* Destination-Image Pointer.
> *nDstStep* Destination-Image Line Step.
> *oSizeROI* Region-of-Interest (ROI).
> *nScaleFactor* Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.386   NppStatus nppiExp_16s_C3IRSfs (Npp16s ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Three 16-bit signed short channel in place image exponential, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

> *pSrcDst* In-Place Image Pointer.
> *nSrcDstStep* In-Place-Image Line Step.
> *oSizeROI* Region-of-Interest (ROI).
> *nScaleFactor* Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.387   NppStatus nppiExp_16s_C3RSfs (const Npp16s ∗ *pSrc*, int *nSrcStep*, Npp16s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Three 16-bit signed short channel image exponential, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

> *pSrc* Source-Image Pointer.
> *nSrcStep* Source-Image Line Step.
> *pDst* Destination-Image Pointer.
> *nDstStep* Destination-Image Line Step.
> *oSizeROI* Region-of-Interest (ROI).
> *nScaleFactor* Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.388 NppStatus nppiExp_16u_C1IRSfs (Npp16u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 16-bit unsigned short channel in place image exponential, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

Parameters:

> *pSrcDst* In-Place Image Pointer.
>
> *nSrcDstStep* In-Place-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.389 NppStatus nppiExp_16u_C1RSfs (const Npp16u ∗ *pSrc*, int *nSrcStep*, Npp16u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 16-bit unsigned short channel image exponential, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

Parameters:

> *pSrc* Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.390 NppStatus nppiExp_16u_C3IRSfs (Npp16u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Three 16-bit unsigned short channel in place image exponential, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

Parameters:

> *pSrcDst* In-Place Image Pointer.
>
> *nSrcDstStep* In-Place-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.391 NppStatus nppiExp_16u_C3RSfs (const Npp16u ∗ *pSrc*, int *nSrcStep*, Npp16u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Three 16-bit unsigned short channel image exponential, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.392 NppStatus nppiExp_32f_C1IR (Npp32f ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

One 32-bit floating point channel in place image exponential.

Parameters:

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.393 NppStatus nppiExp_32f_C1R (const Npp32f ∗ *pSrc*, int *nSrcStep*, Npp32f ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

One 32-bit floating point channel image exponential.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.394   NppStatus nppiExp_32f_C3IR (Npp32f ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Three 32-bit floating point channel in place image exponential.

Parameters:

>   *pSrcDst* In-Place Image Pointer.
>
>   *nSrcDstStep* In-Place-Image Line Step.
>
>   *oSizeROI* Region-of-Interest (ROI).

Returns:

>   Image Data Related Error Codes, ROI Related Error Codes

7.7.1.395   NppStatus nppiExp_32f_C3R (const Npp32f ∗ *pSrc*, int *nSrcStep*, Npp32f ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Three 32-bit floating point channel image exponential.

Parameters:

>   *pSrc* Source-Image Pointer.
>
>   *nSrcStep* Source-Image Line Step.
>
>   *pDst* Destination-Image Pointer.
>
>   *nDstStep* Destination-Image Line Step.
>
>   *oSizeROI* Region-of-Interest (ROI).

Returns:

>   Image Data Related Error Codes, ROI Related Error Codes

7.7.1.396   NppStatus nppiExp_8u_C1IRSfs (Npp8u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 8-bit unsigned char channel in place image exponential, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

Parameters:

>   *pSrcDst* In-Place Image Pointer.
>
>   *nSrcDstStep* In-Place-Image Line Step.
>
>   *oSizeROI* Region-of-Interest (ROI).
>
>   *nScaleFactor* Integer Result Scaling.

Returns:

>   Image Data Related Error Codes, ROI Related Error Codes

7.7.1.397 NppStatus nppiExp_8u_C1RSfs (const Npp8u $*$ *pSrc*, int *nSrcStep*, Npp8u $*$ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 8-bit unsigned char channel image exponential, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

Parameters:

>*pSrc* Source-Image Pointer.
>*nSrcStep* Source-Image Line Step.
>*pDst* Destination-Image Pointer.
>*nDstStep* Destination-Image Line Step.
>*oSizeROI* Region-of-Interest (ROI).
>*nScaleFactor* Integer Result Scaling.

Returns:

>Image Data Related Error Codes, ROI Related Error Codes

7.7.1.398 NppStatus nppiExp_8u_C3IRSfs (Npp8u $*$ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Three 8-bit unsigned char channel in place image exponential, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

Parameters:

>*pSrcDst* In-Place Image Pointer.
>*nSrcDstStep* In-Place-Image Line Step.
>*oSizeROI* Region-of-Interest (ROI).
>*nScaleFactor* Integer Result Scaling.

Returns:

>Image Data Related Error Codes, ROI Related Error Codes

7.7.1.399 NppStatus nppiExp_8u_C3RSfs (const Npp8u $*$ *pSrc*, int *nSrcStep*, Npp8u $*$ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Three 8-bit unsigned char channel image exponential, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

Parameters:

>*pSrc* Source-Image Pointer.
>*nSrcStep* Source-Image Line Step.
>*pDst* Destination-Image Pointer.
>*nDstStep* Destination-Image Line Step.
>*oSizeROI* Region-of-Interest (ROI).
>*nScaleFactor* Integer Result Scaling.

Returns:

>Image Data Related Error Codes, ROI Related Error Codes

7.7.1.400 NppStatus nppiLn_16s_C1IRSfs (Npp16s ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 16-bit signed short channel in place image natural logarithm, scale by $2^\wedge$(-nScaleFactor), then clamp to saturated value.

Parameters:

> *pSrcDst* In-Place Image Pointer.
>
> *nSrcDstStep* In-Place-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.401 NppStatus nppiLn_16s_C1RSfs (const Npp16s ∗ *pSrc*, int *nSrcStep*, Npp16s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 16-bit signed short channel image natural logarithm, scale by $2^\wedge$(-nScaleFactor), then clamp to saturated value.

Parameters:

> *pSrc* Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.402 NppStatus nppiLn_16s_C3IRSfs (Npp16s ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Three 16-bit signed short channel in place image natural logarithm, scale by $2^\wedge$(-nScaleFactor), then clamp to saturated value.

Parameters:

> *pSrcDst* In-Place Image Pointer.
>
> *nSrcDstStep* In-Place-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.403 NppStatus nppiLn_16s_C3RSfs (const Npp16s ∗ *pSrc*, int *nSrcStep*, Npp16s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Three 16-bit signed short channel image natural logarithm, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

 pSrc Source-Image Pointer.
 nSrcStep Source-Image Line Step.
 pDst Destination-Image Pointer.
 nDstStep Destination-Image Line Step.
 oSizeROI Region-of-Interest (ROI).
 nScaleFactor Integer Result Scaling.

Returns:

 Image Data Related Error Codes, ROI Related Error Codes

7.7.1.404 NppStatus nppiLn_16u_C1IRSfs (Npp16u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 16-bit unsigned short channel in place image natural logarithm, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

 pSrcDst In-Place Image Pointer.
 nSrcDstStep In-Place-Image Line Step.
 oSizeROI Region-of-Interest (ROI).
 nScaleFactor Integer Result Scaling.

Returns:

 Image Data Related Error Codes, ROI Related Error Codes

7.7.1.405 NppStatus nppiLn_16u_C1RSfs (const Npp16u ∗ *pSrc*, int *nSrcStep*, Npp16u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 16-bit unsigned short channel image natural logarithm, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

 pSrc Source-Image Pointer.
 nSrcStep Source-Image Line Step.
 pDst Destination-Image Pointer.
 nDstStep Destination-Image Line Step.
 oSizeROI Region-of-Interest (ROI).
 nScaleFactor Integer Result Scaling.

Returns:

 Image Data Related Error Codes, ROI Related Error Codes

7.7.1.406 NppStatus nppiLn_16u_C3IRSfs (Npp16u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Three 16-bit unsigned short channel in place image natural logarithm, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

    pSrcDst In-Place Image Pointer.

    nSrcDstStep In-Place-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

    nScaleFactor Integer Result Scaling.

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.407 NppStatus nppiLn_16u_C3RSfs (const Npp16u ∗ *pSrc*, int *nSrcStep*, Npp16u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Three 16-bit unsigned short channel image natural logarithm, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

    pSrc Source-Image Pointer.

    nSrcStep Source-Image Line Step.

    pDst Destination-Image Pointer.

    nDstStep Destination-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

    nScaleFactor Integer Result Scaling.

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.408 NppStatus nppiLn_32f_C1IR (Npp32f ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

One 32-bit floating point channel in place image natural logarithm.

Parameters:

    pSrcDst In-Place Image Pointer.

    nSrcDstStep In-Place-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.409 NppStatus nppiLn_32f_C1R (const Npp32f ∗ *pSrc*, int *nSrcStep*, Npp32f ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

One 32-bit floating point channel image natural logarithm.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.410 NppStatus nppiLn_32f_C3IR (Npp32f ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Three 32-bit floating point channel in place image natural logarithm.

Parameters:

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.411 NppStatus nppiLn_32f_C3R (const Npp32f ∗ *pSrc*, int *nSrcStep*, Npp32f ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Three 32-bit floating point channel image natural logarithm.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.412 NppStatus nppiLn_8u_C1IRSfs (Npp8u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 8-bit unsigned char channel in place image natural logarithm, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

> *pSrcDst* In-Place Image Pointer.
>
> *nSrcDstStep* In-Place-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.413 NppStatus nppiLn_8u_C1RSfs (const Npp8u ∗ *pSrc*, int *nSrcStep*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 8-bit unsigned char channel image natural logarithm, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

> *pSrc* Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.414 NppStatus nppiLn_8u_C3IRSfs (Npp8u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Three 8-bit unsigned char channel in place image natural logarithm, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

> *pSrcDst* In-Place Image Pointer.
>
> *nSrcDstStep* In-Place-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.415 NppStatus nppiLn_8u_C3RSfs (const Npp8u ∗ *pSrc*, int *nSrcStep*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Three 8-bit unsigned char channel image natural logarithm, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.416 NppStatus nppiLShiftC_16u_AC4IR (const Npp32u ∗ *pConstants*, Npp16u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 16-bit unsigned short channel in place image left shift by constant with unmodified alpha.

Parameters:

pConstants pointer to a list of constant values, one per channel.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.417 NppStatus nppiLShiftC_16u_AC4R (const Npp16u ∗ *pSrc1*, int *nSrc1Step*, const Npp32u ∗ *pConstants*, Npp16u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Four 16-bit unsigned short channel image left shift by constant with unmodified alpha.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pConstants pointer to a list of constant values, one per channel.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.418   NppStatus nppiLShiftC_16u_C1IR (const Npp32u *nConstant*, Npp16u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

One 16-bit unsigned short channel in place image left shift by constant.

Parameters:

    nConstant Constant.

    pSrcDst In-Place Image Pointer.

    nSrcDstStep In-Place-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.419   NppStatus nppiLShiftC_16u_C1R (const Npp16u ∗ *pSrc1*, int *nSrc1Step*, const Npp32u *nConstant*, Npp16u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

One 16-bit unsigned short channel image left shift by constant.

Parameters:

    pSrc1 Source-Image Pointer.

    nSrc1Step Source-Image Line Step.

    nConstant Constant

    pDst Destination-Image Pointer.

    nDstStep Destination-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.420   NppStatus nppiLShiftC_16u_C3IR (const Npp32u ∗ *pConstants*, Npp16u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Three 16-bit unsigned short channel in place image left shift by constant.

Parameters:

    pConstants pointer to a list of constant values, one per channel.

    pSrcDst In-Place Image Pointer.

    nSrcDstStep In-Place-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.421 NppStatus nppiLShiftC_16u_C3R (const Npp16u ∗ *pSrc1*, int *nSrc1Step*, const Npp32u ∗ *pConstants*, Npp16u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Three 16-bit unsigned short channel image left shift by constant.

Parameters:

> *pSrc1* Source-Image Pointer.
>
> *nSrc1Step* Source-Image Line Step.
>
> *pConstants* pointer to a list of constant values, one per channel.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.422 NppStatus nppiLShiftC_16u_C4IR (const Npp32u ∗ *pConstants*, Npp16u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 16-bit unsigned short channel in place image left shift by constant.

Parameters:

> *pConstants* pointer to a list of constant values, one per channel.
>
> *pSrcDst* In-Place Image Pointer.
>
> *nSrcDstStep* In-Place-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.423 NppStatus nppiLShiftC_16u_C4R (const Npp16u ∗ *pSrc1*, int *nSrc1Step*, const Npp32u ∗ *pConstants*, Npp16u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Four 16-bit unsigned short channel image left shift by constant.

Parameters:

> *pSrc1* Source-Image Pointer.
>
> *nSrc1Step* Source-Image Line Step.
>
> *pConstants* pointer to a list of constant values, one per channel.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.424 NppStatus nppiLShiftC_32s_AC4IR (const Npp32u ∗ *pConstants*, Npp32s ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 32-bit signed integer channel in place image left shift by constant with unmodified alpha.

Parameters:

    pConstants pointer to a list of constant values, one per channel.

    pSrcDst In-Place Image Pointer.

    nSrcDstStep In-Place-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.425 NppStatus nppiLShiftC_32s_AC4R (const Npp32s ∗ *pSrc1*, int *nSrc1Step*, const Npp32u ∗ *pConstants*, Npp32s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Four 32-bit signed integer channel image left shift by constant with unmodified alpha.

Parameters:

    pSrc1 Source-Image Pointer.

    nSrc1Step Source-Image Line Step.

    pConstants pointer to a list of constant values, one per channel.

    pDst Destination-Image Pointer.

    nDstStep Destination-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.426 NppStatus nppiLShiftC_32s_C1IR (const Npp32u *nConstant*, Npp32s ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

One 32-bit signed integer channel in place image left shift by constant.

Parameters:

    nConstant Constant.

    pSrcDst In-Place Image Pointer.

    nSrcDstStep In-Place-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.427 NppStatus nppiLShiftC_32s_C1R (const Npp32s ∗ *pSrc1*, **int** *nSrc1Step*, **const Npp32u** *nConstant*, **Npp32s** ∗ *pDst*, **int** *nDstStep*, **NppiSize** *oSizeROI***)**

One 32-bit signed integer channel image left shift by constant.

Parameters:

> *pSrc1* Source-Image Pointer.
> *nSrc1Step* Source-Image Line Step.
> *nConstant* Constant.
> *pDst* Destination-Image Pointer.
> *nDstStep* Destination-Image Line Step.
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.428 NppStatus nppiLShiftC_32s_C3IR (const Npp32u ∗ *pConstants*, **Npp32s** ∗ *pSrcDst*, **int** *nSrcDstStep*, **NppiSize** *oSizeROI***)**

Three 32-bit signed integer channel in place image left shift by constant.

Parameters:

> *pConstants* pointer to a list of constant values, one per channel.
> *pSrcDst* In-Place Image Pointer.
> *nSrcDstStep* In-Place-Image Line Step.
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.429 NppStatus nppiLShiftC_32s_C3R (const Npp32s ∗ *pSrc1*, **int** *nSrc1Step*, **const Npp32u** ∗ *pConstants*, **Npp32s** ∗ *pDst*, **int** *nDstStep*, **NppiSize** *oSizeROI***)**

Three 32-bit signed integer channel image left shift by constant.

Parameters:

> *pSrc1* Source-Image Pointer.
> *nSrc1Step* Source-Image Line Step.
> *pConstants* pointer to a list of constant values, one per channel.
> *pDst* Destination-Image Pointer.
> *nDstStep* Destination-Image Line Step.
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.430 NppStatus nppiLShiftC_32s_C4IR (const Npp32u ∗ *pConstants*, Npp32s ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 32-bit signed integer channel in place image left shift by constant.

Parameters:

> *pConstants* pointer to a list of constant values, one per channel.
>
> *pSrcDst* In-Place Image Pointer.
>
> *nSrcDstStep* In-Place-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.431 NppStatus nppiLShiftC_32s_C4R (const Npp32s ∗ *pSrc1*, int *nSrc1Step*, const Npp32u ∗ *pConstants*, Npp32s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Four 32-bit signed integer channel image left shift by constant.

Parameters:

> *pSrc1* Source-Image Pointer.
>
> *nSrc1Step* Source-Image Line Step.
>
> *pConstants* pointer to a list of constant values, one per channel.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.432 NppStatus nppiLShiftC_8u_AC4IR (const Npp32u ∗ *pConstants*, Npp8u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 8-bit unsigned char channel in place image left shift by constant with unmodified alpha.

Parameters:

> *pConstants* pointer to a list of constant values, one per channel.
>
> *pSrcDst* In-Place Image Pointer.
>
> *nSrcDstStep* In-Place-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.433 NppStatus nppiLShiftC_8u_AC4R (const Npp8u ∗ *pSrc1*, int *nSrc1Step*, const Npp32u ∗ *pConstants*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Four 8-bit unsigned char channel image left shift by constant with unmodified alpha.

Parameters:

　pSrc1 Source-Image Pointer.

　nSrc1Step Source-Image Line Step.

　pConstants pointer to a list of constant values, one per channel.

　pDst Destination-Image Pointer.

　nDstStep Destination-Image Line Step.

　oSizeROI Region-of-Interest (ROI).

Returns:

　Image Data Related Error Codes, ROI Related Error Codes

7.7.1.434 NppStatus nppiLShiftC_8u_C1IR (const Npp32u *nConstant*, Npp8u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

One 8-bit unsigned char channel in place image left shift by constant.

Parameters:

　nConstant Constant.

　pSrcDst In-Place Image Pointer.

　nSrcDstStep In-Place-Image Line Step.

　oSizeROI Region-of-Interest (ROI).

Returns:

　Image Data Related Error Codes, ROI Related Error Codes

7.7.1.435 NppStatus nppiLShiftC_8u_C1R (const Npp8u ∗ *pSrc1*, int *nSrc1Step*, const Npp32u *nConstant*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

One 8-bit unsigned char channel image left shift by constant.

Parameters:

　pSrc1 Source-Image Pointer.

　nSrc1Step Source-Image Line Step.

　nConstant Constant.

　pDst Destination-Image Pointer.

　nDstStep Destination-Image Line Step.

　oSizeROI Region-of-Interest (ROI).

Returns:

　Image Data Related Error Codes, ROI Related Error Codes

7.7.1.436   NppStatus nppiLShiftC_8u_C3IR (const Npp32u ∗ *pConstants*, Npp8u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Three 8-bit unsigned char channel in place image left shift by constant.

Parameters:

> *pConstants*   pointer to a list of constant values, one per channel.
>
> *pSrcDst*   In-Place Image Pointer.
>
> *nSrcDstStep*   In-Place-Image Line Step.
>
> *oSizeROI*   Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.437   NppStatus nppiLShiftC_8u_C3R (const Npp8u ∗ *pSrc1*, int *nSrc1Step*, const Npp32u ∗ *pConstants*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Three 8-bit unsigned char channel image left shift by constant.

Parameters:

> *pSrc1*   Source-Image Pointer.
>
> *nSrc1Step*   Source-Image Line Step.
>
> *pConstants*   pointer to a list of constant values, one per channel.
>
> *pDst*   Destination-Image Pointer.
>
> *nDstStep*   Destination-Image Line Step.
>
> *oSizeROI*   Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.438   NppStatus nppiLShiftC_8u_C4IR (const Npp32u ∗ *pConstants*, Npp8u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 8-bit unsigned char channel in place image left shift by constant.

Parameters:

> *pConstants*   pointer to a list of constant values, one per channel.
>
> *pSrcDst*   In-Place Image Pointer.
>
> *nSrcDstStep*   In-Place-Image Line Step.
>
> *oSizeROI*   Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.439 NppStatus nppiLShiftC_8u_C4R (const Npp8u ∗ pSrc1, int nSrc1Step, const Npp32u ∗ pConstants, Npp8u ∗ pDst, int nDstStep, NppiSize oSizeROI)

Four 8-bit unsigned char channel image left shift by constant.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pConstants pointer to a list of constant values, one per channel.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.440 NppStatus nppiMul_16s_AC4IRSfs (const Npp16s ∗ pSrc, int nSrcStep, Npp16s ∗ pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

Four 16-bit signed short channel with unmodified alpha in place image multiplication, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.441 NppStatus nppiMul_16s_AC4RSfs (const Npp16s ∗ pSrc1, int nSrc1Step, const Npp16s ∗ pSrc2, int nSrc2Step, Npp16s ∗ pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

Four 16-bit signed short channel with unmodified alpha image multiplication, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pSrc2 Source-Image Pointer.

nSrc2Step Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.442 NppStatus nppiMul_16s_C1IRSfs (const Npp16s ∗ *pSrc*, int *nSrcStep*, Npp16s ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 16-bit signed short channel in place image multiplication, scale by $2^\wedge$(-nScaleFactor), then clamp to saturated value.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.443 NppStatus nppiMul_16s_C1RSfs (const Npp16s ∗ *pSrc1*, int *nSrc1Step*, const Npp16s ∗ *pSrc2*, int *nSrc2Step*, Npp16s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 16-bit signed short channel image multiplication, scale by $2^\wedge$(-nScaleFactor), then clamp to saturated value.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pSrc2 Source-Image Pointer.

nSrc2Step Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.444 NppStatus nppiMul_16s_C3IRSfs (const Npp16s ∗ *pSrc*, int *nSrcStep*, Npp16s ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 16-bit signed short channel in place image multiplication, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.445 NppStatus nppiMul_16s_C3RSfs (const Npp16s ∗ *pSrc1*, int *nSrc1Step*, const Npp16s ∗ *pSrc2*, int *nSrc2Step*, Npp16s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Three 16-bit signed short channel image multiplication, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pSrc2 Source-Image Pointer.

nSrc2Step Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.446 NppStatus nppiMul_16s_C4IRSfs (const Npp16s ∗ *pSrc*, int *nSrcStep*, Npp16s ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 16-bit signed short channel in place image multiplication, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.447 NppStatus nppiMul_16s_C4RSfs (const Npp16s ∗ *pSrc1*, int *nSrc1Step*, const Npp16s ∗ *pSrc2*, int *nSrc2Step*, Npp16s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 16-bit signed short channel image multiplication, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pSrc2 Source-Image Pointer.

nSrc2Step Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.448 NppStatus nppiMul_16sc_AC4IRSfs (const Npp16sc ∗ *pSrc*, int *nSrcStep*, Npp16sc ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 16-bit signed short complex number (16-bit real, 16-bit imaginary) channel with unmodified alpha in place image multiplication, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.449 NppStatus nppiMul_16sc_AC4RSfs (const Npp16sc ∗ *pSrc1*, int *nSrc1Step*, const Npp16sc ∗ *pSrc2*, int *nSrc2Step*, Npp16sc ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 16-bit signed short complex number (16-bit real, 16-bit imaginary) channel with unmodified alpha image multiplication, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pSrc2 Source-Image Pointer.

nSrc2Step Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.450 NppStatus nppiMul_16sc_C1IRSfs (const Npp16sc ∗ *pSrc*, int *nSrcStep*, Npp16sc ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 16-bit signed short complex number (16-bit real, 16-bit imaginary) channel in place image multiplication, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.451 NppStatus nppiMul_16sc_C1RSfs (const Npp16sc ∗ *pSrc1*, int *nSrc1Step*, const Npp16sc ∗ *pSrc2*, int *nSrc2Step*, Npp16sc ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 16-bit signed short complex number (16-bit real, 16-bit imaginary) channel image multiplication, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pSrc2 Source-Image Pointer.

nSrc2Step Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.452 NppStatus nppiMul_16sc_C3IRSfs (const Npp16sc ∗ *pSrc*, int *nSrcStep*, Npp16sc ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 16-bit signed short complex number (16-bit real, 16-bit imaginary) channel in place image multiplication, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.453 NppStatus nppiMul_16sc_C3RSfs (const Npp16sc ∗ *pSrc1*, int *nSrc1Step*, const Npp16sc ∗ *pSrc2*, int *nSrc2Step*, Npp16sc ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Three 16-bit signed short complex number (16-bit real, 16-bit imaginary) channel image multiplication, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pSrc2 Source-Image Pointer.

nSrc2Step Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.454 NppStatus nppiMul_16u_AC4IRSfs (const Npp16u ∗ *pSrc*, int *nSrcStep*, Npp16u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 16-bit unsigned short channel with unmodified alpha in place image multiplication, scale by $2^{\wedge}($-nScaleFactor), then clamp to saturated value.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.455 NppStatus nppiMul_16u_AC4RSfs (const Npp16u ∗ *pSrc1*, int *nSrc1Step*, const Npp16u ∗ *pSrc2*, int *nSrc2Step*, Npp16u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 16-bit unsigned short channel with unmodified alpha image multiplication, scale by $2^{\wedge}($-nScaleFactor), then clamp to saturated value.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pSrc2 Source-Image Pointer.

nSrc2Step Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.456 NppStatus nppiMul_16u_C1IRSfs (const Npp16u ∗ *pSrc*, int *nSrcStep*, Npp16u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 16-bit unsigned short channel in place image multiplication, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

Parameters:

    pSrc Source-Image Pointer.

    nSrcStep Source-Image Line Step.

    pSrcDst In-Place Image Pointer.

    nSrcDstStep In-Place-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

    nScaleFactor Integer Result Scaling.

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.457 NppStatus nppiMul_16u_C1RSfs (const Npp16u ∗ *pSrc1*, int *nSrc1Step*, const Npp16u ∗ *pSrc2*, int *nSrc2Step*, Npp16u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 16-bit unsigned short channel image multiplication, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

Parameters:

    pSrc1 Source-Image Pointer.

    nSrc1Step Source-Image Line Step.

    pSrc2 Source-Image Pointer.

    nSrc2Step Source-Image Line Step.

    pDst Destination-Image Pointer.

    nDstStep Destination-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

    nScaleFactor Integer Result Scaling.

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.458 NppStatus nppiMul_16u_C3IRSfs (const Npp16u ∗ *pSrc*, int *nSrcStep*, Npp16u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 16-bit unsigned short channel in place image multiplication, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

Parameters:

    pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.459 NppStatus nppiMul_16u_C3RSfs (const Npp16u ∗ *pSrc1*, int *nSrc1Step*, const Npp16u ∗ *pSrc2*, int *nSrc2Step*, Npp16u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Three 16-bit unsigned short channel image multiplication, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pSrc2 Source-Image Pointer.

nSrc2Step Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.460 NppStatus nppiMul_16u_C4IRSfs (const Npp16u ∗ *pSrc*, int *nSrcStep*, Npp16u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 16-bit unsigned short channel in place image multiplication, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.461 NppStatus nppiMul_16u_C4RSfs (const Npp16u ∗ *pSrc1*, int *nSrc1Step*, const Npp16u ∗ *pSrc2*, int *nSrc2Step*, Npp16u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 16-bit unsigned short channel image multiplication, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

>   *pSrc1* Source-Image Pointer.
>   *nSrc1Step* Source-Image Line Step.
>   *pSrc2* Source-Image Pointer.
>   *nSrc2Step* Source-Image Line Step.
>   *pDst* Destination-Image Pointer.
>   *nDstStep* Destination-Image Line Step.
>   *oSizeROI* Region-of-Interest (ROI).
>   *nScaleFactor* Integer Result Scaling.

Returns:

>   Image Data Related Error Codes, ROI Related Error Codes

7.7.1.462 NppStatus nppiMul_32f_AC4IR (const Npp32f ∗ *pSrc*, int *nSrcStep*, Npp32f ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 32-bit floating point channel with unmodified alpha in place image multiplication.

Parameters:

>   *pSrc* Source-Image Pointer.
>   *nSrcStep* Source-Image Line Step.
>   *pSrcDst* In-Place Image Pointer.
>   *nSrcDstStep* In-Place-Image Line Step.
>   *oSizeROI* Region-of-Interest (ROI).

Returns:

>   Image Data Related Error Codes, ROI Related Error Codes

7.7.1.463 NppStatus nppiMul_32f_AC4R (const Npp32f ∗ *pSrc1*, int *nSrc1Step*, const Npp32f ∗ *pSrc2*, int *nSrc2Step*, Npp32f ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Four 32-bit floating point channel with unmodified alpha image multiplication.

Parameters:

>   *pSrc1* Source-Image Pointer.
>   *nSrc1Step* Source-Image Line Step.
>   *pSrc2* Source-Image Pointer.

nSrc2Step Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.464 NppStatus nppiMul_32f_C1IR (const Npp32f ∗ *pSrc*, int *nSrcStep*, Npp32f ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

One 32-bit floating point channel in place image multiplication.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.465 NppStatus nppiMul_32f_C1R (const Npp32f ∗ *pSrc1*, int *nSrc1Step*, const Npp32f ∗ *pSrc2*, int *nSrc2Step*, Npp32f ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

One 32-bit floating point channel image multiplication.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pSrc2 Source-Image Pointer.

nSrc2Step Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.466   NppStatus nppiMul_32f_C3IR (const Npp32f ∗ *pSrc*, int *nSrcStep*, Npp32f ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

One 32-bit floating point channel in place image multiplication.

Parameters:

> *pSrc* Source-Image Pointer.
> *nSrcStep* Source-Image Line Step.
> *pSrcDst* In-Place Image Pointer.
> *nSrcDstStep* In-Place-Image Line Step.
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.467   NppStatus nppiMul_32f_C3R (const Npp32f ∗ *pSrc1*, int *nSrc1Step*, const Npp32f ∗ *pSrc2*, int *nSrc2Step*, Npp32f ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Three 32-bit floating point channel image multiplication.

Parameters:

> *pSrc1* Source-Image Pointer.
> *nSrc1Step* Source-Image Line Step.
> *pSrc2* Source-Image Pointer.
> *nSrc2Step* Source-Image Line Step.
> *pDst* Destination-Image Pointer.
> *nDstStep* Destination-Image Line Step.
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.468   NppStatus nppiMul_32f_C4IR (const Npp32f ∗ *pSrc*, int *nSrcStep*, Npp32f ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 32-bit floating point channel in place image multiplication.

Parameters:

> *pSrc* Source-Image Pointer.
> *nSrcStep* Source-Image Line Step.
> *pSrcDst* In-Place Image Pointer.
> *nSrcDstStep* In-Place-Image Line Step.
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.469 NppStatus nppiMul_32f_C4R (const Npp32f * *pSrc1*, int *nSrc1Step*, const Npp32f * *pSrc2*, int *nSrc2Step*, Npp32f * *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Four 32-bit floating point channel image multiplication.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pSrc2 Source-Image Pointer.

nSrc2Step Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.470 NppStatus nppiMul_32fc_AC4IR (const Npp32fc * *pSrc*, int *nSrcStep*, Npp32fc * *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 32-bit floating point complex number (32-bit real, 32-bit imaginary) channel with unmodified alpha in place image multiplication.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.471 NppStatus nppiMul_32fc_AC4R (const Npp32fc * *pSrc1*, int *nSrc1Step*, const Npp32fc * *pSrc2*, int *nSrc2Step*, Npp32fc * *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Four 32-bit floating point complex number (32-bit real, 32-bit imaginary) channel with unmodified alpha image multiplication.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pSrc2 Source-Image Pointer.

nSrc2Step Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.472 NppStatus nppiMul_32fc_C1IR (const Npp32fc ∗ *pSrc*, int *nSrcStep*, Npp32fc ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

One 32-bit floating point complex number (32-bit real, 32-bit imaginary) channel in place image multiplication.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.473 NppStatus nppiMul_32fc_C1R (const Npp32fc ∗ *pSrc1*, int *nSrc1Step*, const Npp32fc ∗ *pSrc2*, int *nSrc2Step*, Npp32fc ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

One 32-bit floating point complex number (32-bit real, 32-bit imaginary) channel image multiplication.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pSrc2 Source-Image Pointer.

nSrc2Step Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.474 NppStatus nppiMul_32fc_C3IR (const Npp32fc ∗ *pSrc*, int *nSrcStep*, Npp32fc ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

One 32-bit floating point complex number (32-bit real, 32-bit imaginary) channel in place image multiplication.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.475 NppStatus nppiMul_32fc_C3R (const Npp32fc ∗ *pSrc1*, int *nSrc1Step*, const Npp32fc ∗ *pSrc2*, int *nSrc2Step*, Npp32fc ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Three 32-bit floating point complex number (32-bit real, 32-bit imaginary) channel image multiplication.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pSrc2 Source-Image Pointer.

nSrc2Step Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.476 NppStatus nppiMul_32fc_C4IR (const Npp32fc ∗ *pSrc*, int *nSrcStep*, Npp32fc ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 32-bit floating point complex number (32-bit real, 32-bit imaginary) channel in place image multiplication.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.477 NppStatus nppiMul_32fc_C4R (const Npp32fc ∗ *pSrc1*, int *nSrc1Step*, const Npp32fc ∗ *pSrc2*, int *nSrc2Step*, Npp32fc ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Four 32-bit floating point complex number (32-bit real, 32-bit imaginary) channel image multiplication.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pSrc2 Source-Image Pointer.

nSrc2Step Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.478 NppStatus nppiMul_32s_C1IRSfs (const Npp32s ∗ *pSrc*, int *nSrcStep*, Npp32s ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 32-bit signed integer channel in place image multiplication, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.479 NppStatus nppiMul_32s_C1R (const Npp32s * pSrc1, int nSrc1Step, const Npp32s * pSrc2, int nSrc2Step, Npp32s * pDst, int nDstStep, NppiSize oSizeROI)

Note: This function is to be deprecated in future NPP releases, use the function above with a scale factor of 0 instead.

1 channel 32-bit image multiplication. Multiply corresponding pixels in ROI.

Parameters:

    pSrc1 Source-Image Pointer.

    nSrc1Step Source-Image Line Step.

    pSrc2 Source-Image Pointer.

    nSrc2Step Source-Image Line Step.

    pDst Destination-Image Pointer.

    nDstStep Destination-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.480 NppStatus nppiMul_32s_C1RSfs (const Npp32s * pSrc1, int nSrc1Step, const Npp32s * pSrc2, int nSrc2Step, Npp32s * pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

One 32-bit signed integer channel image multiplication, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

    pSrc1 Source-Image Pointer.

    nSrc1Step Source-Image Line Step.

    pSrc2 Source-Image Pointer.

    nSrc2Step Source-Image Line Step.

    pDst Destination-Image Pointer.

    nDstStep Destination-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

    nScaleFactor Integer Result Scaling.

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.481 NppStatus nppiMul_32s_C3IRSfs (const Npp32s * pSrc, int nSrcStep, Npp32s * pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

One 32-bit signed integer channel in place image multiplication, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

>*pSrc* Source-Image Pointer.
>*nSrcStep* Source-Image Line Step.
>*pSrcDst* In-Place Image Pointer.
>*nSrcDstStep* In-Place-Image Line Step.
>*oSizeROI* Region-of-Interest (ROI).
>*nScaleFactor* Integer Result Scaling.

Returns:

>Image Data Related Error Codes, ROI Related Error Codes

7.7.1.482   NppStatus nppiMul_32s_C3RSfs (const Npp32s ∗ *pSrc1*, int *nSrc1Step*, const Npp32s ∗ *pSrc2*, int *nSrc2Step*, Npp32s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Three 32-bit signed integer channel image multiplication, scale by $2^\wedge$(-nScaleFactor), then clamp to saturated value.

Parameters:

>*pSrc1* Source-Image Pointer.
>*nSrc1Step* Source-Image Line Step.
>*pSrc2* Source-Image Pointer.
>*nSrc2Step* Source-Image Line Step.
>*pDst* Destination-Image Pointer.
>*nDstStep* Destination-Image Line Step.
>*oSizeROI* Region-of-Interest (ROI).
>*nScaleFactor* Integer Result Scaling.

Returns:

>Image Data Related Error Codes, ROI Related Error Codes

7.7.1.483   NppStatus nppiMul_32sc_AC4IRSfs (const Npp32sc ∗ *pSrc*, int *nSrcStep*, Npp32sc ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 32-bit signed integer complex number (32-bit real, 32-bit imaginary) channel with unmodified alpha in place image multiplication, scale by $2^\wedge$(-nScaleFactor), then clamp to saturated value.

Parameters:

>*pSrc* Source-Image Pointer.
>*nSrcStep* Source-Image Line Step.
>*pSrcDst* In-Place Image Pointer.
>*nSrcDstStep* In-Place-Image Line Step.
>*oSizeROI* Region-of-Interest (ROI).
>*nScaleFactor* Integer Result Scaling.

Returns:

>Image Data Related Error Codes, ROI Related Error Codes

7.7.1.484 NppStatus nppiMul_32sc_AC4RSfs (const Npp32sc ∗ *pSrc1*, int *nSrc1Step*, const Npp32sc ∗ *pSrc2*, int *nSrc2Step*, Npp32sc ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 32-bit signed integer complex number (32-bit real, 32-bit imaginary) channel with unmodified alpha image multiplication, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pSrc2 Source-Image Pointer.

nSrc2Step Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.485 NppStatus nppiMul_32sc_C1IRSfs (const Npp32sc ∗ *pSrc*, int *nSrcStep*, Npp32sc ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 32-bit signed integer complex number (32-bit real, 32-bit imaginary) channel in place image multiplication, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.486 NppStatus nppiMul_32sc_C1RSfs (const Npp32sc ∗ *pSrc1*, int *nSrc1Step*, const Npp32sc ∗ *pSrc2*, int *nSrc2Step*, Npp32sc ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 32-bit signed integer complex number (32-bit real, 32-bit imaginary) channel image multiplication, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

>*pSrc1* Source-Image Pointer.
>
>*nSrc1Step* Source-Image Line Step.
>
>*pSrc2* Source-Image Pointer.
>
>*nSrc2Step* Source-Image Line Step.
>
>*pDst* Destination-Image Pointer.
>
>*nDstStep* Destination-Image Line Step.
>
>*oSizeROI* Region-of-Interest (ROI).
>
>*nScaleFactor* Integer Result Scaling.

Returns:

>Image Data Related Error Codes, ROI Related Error Codes

7.7.1.487 NppStatus nppiMul_32sc_C3IRSfs (const Npp32sc ∗ *pSrc*, int *nSrcStep*, Npp32sc ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 32-bit signed integer complex number (32-bit real, 32-bit imaginary) channel in place image multiplication, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

>*pSrc* Source-Image Pointer.
>
>*nSrcStep* Source-Image Line Step.
>
>*pSrcDst* In-Place Image Pointer.
>
>*nSrcDstStep* In-Place-Image Line Step.
>
>*oSizeROI* Region-of-Interest (ROI).
>
>*nScaleFactor* Integer Result Scaling.

Returns:

>Image Data Related Error Codes, ROI Related Error Codes

7.7.1.488 NppStatus nppiMul_32sc_C3RSfs (const Npp32sc ∗ *pSrc1*, int *nSrc1Step*, const Npp32sc ∗ *pSrc2*, int *nSrc2Step*, Npp32sc ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Three 32-bit signed integer complex number (32-bit real, 32-bit imaginary) channel image multiplication, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

>*pSrc1* Source-Image Pointer.
>
>*nSrc1Step* Source-Image Line Step.
>
>*pSrc2* Source-Image Pointer.
>
>*nSrc2Step* Source-Image Line Step.
>
>*pDst* Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.489 NppStatus nppiMul_8u_AC4IRSfs (const Npp8u ∗ *pSrc*, int *nSrcStep*, Npp8u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 8-bit unsigned char channel with unmodified alpha in place image multiplication, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.490 NppStatus nppiMul_8u_AC4RSfs (const Npp8u ∗ *pSrc1*, int *nSrc1Step*, const Npp8u ∗ *pSrc2*, int *nSrc2Step*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 8-bit unsigned char channel with unmodified alpha image multiplication, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pSrc2 Source-Image Pointer.

nSrc2Step Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.491 NppStatus nppiMul_8u_C1IRSfs (const Npp8u ∗ *pSrc*, int *nSrcStep*, Npp8u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 8-bit unsigned char channel in place image multiplication, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

> *pSrc* Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *pSrcDst* In-Place Image Pointer.
>
> *nSrcDstStep* In-Place-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.492 NppStatus nppiMul_8u_C1RSfs (const Npp8u ∗ *pSrc1*, int *nSrc1Step*, const Npp8u ∗ *pSrc2*, int *nSrc2Step*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 8-bit unsigned char channel image multiplication, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

> *pSrc1* Source-Image Pointer.
>
> *nSrc1Step* Source-Image Line Step.
>
> *pSrc2* Source-Image Pointer.
>
> *nSrc2Step* Source-Image Line Step.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.493 NppStatus nppiMul_8u_C3IRSfs (const Npp8u ∗ *pSrc*, int *nSrcStep*, Npp8u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 8-bit unsigned char channel in place image multiplication, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

> *pSrc* Source-Image Pointer.

nSrcStep Source-Image Line Step.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.494 NppStatus nppiMul_8u_C3RSfs (const Npp8u ∗ *pSrc1*, int *nSrc1Step*, const Npp8u ∗ *pSrc2*, int *nSrc2Step*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Three 8-bit unsigned char channel image multiplication, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pSrc2 Source-Image Pointer.

nSrc2Step Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.495 NppStatus nppiMul_8u_C4IRSfs (const Npp8u ∗ *pSrc*, int *nSrcStep*, Npp8u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 8-bit unsigned char channel in place image multiplication, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.496 NppStatus nppiMul_8u_C4RSfs (const Npp8u ∗ *pSrc1*, int *nSrc1Step*, const Npp8u ∗ *pSrc2*, int *nSrc2Step*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 8-bit unsigned char channel image multiplication, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

Parameters:

    pSrc1 Source-Image Pointer.

    nSrc1Step Source-Image Line Step.

    pSrc2 Source-Image Pointer.

    nSrc2Step Source-Image Line Step.

    pDst Destination-Image Pointer.

    nDstStep Destination-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

    nScaleFactor Integer Result Scaling.

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.497 NppStatus nppiMulC_16s_AC4IRSfs (const Npp16s ∗ *pConstants*, Npp16s ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 16-bit signed short channel with unmodified alpha in place image multiply by constant, scale, then clamp to saturated value.

Parameters:

    pConstants pointer to a list of constant values, one per channel.

    pSrcDst In-Place Image Pointer.

    nSrcDstStep In-Place-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

    nScaleFactor Integer Result Scaling.

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.498 NppStatus nppiMulC_16s_AC4RSfs (const Npp16s ∗ *pSrc1*, int *nSrc1Step*, const Npp16s ∗ *pConstants*, Npp16s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 16-bit signed short channel with unmodified alpha image multiply by constant, scale, then clamp to saturated value.

Parameters:

    pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pConstants pointer to a list of constant values, one per channel.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.499 NppStatus nppiMulC_16s_C1IRSfs (const Npp16s *nConstant*, Npp16s ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 16-bit signed short channel in place image multiply by constant, scale, then clamp to saturated value.

Parameters:

nConstant Constant.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.500 NppStatus nppiMulC_16s_C1RSfs (const Npp16s ∗ *pSrc1*, int *nSrc1Step*, const Npp16s *nConstant*, Npp16s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 16-bit signed short channel image multiply by constant, scale, then clamp to saturated value.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

nConstant Constant.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.501 NppStatus nppiMulC_16s_C3IRSfs (const Npp16s ∗ *pConstants*, Npp16s ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Three 16-bit signed short channel in place image multiply by constant, scale, then clamp to saturated value.

Parameters:

>   *pConstants* pointer to a list of constant values, one per channel.
>
>   *pSrcDst* In-Place Image Pointer.
>
>   *nSrcDstStep* In-Place-Image Line Step.
>
>   *oSizeROI* Region-of-Interest (ROI).
>
>   *nScaleFactor* Integer Result Scaling.

Returns:

>   Image Data Related Error Codes, ROI Related Error Codes

7.7.1.502 NppStatus nppiMulC_16s_C3RSfs (const Npp16s ∗ *pSrc1*, int *nSrc1Step*, const Npp16s ∗ *pConstants*, Npp16s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Three 16-bit signed short channel image multiply by constant, scale, then clamp to saturated value.

Parameters:

>   *pSrc1* Source-Image Pointer.
>
>   *nSrc1Step* Source-Image Line Step.
>
>   *pConstants* pointer to a list of constant values, one per channel.
>
>   *pDst* Destination-Image Pointer.
>
>   *nDstStep* Destination-Image Line Step.
>
>   *oSizeROI* Region-of-Interest (ROI).
>
>   *nScaleFactor* Integer Result Scaling.

Returns:

>   Image Data Related Error Codes, ROI Related Error Codes

7.7.1.503 NppStatus nppiMulC_16s_C4IRSfs (const Npp16s ∗ *pConstants*, Npp16s ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 16-bit signed short channel in place image multiply by constant, scale, then clamp to saturated value.

Parameters:

>   *pConstants* pointer to a list of constant values, one per channel.
>
>   *pSrcDst* In-Place Image Pointer.
>
>   *nSrcDstStep* In-Place-Image Line Step.
>
>   *oSizeROI* Region-of-Interest (ROI).
>
>   *nScaleFactor* Integer Result Scaling.

Returns:

>   Image Data Related Error Codes, ROI Related Error Codes

7.7.1.504   NppStatus nppiMulC_16s_C4RSfs (const Npp16s ∗ *pSrc1*, int *nSrc1Step*, const Npp16s ∗ *pConstants*, Npp16s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 16-bit signed short channel image multiply by constant, scale, then clamp to saturated value.

Parameters:

> *pSrc1* Source-Image Pointer.
>
> *nSrc1Step* Source-Image Line Step.
>
> *pConstants* pointer to a list of constant values, one per channel.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.505   NppStatus nppiMulC_16sc_AC4IRSfs (const Npp16sc ∗ *pConstants*, Npp16sc ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 16-bit signed short complex number (16-bit real, 16-bit imaginary) channel with unmodified alpha in place image multiply by constant, scale, then clamp to saturated value.

Parameters:

> *pConstants* pointer to a list of constant values, one per channel.
>
> *pSrcDst* In-Place Image Pointer.
>
> *nSrcDstStep* In-Place-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.506   NppStatus nppiMulC_16sc_AC4RSfs (const Npp16sc ∗ *pSrc1*, int *nSrc1Step*, const Npp16sc ∗ *pConstants*, Npp16sc ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 16-bit signed short complex number (16-bit real, 16-bit imaginary) channel with unmodified alpha image multiply by constant, scale, then clamp to saturated value.

Parameters:

> *pSrc1* Source-Image Pointer.
>
> *nSrc1Step* Source-Image Line Step.
>
> *pConstants* pointer to a list of constant values, one per channel.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.507 NppStatus nppiMulC_16sc_C1IRSfs (const Npp16sc *nConstant*, Npp16sc ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 16-bit signed short complex number (16-bit real, 16-bit imaginary) channel in place image multiply by constant, scale, then clamp to saturated value.

Parameters:

nConstant Constant.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.508 NppStatus nppiMulC_16sc_C1RSfs (const Npp16sc ∗ *pSrc1*, int *nSrc1Step*, const Npp16sc *nConstant*, Npp16sc ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 16-bit signed short complex number (16-bit real, 16-bit imaginary) channel image multiply by constant, scale, then clamp to saturated value.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

nConstant Constant.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.509 **NppStatus nppiMulC_16sc_C3IRSfs (const Npp16sc ∗ *pConstants*, Npp16sc ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)**

Three 16-bit signed short complex number (16-bit real, 16-bit imaginary) channel in place image multiply by constant, scale, then clamp to saturated value.

Parameters:

> *pConstants* pointer to a list of constant values, one per channel.
>
> *pSrcDst* In-Place Image Pointer.
>
> *nSrcDstStep* In-Place-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.510 **NppStatus nppiMulC_16sc_C3RSfs (const Npp16sc ∗ *pSrc1*, int *nSrc1Step*, const Npp16sc ∗ *pConstants*, Npp16sc ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)**

Three 16-bit signed short complex number (16-bit real, 16-bit imaginary) channel image multiply by constant, scale, then clamp to saturated value.

Parameters:

> *pSrc1* Source-Image Pointer.
>
> *nSrc1Step* Source-Image Line Step.
>
> *pConstants* pointer to a list of constant values, one per channel.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.511 **NppStatus nppiMulC_16u_AC4IRSfs (const Npp16u ∗ *pConstants*, Npp16u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)**

Four 16-bit unsigned short channel with unmodified alpha in place image multiply by constant, scale, then clamp to saturated value.

Parameters:

> *pConstants* pointer to a list of constant values, one per channel.
>
> *pSrcDst* In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.512 NppStatus nppiMulC_16u_AC4RSfs (const Npp16u ∗ *pSrc1*, int *nSrc1Step*, const Npp16u ∗ *pConstants*, Npp16u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 16-bit unsigned short channel with unmodified alpha image multiply by constant, scale, then clamp to saturated value.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pConstants pointer to a list of constant values, one per channel.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.513 NppStatus nppiMulC_16u_C1IRSfs (const Npp16u *nConstant*, Npp16u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 16-bit unsigned short channel in place image multiply by constant, scale, then clamp to saturated value.

Parameters:

nConstant Constant.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.514 NppStatus nppiMulC_16u_C1RSfs (const Npp16u ∗ *pSrc1*, int *nSrc1Step*, const Npp16u *nConstant*, Npp16u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 16-bit unsigned short channel image multiply by constant, scale, then clamp to saturated value.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

nConstant Constant.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.515 NppStatus nppiMulC_16u_C3IRSfs (const Npp16u ∗ *pConstants*, Npp16u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Three 16-bit unsigned short channel in place image multiply by constant, scale, then clamp to saturated value.

Parameters:

pConstants pointer to a list of constant values, one per channel.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.516 NppStatus nppiMulC_16u_C3RSfs (const Npp16u ∗ *pSrc1*, int *nSrc1Step*, const Npp16u ∗ *pConstants*, Npp16u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Three 16-bit unsigned short channel image multiply by constant, scale, then clamp to saturated value.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pConstants pointer to a list of constant values, one per channel.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.517   NppStatus nppiMulC_16u_C4IRSfs (const Npp16u ∗ *pConstants*, Npp16u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 16-bit unsigned short channel in place image multiply by constant, scale, then clamp to saturated value.

Parameters:

pConstants pointer to a list of constant values, one per channel.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.518   NppStatus nppiMulC_16u_C4RSfs (const Npp16u ∗ *pSrc1*, int *nSrc1Step*, const Npp16u ∗ *pConstants*, Npp16u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 16-bit unsigned short channel image multiply by constant, scale, then clamp to saturated value.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pConstants pointer to a list of constant values, one per channel.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.519 NppStatus nppiMulC_32f_AC4IR (const Npp32f ∗ *pConstants*, Npp32f ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 32-bit floating point channel with unmodified alpha in place image multiply by constant.

Parameters:

> *pConstants* pointer to a list of constant values, one per channel.
>
> *pSrcDst* In-Place Image Pointer.
>
> *nSrcDstStep* In-Place-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.520 NppStatus nppiMulC_32f_AC4R (const Npp32f ∗ *pSrc1*, int *nSrc1Step*, const Npp32f ∗ *pConstants*, Npp32f ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Four 32-bit floating point channel with unmodified alpha image multiply by constant.

Parameters:

> *pSrc1* Source-Image Pointer.
>
> *nSrc1Step* Source-Image Line Step.
>
> *pConstants* pointer to a list of constant values, one per channel.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.521 NppStatus nppiMulC_32f_C1IR (const Npp32f *nConstant*, Npp32f ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

One 32-bit floating point channel in place image multiply by constant.

Parameters:

> *nConstant* Constant.
>
> *pSrcDst* In-Place Image Pointer.
>
> *nSrcDstStep* In-Place-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.522 NppStatus nppiMulC_32f_C1R (const Npp32f ∗ *pSrc1*, int *nSrc1Step*, const Npp32f *nConstant*, Npp32f ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

One 32-bit floating point channel image multiply by constant.

Parameters:

    pSrc1 Source-Image Pointer.

    nSrc1Step Source-Image Line Step.

    nConstant Constant.

    pDst Destination-Image Pointer.

    nDstStep Destination-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.523 NppStatus nppiMulC_32f_C3IR (const Npp32f ∗ *pConstants*, Npp32f ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Three 32-bit floating point channel in place image multiply by constant.

Parameters:

    pConstants pointer to a list of constant values, one per channel.

    pSrcDst In-Place Image Pointer.

    nSrcDstStep In-Place-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.524 NppStatus nppiMulC_32f_C3R (const Npp32f ∗ *pSrc1*, int *nSrc1Step*, const Npp32f ∗ *pConstants*, Npp32f ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Three 32-bit floating point channel image multiply by constant.

Parameters:

    pSrc1 Source-Image Pointer.

    nSrc1Step Source-Image Line Step.

    pConstants pointer to a list of constant values, one per channel.

    pDst Destination-Image Pointer.

    nDstStep Destination-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.525 NppStatus nppiMulC_32f_C4IR (const Npp32f ∗ *pConstants*, Npp32f ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 32-bit floating point channel in place image multiply by constant.

Parameters:

>*pConstants* pointer to a list of constant values, one per channel.
>
>*pSrcDst* In-Place Image Pointer.
>
>*nSrcDstStep* In-Place-Image Line Step.
>
>*oSizeROI* Region-of-Interest (ROI).

Returns:

>Image Data Related Error Codes, ROI Related Error Codes

7.7.1.526 NppStatus nppiMulC_32f_C4R (const Npp32f ∗ *pSrc1*, int *nSrc1Step*, const Npp32f ∗ *pConstants*, Npp32f ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Four 32-bit floating point channel image multiply by constant.

Parameters:

>*pSrc1* Source-Image Pointer.
>
>*nSrc1Step* Source-Image Line Step.
>
>*pConstants* pointer to a list of constant values, one per channel.
>
>*pDst* Destination-Image Pointer.
>
>*nDstStep* Destination-Image Line Step.
>
>*oSizeROI* Region-of-Interest (ROI).

Returns:

>Image Data Related Error Codes, ROI Related Error Codes

7.7.1.527 NppStatus nppiMulC_32fc_AC4IR (const Npp32fc ∗ *pConstants*, Npp32fc ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 32-bit complex floating point (32-bit floating point real, 32-bit floating point imaginary) channel with unmodified alpha in place image multiply by constant.

Parameters:

>*pConstants* pointer to a list of constant values, one per channel.
>
>*pSrcDst* In-Place Image Pointer.
>
>*nSrcDstStep* In-Place-Image Line Step.
>
>*oSizeROI* Region-of-Interest (ROI).

Returns:

>Image Data Related Error Codes, ROI Related Error Codes

7.7.1.528 NppStatus nppiMulC_32fc_AC4R (const Npp32fc ∗ *pSrc1*, int *nSrc1Step*, const Npp32fc ∗ *pConstants*, Npp32fc ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Four 32-bit complex floating point (32-bit floating point real, 32-bit floating point imaginary) channel with unmodified alpha image multiply by constant.

Parameters:

> *pSrc1* Source-Image Pointer.
>
> *nSrc1Step* Source-Image Line Step.
>
> *pConstants* pointer to a list of constant values, one per channel.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.529 NppStatus nppiMulC_32fc_C1IR (const Npp32fc *nConstant*, Npp32fc ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

One 32-bit complex floating point (32-bit floating point real, 32-bit floating point imaginary) channel in place image multiply by constant.

Parameters:

> *nConstant* Constant.
>
> *pSrcDst* In-Place Image Pointer.
>
> *nSrcDstStep* In-Place-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.530 NppStatus nppiMulC_32fc_C1R (const Npp32fc ∗ *pSrc1*, int *nSrc1Step*, const Npp32fc *nConstant*, Npp32fc ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

One 32-bit complex floating point (32-bit floating point real, 32-bit floating point imaginary) channel image multiply by constant.

Parameters:

> *pSrc1* Source-Image Pointer.
>
> *nSrc1Step* Source-Image Line Step.
>
> *nConstant* Constant.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.531 NppStatus nppiMulC_32fc_C3IR (const Npp32fc ∗ *pConstants*, Npp32fc ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Three 32-bit complex floating point (32-bit floating point real, 32-bit floating point imaginary) channel in place image multiply by constant.

Parameters:

pConstants pointer to a list of constant values, one per channel.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.532 NppStatus nppiMulC_32fc_C3R (const Npp32fc ∗ *pSrc1*, int *nSrc1Step*, const Npp32fc ∗ *pConstants*, Npp32fc ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Three 32-bit complex floating point (32-bit floating point real, 32-bit floating point imaginary) channel image multiply by constant.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pConstants pointer to a list of constant values, one per channel.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.533 NppStatus nppiMulC_32fc_C4IR (const Npp32fc ∗ *pConstants*, Npp32fc ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 32-bit complex floating point (32-bit floating point real, 32-bit floating point imaginary) channel in place image multiply by constant.

Parameters:

> *pConstants* pointer to a list of constant values, one per channel.
>
> *pSrcDst* In-Place Image Pointer.
>
> *nSrcDstStep* In-Place-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.534 NppStatus nppiMulC_32fc_C4R (const Npp32fc ∗ *pSrc1*, int *nSrc1Step*, const Npp32fc ∗ *pConstants*, Npp32fc ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Four 32-bit complex floating point (32-bit floating point real, 32-bit floating point imaginary) channel image multiply by constant.

Parameters:

> *pSrc1* Source-Image Pointer.
>
> *nSrc1Step* Source-Image Line Step.
>
> *pConstants* pointer to a list of constant values, one per channel.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.535 NppStatus nppiMulC_32s_C1IRSfs (const Npp32s *nConstant*, Npp32s ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 32-bit signed integer channel in place image multiply by constant, scale, then clamp to saturated value.

Parameters:

> *nConstant* Constant.
>
> *pSrcDst* In-Place Image Pointer.
>
> *nSrcDstStep* In-Place-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.536 NppStatus nppiMulC_32s_C1RSfs (const Npp32s ∗ *pSrc1*, int *nSrc1Step*, const Npp32s *nConstant*, Npp32s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 32-bit signed integer channel image multiply by constant, scale, then clamp to saturated value.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

nConstant Constant.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.537 NppStatus nppiMulC_32s_C3IRSfs (const Npp32s ∗ *pConstants*, Npp32s ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Three 32-bit signed integer channel in place image multiply by constant, scale, then clamp to saturated value.

Parameters:

pConstants pointer to a list of constant values, one per channel.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.538 NppStatus nppiMulC_32s_C3RSfs (const Npp32s ∗ *pSrc1*, int *nSrc1Step*, const Npp32s ∗ *pConstants*, Npp32s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Three 32-bit signed integer channel image multiply by constant, scale, then clamp to saturated value.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pConstants pointer to a list of constant values, one per channel.

pDst Destination-Image Pointer.

> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.539   NppStatus nppiMulC_32sc_AC4IRSfs (const Npp32sc ∗ *pConstants*, Npp32sc ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 32-bit signed complex integer (32-bit real, 32-bit imaginary) channel with unmodified alpha in place image multiply by constant, scale, then clamp to saturated value.

Parameters:

> *pConstants* pointer to a list of constant values, one per channel.
>
> *pSrcDst* In-Place Image Pointer.
>
> *nSrcDstStep* In-Place-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.540   NppStatus nppiMulC_32sc_AC4RSfs (const Npp32sc ∗ *pSrc1*, int *nSrc1Step*, const Npp32sc ∗ *pConstants*, Npp32sc ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 32-bit signed complex integer (32-bit real, 32-bit imaginary) channel with unmodified alpha image multiply by constant, scale, then clamp to saturated value.

Parameters:

> *pSrc1* Source-Image Pointer.
>
> *nSrc1Step* Source-Image Line Step.
>
> *pConstants* pointer to a list of constant values, one per channel.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.541   NppStatus nppiMulC_32sc_C1IRSfs (const Npp32sc *nConstant*, Npp32sc $*$ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 32-bit signed complex integer (32-bit real, 32-bit imaginary) channel in place image multiply by constant, scale, then clamp to saturated value.

Parameters:

    nConstant Constant.

    pSrcDst In-Place Image Pointer.

    nSrcDstStep In-Place-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

    nScaleFactor Integer Result Scaling.

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.542   NppStatus nppiMulC_32sc_C1RSfs (const Npp32sc $*$ *pSrc1*, int *nSrc1Step*, const Npp32sc *nConstant*, Npp32sc $*$ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 32-bit signed complex integer (32-bit real, 32-bit imaginary) channel image multiply by constant, scale, then clamp to saturated value.

Parameters:

    pSrc1 Source-Image Pointer.

    nSrc1Step Source-Image Line Step.

    nConstant Constant.

    pDst Destination-Image Pointer.

    nDstStep Destination-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

    nScaleFactor Integer Result Scaling.

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.543   NppStatus nppiMulC_32sc_C3IRSfs (const Npp32sc $*$ *pConstants*, Npp32sc $*$ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Three 32-bit signed complex integer (32-bit real, 32-bit imaginary) channel in place image multiply by constant, scale, then clamp to saturated value.

Parameters:

    pConstants pointer to a list of constant values, one per channel.

    pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.544 NppStatus nppiMulC_32sc_C3RSfs (const Npp32sc ∗ *pSrc1*, int *nSrc1Step*, const Npp32sc ∗ *pConstants*, Npp32sc ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Three 32-bit signed complex integer (32-bit real, 32-bit imaginary) channel image multiply by constant, scale, then clamp to saturated value.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pConstants pointer to a list of constant values, one per channel.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.545 NppStatus nppiMulC_8u_AC4IRSfs (const Npp8u ∗ *pConstants*, Npp8u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 8-bit unsigned char channel with unmodified alpha in place image multiply by constant, scale, then clamp to saturated value.

Parameters:

pConstants pointer to a list of constant values, one per channel.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.546 **NppStatus nppiMulC_8u_AC4RSfs (const Npp8u** ∗ *pSrc1***, int** *nSrc1Step***, const Npp8u** ∗ *pConstants***, Npp8u** ∗ *pDst***, int** *nDstStep***, NppiSize** *oSizeROI***, int** *nScaleFactor***)**

Four 8-bit unsigned char channel with unmodified alpha image multiply by constant, scale, then clamp to saturated value.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pConstants pointer to a list of constant values, one per channel.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.547 **NppStatus nppiMulC_8u_C1IRSfs (const Npp8u** *nConstant***, Npp8u** ∗ *pSrcDst***, int** *nSrcDstStep***, NppiSize** *oSizeROI***, int** *nScaleFactor***)**

One 8-bit unsigned char channel in place image multiply by constant, scale, then clamp to saturated value.

Parameters:

nConstant Constant.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.548 **NppStatus nppiMulC_8u_C1RSfs (const Npp8u** ∗ *pSrc1***, int** *nSrc1Step***, const Npp8u** *nConstant***, Npp8u** ∗ *pDst***, int** *nDstStep***, NppiSize** *oSizeROI***, int** *nScaleFactor***)**

One 8-bit unsigned char channel image multiply by constant, scale, then clamp to saturated value.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

nConstant Constant.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.549 NppStatus nppiMulC_8u_C3IRSfs (const Npp8u ∗ *pConstants*, Npp8u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Three 8-bit unsigned char channel 8-bit unsigned char in place image multiply by constant, scale, then clamp to saturated value.

Parameters:

pConstants pointer to a list of constant values, one per channel.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.550 NppStatus nppiMulC_8u_C3RSfs (const Npp8u ∗ *pSrc1*, int *nSrc1Step*, const Npp8u ∗ *pConstants*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Three 8-bit unsigned char channel image multiply by constant, scale, then clamp to saturated value.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pConstants pointer to a list of constant values, one per channel.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.551 NppStatus nppiMulC_8u_C4IRSfs (const Npp8u ∗ *pConstants*, Npp8u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 8-bit unsigned char channel in place image multiply by constant, scale, then clamp to saturated value.

Parameters:

>*pConstants* pointer to a list of constant values, one per channel.
>
>*pSrcDst* In-Place Image Pointer.
>
>*nSrcDstStep* In-Place-Image Line Step.
>
>*oSizeROI* Region-of-Interest (ROI).
>
>*nScaleFactor* Integer Result Scaling.

Returns:

>Image Data Related Error Codes, ROI Related Error Codes

7.7.1.552 NppStatus nppiMulC_8u_C4RSfs (const Npp8u ∗ *pSrc1*, int *nSrc1Step*, const Npp8u ∗ *pConstants*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 8-bit unsigned char channel image multiply by constant, scale, then clamp to saturated value.

Parameters:

>*pSrc1* Source-Image Pointer.
>
>*nSrc1Step* Source-Image Line Step.
>
>*pConstants* pointer to a list of constant values, one per channel.
>
>*pDst* Destination-Image Pointer.
>
>*nDstStep* Destination-Image Line Step.
>
>*oSizeROI* Region-of-Interest (ROI).
>
>*nScaleFactor* Integer Result Scaling.

Returns:

>Image Data Related Error Codes, ROI Related Error Codes

7.7.1.553 NppStatus nppiMulCScale_16u_AC4IR (const Npp16u ∗ *pConstants*, Npp16u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 16-bit unsigned short channel with unmodified alpha in place image multiply by constant and scale by max bit width value.

Parameters:

>*pConstants* pointer to a list of constant values, one per channel.
>
>*pSrcDst* In-Place Image Pointer.
>
>*nSrcDstStep* In-Place-Image Line Step.
>
>*oSizeROI* Region-of-Interest (ROI).

Returns:

>Image Data Related Error Codes, ROI Related Error Codes

7.7.1.554 NppStatus nppiMulCScale_16u_AC4R (const Npp16u ∗ *pSrc1*, int *nSrc1Step*, const Npp16u ∗ *pConstants*, Npp16u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Four 16-bit unsigned short channel with unmodified alpha image multiply by constant and scale by max bit width value.

Parameters:

> *pSrc1* Source-Image Pointer.
>
> *nSrc1Step* Source-Image Line Step.
>
> *pConstants* pointer to a list of constant values, one per channel.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.555 NppStatus nppiMulCScale_16u_C1IR (const Npp16u *nConstant*, Npp16u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

One 16-bit unsigned short channel in place image multiply by constant and scale by max bit width value.

Parameters:

> *nConstant* Constant.
>
> *pSrcDst* In-Place Image Pointer.
>
> *nSrcDstStep* In-Place-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.556 NppStatus nppiMulCScale_16u_C1R (const Npp16u ∗ *pSrc1*, int *nSrc1Step*, const Npp16u *nConstant*, Npp16u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

One 16-bit unsigned short channel image multiply by constant and scale by max bit width value.

Parameters:

> *pSrc1* Source-Image Pointer.
>
> *nSrc1Step* Source-Image Line Step.
>
> *nConstant* Constant.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.557 NppStatus nppiMulCScale_16u_C3IR (const Npp16u *pConstants, Npp16u *pSrcDst, int *nSrcDstStep*, NppiSize *oSizeROI*)

Three 16-bit unsigned short channel in place image multiply by constant and scale by max bit width value.

Parameters:

>*pConstants* pointer to a list of constant values, one per channel.
>
>*pSrcDst* In-Place Image Pointer.
>
>*nSrcDstStep* In-Place-Image Line Step.
>
>*oSizeROI* Region-of-Interest (ROI).

Returns:

>Image Data Related Error Codes, ROI Related Error Codes

7.7.1.558 NppStatus nppiMulCScale_16u_C3R (const Npp16u *pSrc1, int *nSrc1Step*, const Npp16u *pConstants, Npp16u *pDst, int *nDstStep*, NppiSize *oSizeROI*)

Three 16-bit unsigned short channel image multiply by constant and scale by max bit width value.

Parameters:

>*pSrc1* Source-Image Pointer.
>
>*nSrc1Step* Source-Image Line Step.
>
>*pConstants* pointer to a list of constant values, one per channel.
>
>*pDst* Destination-Image Pointer.
>
>*nDstStep* Destination-Image Line Step.
>
>*oSizeROI* Region-of-Interest (ROI).

Returns:

>Image Data Related Error Codes, ROI Related Error Codes

7.7.1.559 NppStatus nppiMulCScale_16u_C4IR (const Npp16u *pConstants, Npp16u *pSrcDst, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 16-bit unsigned short channel in place image multiply by constant and scale by max bit width value.

Parameters:

>*pConstants* pointer to a list of constant values, one per channel.
>
>*pSrcDst* In-Place Image Pointer.
>
>*nSrcDstStep* In-Place-Image Line Step.
>
>*oSizeROI* Region-of-Interest (ROI).

Returns:

>Image Data Related Error Codes, ROI Related Error Codes

7.7.1.560 NppStatus nppiMulCScale_16u_C4R (const Npp16u ∗ *pSrc1*, int *nSrc1Step*, const Npp16u ∗ *pConstants*, Npp16u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Four 16-bit unsigned short channel image multiply by constant and scale by max bit width value.

Parameters:

> *pSrc1* Source-Image Pointer.
>
> *nSrc1Step* Source-Image Line Step.
>
> *pConstants* pointer to a list of constant values, one per channel.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.561 NppStatus nppiMulCScale_8u_AC4IR (const Npp8u ∗ *pConstants*, Npp8u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 8-bit unsigned char channel with unmodified alpha in place image multiply by constant, scale and scale by max bit width value.

Parameters:

> *pConstants* pointer to a list of constant values, one per channel.
>
> *pSrcDst* In-Place Image Pointer.
>
> *nSrcDstStep* In-Place-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.562 NppStatus nppiMulCScale_8u_AC4R (const Npp8u ∗ *pSrc1*, int *nSrc1Step*, const Npp8u ∗ *pConstants*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Four 8-bit unsigned char channel with unmodified alpha image multiply by constant and scale by max bit width value.

Parameters:

> *pSrc1* Source-Image Pointer.
>
> *nSrc1Step* Source-Image Line Step.
>
> *pConstants* pointer to a list of constant values, one per channel.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.563 NppStatus nppiMulCScale_8u_C1IR (const Npp8u *nConstant*, Npp8u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

One 8-bit unsigned char channel in place image multiply by constant and scale by max bit width value.

Parameters:

> *nConstant* Constant.
>
> *pSrcDst* In-Place Image Pointer.
>
> *nSrcDstStep* In-Place-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.564 NppStatus nppiMulCScale_8u_C1R (const Npp8u ∗ *pSrc1*, int *nSrc1Step*, const Npp8u *nConstant*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

One 8-bit unsigned char channel image multiply by constant and scale by max bit width value.

Parameters:

> *pSrc1* Source-Image Pointer.
>
> *nSrc1Step* Source-Image Line Step.
>
> *nConstant* Constant.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.565 NppStatus nppiMulCScale_8u_C3IR (const Npp8u ∗ *pConstants*, Npp8u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Three 8-bit unsigned char channel 8-bit unsigned char in place image multiply by constant and scale by max bit width value.

Parameters:

> *pConstants* pointer to a list of constant values, one per channel.
>
> *pSrcDst* In-Place Image Pointer.
>
> *nSrcDstStep* In-Place-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.566 NppStatus nppiMulCScale_8u_C3R (const Npp8u ∗ pSrc1, int nSrc1Step, const Npp8u ∗ pConstants, Npp8u ∗ pDst, int nDstStep, NppiSize oSizeROI)

Three 8-bit unsigned char channel image multiply by constant and scale by max bit width value.

Parameters:

> *pSrc1* Source-Image Pointer.
>
> *nSrc1Step* Source-Image Line Step.
>
> *pConstants* pointer to a list of constant values, one per channel.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.567 NppStatus nppiMulCScale_8u_C4IR (const Npp8u ∗ pConstants, Npp8u ∗ pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

Four 8-bit unsigned char channel in place image multiply by constant and scale by max bit width value.

Parameters:

> *pConstants* pointer to a list of constant values, one per channel.
>
> *pSrcDst* In-Place Image Pointer.
>
> *nSrcDstStep* In-Place-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.568 NppStatus nppiMulCScale_8u_C4R (const Npp8u ∗ pSrc1, int nSrc1Step, const Npp8u ∗ pConstants, Npp8u ∗ pDst, int nDstStep, NppiSize oSizeROI)

Four 8-bit unsigned char channel image multiply by constant and scale by max bit width value.

Parameters:

> *pSrc1* Source-Image Pointer.
>
> *nSrc1Step* Source-Image Line Step.
>
> *pConstants* pointer to a list of constant values, one per channel.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.569 NppStatus nppiMulScale_16u_AC4IR (const Npp16u $*$ *pSrc*, int *nSrcStep*, Npp16u $*$ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 16-bit unsigned short channel with unmodified alpha in place image multiplication then scale by maximum value for pixel bit width.

Parameters:

> *pSrc* Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *pSrcDst* In-Place Image Pointer.
>
> *nSrcDstStep* In-Place-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.570 NppStatus nppiMulScale_16u_AC4R (const Npp16u $*$ *pSrc1*, int *nSrc1Step*, const Npp16u $*$ *pSrc2*, int *nSrc2Step*, Npp16u $*$ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Four 16-bit unsigned short channel with unmodified alpha image multiplication then scale by maximum value for pixel bit width.

Parameters:

> *pSrc1* Source-Image Pointer.
>
> *nSrc1Step* Source-Image Line Step.
>
> *pSrc2* Source-Image Pointer.
>
> *nSrc2Step* Source-Image Line Step.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.571 NppStatus nppiMulScale_16u_C1IR (const Npp16u $*$ *pSrc*, int *nSrcStep*, Npp16u $*$ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

One 16-bit unsigned short channel in place image multiplication then scale by maximum value for pixel bit width.

Parameters:

> *pSrc* Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *pSrcDst* In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.572 NppStatus nppiMulScale_16u_C1R (const Npp16u ∗ *pSrc1*, int *nSrc1Step*, const Npp16u ∗ *pSrc2*, int *nSrc2Step*, Npp16u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

One 16-bit unsigned short channel image multiplication then scale by maximum value for pixel bit width.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pSrc2 Source-Image Pointer.

nSrc2Step Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.573 NppStatus nppiMulScale_16u_C3IR (const Npp16u ∗ *pSrc*, int *nSrcStep*, Npp16u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

One 16-bit unsigned short channel in place image multiplication then scale by maximum value for pixel bit width.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.574 NppStatus nppiMulScale_16u_C3R (const Npp16u ∗ *pSrc1*, int *nSrc1Step*, const Npp16u ∗ *pSrc2*, int *nSrc2Step*, Npp16u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Three 16-bit unsigned short channel image multiplication then scale by maximum value for pixel bit width.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pSrc2 Source-Image Pointer.

nSrc2Step Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.575 NppStatus nppiMulScale_16u_C4IR (const Npp16u ∗ *pSrc*, int *nSrcStep*, Npp16u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 16-bit unsigned short channel in place image multiplication then scale by maximum value for pixel bit width.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.576 NppStatus nppiMulScale_16u_C4R (const Npp16u ∗ *pSrc1*, int *nSrc1Step*, const Npp16u ∗ *pSrc2*, int *nSrc2Step*, Npp16u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Four 16-bit unsigned short channel image multiplication then scale by maximum value for pixel bit width.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pSrc2 Source-Image Pointer.

nSrc2Step Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.577 NppStatus nppiMulScale_8u_AC4IR (const Npp8u ∗ *pSrc*, int *nSrcStep*, Npp8u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 8-bit unsigned char channel with unmodified alpha in place image multiplication then scale by maximum value for pixel bit width.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.578 NppStatus nppiMulScale_8u_AC4R (const Npp8u ∗ *pSrc1*, int *nSrc1Step*, const Npp8u ∗ *pSrc2*, int *nSrc2Step*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Four 8-bit unsigned char channel with unmodified alpha image multiplication then scale by maximum value for pixel bit width.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pSrc2 Source-Image Pointer.

nSrc2Step Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.579 NppStatus nppiMulScale_8u_C1IR (const Npp8u * *pSrc*, int *nSrcStep*, Npp8u * *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

One 8-bit unsigned char channel in place image multiplication then scale by maximum value for pixel bit width.

Parameters:

> *pSrc* Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *pSrcDst* In-Place Image Pointer.
>
> *nSrcDstStep* In-Place-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.580 NppStatus nppiMulScale_8u_C1R (const Npp8u * *pSrc1*, int *nSrc1Step*, const Npp8u * *pSrc2*, int *nSrc2Step*, Npp8u * *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

One 8-bit unsigned char channel image multiplication then scale by maximum value for pixel bit width.

Parameters:

> *pSrc1* Source-Image Pointer.
>
> *nSrc1Step* Source-Image Line Step.
>
> *pSrc2* Source-Image Pointer.
>
> *nSrc2Step* Source-Image Line Step.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.581 NppStatus nppiMulScale_8u_C3IR (const Npp8u * *pSrc*, int *nSrcStep*, Npp8u * *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

One 8-bit unsigned char channel in place image multiplication then scale by maximum value for pixel bit width.

Parameters:

> *pSrc* Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *pSrcDst* In-Place Image Pointer.
>
> *nSrcDstStep* In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.582   NppStatus nppiMulScale_8u_C3R (const Npp8u ∗ *pSrc1*, int *nSrc1Step*, const Npp8u ∗ *pSrc2*, int *nSrc2Step*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Three 8-bit unsigned char channel image multiplication then scale by maximum value for pixel bit width.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pSrc2 Source-Image Pointer.

nSrc2Step Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.583   NppStatus nppiMulScale_8u_C4IR (const Npp8u ∗ *pSrc*, int *nSrcStep*, Npp8u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 8-bit unsigned char channel in place image multiplication then scale by maximum value for pixel bit width.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.584   NppStatus nppiMulScale_8u_C4R (const Npp8u ∗ *pSrc1*, int *nSrc1Step*, const Npp8u ∗ *pSrc2*, int *nSrc2Step*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Four 8-bit unsigned char channel image multiplication then scale by maximum value for pixel bit width.

Parameters:

    pSrc1 Source-Image Pointer.

    nSrc1Step Source-Image Line Step.

    pSrc2 Source-Image Pointer.

    nSrc2Step Source-Image Line Step.

    pDst Destination-Image Pointer.

    nDstStep Destination-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.585 NppStatus nppiNot_8u_AC4IR (Npp8u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 8-bit unsigned char channel in place image logical not with unmodified alpha.

Parameters:

    pSrcDst In-Place Image Pointer.

    nSrcDstStep In-Place-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.586 NppStatus nppiNot_8u_AC4R (const Npp8u ∗ *pSrc*, int *nSrcStep*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Four 8-bit unsigned char channel image logical not with unmodified alpha.

Parameters:

    pSrc Source-Image Pointer.

    nSrcStep Source-Image Line Step.

    pDst Destination-Image Pointer.

    nDstStep Destination-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.587   NppStatus nppiNot_8u_C1IR (Npp8u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

One 8-bit unsigned char channel in place image logical not.

Parameters:

>   *pSrcDst* In-Place Image Pointer.
>
>   *nSrcDstStep* In-Place-Image Line Step.
>
>   *oSizeROI* Region-of-Interest (ROI).

Returns:

>   Image Data Related Error Codes, ROI Related Error Codes

7.7.1.588   NppStatus nppiNot_8u_C1R (const Npp8u ∗ *pSrc*, int *nSrcStep*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

One 8-bit unsigned char channel image logical not.

Parameters:

>   *pSrc* Source-Image Pointer.
>
>   *nSrcStep* Source-Image Line Step.
>
>   *pDst* Destination-Image Pointer.
>
>   *nDstStep* Destination-Image Line Step.
>
>   *oSizeROI* Region-of-Interest (ROI).

Returns:

>   Image Data Related Error Codes, ROI Related Error Codes

7.7.1.589   NppStatus nppiNot_8u_C3IR (Npp8u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Three 8-bit unsigned char channel in place image logical not.

Parameters:

>   *pSrcDst* In-Place Image Pointer.
>
>   *nSrcDstStep* In-Place-Image Line Step.
>
>   *oSizeROI* Region-of-Interest (ROI).

Returns:

>   Image Data Related Error Codes, ROI Related Error Codes

7.7.1.590 **NppStatus nppiNot_8u_C3R (const Npp8u** ∗ *pSrc*, **int** *nSrcStep*, **Npp8u** ∗ *pDst*, **int** *nDstStep*, **NppiSize** *oSizeROI***)**

Three 8-bit unsigned char channel image logical not.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.591 **NppStatus nppiNot_8u_C4IR (Npp8u** ∗ *pSrcDst*, **int** *nSrcDstStep*, **NppiSize** *oSizeROI***)**

Four 8-bit unsigned char channel in place image logical not.

Parameters:

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.592 **NppStatus nppiNot_8u_C4R (const Npp8u** ∗ *pSrc*, **int** *nSrcStep*, **Npp8u** ∗ *pDst*, **int** *nDstStep*, **NppiSize** *oSizeROI***)**

Four 8-bit unsigned char channel image logical not.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.593 NppStatus nppiOr_16u_AC4IR (const Npp16u ∗ *pSrc*, int *nSrcStep*, Npp16u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 16-bit unsigned short channel in place image logical or with unmodified alpha.

Parameters:

> *pSrc* Source-Image Pointer.
> *nSrcStep* Source-Image Line Step.
> *pSrcDst* In-Place Image Pointer.
> *nSrcDstStep* In-Place-Image Line Step.
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.594 NppStatus nppiOr_16u_AC4R (const Npp16u ∗ *pSrc1*, int *nSrc1Step*, const Npp16u ∗ *pSrc2*, int *nSrc2Step*, Npp16u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Four 16-bit unsigned short channel image logical or with unmodified alpha.

Parameters:

> *pSrc1* Source-Image Pointer.
> *nSrc1Step* Source-Image Line Step.
> *pSrc2* Source-Image Pointer.
> *nSrc2Step* Source-Image Line Step.
> *pDst* Destination-Image Pointer.
> *nDstStep* Destination-Image Line Step.
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.595 NppStatus nppiOr_16u_C1IR (const Npp16u ∗ *pSrc*, int *nSrcStep*, Npp16u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

One 16-bit unsigned short channel in place image logical or.

Parameters:

> *pSrc* Source-Image Pointer.
> *nSrcStep* Source-Image Line Step.
> *pSrcDst* In-Place Image Pointer.
> *nSrcDstStep* In-Place-Image Line Step.
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.596 NppStatus nppiOr_16u_C1R (const Npp16u ∗ *pSrc1*, int *nSrc1Step*, const Npp16u ∗ *pSrc2*, int *nSrc2Step*, Npp16u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

One 16-bit unsigned short channel image logical or.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pSrc2 Source-Image Pointer.

nSrc2Step Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.597 NppStatus nppiOr_16u_C3IR (const Npp16u ∗ *pSrc*, int *nSrcStep*, Npp16u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Three 16-bit unsigned short channel in place image logical or.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.598 NppStatus nppiOr_16u_C3R (const Npp16u ∗ *pSrc1*, int *nSrc1Step*, const Npp16u ∗ *pSrc2*, int *nSrc2Step*, Npp16u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Three 16-bit unsigned short channel image logical or.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pSrc2 Source-Image Pointer.

nSrc2Step Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.599 NppStatus nppiOr_16u_C4IR (const Npp16u ∗ *pSrc*, int *nSrcStep*, Npp16u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 16-bit unsigned short channel in place image logical or.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.600 NppStatus nppiOr_16u_C4R (const Npp16u ∗ *pSrc1*, int *nSrc1Step*, const Npp16u ∗ *pSrc2*, int *nSrc2Step*, Npp16u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Four 16-bit unsigned short channel image logical or.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pSrc2 Source-Image Pointer.

nSrc2Step Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.601 NppStatus nppiOr_32s_AC4IR (const Npp32s ∗ *pSrc*, int *nSrcStep*, Npp32s ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 32-bit signed integer channel in place image logical or with unmodified alpha.

Parameters:

>*pSrc* Source-Image Pointer.
>*nSrcStep* Source-Image Line Step.
>*pSrcDst* In-Place Image Pointer.
>*nSrcDstStep* In-Place-Image Line Step.
>*oSizeROI* Region-of-Interest (ROI).

Returns:

>Image Data Related Error Codes, ROI Related Error Codes

7.7.1.602 NppStatus nppiOr_32s_AC4R (const Npp32s ∗ *pSrc1*, int *nSrc1Step*, const Npp32s ∗ *pSrc2*, int *nSrc2Step*, Npp32s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Four 32-bit signed integer channel image logical or with unmodified alpha.

Parameters:

>*pSrc1* Source-Image Pointer.
>*nSrc1Step* Source-Image Line Step.
>*pSrc2* Source-Image Pointer.
>*nSrc2Step* Source-Image Line Step.
>*pDst* Destination-Image Pointer.
>*nDstStep* Destination-Image Line Step.
>*oSizeROI* Region-of-Interest (ROI).

Returns:

>Image Data Related Error Codes, ROI Related Error Codes

7.7.1.603 NppStatus nppiOr_32s_C1IR (const Npp32s ∗ *pSrc*, int *nSrcStep*, Npp32s ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

One 32-bit signed integer channel in place image logical or.

Parameters:

>*pSrc* Source-Image Pointer.
>*nSrcStep* Source-Image Line Step.
>*pSrcDst* In-Place Image Pointer.
>*nSrcDstStep* In-Place-Image Line Step.
>*oSizeROI* Region-of-Interest (ROI).

Returns:

>Image Data Related Error Codes, ROI Related Error Codes

7.7.1.604 NppStatus nppiOr_32s_C1R (const Npp32s ∗ *pSrc1*, int *nSrc1Step*, const Npp32s ∗ *pSrc2*, int *nSrc2Step*, Npp32s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

One 32-bit signed integer channel image logical or.

Parameters:

   pSrc1 Source-Image Pointer.

   nSrc1Step Source-Image Line Step.

   pSrc2 Source-Image Pointer.

   nSrc2Step Source-Image Line Step.

   pDst Destination-Image Pointer.

   nDstStep Destination-Image Line Step.

   oSizeROI Region-of-Interest (ROI).

Returns:

   Image Data Related Error Codes, ROI Related Error Codes

7.7.1.605 NppStatus nppiOr_32s_C3IR (const Npp32s ∗ *pSrc*, int *nSrcStep*, Npp32s ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Three 32-bit signed integer channel in place image logical or.

Parameters:

   pSrc Source-Image Pointer.

   nSrcStep Source-Image Line Step.

   pSrcDst In-Place Image Pointer.

   nSrcDstStep In-Place-Image Line Step.

   oSizeROI Region-of-Interest (ROI).

Returns:

   Image Data Related Error Codes, ROI Related Error Codes

7.7.1.606 NppStatus nppiOr_32s_C3R (const Npp32s ∗ *pSrc1*, int *nSrc1Step*, const Npp32s ∗ *pSrc2*, int *nSrc2Step*, Npp32s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Three 32-bit signed integer channel image logical or.

Parameters:

   pSrc1 Source-Image Pointer.

   nSrc1Step Source-Image Line Step.

   pSrc2 Source-Image Pointer.

   nSrc2Step Source-Image Line Step.

   pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.607 NppStatus nppiOr_32s_C4IR (const Npp32s ∗ *pSrc*, int *nSrcStep*, Npp32s ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 32-bit signed integer channel in place image logical or.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.608 NppStatus nppiOr_32s_C4R (const Npp32s ∗ *pSrc1*, int *nSrc1Step*, const Npp32s ∗ *pSrc2*, int *nSrc2Step*, Npp32s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Four 32-bit signed integer channel image logical or.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pSrc2 Source-Image Pointer.

nSrc2Step Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.609 NppStatus nppiOr_8u_AC4IR (const Npp8u ∗ *pSrc*, int *nSrcStep*, Npp8u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 8-bit unsigned char channel in place image logical or with unmodified alpha.

Parameters:

>   *pSrc* Source-Image Pointer.
>   *nSrcStep* Source-Image Line Step.
>   *pSrcDst* In-Place Image Pointer.
>   *nSrcDstStep* In-Place-Image Line Step.
>   *oSizeROI* Region-of-Interest (ROI).

Returns:

>   Image Data Related Error Codes, ROI Related Error Codes

7.7.1.610 NppStatus nppiOr_8u_AC4R (const Npp8u ∗ *pSrc1*, int *nSrc1Step*, const Npp8u ∗ *pSrc2*, int *nSrc2Step*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Four 8-bit unsigned char channel image logical or with unmodified alpha.

Parameters:

>   *pSrc1* Source-Image Pointer.
>   *nSrc1Step* Source-Image Line Step.
>   *pSrc2* Source-Image Pointer.
>   *nSrc2Step* Source-Image Line Step.
>   *pDst* Destination-Image Pointer.
>   *nDstStep* Destination-Image Line Step.
>   *oSizeROI* Region-of-Interest (ROI).

Returns:

>   Image Data Related Error Codes, ROI Related Error Codes

7.7.1.611 NppStatus nppiOr_8u_C1IR (const Npp8u ∗ *pSrc*, int *nSrcStep*, Npp8u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

One 8-bit unsigned char channel in place image logical or.

Parameters:

>   *pSrc* Source-Image Pointer.
>   *nSrcStep* Source-Image Line Step.
>   *pSrcDst* In-Place Image Pointer.
>   *nSrcDstStep* In-Place-Image Line Step.
>   *oSizeROI* Region-of-Interest (ROI).

Returns:

>   Image Data Related Error Codes, ROI Related Error Codes

7.7.1.612 **NppStatus nppiOr_8u_C1R (const Npp8u** ∗ *pSrc1*, **int** *nSrc1Step*, **const Npp8u** ∗ *pSrc2*, **int** *nSrc2Step*, **Npp8u** ∗ *pDst*, **int** *nDstStep*, **NppiSize** *oSizeROI*)

One 8-bit unsigned char channel image logical or.

Parameters:

> *pSrc1* Source-Image Pointer.
>
> *nSrc1Step* Source-Image Line Step.
>
> *pSrc2* Source-Image Pointer.
>
> *nSrc2Step* Source-Image Line Step.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.613 **NppStatus nppiOr_8u_C3IR (const Npp8u** ∗ *pSrc*, **int** *nSrcStep*, **Npp8u** ∗ *pSrcDst*, **int** *nSrcDstStep*, **NppiSize** *oSizeROI*)

Three 8-bit unsigned char channel in place image logical or.

Parameters:

> *pSrc* Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *pSrcDst* In-Place Image Pointer.
>
> *nSrcDstStep* In-Place-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.614 **NppStatus nppiOr_8u_C3R (const Npp8u** ∗ *pSrc1*, **int** *nSrc1Step*, **const Npp8u** ∗ *pSrc2*, **int** *nSrc2Step*, **Npp8u** ∗ *pDst*, **int** *nDstStep*, **NppiSize** *oSizeROI*)

Three 8-bit unsigned char channel image logical or.

Parameters:

> *pSrc1* Source-Image Pointer.
>
> *nSrc1Step* Source-Image Line Step.
>
> *pSrc2* Source-Image Pointer.
>
> *nSrc2Step* Source-Image Line Step.
>
> *pDst* Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.615 NppStatus nppiOr_8u_C4IR (const Npp8u ∗ pSrc, int nSrcStep, Npp8u ∗ pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

Four 8-bit unsigned char channel in place image logical or.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.616 NppStatus nppiOr_8u_C4R (const Npp8u ∗ pSrc1, int nSrc1Step, const Npp8u ∗ pSrc2, int nSrc2Step, Npp8u ∗ pDst, int nDstStep, NppiSize oSizeROI)

Four 8-bit unsigned char channel image logical or.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pSrc2 Source-Image Pointer.

nSrc2Step Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.617 NppStatus nppiOrC_16u_AC4IR (const Npp16u ∗ *pConstants*, Npp16u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 16-bit unsigned short channel in place image logical or with constant with unmodified alpha.

Parameters:

    pConstants pointer to a list of constant values, one per channel.

    pSrcDst In-Place Image Pointer.

    nSrcDstStep In-Place-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.618 NppStatus nppiOrC_16u_AC4R (const Npp16u ∗ *pSrc1*, int *nSrc1Step*, const Npp16u ∗ *pConstants*, Npp16u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Four 16-bit unsigned short channel image logical or with constant with unmodified alpha.

Parameters:

    pSrc1 Source-Image Pointer.

    nSrc1Step Source-Image Line Step.

    pConstants pointer to a list of constant values, one per channel.

    pDst Destination-Image Pointer.

    nDstStep Destination-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.619 NppStatus nppiOrC_16u_C1IR (const Npp16u *nConstant*, Npp16u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

One 16-bit unsigned short channel in place image logical or with constant.

Parameters:

    nConstant Constant.

    pSrcDst In-Place Image Pointer.

    nSrcDstStep In-Place-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.620 NppStatus nppiOrC_16u_C1R (const Npp16u ∗ *pSrc1*, int *nSrc1Step*, const Npp16u *nConstant*, Npp16u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

One 16-bit unsigned short channel image logical or with constant.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

nConstant Constant.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.621 NppStatus nppiOrC_16u_C3IR (const Npp16u ∗ *pConstants*, Npp16u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Three 16-bit unsigned short channel in place image logical or with constant.

Parameters:

pConstants pointer to a list of constant values, one per channel.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.622 NppStatus nppiOrC_16u_C3R (const Npp16u ∗ *pSrc1*, int *nSrc1Step*, const Npp16u ∗ *pConstants*, Npp16u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Three 16-bit unsigned short channel image logical or with constant.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pConstants pointer to a list of constant values, one per channel.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.623 NppStatus nppiOrC_16u_C4IR (const Npp16u ∗ *pConstants*, Npp16u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 16-bit unsigned short channel in place image logical or with constant.

Parameters:

pConstants pointer to a list of constant values, one per channel.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.624 NppStatus nppiOrC_16u_C4R (const Npp16u ∗ *pSrc1*, int *nSrc1Step*, const Npp16u ∗ *pConstants*, Npp16u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Four 16-bit unsigned short channel image logical or with constant.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pConstants pointer to a list of constant values, one per channel.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.625 NppStatus nppiOrC_32s_AC4IR (const Npp32s ∗ *pConstants*, Npp32s ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 32-bit signed integer channel in place image logical or with constant with unmodified alpha.

Parameters:

pConstants pointer to a list of constant values, one per channel.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.626   NppStatus nppiOrC_32s_AC4R (const Npp32s ∗ pSrc1, int nSrc1Step, const Npp32s ∗ pConstants, Npp32s ∗ pDst, int nDstStep, NppiSize oSizeROI)

Four 32-bit signed integer channel image logical or with constant with unmodified alpha.

Parameters:

    pSrc1 Source-Image Pointer.

    nSrc1Step Source-Image Line Step.

    pConstants pointer to a list of constant values, one per channel.

    pDst Destination-Image Pointer.

    nDstStep Destination-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.627   NppStatus nppiOrC_32s_C1IR (const Npp32s nConstant, Npp32s ∗ pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

One 32-bit signed integer channel in place image logical or with constant.

Parameters:

    nConstant Constant.

    pSrcDst In-Place Image Pointer.

    nSrcDstStep In-Place-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.628   NppStatus nppiOrC_32s_C1R (const Npp32s ∗ pSrc1, int nSrc1Step, const Npp32s nConstant, Npp32s ∗ pDst, int nDstStep, NppiSize oSizeROI)

One 32-bit signed integer channel image logical or with constant.

Parameters:

    pSrc1 Source-Image Pointer.

    nSrc1Step Source-Image Line Step.

    nConstant Constant.

    pDst Destination-Image Pointer.

    nDstStep Destination-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.629 **NppStatus nppiOrC_32s_C3IR (const Npp32s** ∗ *pConstants*, **Npp32s** ∗ *pSrcDst*, **int** *nSrcDstStep*, **NppiSize** *oSizeROI*)

Three 32-bit signed integer channel in place image logical or with constant.

Parameters:

> *pConstants* pointer to a list of constant values, one per channel.
>
> *pSrcDst* In-Place Image Pointer.
>
> *nSrcDstStep* In-Place-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.630 **NppStatus nppiOrC_32s_C3R (const Npp32s** ∗ *pSrc1*, **int** *nSrc1Step*, **const Npp32s** ∗ *pConstants*, **Npp32s** ∗ *pDst*, **int** *nDstStep*, **NppiSize** *oSizeROI*)

Three 32-bit signed integer channel image logical or with constant.

Parameters:

> *pSrc1* Source-Image Pointer.
>
> *nSrc1Step* Source-Image Line Step.
>
> *pConstants* pointer to a list of constant values, one per channel.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.631 **NppStatus nppiOrC_32s_C4IR (const Npp32s** ∗ *pConstants*, **Npp32s** ∗ *pSrcDst*, **int** *nSrcDstStep*, **NppiSize** *oSizeROI*)

Four 32-bit signed integer channel in place image logical or with constant.

Parameters:

> *pConstants* pointer to a list of constant values, one per channel.
>
> *pSrcDst* In-Place Image Pointer.
>
> *nSrcDstStep* In-Place-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.632 NppStatus nppiOrC_32s_C4R (const Npp32s ∗ *pSrc1*, int *nSrc1Step*, const Npp32s ∗ *pConstants*, Npp32s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Four 32-bit signed integer channel image logical or with constant.

Parameters:

> *pSrc1* Source-Image Pointer.
>
> *nSrc1Step* Source-Image Line Step.
>
> *pConstants* pointer to a list of constant values, one per channel.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.633 NppStatus nppiOrC_8u_AC4IR (const Npp8u ∗ *pConstants*, Npp8u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 8-bit unsigned char channel in place image logical or with constant with unmodified alpha.

Parameters:

> *pConstants* pointer to a list of constant values, one per channel.
>
> *pSrcDst* In-Place Image Pointer.
>
> *nSrcDstStep* In-Place-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.634 NppStatus nppiOrC_8u_AC4R (const Npp8u ∗ *pSrc1*, int *nSrc1Step*, const Npp8u ∗ *pConstants*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Four 8-bit unsigned char channel image logical or with constant with unmodified alpha.

Parameters:

> *pSrc1* Source-Image Pointer.
>
> *nSrc1Step* Source-Image Line Step.
>
> *pConstants* pointer to a list of constant values, one per channel.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.635 NppStatus nppiOrC_8u_C1IR (const Npp8u *nConstant*, Npp8u * *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

One 8-bit unsigned char channel in place image logical or with constant.

Parameters:

  nConstant Constant.

  pSrcDst In-Place Image Pointer.

  nSrcDstStep In-Place-Image Line Step.

  oSizeROI Region-of-Interest (ROI).

Returns:

  Image Data Related Error Codes, ROI Related Error Codes

7.7.1.636 NppStatus nppiOrC_8u_C1R (const Npp8u * *pSrc1*, int *nSrc1Step*, const Npp8u *nConstant*, Npp8u * *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

One 8-bit unsigned char channel image logical or with constant.

Parameters:

  pSrc1 Source-Image Pointer.

  nSrc1Step Source-Image Line Step.

  nConstant Constant.

  pDst Destination-Image Pointer.

  nDstStep Destination-Image Line Step.

  oSizeROI Region-of-Interest (ROI).

Returns:

  Image Data Related Error Codes, ROI Related Error Codes

7.7.1.637 NppStatus nppiOrC_8u_C3IR (const Npp8u * *pConstants*, Npp8u * *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Three 8-bit unsigned char channel in place image logical or with constant.

Parameters:

  pConstants pointer to a list of constant values, one per channel.

  pSrcDst In-Place Image Pointer.

  nSrcDstStep In-Place-Image Line Step.

  oSizeROI Region-of-Interest (ROI).

Returns:

  Image Data Related Error Codes, ROI Related Error Codes

7.7.1.638 NppStatus nppiOrC_8u_C3R (const Npp8u ∗ *pSrc1*, int *nSrc1Step*, const Npp8u ∗ *pConstants*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Three 8-bit unsigned char channel image logical or with constant.

Parameters:

> *pSrc1* Source-Image Pointer.
>
> *nSrc1Step* Source-Image Line Step.
>
> *pConstants* pointer to a list of constant values, one per channel.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.639 NppStatus nppiOrC_8u_C4IR (const Npp8u ∗ *pConstants*, Npp8u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 8-bit unsigned char channel in place image logical or with constant.

Parameters:

> *pConstants* pointer to a list of constant values, one per channel.
>
> *pSrcDst* In-Place Image Pointer.
>
> *nSrcDstStep* In-Place-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.640 NppStatus nppiOrC_8u_C4R (const Npp8u ∗ *pSrc1*, int *nSrc1Step*, const Npp8u ∗ *pConstants*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Four 8-bit unsigned char channel image logical or with constant.

Parameters:

> *pSrc1* Source-Image Pointer.
>
> *nSrc1Step* Source-Image Line Step.
>
> *pConstants* pointer to a list of constant values, one per channel.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.641 NppStatus nppiRShiftC_16s_AC4IR (const Npp32u ∗ *pConstants*, Npp16s ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 16-bit signed short channel in place image right shift by constant with unmodified alpha.

Parameters:

    pConstants pointer to a list of constant values, one per channel.

    pSrcDst In-Place Image Pointer.

    nSrcDstStep In-Place-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.642 NppStatus nppiRShiftC_16s_AC4R (const Npp16s ∗ *pSrc1*, int *nSrc1Step*, const Npp32u ∗ *pConstants*, Npp16s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Four 16-bit signed short channel image right shift by constant with unmodified alpha.

Parameters:

    pSrc1 Source-Image Pointer.

    nSrc1Step Source-Image Line Step.

    pConstants pointer to a list of constant values, one per channel.

    pDst Destination-Image Pointer.

    nDstStep Destination-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.643 NppStatus nppiRShiftC_16s_C1IR (const Npp32u *nConstant*, Npp16s ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

One 16-bit signed short channel in place image right shift by constant.

Parameters:

    nConstant Constant.

    pSrcDst In-Place Image Pointer.

    nSrcDstStep In-Place-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.644   NppStatus nppiRShiftC_16s_C1R (const Npp16s ∗ *pSrc1*, int *nSrc1Step*, const Npp32u *nConstant*, Npp16s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

One 16-bit signed short channel image right shift by constant.

Parameters:

> *pSrc1* Source-Image Pointer.
>
> *nSrc1Step* Source-Image Line Step.
>
> *nConstant* Constant.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.645   NppStatus nppiRShiftC_16s_C3IR (const Npp32u ∗ *pConstants*, Npp16s ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Three 16-bit signed short channel in place image right shift by constant.

Parameters:

> *pConstants* pointer to a list of constant values, one per channel.
>
> *pSrcDst* In-Place Image Pointer.
>
> *nSrcDstStep* In-Place-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.646   NppStatus nppiRShiftC_16s_C3R (const Npp16s ∗ *pSrc1*, int *nSrc1Step*, const Npp32u ∗ *pConstants*, Npp16s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Three 16-bit signed short channel image right shift by constant.

Parameters:

> *pSrc1* Source-Image Pointer.
>
> *nSrc1Step* Source-Image Line Step.
>
> *pConstants* pointer to a list of constant values, one per channel.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.647 NppStatus nppiRShiftC_16s_C4IR (const Npp32u * *pConstants*, Npp16s * *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 16-bit signed short channel in place image right shift by constant.

Parameters:

pConstants pointer to a list of constant values, one per channel.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.648 NppStatus nppiRShiftC_16s_C4R (const Npp16s * *pSrc1*, int *nSrc1Step*, const Npp32u * *pConstants*, Npp16s * *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Four 16-bit signed short channel image right shift by constant.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pConstants pointer to a list of constant values, one per channel.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.649 NppStatus nppiRShiftC_16u_AC4IR (const Npp32u * *pConstants*, Npp16u * *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 16-bit unsigned short channel in place image right shift by constant with unmodified alpha.

Parameters:

pConstants pointer to a list of constant values, one per channel.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.650 NppStatus nppiRShiftC_16u_AC4R (const Npp16u ∗ *pSrc1*, int *nSrc1Step*, const Npp32u ∗ *pConstants*, Npp16u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Four 16-bit unsigned short channel image right shift by constant with unmodified alpha.

Parameters:

>   *pSrc1* Source-Image Pointer.
>
>   *nSrc1Step* Source-Image Line Step.
>
>   *pConstants* pointer to a list of constant values, one per channel.
>
>   *pDst* Destination-Image Pointer.
>
>   *nDstStep* Destination-Image Line Step.
>
>   *oSizeROI* Region-of-Interest (ROI).

Returns:

>   Image Data Related Error Codes, ROI Related Error Codes

7.7.1.651 NppStatus nppiRShiftC_16u_C1IR (const Npp32u *nConstant*, Npp16u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

One 16-bit unsigned short channel in place image right shift by constant.

Parameters:

>   *nConstant* Constant.
>
>   *pSrcDst* In-Place Image Pointer.
>
>   *nSrcDstStep* In-Place-Image Line Step.
>
>   *oSizeROI* Region-of-Interest (ROI).

Returns:

>   Image Data Related Error Codes, ROI Related Error Codes

7.7.1.652 NppStatus nppiRShiftC_16u_C1R (const Npp16u ∗ *pSrc1*, int *nSrc1Step*, const Npp32u *nConstant*, Npp16u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

One 16-bit unsigned short channel image right shift by constant.

Parameters:

>   *pSrc1* Source-Image Pointer.
>
>   *nSrc1Step* Source-Image Line Step.
>
>   *nConstant* Constant.
>
>   *pDst* Destination-Image Pointer.
>
>   *nDstStep* Destination-Image Line Step.
>
>   *oSizeROI* Region-of-Interest (ROI).

Returns:

>   Image Data Related Error Codes, ROI Related Error Codes

7.7.1.653 **NppStatus nppiRShiftC_16u_C3IR (const Npp32u** * *pConstants***, Npp16u** * *pSrcDst***, int** *nSrcDstStep***, NppiSize** *oSizeROI***)**

Three 16-bit unsigned short channel in place image right shift by constant.

Parameters:

> *pConstants* pointer to a list of constant values, one per channel.
>
> *pSrcDst* In-Place Image Pointer.
>
> *nSrcDstStep* In-Place-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.654 **NppStatus nppiRShiftC_16u_C3R (const Npp16u** * *pSrc1***, int** *nSrc1Step***, const Npp32u** * *pConstants***, Npp16u** * *pDst***, int** *nDstStep***, NppiSize** *oSizeROI***)**

Three 16-bit unsigned short channel image right shift by constant.

Parameters:

> *pSrc1* Source-Image Pointer.
>
> *nSrc1Step* Source-Image Line Step.
>
> *pConstants* pointer to a list of constant values, one per channel.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.655 **NppStatus nppiRShiftC_16u_C4IR (const Npp32u** * *pConstants***, Npp16u** * *pSrcDst***, int** *nSrcDstStep***, NppiSize** *oSizeROI***)**

Four 16-bit unsigned short channel in place image right shift by constant.

Parameters:

> *pConstants* pointer to a list of constant values, one per channel.
>
> *pSrcDst* In-Place Image Pointer.
>
> *nSrcDstStep* In-Place-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.656 NppStatus nppiRShiftC_16u_C4R (const Npp16u ∗ _pSrc1_, int _nSrc1Step_, const Npp32u ∗ _pConstants_, Npp16u ∗ _pDst_, int _nDstStep_, NppiSize _oSizeROI_)

Four 16-bit unsigned short channel image right shift by constant.

Parameters:

> _pSrc1_ Source-Image Pointer.
> _nSrc1Step_ Source-Image Line Step.
> _pConstants_ pointer to a list of constant values, one per channel.
> _pDst_ Destination-Image Pointer.
> _nDstStep_ Destination-Image Line Step.
> _oSizeROI_ Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.657 NppStatus nppiRShiftC_32s_AC4IR (const Npp32u ∗ _pConstants_, Npp32s ∗ _pSrcDst_, int _nSrcDstStep_, NppiSize _oSizeROI_)

Four 32-bit signed integer channel in place image right shift by constant with unmodified alpha.

Parameters:

> _pConstants_ pointer to a list of constant values, one per channel.
> _pSrcDst_ In-Place Image Pointer.
> _nSrcDstStep_ In-Place-Image Line Step.
> _oSizeROI_ Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.658 NppStatus nppiRShiftC_32s_AC4R (const Npp32s ∗ _pSrc1_, int _nSrc1Step_, const Npp32u ∗ _pConstants_, Npp32s ∗ _pDst_, int _nDstStep_, NppiSize _oSizeROI_)

Four 32-bit signed integer channel image right shift by constant with unmodified alpha.

Parameters:

> _pSrc1_ Source-Image Pointer.
> _nSrc1Step_ Source-Image Line Step.
> _pConstants_ pointer to a list of constant values, one per channel.
> _pDst_ Destination-Image Pointer.
> _nDstStep_ Destination-Image Line Step.
> _oSizeROI_ Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.659 NppStatus nppiRShiftC_32s_C1IR (const Npp32u *nConstant*, Npp32s * *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

One 32-bit signed integer channel in place image right shift by constant.

Parameters:

>*nConstant* Constant.
>
>*pSrcDst* In-Place Image Pointer.
>
>*nSrcDstStep* In-Place-Image Line Step.
>
>*oSizeROI* Region-of-Interest (ROI).

Returns:

>Image Data Related Error Codes, ROI Related Error Codes

7.7.1.660 NppStatus nppiRShiftC_32s_C1R (const Npp32s * *pSrc1*, int *nSrc1Step*, const Npp32u *nConstant*, Npp32s * *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

One 32-bit signed integer channel image right shift by constant.

Parameters:

>*pSrc1* Source-Image Pointer.
>
>*nSrc1Step* Source-Image Line Step.
>
>*nConstant* Constant.
>
>*pDst* Destination-Image Pointer.
>
>*nDstStep* Destination-Image Line Step.
>
>*oSizeROI* Region-of-Interest (ROI).

Returns:

>Image Data Related Error Codes, ROI Related Error Codes

7.7.1.661 NppStatus nppiRShiftC_32s_C3IR (const Npp32u * *pConstants*, Npp32s * *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Three 32-bit signed integer channel in place image right shift by constant.

Parameters:

>*pConstants* pointer to a list of constant values, one per channel.
>
>*pSrcDst* In-Place Image Pointer.
>
>*nSrcDstStep* In-Place-Image Line Step.
>
>*oSizeROI* Region-of-Interest (ROI).

Returns:

>Image Data Related Error Codes, ROI Related Error Codes

7.7.1.662 NppStatus nppiRShiftC_32s_C3R (const Npp32s ∗ _pSrc1_, int _nSrc1Step_, const Npp32u ∗ _pConstants_, Npp32s ∗ _pDst_, int _nDstStep_, NppiSize _oSizeROI_)

Three 32-bit signed integer channel image right shift by constant.

Parameters:

> _pSrc1_ Source-Image Pointer.
> _nSrc1Step_ Source-Image Line Step.
> _pConstants_ pointer to a list of constant values, one per channel.
> _pDst_ Destination-Image Pointer.
> _nDstStep_ Destination-Image Line Step.
> _oSizeROI_ Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.663 NppStatus nppiRShiftC_32s_C4IR (const Npp32u ∗ _pConstants_, Npp32s ∗ _pSrcDst_, int _nSrcDstStep_, NppiSize _oSizeROI_)

Four 32-bit signed integer channel in place image right shift by constant.

Parameters:

> _pConstants_ pointer to a list of constant values, one per channel.
> _pSrcDst_ In-Place Image Pointer.
> _nSrcDstStep_ In-Place-Image Line Step.
> _oSizeROI_ Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.664 NppStatus nppiRShiftC_32s_C4R (const Npp32s ∗ _pSrc1_, int _nSrc1Step_, const Npp32u ∗ _pConstants_, Npp32s ∗ _pDst_, int _nDstStep_, NppiSize _oSizeROI_)

Four 32-bit signed integer channel image right shift by constant.

Parameters:

> _pSrc1_ Source-Image Pointer.
> _nSrc1Step_ Source-Image Line Step.
> _pConstants_ pointer to a list of constant values, one per channel.
> _pDst_ Destination-Image Pointer.
> _nDstStep_ Destination-Image Line Step.
> _oSizeROI_ Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.665 NppStatus nppiRShiftC_8s_AC4IR (const Npp32u ∗ *pConstants*, Npp8s ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 8-bit signed char channel in place image right shift by constant with unmodified alpha.

Parameters:

    pConstants pointer to a list of constant values, one per channel.

    pSrcDst In-Place Image Pointer.

    nSrcDstStep In-Place-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.666 NppStatus nppiRShiftC_8s_AC4R (const Npp8s ∗ *pSrc1*, int *nSrc1Step*, const Npp32u ∗ *pConstants*, Npp8s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Four 8-bit signed char channel image right shift by constant with unmodified alpha.

Parameters:

    pSrc1 Source-Image Pointer.

    nSrc1Step Source-Image Line Step.

    pConstants pointer to a list of constant values, one per channel.

    pDst Destination-Image Pointer.

    nDstStep Destination-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.667 NppStatus nppiRShiftC_8s_C1IR (const Npp32u *nConstant*, Npp8s ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

One 8-bit signed char channel in place image right shift by constant.

Parameters:

    nConstant Constant.

    pSrcDst In-Place Image Pointer.

    nSrcDstStep In-Place-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.668 **NppStatus nppiRShiftC_8s_C1R (const Npp8s** ∗ *pSrc1*, **int** *nSrc1Step*, **const Npp32u** *nConstant*, **Npp8s** ∗ *pDst*, **int** *nDstStep*, **NppiSize** *oSizeROI*)

One 8-bit signed char channel image right shift by constant.

Parameters:

    pSrc1 Source-Image Pointer.

    nSrc1Step Source-Image Line Step.

    nConstant Constant.

    pDst Destination-Image Pointer.

    nDstStep Destination-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.669 **NppStatus nppiRShiftC_8s_C3IR (const Npp32u** ∗ *pConstants*, **Npp8s** ∗ *pSrcDst*, **int** *nSrcDstStep*, **NppiSize** *oSizeROI*)

Three 8-bit signed char channel in place image right shift by constant.

Parameters:

    pConstants pointer to a list of constant values, one per channel.

    pSrcDst In-Place Image Pointer.

    nSrcDstStep In-Place-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.670 **NppStatus nppiRShiftC_8s_C3R (const Npp8s** ∗ *pSrc1*, **int** *nSrc1Step*, **const Npp32u** ∗ *pConstants*, **Npp8s** ∗ *pDst*, **int** *nDstStep*, **NppiSize** *oSizeROI*)

Three 8-bit signed char channel image right shift by constant.

Parameters:

    pSrc1 Source-Image Pointer.

    nSrc1Step Source-Image Line Step.

    pConstants pointer to a list of constant values, one per channel.

    pDst Destination-Image Pointer.

    nDstStep Destination-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.671 NppStatus nppiRShiftC_8s_C4IR (const Npp32u ∗ pConstants, Npp8s ∗ pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

Four 8-bit signed char channel in place image right shift by constant.

Parameters:

>   *pConstants* pointer to a list of constant values, one per channel.

>   *pSrcDst* In-Place Image Pointer.

>   *nSrcDstStep* In-Place-Image Line Step.

>   *oSizeROI* Region-of-Interest (ROI).

Returns:

>   Image Data Related Error Codes, ROI Related Error Codes

7.7.1.672 NppStatus nppiRShiftC_8s_C4R (const Npp8s ∗ pSrc1, int nSrc1Step, const Npp32u ∗ pConstants, Npp8s ∗ pDst, int nDstStep, NppiSize oSizeROI)

Four 8-bit signed char channel image right shift by constant.

Parameters:

>   *pSrc1* Source-Image Pointer.

>   *nSrc1Step* Source-Image Line Step.

>   *pConstants* pointer to a list of constant values, one per channel.

>   *pDst* Destination-Image Pointer.

>   *nDstStep* Destination-Image Line Step.

>   *oSizeROI* Region-of-Interest (ROI).

Returns:

>   Image Data Related Error Codes, ROI Related Error Codes

7.7.1.673 NppStatus nppiRShiftC_8u_AC4IR (const Npp32u ∗ pConstants, Npp8u ∗ pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

Four 8-bit unsigned char channel in place image right shift by constant with unmodified alpha.

Parameters:

>   *pConstants* pointer to a list of constant values, one per channel.

>   *pSrcDst* In-Place Image Pointer.

>   *nSrcDstStep* In-Place-Image Line Step.

>   *oSizeROI* Region-of-Interest (ROI).

Returns:

>   Image Data Related Error Codes, ROI Related Error Codes

7.7.1.674 NppStatus nppiRShiftC_8u_AC4R (const Npp8u ∗ *pSrc1*, int *nSrc1Step*, const Npp32u ∗ *pConstants*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Four 8-bit unsigned char channel image right shift by constant with unmodified alpha.

Parameters:

> *pSrc1* Source-Image Pointer.
>
> *nSrc1Step* Source-Image Line Step.
>
> *pConstants* pointer to a list of constant values, one per channel.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.675 NppStatus nppiRShiftC_8u_C1IR (const Npp32u *nConstant*, Npp8u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

One 8-bit unsigned char channel in place image right shift by constant.

Parameters:

> *nConstant* Constant.
>
> *pSrcDst* In-Place Image Pointer.
>
> *nSrcDstStep* In-Place-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.676 NppStatus nppiRShiftC_8u_C1R (const Npp8u ∗ *pSrc1*, int *nSrc1Step*, const Npp32u *nConstant*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

One 8-bit unsigned char channel image right shift by constant.

Parameters:

> *pSrc1* Source-Image Pointer.
>
> *nSrc1Step* Source-Image Line Step.
>
> *nConstant* Constant.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.677 NppStatus nppiRShiftC_8u_C3IR (const Npp32u ∗ *pConstants*, Npp8u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Three 8-bit unsigned char channel in place image right shift by constant.

Parameters:

> *pConstants* pointer to a list of constant values, one per channel.
>
> *pSrcDst* In-Place Image Pointer.
>
> *nSrcDstStep* In-Place-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.678 NppStatus nppiRShiftC_8u_C3R (const Npp8u ∗ *pSrc1*, int *nSrc1Step*, const Npp32u ∗ *pConstants*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Three 8-bit unsigned char channel image right shift by constant.

Parameters:

> *pSrc1* Source-Image Pointer.
>
> *nSrc1Step* Source-Image Line Step.
>
> *pConstants* pointer to a list of constant values, one per channel.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.679 NppStatus nppiRShiftC_8u_C4IR (const Npp32u ∗ *pConstants*, Npp8u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 8-bit unsigned char channel in place image right shift by constant.

Parameters:

> *pConstants* pointer to a list of constant values, one per channel.
>
> *pSrcDst* In-Place Image Pointer.
>
> *nSrcDstStep* In-Place-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.680 NppStatus nppiRShiftC_8u_C4R (const Npp8u ∗ *pSrc1*, int *nSrc1Step*, const Npp32u ∗ *pConstants*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Four 8-bit unsigned char channel image right shift by constant.

Parameters:

> *pSrc1* Source-Image Pointer.
>
> *nSrc1Step* Source-Image Line Step.
>
> *pConstants* pointer to a list of constant values, one per channel.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.681 NppStatus nppiSqr_16s_AC4IRSfs (Npp16s ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 16-bit signed short channel in place image squared with unmodified alpha, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

Parameters:

> *pSrcDst* In-Place Image Pointer.
>
> *nSrcDstStep* In-Place-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.682 NppStatus nppiSqr_16s_AC4RSfs (const Npp16s ∗ *pSrc*, int *nSrcStep*, Npp16s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 16-bit signed short channel image squared with unmodified alpha, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

Parameters:

> *pSrc* Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.683 NppStatus nppiSqr_16s_C1IRSfs (Npp16s * *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 16-bit signed short channel in place image squared, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

Parameters:

> *pSrcDst* In-Place Image Pointer.
> *nSrcDstStep* In-Place-Image Line Step.
> *oSizeROI* Region-of-Interest (ROI).
> *nScaleFactor* Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.684 NppStatus nppiSqr_16s_C1RSfs (const Npp16s * *pSrc*, int *nSrcStep*, Npp16s * *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 16-bit signed short channel image squared, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

Parameters:

> *pSrc* Source-Image Pointer.
> *nSrcStep* Source-Image Line Step.
> *pDst* Destination-Image Pointer.
> *nDstStep* Destination-Image Line Step.
> *oSizeROI* Region-of-Interest (ROI).
> *nScaleFactor* Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.685 NppStatus nppiSqr_16s_C3IRSfs (Npp16s * *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Three 16-bit signed short channel in place image squared, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

Parameters:

> *pSrcDst* In-Place Image Pointer.
> *nSrcDstStep* In-Place-Image Line Step.
> *oSizeROI* Region-of-Interest (ROI).
> *nScaleFactor* Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.686 NppStatus nppiSqr_16s_C3RSfs (const Npp16s * *pSrc*, int *nSrcStep*, Npp16s * *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Three 16-bit signed short channel image squared, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

Parameters:

    pSrc Source-Image Pointer.

    nSrcStep Source-Image Line Step.

    pDst Destination-Image Pointer.

    nDstStep Destination-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

    nScaleFactor Integer Result Scaling.

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.687 NppStatus nppiSqr_16s_C4IRSfs (Npp16s * *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 16-bit signed short channel in place image squared, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

Parameters:

    pSrcDst In-Place Image Pointer.

    nSrcDstStep In-Place-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

    nScaleFactor Integer Result Scaling.

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.688 NppStatus nppiSqr_16s_C4RSfs (const Npp16s * *pSrc*, int *nSrcStep*, Npp16s * *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 16-bit signed short channel image squared, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

Parameters:

    pSrc Source-Image Pointer.

    nSrcStep Source-Image Line Step.

    pDst Destination-Image Pointer.

    nDstStep Destination-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

    nScaleFactor Integer Result Scaling.

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.689 NppStatus nppiSqr_16u_AC4IRSfs (Npp16u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 16-bit unsigned short channel in place image squared with unmodified alpha, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

> *pSrcDst* In-Place Image Pointer.
> *nSrcDstStep* In-Place-Image Line Step.
> *oSizeROI* Region-of-Interest (ROI).
> *nScaleFactor* Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.690 NppStatus nppiSqr_16u_AC4RSfs (const Npp16u ∗ *pSrc*, int *nSrcStep*, Npp16u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 16-bit unsigned short channel image squared with unmodified alpha, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

> *pSrc* Source-Image Pointer.
> *nSrcStep* Source-Image Line Step.
> *pDst* Destination-Image Pointer.
> *nDstStep* Destination-Image Line Step.
> *oSizeROI* Region-of-Interest (ROI).
> *nScaleFactor* Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.691 NppStatus nppiSqr_16u_C1IRSfs (Npp16u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 16-bit unsigned short channel in place image squared, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

> *pSrcDst* In-Place Image Pointer.
> *nSrcDstStep* In-Place-Image Line Step.
> *oSizeROI* Region-of-Interest (ROI).
> *nScaleFactor* Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.692   NppStatus nppiSqr_16u_C1RSfs (const Npp16u ∗ _pSrc_, int _nSrcStep_, Npp16u ∗ _pDst_, int _nDstStep_, NppiSize _oSizeROI_, int _nScaleFactor_)

One 16-bit unsigned short channel image squared, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

> _pSrc_ Source-Image Pointer.
> _nSrcStep_ Source-Image Line Step.
> _pDst_ Destination-Image Pointer.
> _nDstStep_ Destination-Image Line Step.
> _oSizeROI_ Region-of-Interest (ROI).
> _nScaleFactor_ Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.693   NppStatus nppiSqr_16u_C3IRSfs (Npp16u ∗ _pSrcDst_, int _nSrcDstStep_, NppiSize _oSizeROI_, int _nScaleFactor_)

Three 16-bit unsigned short channel in place image squared, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

> _pSrcDst_ In-Place Image Pointer.
> _nSrcDstStep_ In-Place-Image Line Step.
> _oSizeROI_ Region-of-Interest (ROI).
> _nScaleFactor_ Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.694   NppStatus nppiSqr_16u_C3RSfs (const Npp16u ∗ _pSrc_, int _nSrcStep_, Npp16u ∗ _pDst_, int _nDstStep_, NppiSize _oSizeROI_, int _nScaleFactor_)

Three 16-bit unsigned short channel image squared, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

> _pSrc_ Source-Image Pointer.
> _nSrcStep_ Source-Image Line Step.
> _pDst_ Destination-Image Pointer.
> _nDstStep_ Destination-Image Line Step.
> _oSizeROI_ Region-of-Interest (ROI).
> _nScaleFactor_ Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.695 NppStatus nppiSqr_16u_C4IRSfs (Npp16u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 16-bit unsigned short channel in place image squared, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

> *pSrcDst* In-Place Image Pointer.
>
> *nSrcDstStep* In-Place-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.696 NppStatus nppiSqr_16u_C4RSfs (const Npp16u ∗ *pSrc*, int *nSrcStep*, Npp16u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 16-bit unsigned short channel image squared, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

> *pSrc* Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.697 NppStatus nppiSqr_32f_AC4IR (Npp32f ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 32-bit floating point channel in place image squared with unmodified alpha.

Parameters:

> *pSrcDst* In-Place Image Pointer.
>
> *nSrcDstStep* In-Place-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.698 NppStatus nppiSqr_32f_AC4R (const Npp32f * *pSrc*, int *nSrcStep*, Npp32f * *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Four 32-bit floating point channel image squared with unmodified alpha.

Parameters:

 pSrc Source-Image Pointer.

 nSrcStep Source-Image Line Step.

 pDst Destination-Image Pointer.

 nDstStep Destination-Image Line Step.

 oSizeROI Region-of-Interest (ROI).

Returns:

 Image Data Related Error Codes, ROI Related Error Codes

7.7.1.699 NppStatus nppiSqr_32f_C1IR (Npp32f * *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

One 32-bit floating point channel in place image squared.

Parameters:

 pSrcDst In-Place Image Pointer.

 nSrcDstStep In-Place-Image Line Step.

 oSizeROI Region-of-Interest (ROI).

Returns:

 Image Data Related Error Codes, ROI Related Error Codes

7.7.1.700 NppStatus nppiSqr_32f_C1R (const Npp32f * *pSrc*, int *nSrcStep*, Npp32f * *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

One 32-bit floating point channel image squared.

Parameters:

 pSrc Source-Image Pointer.

 nSrcStep Source-Image Line Step.

 pDst Destination-Image Pointer.

 nDstStep Destination-Image Line Step.

 oSizeROI Region-of-Interest (ROI).

Returns:

 Image Data Related Error Codes, ROI Related Error Codes

7.7.1.701 NppStatus nppiSqr_32f_C3IR (Npp32f ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Three 32-bit floating point channel in place image squared.

Parameters:

>   *pSrcDst* In-Place Image Pointer.
>
>   *nSrcDstStep* In-Place-Image Line Step.
>
>   *oSizeROI* Region-of-Interest (ROI).

Returns:

>   Image Data Related Error Codes, ROI Related Error Codes

7.7.1.702 NppStatus nppiSqr_32f_C3R (const Npp32f ∗ *pSrc*, int *nSrcStep*, Npp32f ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Three 32-bit floating point channel image squared.

Parameters:

>   *pSrc* Source-Image Pointer.
>
>   *nSrcStep* Source-Image Line Step.
>
>   *pDst* Destination-Image Pointer.
>
>   *nDstStep* Destination-Image Line Step.
>
>   *oSizeROI* Region-of-Interest (ROI).

Returns:

>   Image Data Related Error Codes, ROI Related Error Codes

7.7.1.703 NppStatus nppiSqr_32f_C4IR (Npp32f ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 32-bit floating point channel in place image squared.

Parameters:

>   *pSrcDst* In-Place Image Pointer.
>
>   *nSrcDstStep* In-Place-Image Line Step.
>
>   *oSizeROI* Region-of-Interest (ROI).

Returns:

>   Image Data Related Error Codes, ROI Related Error Codes

7.7.1.704   NppStatus nppiSqr_32f_C4R (const Npp32f ∗ *pSrc*, int *nSrcStep*, Npp32f ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Four 32-bit floating point channel image squared.

Parameters:

    pSrc Source-Image Pointer.

    nSrcStep Source-Image Line Step.

    pDst Destination-Image Pointer.

    nDstStep Destination-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.705   NppStatus nppiSqr_8u_AC4IRSfs (Npp8u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 8-bit unsigned char channel in place image squared with unmodified alpha, scale by $2^{\wedge}($-nScaleFactor), then clamp to saturated value.

Parameters:

    pSrcDst In-Place Image Pointer.

    nSrcDstStep In-Place-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

    nScaleFactor Integer Result Scaling.

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.706   NppStatus nppiSqr_8u_AC4RSfs (const Npp8u ∗ *pSrc*, int *nSrcStep*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 8-bit unsigned char channel image squared with unmodified alpha, scale by $2^{\wedge}($-nScaleFactor), then clamp to saturated value.

Parameters:

    pSrc Source-Image Pointer.

    nSrcStep Source-Image Line Step.

    pDst Destination-Image Pointer.

    nDstStep Destination-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

    nScaleFactor Integer Result Scaling.

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.707 NppStatus nppiSqr_8u_C1IRSfs (Npp8u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 8-bit unsigned char channel in place image squared, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

> *pSrcDst* In-Place Image Pointer.
> *nSrcDstStep* In-Place-Image Line Step.
> *oSizeROI* Region-of-Interest (ROI).
> *nScaleFactor* Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.708 NppStatus nppiSqr_8u_C1RSfs (const Npp8u ∗ *pSrc*, int *nSrcStep*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 8-bit unsigned char channel image squared, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

> *pSrc* Source-Image Pointer.
> *nSrcStep* Source-Image Line Step.
> *pDst* Destination-Image Pointer.
> *nDstStep* Destination-Image Line Step.
> *oSizeROI* Region-of-Interest (ROI).
> *nScaleFactor* Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.709 NppStatus nppiSqr_8u_C3IRSfs (Npp8u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Three 8-bit unsigned char channel in place image squared, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

> *pSrcDst* In-Place Image Pointer.
> *nSrcDstStep* In-Place-Image Line Step.
> *oSizeROI* Region-of-Interest (ROI).
> *nScaleFactor* Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.710 NppStatus nppiSqr_8u_C3RSfs (const Npp8u ∗ _pSrc_, int _nSrcStep_, Npp8u ∗ _pDst_, int _nDstStep_, NppiSize _oSizeROI_, int _nScaleFactor_)

Three 8-bit unsigned char channel image squared, scale by $2^\wedge$(-nScaleFactor), then clamp to saturated value.

Parameters:

>   _pSrc_ Source-Image Pointer.
>   _nSrcStep_ Source-Image Line Step.
>   _pDst_ Destination-Image Pointer.
>   _nDstStep_ Destination-Image Line Step.
>   _oSizeROI_ Region-of-Interest (ROI).
>   _nScaleFactor_ Integer Result Scaling.

Returns:

>   Image Data Related Error Codes, ROI Related Error Codes

7.7.1.711 NppStatus nppiSqr_8u_C4IRSfs (Npp8u ∗ _pSrcDst_, int _nSrcDstStep_, NppiSize _oSizeROI_, int _nScaleFactor_)

Four 8-bit unsigned char channel in place image squared, scale by $2^\wedge$(-nScaleFactor), then clamp to saturated value.

Parameters:

>   _pSrcDst_ In-Place Image Pointer.
>   _nSrcDstStep_ In-Place-Image Line Step.
>   _oSizeROI_ Region-of-Interest (ROI).
>   _nScaleFactor_ Integer Result Scaling.

Returns:

>   Image Data Related Error Codes, ROI Related Error Codes

7.7.1.712 NppStatus nppiSqr_8u_C4RSfs (const Npp8u ∗ _pSrc_, int _nSrcStep_, Npp8u ∗ _pDst_, int _nDstStep_, NppiSize _oSizeROI_, int _nScaleFactor_)

Four 8-bit unsigned char channel image squared, scale by $2^\wedge$(-nScaleFactor), then clamp to saturated value.

Parameters:

>   _pSrc_ Source-Image Pointer.
>   _nSrcStep_ Source-Image Line Step.
>   _pDst_ Destination-Image Pointer.
>   _nDstStep_ Destination-Image Line Step.
>   _oSizeROI_ Region-of-Interest (ROI).
>   _nScaleFactor_ Integer Result Scaling.

Returns:

>   Image Data Related Error Codes, ROI Related Error Codes

7.7.1.713 NppStatus nppiSqrt_16s_AC4IRSfs (Npp16s ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 16-bit signed short channel in place image square root with unmodified alpha, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

Parameters:

> *pSrcDst* In-Place Image Pointer.
>
> *nSrcDstStep* In-Place-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.714 NppStatus nppiSqrt_16s_AC4RSfs (const Npp16s ∗ *pSrc*, int *nSrcStep*, Npp16s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 16-bit signed short channel image square root with unmodified alpha, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

Parameters:

> *pSrc* Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.715 NppStatus nppiSqrt_16s_C1IRSfs (Npp16s ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 16-bit signed short channel in place image square root, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

Parameters:

> *pSrcDst* In-Place Image Pointer.
>
> *nSrcDstStep* In-Place-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.716 NppStatus nppiSqrt_16s_C1RSfs (const Npp16s ∗ *pSrc*, int *nSrcStep*, Npp16s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 16-bit signed short channel image square root, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

> *pSrc* Source-Image Pointer.
> *nSrcStep* Source-Image Line Step.
> *pDst* Destination-Image Pointer.
> *nDstStep* Destination-Image Line Step.
> *oSizeROI* Region-of-Interest (ROI).
> *nScaleFactor* Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.717 NppStatus nppiSqrt_16s_C3IRSfs (Npp16s ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Three 16-bit signed short channel in place image square root, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

> *pSrcDst* In-Place Image Pointer.
> *nSrcDstStep* In-Place-Image Line Step.
> *oSizeROI* Region-of-Interest (ROI).
> *nScaleFactor* Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.718 NppStatus nppiSqrt_16s_C3RSfs (const Npp16s ∗ *pSrc*, int *nSrcStep*, Npp16s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Three 16-bit signed short channel image square root, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

> *pSrc* Source-Image Pointer.
> *nSrcStep* Source-Image Line Step.
> *pDst* Destination-Image Pointer.
> *nDstStep* Destination-Image Line Step.
> *oSizeROI* Region-of-Interest (ROI).
> *nScaleFactor* Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.719 NppStatus nppiSqrt_16u_AC4IRSfs (Npp16u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 16-bit unsigned short channel in place image square root with unmodified alpha, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

>*pSrcDst* In-Place Image Pointer.
>
>*nSrcDstStep* In-Place-Image Line Step.
>
>*oSizeROI* Region-of-Interest (ROI).
>
>*nScaleFactor* Integer Result Scaling.

Returns:

>Image Data Related Error Codes, ROI Related Error Codes

7.7.1.720 NppStatus nppiSqrt_16u_AC4RSfs (const Npp16u ∗ *pSrc*, int *nSrcStep*, Npp16u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 16-bit unsigned short channel image square root with unmodified alpha, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

>*pSrc* Source-Image Pointer.
>
>*nSrcStep* Source-Image Line Step.
>
>*pDst* Destination-Image Pointer.
>
>*nDstStep* Destination-Image Line Step.
>
>*oSizeROI* Region-of-Interest (ROI).
>
>*nScaleFactor* Integer Result Scaling.

Returns:

>Image Data Related Error Codes, ROI Related Error Codes

7.7.1.721 NppStatus nppiSqrt_16u_C1IRSfs (Npp16u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 16-bit unsigned short channel in place image square root, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

>*pSrcDst* In-Place Image Pointer.
>
>*nSrcDstStep* In-Place-Image Line Step.
>
>*oSizeROI* Region-of-Interest (ROI).
>
>*nScaleFactor* Integer Result Scaling.

Returns:

>Image Data Related Error Codes, ROI Related Error Codes

7.7.1.722 NppStatus nppiSqrt_16u_C1RSfs (const Npp16u * *pSrc*, int *nSrcStep*, Npp16u * *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 16-bit unsigned short channel image square root, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

>*pSrc* Source-Image Pointer.
>*nSrcStep* Source-Image Line Step.
>*pDst* Destination-Image Pointer.
>*nDstStep* Destination-Image Line Step.
>*oSizeROI* Region-of-Interest (ROI).
>*nScaleFactor* Integer Result Scaling.

Returns:

>Image Data Related Error Codes, ROI Related Error Codes

7.7.1.723 NppStatus nppiSqrt_16u_C3IRSfs (Npp16u * *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Three 16-bit unsigned short channel in place image square root, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

>*pSrcDst* In-Place Image Pointer.
>*nSrcDstStep* In-Place-Image Line Step.
>*oSizeROI* Region-of-Interest (ROI).
>*nScaleFactor* Integer Result Scaling.

Returns:

>Image Data Related Error Codes, ROI Related Error Codes

7.7.1.724 NppStatus nppiSqrt_16u_C3RSfs (const Npp16u * *pSrc*, int *nSrcStep*, Npp16u * *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Three 16-bit unsigned short channel image square root, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

>*pSrc* Source-Image Pointer.
>*nSrcStep* Source-Image Line Step.
>*pDst* Destination-Image Pointer.
>*nDstStep* Destination-Image Line Step.
>*oSizeROI* Region-of-Interest (ROI).
>*nScaleFactor* Integer Result Scaling.

Returns:

>Image Data Related Error Codes, ROI Related Error Codes

7.7.1.725 **NppStatus nppiSqrt_32f_AC4IR (Npp32f** ∗ *pSrcDst*, **int** *nSrcDstStep*, **NppiSize** *oSizeROI***)**

Four 32-bit floating point channel in place image square root with unmodified alpha.

Parameters:

 pSrcDst In-Place Image Pointer.

 nSrcDstStep In-Place-Image Line Step.

 oSizeROI Region-of-Interest (ROI).

Returns:

 Image Data Related Error Codes, ROI Related Error Codes

7.7.1.726 **NppStatus nppiSqrt_32f_AC4R (const Npp32f** ∗ *pSrc*, **int** *nSrcStep*, **Npp32f** ∗ *pDst*, **int** *nDstStep*, **NppiSize** *oSizeROI***)**

Four 32-bit floating point channel image square root with unmodified alpha.

Parameters:

 pSrc Source-Image Pointer.

 nSrcStep Source-Image Line Step.

 pDst Destination-Image Pointer.

 nDstStep Destination-Image Line Step.

 oSizeROI Region-of-Interest (ROI).

Returns:

 Image Data Related Error Codes, ROI Related Error Codes

7.7.1.727 **NppStatus nppiSqrt_32f_C1IR (Npp32f** ∗ *pSrcDst*, **int** *nSrcDstStep*, **NppiSize** *oSizeROI***)**

One 32-bit floating point channel in place image square root.

Parameters:

 pSrcDst In-Place Image Pointer.

 nSrcDstStep In-Place-Image Line Step.

 oSizeROI Region-of-Interest (ROI).

Returns:

 Image Data Related Error Codes, ROI Related Error Codes

7.7.1.728 NppStatus nppiSqrt_32f_C1R (const Npp32f ∗ _pSrc_, int _nSrcStep_, Npp32f ∗ _pDst_, int _nDstStep_, NppiSize _oSizeROI_)

One 32-bit floating point channel image square root.

Parameters:

> **_pSrc_** Source-Image Pointer.
>
> **_nSrcStep_** Source-Image Line Step.
>
> **_pDst_** Destination-Image Pointer.
>
> **_nDstStep_** Destination-Image Line Step.
>
> **_oSizeROI_** Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.729 NppStatus nppiSqrt_32f_C3IR (Npp32f ∗ _pSrcDst_, int _nSrcDstStep_, NppiSize _oSizeROI_)

Three 32-bit floating point channel in place image square root.

Parameters:

> **_pSrcDst_** In-Place Image Pointer.
>
> **_nSrcDstStep_** In-Place-Image Line Step.
>
> **_oSizeROI_** Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.730 NppStatus nppiSqrt_32f_C3R (const Npp32f ∗ _pSrc_, int _nSrcStep_, Npp32f ∗ _pDst_, int _nDstStep_, NppiSize _oSizeROI_)

Three 32-bit floating point channel image square root.

Parameters:

> **_pSrc_** Source-Image Pointer.
>
> **_nSrcStep_** Source-Image Line Step.
>
> **_pDst_** Destination-Image Pointer.
>
> **_nDstStep_** Destination-Image Line Step.
>
> **_oSizeROI_** Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.731 NppStatus nppiSqrt_32f_C4IR (Npp32f ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 32-bit floating point channel in place image square root.

Parameters:

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.732 NppStatus nppiSqrt_32f_C4R (const Npp32f ∗ *pSrc*, int *nSrcStep*, Npp32f ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Four 32-bit floating point channel image square root.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.733 NppStatus nppiSqrt_8u_AC4IRSfs (Npp8u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 8-bit unsigned char channel in place image square root with unmodified alpha, scale by $2^{-nScaleFactor}$, then clamp to saturated value.

Parameters:

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.734 NppStatus nppiSqrt_8u_AC4RSfs (const Npp8u ∗ *pSrc*, int *nSrcStep*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 8-bit unsigned char channel image square root with unmodified alpha, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

> *pSrc* Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.735 NppStatus nppiSqrt_8u_C1IRSfs (Npp8u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 8-bit unsigned char channel in place image square root, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

> *pSrcDst* In-Place Image Pointer.
>
> *nSrcDstStep* In-Place-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.736 NppStatus nppiSqrt_8u_C1RSfs (const Npp8u ∗ *pSrc*, int *nSrcStep*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 8-bit unsigned char channel image square root, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

> *pSrc* Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.737 NppStatus nppiSqrt_8u_C3IRSfs (Npp8u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Three 8-bit unsigned char channel in place image square root, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.738 NppStatus nppiSqrt_8u_C3RSfs (const Npp8u ∗ *pSrc*, int *nSrcStep*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Three 8-bit unsigned char channel image square root, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.739 NppStatus nppiSub_16s_AC4IRSfs (const Npp16s ∗ *pSrc*, int *nSrcStep*, Npp16s ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 16-bit signed short channel with unmodified alpha in place image subtraction, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.740 NppStatus nppiSub_16s_AC4RSfs (const Npp16s ∗ *pSrc1*, int *nSrc1Step*, const Npp16s ∗ *pSrc2*, int *nSrc2Step*, Npp16s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 16-bit signed short channel with unmodified alpha image subtraction, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pSrc2 Source-Image Pointer.

nSrc2Step Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.741 NppStatus nppiSub_16s_C1IRSfs (const Npp16s ∗ *pSrc*, int *nSrcStep*, Npp16s ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 16-bit signed short channel in place image subtraction, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.742 NppStatus nppiSub_16s_C1RSfs (const Npp16s ∗ pSrc1, int nSrc1Step, const Npp16s ∗ pSrc2, int nSrc2Step, Npp16s ∗ pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

One 16-bit signed short channel image subtraction, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

Parameters:

> *pSrc1* Source-Image Pointer.
>
> *nSrc1Step* Source-Image Line Step.
>
> *pSrc2* Source-Image Pointer.
>
> *nSrc2Step* Source-Image Line Step.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.743 NppStatus nppiSub_16s_C3IRSfs (const Npp16s ∗ pSrc, int nSrcStep, Npp16s ∗ pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

One 16-bit signed short channel in place image subtraction, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

Parameters:

> *pSrc* Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *pSrcDst* In-Place Image Pointer.
>
> *nSrcDstStep* In-Place-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.744 NppStatus nppiSub_16s_C3RSfs (const Npp16s ∗ pSrc1, int nSrc1Step, const Npp16s ∗ pSrc2, int nSrc2Step, Npp16s ∗ pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

Three 16-bit signed short channel image subtraction, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

Parameters:

> *pSrc1* Source-Image Pointer.
>
> *nSrc1Step* Source-Image Line Step.
>
> *pSrc2* Source-Image Pointer.
>
> *nSrc2Step* Source-Image Line Step.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.745 NppStatus nppiSub_16s_C4IRSfs (const Npp16s ∗ *pSrc*, int *nSrcStep*, Npp16s ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 16-bit signed short channel in place image subtraction, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

> *pSrc* Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *pSrcDst* In-Place Image Pointer.
>
> *nSrcDstStep* In-Place-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.746 NppStatus nppiSub_16s_C4RSfs (const Npp16s ∗ *pSrc1*, int *nSrc1Step*, const Npp16s ∗ *pSrc2*, int *nSrc2Step*, Npp16s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 16-bit signed short channel image subtraction, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

> *pSrc1* Source-Image Pointer.
>
> *nSrc1Step* Source-Image Line Step.
>
> *pSrc2* Source-Image Pointer.
>
> *nSrc2Step* Source-Image Line Step.
>
> *pDst* Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.747   NppStatus nppiSub_16sc_AC4IRSfs (const Npp16sc ∗ *pSrc*, int *nSrcStep*, Npp16sc ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 16-bit signed short complex number (16-bit real, 16-bit imaginary) channel with unmodified alpha in place image subtraction, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.748   NppStatus nppiSub_16sc_AC4RSfs (const Npp16sc ∗ *pSrc1*, int *nSrc1Step*, const Npp16sc ∗ *pSrc2*, int *nSrc2Step*, Npp16sc ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 16-bit signed short complex number (16-bit real, 16-bit imaginary) channel with unmodified alpha image subtraction, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pSrc2 Source-Image Pointer.

nSrc2Step Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.749 NppStatus nppiSub_16sc_C1IRSfs (const Npp16sc ∗ *pSrc*, int *nSrcStep*, Npp16sc ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 16-bit signed short complex number (16-bit real, 16-bit imaginary) channel in place image subtraction, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

> *pSrc* Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *pSrcDst* In-Place Image Pointer.
>
> *nSrcDstStep* In-Place-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.750 NppStatus nppiSub_16sc_C1RSfs (const Npp16sc ∗ *pSrc1*, int *nSrc1Step*, const Npp16sc ∗ *pSrc2*, int *nSrc2Step*, Npp16sc ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 16-bit signed short complex number (16-bit real, 16-bit imaginary) channel image subtraction, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

> *pSrc1* Source-Image Pointer.
>
> *nSrc1Step* Source-Image Line Step.
>
> *pSrc2* Source-Image Pointer.
>
> *nSrc2Step* Source-Image Line Step.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.751 NppStatus nppiSub_16sc_C3IRSfs (const Npp16sc ∗ *pSrc*, int *nSrcStep*, Npp16sc ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 16-bit signed short complex number (16-bit real, 16-bit imaginary) channel in place image subtraction, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

> *pSrc* Source-Image Pointer.

nSrcStep Source-Image Line Step.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.752 NppStatus nppiSub_16sc_C3RSfs (const Npp16sc ∗ *pSrc1*, int *nSrc1Step*, const Npp16sc ∗ *pSrc2*, int *nSrc2Step*, Npp16sc ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Three 16-bit signed short complex number (16-bit real, 16-bit imaginary) channel image subtraction, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pSrc2 Source-Image Pointer.

nSrc2Step Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.753 NppStatus nppiSub_16u_AC4IRSfs (const Npp16u ∗ *pSrc*, int *nSrcStep*, Npp16u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 16-bit unsigned short channel with unmodified alpha in place image subtraction, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.754 NppStatus nppiSub_16u_AC4RSfs (const Npp16u ∗ *pSrc1*, int *nSrc1Step*, const Npp16u ∗ *pSrc2*, int *nSrc2Step*, Npp16u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 16-bit unsigned short channel with unmodified alpha image subtraction, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

> *pSrc1* Source-Image Pointer.
>
> *nSrc1Step* Source-Image Line Step.
>
> *pSrc2* Source-Image Pointer.
>
> *nSrc2Step* Source-Image Line Step.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.755 NppStatus nppiSub_16u_C1IRSfs (const Npp16u ∗ *pSrc*, int *nSrcStep*, Npp16u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 16-bit unsigned short channel in place image subtraction, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

> *pSrc* Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *pSrcDst* In-Place Image Pointer.
>
> *nSrcDstStep* In-Place-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.756 NppStatus nppiSub_16u_C1RSfs (const Npp16u ∗ *pSrc1*, int *nSrc1Step*, const Npp16u ∗ *pSrc2*, int *nSrc2Step*, Npp16u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 16-bit unsigned short channel image subtraction, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

> ***pSrc1*** Source-Image Pointer.
>
> ***nSrc1Step*** Source-Image Line Step.
>
> ***pSrc2*** Source-Image Pointer.
>
> ***nSrc2Step*** Source-Image Line Step.
>
> ***pDst*** Destination-Image Pointer.
>
> ***nDstStep*** Destination-Image Line Step.
>
> ***oSizeROI*** Region-of-Interest (ROI).
>
> ***nScaleFactor*** Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.757 NppStatus nppiSub_16u_C3IRSfs (const Npp16u ∗ *pSrc*, int *nSrcStep*, Npp16u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 16-bit unsigned short channel in place image subtraction, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

> ***pSrc*** Source-Image Pointer.
>
> ***nSrcStep*** Source-Image Line Step.
>
> ***pSrcDst*** In-Place Image Pointer.
>
> ***nSrcDstStep*** In-Place-Image Line Step.
>
> ***oSizeROI*** Region-of-Interest (ROI).
>
> ***nScaleFactor*** Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.758 NppStatus nppiSub_16u_C3RSfs (const Npp16u ∗ *pSrc1*, int *nSrc1Step*, const Npp16u ∗ *pSrc2*, int *nSrc2Step*, Npp16u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Three 16-bit unsigned short channel image subtraction, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

> ***pSrc1*** Source-Image Pointer.
>
> ***nSrc1Step*** Source-Image Line Step.
>
> ***pSrc2*** Source-Image Pointer.
>
> ***nSrc2Step*** Source-Image Line Step.
>
> ***pDst*** Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.759 NppStatus nppiSub_16u_C4IRSfs (const Npp16u ∗ *pSrc*, int *nSrcStep*, Npp16u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 16-bit unsigned short channel in place image subtraction, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.760 NppStatus nppiSub_16u_C4RSfs (const Npp16u ∗ *pSrc1*, int *nSrc1Step*, const Npp16u ∗ *pSrc2*, int *nSrc2Step*, Npp16u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 16-bit unsigned short channel image subtraction, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pSrc2 Source-Image Pointer.

nSrc2Step Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.761 NppStatus nppiSub_32f_AC4IR (const Npp32f ∗ _pSrc_, int _nSrcStep_, Npp32f ∗ _pSrcDst_, int _nSrcDstStep_, NppiSize _oSizeROI_)

Four 32-bit floating point channel with unmodified alpha in place image subtraction.

Parameters:

> _pSrc_ Source-Image Pointer.
> _nSrcStep_ Source-Image Line Step.
> _pSrcDst_ In-Place Image Pointer.
> _nSrcDstStep_ In-Place-Image Line Step.
> _oSizeROI_ Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.762 NppStatus nppiSub_32f_AC4R (const Npp32f ∗ _pSrc1_, int _nSrc1Step_, const Npp32f ∗ _pSrc2_, int _nSrc2Step_, Npp32f ∗ _pDst_, int _nDstStep_, NppiSize _oSizeROI_)

Four 32-bit floating point channel with unmodified alpha image subtraction.

Parameters:

> _pSrc1_ Source-Image Pointer.
> _nSrc1Step_ Source-Image Line Step.
> _pSrc2_ Source-Image Pointer.
> _nSrc2Step_ Source-Image Line Step.
> _pDst_ Destination-Image Pointer.
> _nDstStep_ Destination-Image Line Step.
> _oSizeROI_ Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.763 NppStatus nppiSub_32f_C1IR (const Npp32f ∗ _pSrc_, int _nSrcStep_, Npp32f ∗ _pSrcDst_, int _nSrcDstStep_, NppiSize _oSizeROI_)

One 32-bit floating point channel in place image subtraction.

Parameters:

> _pSrc_ Source-Image Pointer.
> _nSrcStep_ Source-Image Line Step.
> _pSrcDst_ In-Place Image Pointer.
> _nSrcDstStep_ In-Place-Image Line Step.
> _oSizeROI_ Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.764 NppStatus nppiSub_32f_C1R (const Npp32f ∗ *pSrc1*, int *nSrc1Step*, const Npp32f ∗ *pSrc2*, int *nSrc2Step*, Npp32f ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

One 32-bit floating point channel image subtraction.

Parameters:

    pSrc1 Source-Image Pointer.

    nSrc1Step Source-Image Line Step.

    pSrc2 Source-Image Pointer.

    nSrc2Step Source-Image Line Step.

    pDst Destination-Image Pointer.

    nDstStep Destination-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.765 NppStatus nppiSub_32f_C3IR (const Npp32f ∗ *pSrc*, int *nSrcStep*, Npp32f ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

One 32-bit floating point channel in place image subtraction.

Parameters:

    pSrc Source-Image Pointer.

    nSrcStep Source-Image Line Step.

    pSrcDst In-Place Image Pointer.

    nSrcDstStep In-Place-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.766 NppStatus nppiSub_32f_C3R (const Npp32f ∗ *pSrc1*, int *nSrc1Step*, const Npp32f ∗ *pSrc2*, int *nSrc2Step*, Npp32f ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Three 32-bit floating point channel image subtraction.

Parameters:

    pSrc1 Source-Image Pointer.

    nSrc1Step Source-Image Line Step.

    pSrc2 Source-Image Pointer.

    nSrc2Step Source-Image Line Step.

    pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.767 NppStatus nppiSub_32f_C4IR (const Npp32f ∗ *pSrc*, int *nSrcStep*, Npp32f ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 32-bit floating point channel in place image subtraction.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.768 NppStatus nppiSub_32f_C4R (const Npp32f ∗ *pSrc1*, int *nSrc1Step*, const Npp32f ∗ *pSrc2*, int *nSrc2Step*, Npp32f ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Four 32-bit floating point channel image subtraction.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pSrc2 Source-Image Pointer.

nSrc2Step Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.769 NppStatus nppiSub_32fc_AC4IR (const Npp32fc ∗ *pSrc*, int *nSrcStep*, Npp32fc ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 32-bit floating point complex number (32-bit real, 32-bit imaginary) channel with unmodified alpha in place image subtraction.

Parameters:

> *pSrc* Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *pSrcDst* In-Place Image Pointer.
>
> *nSrcDstStep* In-Place-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.770 NppStatus nppiSub_32fc_AC4R (const Npp32fc ∗ *pSrc1*, int *nSrc1Step*, const Npp32fc ∗ *pSrc2*, int *nSrc2Step*, Npp32fc ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Four 32-bit floating point complex number (32-bit real, 32-bit imaginary) channel with unmodified alpha image subtraction.

Parameters:

> *pSrc1* Source-Image Pointer.
>
> *nSrc1Step* Source-Image Line Step.
>
> *pSrc2* Source-Image Pointer.
>
> *nSrc2Step* Source-Image Line Step.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.771 NppStatus nppiSub_32fc_C1IR (const Npp32fc ∗ *pSrc*, int *nSrcStep*, Npp32fc ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

One 32-bit floating point complex number (32-bit real, 32-bit imaginary) channel in place image subtraction.

Parameters:

> *pSrc* Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *pSrcDst* In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.772 NppStatus nppiSub_32fc_C1R (const Npp32fc ∗ *pSrc1*, int *nSrc1Step*, const Npp32fc ∗ *pSrc2*, int *nSrc2Step*, Npp32fc ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

One 32-bit floating point complex number (32-bit real, 32-bit imaginary) channel image subtraction.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pSrc2 Source-Image Pointer.

nSrc2Step Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.773 NppStatus nppiSub_32fc_C3IR (const Npp32fc ∗ *pSrc*, int *nSrcStep*, Npp32fc ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

One 32-bit floating point complex number (32-bit real, 32-bit imaginary) channel in place image subtraction.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.774 NppStatus nppiSub_32fc_C3R (const Npp32fc ∗ *pSrc1*, int *nSrc1Step*, const Npp32fc ∗ *pSrc2*, int *nSrc2Step*, Npp32fc ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Three 32-bit floating point complex number (32-bit real, 32-bit imaginary) channel image subtraction.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pSrc2 Source-Image Pointer.

nSrc2Step Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.775 NppStatus nppiSub_32fc_C4IR (const Npp32fc ∗ *pSrc*, int *nSrcStep*, Npp32fc ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 32-bit floating point complex number (32-bit real, 32-bit imaginary) channel in place image subtraction.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.776 NppStatus nppiSub_32fc_C4R (const Npp32fc ∗ *pSrc1*, int *nSrc1Step*, const Npp32fc ∗ *pSrc2*, int *nSrc2Step*, Npp32fc ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Four 32-bit floating point complex number (32-bit real, 32-bit imaginary) channel image subtraction.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pSrc2 Source-Image Pointer.

nSrc2Step Source-Image Line Step.

> ***pDst*** Destination-Image Pointer.
>
> ***nDstStep*** Destination-Image Line Step.
>
> ***oSizeROI*** Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.777 NppStatus nppiSub_32s_C1IRSfs (const Npp32s ∗ *pSrc*, int *nSrcStep*, Npp32s ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 32-bit signed integer channel in place image subtraction, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

Parameters:

> ***pSrc*** Source-Image Pointer.
>
> ***nSrcStep*** Source-Image Line Step.
>
> ***pSrcDst*** In-Place Image Pointer.
>
> ***nSrcDstStep*** In-Place-Image Line Step.
>
> ***oSizeROI*** Region-of-Interest (ROI).
>
> ***nScaleFactor*** Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.778 NppStatus nppiSub_32s_C1R (const Npp32s ∗ *pSrc1*, int *nSrc1Step*, const Npp32s ∗ *pSrc2*, int *nSrc2Step*, Npp32s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Note: This function is to be deprecated in future NPP releases, use the function above with a scale factor of 0 instead.

32-bit image subtraction. Subtract pSrc1's pixels from corresponding pixels in pSrc2.

Parameters:

> ***pSrc1*** Source-Image Pointer.
>
> ***nSrc1Step*** Source-Image Line Step.
>
> ***pSrc2*** Source-Image Pointer.
>
> ***nSrc2Step*** Source-Image Line Step.
>
> ***pDst*** Destination-Image Pointer.
>
> ***nDstStep*** Destination-Image Line Step.
>
> ***oSizeROI*** Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.779 NppStatus nppiSub_32s_C1RSfs (const Npp32s ∗ *pSrc1*, int *nSrc1Step*, const Npp32s ∗ *pSrc2*, int *nSrc2Step*, Npp32s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 32-bit signed integer channel image subtraction, scale by $2^\wedge$(-nScaleFactor), then clamp to saturated value.

Parameters:

> *pSrc1* Source-Image Pointer.
>
> *nSrc1Step* Source-Image Line Step.
>
> *pSrc2* Source-Image Pointer.
>
> *nSrc2Step* Source-Image Line Step.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.780 NppStatus nppiSub_32s_C3IRSfs (const Npp32s ∗ *pSrc*, int *nSrcStep*, Npp32s ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 32-bit signed integer channel in place image subtraction, scale by $2^\wedge$(-nScaleFactor), then clamp to saturated value.

Parameters:

> *pSrc* Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *pSrcDst* In-Place Image Pointer.
>
> *nSrcDstStep* In-Place-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.781 NppStatus nppiSub_32s_C3RSfs (const Npp32s ∗ *pSrc1*, int *nSrc1Step*, const Npp32s ∗ *pSrc2*, int *nSrc2Step*, Npp32s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Three 32-bit signed integer channel image subtraction, scale by $2^\wedge$(-nScaleFactor), then clamp to saturated value.

Parameters:

> ***pSrc1*** Source-Image Pointer.
>
> ***nSrc1Step*** Source-Image Line Step.
>
> ***pSrc2*** Source-Image Pointer.
>
> ***nSrc2Step*** Source-Image Line Step.
>
> ***pDst*** Destination-Image Pointer.
>
> ***nDstStep*** Destination-Image Line Step.
>
> ***oSizeROI*** Region-of-Interest (ROI).
>
> ***nScaleFactor*** Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.782 NppStatus nppiSub_32sc_AC4IRSfs (const Npp32sc ∗ *pSrc*, int *nSrcStep*, Npp32sc ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 32-bit signed integer complex number (32-bit real, 32-bit imaginary) channel with unmodified alpha in place image subtraction, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

> ***pSrc*** Source-Image Pointer.
>
> ***nSrcStep*** Source-Image Line Step.
>
> ***pSrcDst*** In-Place Image Pointer.
>
> ***nSrcDstStep*** In-Place-Image Line Step.
>
> ***oSizeROI*** Region-of-Interest (ROI).
>
> ***nScaleFactor*** Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.783 NppStatus nppiSub_32sc_AC4RSfs (const Npp32sc ∗ *pSrc1*, int *nSrc1Step*, const Npp32sc ∗ *pSrc2*, int *nSrc2Step*, Npp32sc ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 32-bit signed integer complex number (32-bit real, 32-bit imaginary) channel with unmodified alpha image subtraction, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

> ***pSrc1*** Source-Image Pointer.
>
> ***nSrc1Step*** Source-Image Line Step.
>
> ***pSrc2*** Source-Image Pointer.
>
> ***nSrc2Step*** Source-Image Line Step.
>
> ***pDst*** Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.784 NppStatus nppiSub_32sc_C1IRSfs (const Npp32sc * *pSrc*, int *nSrcStep*, Npp32sc * *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 32-bit signed integer complex number (32-bit real, 32-bit imaginary) channel in place image subtraction, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.785 NppStatus nppiSub_32sc_C1RSfs (const Npp32sc * *pSrc1*, int *nSrc1Step*, const Npp32sc * *pSrc2*, int *nSrc2Step*, Npp32sc * *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 32-bit signed integer complex number (32-bit real, 32-bit imaginary) channel image subtraction, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pSrc2 Source-Image Pointer.

nSrc2Step Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.786 NppStatus nppiSub_32sc_C3IRSfs (const Npp32sc * *pSrc*, int *nSrcStep*, Npp32sc * *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 32-bit signed integer complex number (32-bit real, 32-bit imaginary) channel in place image subtraction, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.787 NppStatus nppiSub_32sc_C3RSfs (const Npp32sc * *pSrc1*, int *nSrc1Step*, const Npp32sc * *pSrc2*, int *nSrc2Step*, Npp32sc * *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Three 32-bit signed integer complex number (32-bit real, 32-bit imaginary) channel image subtraction, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pSrc2 Source-Image Pointer.

nSrc2Step Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.788 NppStatus nppiSub_8u_AC4IRSfs (const Npp8u * *pSrc*, int *nSrcStep*, Npp8u * *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 8-bit unsigned char channel with unmodified alpha in place image subtraction, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.789 NppStatus nppiSub_8u_AC4RSfs (const Npp8u * *pSrc1*, int *nSrc1Step*, const Npp8u * *pSrc2*, int *nSrc2Step*, Npp8u * *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 8-bit unsigned char channel with unmodified alpha image subtraction, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pSrc2 Source-Image Pointer.

nSrc2Step Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.790 NppStatus nppiSub_8u_C1IRSfs (const Npp8u * *pSrc*, int *nSrcStep*, Npp8u * *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 8-bit unsigned char channel in place image subtraction, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.791   NppStatus nppiSub_8u_C1RSfs (const Npp8u ∗ *pSrc1*, int *nSrc1Step*, const Npp8u ∗
**   *pSrc2*, int *nSrc2Step*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)**

One 8-bit unsigned char channel image subtraction, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

Parameters:

 pSrc1 Source-Image Pointer.

 nSrc1Step Source-Image Line Step.

 pSrc2 Source-Image Pointer.

 nSrc2Step Source-Image Line Step.

 pDst Destination-Image Pointer.

 nDstStep Destination-Image Line Step.

 oSizeROI Region-of-Interest (ROI).

 nScaleFactor Integer Result Scaling.

Returns:

 Image Data Related Error Codes, ROI Related Error Codes

7.7.1.792   NppStatus nppiSub_8u_C3IRSfs (const Npp8u ∗ *pSrc*, int *nSrcStep*, Npp8u ∗ *pSrcDst*,
**   int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)**

One 8-bit unsigned char channel in place image subtraction, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

Parameters:

 pSrc Source-Image Pointer.

 nSrcStep Source-Image Line Step.

 pSrcDst In-Place Image Pointer.

 nSrcDstStep In-Place-Image Line Step.

 oSizeROI Region-of-Interest (ROI).

 nScaleFactor Integer Result Scaling.

Returns:

 Image Data Related Error Codes, ROI Related Error Codes

7.7.1.793   NppStatus nppiSub_8u_C3RSfs (const Npp8u ∗ *pSrc1*, int *nSrc1Step*, const Npp8u ∗
**   *pSrc2*, int *nSrc2Step*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)**

Three 8-bit unsigned char channel image subtraction, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

Parameters:

 pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pSrc2 Source-Image Pointer.

nSrc2Step Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.794   NppStatus nppiSub_8u_C4IRSfs (const Npp8u ∗ *pSrc*, int *nSrcStep*, Npp8u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 8-bit unsigned char channel in place image subtraction, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.795   NppStatus nppiSub_8u_C4RSfs (const Npp8u ∗ *pSrc1*, int *nSrc1Step*, const Npp8u ∗ *pSrc2*, int *nSrc2Step*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 8-bit unsigned char channel image subtraction, scale by $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pSrc2 Source-Image Pointer.

nSrc2Step Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.796 NppStatus nppiSubC_16s_AC4IRSfs (const Npp16s ∗ *pConstants*, Npp16s ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 16-bit signed short channel with unmodified alpha in place image subtract constant, scale, then clamp to saturated value.

Parameters:

pConstants pointer to a list of constant values, one per channel.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.797 NppStatus nppiSubC_16s_AC4RSfs (const Npp16s ∗ *pSrc1*, int *nSrc1Step*, const Npp16s ∗ *pConstants*, Npp16s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 16-bit signed short channel with unmodified alpha image subtract constant, scale, then clamp to saturated value.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pConstants pointer to a list of constant values, one per channel.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.798 NppStatus nppiSubC_16s_C1IRSfs (const Npp16s *nConstant*, Npp16s ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 16-bit signed short channel in place image subtract constant, scale, then clamp to saturated value.

Parameters:

nConstant Constant.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.799 NppStatus nppiSubC_16s_C1RSfs (const Npp16s ∗ *pSrc1*, int *nSrc1Step*, const Npp16s *nConstant*, Npp16s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 16-bit signed short channel image subtract constant, scale, then clamp to saturated value.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

nConstant Constant.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.800 NppStatus nppiSubC_16s_C3IRSfs (const Npp16s ∗ *pConstants*, Npp16s ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Three 16-bit signed short channel in place image subtract constant, scale, then clamp to saturated value.

Parameters:

pConstants pointer to a list of constant values, one per channel.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.801 NppStatus nppiSubC_16s_C3RSfs (const Npp16s ∗ *pSrc1*, int *nSrc1Step*, const Npp16s ∗ *pConstants*, Npp16s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Three 16-bit signed short channel image subtract constant, scale, then clamp to saturated value.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pConstants pointer to a list of constant values, one per channel.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.802 NppStatus nppiSubC_16s_C4IRSfs (const Npp16s ∗ *pConstants*, Npp16s ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 16-bit signed short channel in place image subtract constant, scale, then clamp to saturated value.

Parameters:

pConstants pointer to a list of constant values, one per channel.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.803 NppStatus nppiSubC_16s_C4RSfs (const Npp16s ∗ *pSrc1*, int *nSrc1Step*, const Npp16s ∗ *pConstants*, Npp16s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 16-bit signed short channel image subtract constant, scale, then clamp to saturated value.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pConstants pointer to a list of constant values, one per channel.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.804   NppStatus nppiSubC_16sc_AC4IRSfs (const Npp16sc ∗ *pConstants*, Npp16sc ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 16-bit signed short complex number (16-bit real, 16-bit imaginary) channel with unmodified alpha in place image subtract constant, scale, then clamp to saturated value.

Parameters:

> *pConstants* pointer to a list of constant values, one per channel.
>
> *pSrcDst* In-Place Image Pointer.
>
> *nSrcDstStep* In-Place-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.805   NppStatus nppiSubC_16sc_AC4RSfs (const Npp16sc ∗ *pSrc1*, int *nSrc1Step*, const Npp16sc ∗ *pConstants*, Npp16sc ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 16-bit signed short complex number (16-bit real, 16-bit imaginary) channel with unmodified alpha image subtract constant, scale, then clamp to saturated value.

Parameters:

> *pSrc1* Source-Image Pointer.
>
> *nSrc1Step* Source-Image Line Step.
>
> *pConstants* pointer to a list of constant values, one per channel.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.806   NppStatus nppiSubC_16sc_C1IRSfs (const Npp16sc *nConstant*, Npp16sc ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 16-bit signed short complex number (16-bit real, 16-bit imaginary) channel in place image subtract constant, scale, then clamp to saturated value.

Parameters:

> *nConstant* Constant.
>
> *pSrcDst* In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.807 NppStatus nppiSubC_16sc_C1RSfs (const Npp16sc ∗ *pSrc1*, int *nSrc1Step*, const Npp16sc *nConstant*, Npp16sc ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 16-bit signed short complex number (16-bit real, 16-bit imaginary) channel image subtract constant, scale, then clamp to saturated value.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

nConstant Constant.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.808 NppStatus nppiSubC_16sc_C3IRSfs (const Npp16sc ∗ *pConstants*, Npp16sc ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Three 16-bit signed short complex number (16-bit real, 16-bit imaginary) channel in place image subtract constant, scale, then clamp to saturated value.

Parameters:

pConstants pointer to a list of constant values, one per channel.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.809 NppStatus nppiSubC_16sc_C3RSfs (const Npp16sc ∗ *pSrc1*, int *nSrc1Step*, const Npp16sc ∗ *pConstants*, Npp16sc ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Three 16-bit signed short complex number (16-bit real, 16-bit imaginary) channel image subtract constant, scale, then clamp to saturated value.

Parameters:

>   *pSrc1* Source-Image Pointer.
>
>   *nSrc1Step* Source-Image Line Step.
>
>   *pConstants* pointer to a list of constant values, one per channel.
>
>   *pDst* Destination-Image Pointer.
>
>   *nDstStep* Destination-Image Line Step.
>
>   *oSizeROI* Region-of-Interest (ROI).
>
>   *nScaleFactor* Integer Result Scaling.

Returns:

>   Image Data Related Error Codes, ROI Related Error Codes

7.7.1.810 NppStatus nppiSubC_16u_AC4IRSfs (const Npp16u ∗ *pConstants*, Npp16u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 16-bit unsigned short channel with unmodified alpha in place image subtract constant, scale, then clamp to saturated value.

Parameters:

>   *pConstants* pointer to a list of constant values, one per channel.
>
>   *pSrcDst* In-Place Image Pointer.
>
>   *nSrcDstStep* In-Place-Image Line Step.
>
>   *oSizeROI* Region-of-Interest (ROI).
>
>   *nScaleFactor* Integer Result Scaling.

Returns:

>   Image Data Related Error Codes, ROI Related Error Codes

7.7.1.811 NppStatus nppiSubC_16u_AC4RSfs (const Npp16u ∗ *pSrc1*, int *nSrc1Step*, const Npp16u ∗ *pConstants*, Npp16u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 16-bit unsigned short channel with unmodified alpha image subtract constant, scale, then clamp to saturated value.

Parameters:

>   *pSrc1* Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pConstants pointer to a list of constant values, one per channel.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.812 NppStatus nppiSubC_16u_C1IRSfs (const Npp16u *nConstant*, Npp16u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 16-bit unsigned short channel in place image subtract constant, scale, then clamp to saturated value.

Parameters:

nConstant Constant.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.813 NppStatus nppiSubC_16u_C1RSfs (const Npp16u ∗ *pSrc1*, int *nSrc1Step*, const Npp16u *nConstant*, Npp16u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 16-bit unsigned short channel image subtract constant, scale, then clamp to saturated value.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

nConstant Constant.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.814 NppStatus nppiSubC_16u_C3IRSfs (const Npp16u * *pConstants*, Npp16u * *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Three 16-bit unsigned short channel in place image subtract constant, scale, then clamp to saturated value.

Parameters:

> *pConstants* pointer to a list of constant values, one per channel.
>
> *pSrcDst* In-Place Image Pointer.
>
> *nSrcDstStep* In-Place-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.815 NppStatus nppiSubC_16u_C3RSfs (const Npp16u * *pSrc1*, int *nSrc1Step*, const Npp16u * *pConstants*, Npp16u * *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Three 16-bit unsigned short channel image subtract constant, scale, then clamp to saturated value.

Parameters:

> *pSrc1* Source-Image Pointer.
>
> *nSrc1Step* Source-Image Line Step.
>
> *pConstants* pointer to a list of constant values, one per channel.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.816 NppStatus nppiSubC_16u_C4IRSfs (const Npp16u * *pConstants*, Npp16u * *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 16-bit unsigned short channel in place image subtract constant, scale, then clamp to saturated value.

Parameters:

> *pConstants* pointer to a list of constant values, one per channel.
>
> *pSrcDst* In-Place Image Pointer.
>
> *nSrcDstStep* In-Place-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.817 NppStatus nppiSubC_16u_C4RSfs (const Npp16u ∗ *pSrc1*, int *nSrc1Step*, const Npp16u ∗ *pConstants*, Npp16u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 16-bit unsigned short channel image subtract constant, scale, then clamp to saturated value.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pConstants pointer to a list of constant values, one per channel.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.818 NppStatus nppiSubC_32f_AC4IR (const Npp32f ∗ *pConstants*, Npp32f ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 32-bit floating point channel with unmodified alpha in place image subtract constant.

Parameters:

pConstants pointer to a list of constant values, one per channel.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.819 NppStatus nppiSubC_32f_AC4R (const Npp32f ∗ *pSrc1*, int *nSrc1Step*, const Npp32f ∗ *pConstants*, Npp32f ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Four 32-bit floating point channel with unmodified alpha image subtract constant.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pConstants pointer to a list of constant values, one per channel.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.820 NppStatus nppiSubC_32f_C1IR (const Npp32f *nConstant*, Npp32f *∗ pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

One 32-bit floating point channel in place image subtract constant.

Parameters:

    nConstant Constant.

    pSrcDst In-Place Image Pointer.

    nSrcDstStep In-Place-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.821 NppStatus nppiSubC_32f_C1R (const Npp32f *∗ pSrc1*, int *nSrc1Step*, const Npp32f *nConstant*, Npp32f *∗ pDst*, int *nDstStep*, NppiSize *oSizeROI*)

One 32-bit floating point channel image subtract constant.

Parameters:

    pSrc1 Source-Image Pointer.

    nSrc1Step Source-Image Line Step.

    nConstant Constant.

    pDst Destination-Image Pointer.

    nDstStep Destination-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.822 NppStatus nppiSubC_32f_C3IR (const Npp32f *∗ pConstants*, Npp32f *∗ pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Three 32-bit floating point channel in place image subtract constant.

Parameters:

    pConstants pointer to a list of constant values, one per channel.

    pSrcDst In-Place Image Pointer.

    nSrcDstStep In-Place-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.823 NppStatus nppiSubC_32f_C3R (const Npp32f ∗ *pSrc1*, int *nSrc1Step*, const Npp32f ∗ *pConstants*, Npp32f ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Three 32-bit floating point channel image subtract constant.

Parameters:

>*pSrc1* Source-Image Pointer.
>
>*nSrc1Step* Source-Image Line Step.
>
>*pConstants* pointer to a list of constant values, one per channel.
>
>*pDst* Destination-Image Pointer.
>
>*nDstStep* Destination-Image Line Step.
>
>*oSizeROI* Region-of-Interest (ROI).

Returns:

>Image Data Related Error Codes, ROI Related Error Codes

7.7.1.824 NppStatus nppiSubC_32f_C4IR (const Npp32f ∗ *pConstants*, Npp32f ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 32-bit floating point channel in place image subtract constant.

Parameters:

>*pConstants* pointer to a list of constant values, one per channel.
>
>*pSrcDst* In-Place Image Pointer.
>
>*nSrcDstStep* In-Place-Image Line Step.
>
>*oSizeROI* Region-of-Interest (ROI).

Returns:

>Image Data Related Error Codes, ROI Related Error Codes

7.7.1.825 NppStatus nppiSubC_32f_C4R (const Npp32f ∗ *pSrc1*, int *nSrc1Step*, const Npp32f ∗ *pConstants*, Npp32f ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Four 32-bit floating point channel image subtract constant.

Parameters:

>*pSrc1* Source-Image Pointer.
>
>*nSrc1Step* Source-Image Line Step.
>
>*pConstants* pointer to a list of constant values, one per channel.
>
>*pDst* Destination-Image Pointer.
>
>*nDstStep* Destination-Image Line Step.
>
>*oSizeROI* Region-of-Interest (ROI).

Returns:

>Image Data Related Error Codes, ROI Related Error Codes

7.7.1.826 NppStatus nppiSubC_32fc_AC4IR (const Npp32fc ∗ pConstants, Npp32fc ∗ pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

Four 32-bit complex floating point (32-bit floating point real, 32-bit floating point imaginary) channel with unmodified alpha in place image subtract constant.

Parameters:

    pConstants pointer to a list of constant values, one per channel.

    pSrcDst In-Place Image Pointer.

    nSrcDstStep In-Place-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.827 NppStatus nppiSubC_32fc_AC4R (const Npp32fc ∗ pSrc1, int nSrc1Step, const Npp32fc ∗ pConstants, Npp32fc ∗ pDst, int nDstStep, NppiSize oSizeROI)

Four 32-bit complex floating point (32-bit floating point real, 32-bit floating point imaginary) channel with unmodified alpha image subtract constant.

Parameters:

    pSrc1 Source-Image Pointer.

    nSrc1Step Source-Image Line Step.

    pConstants pointer to a list of constant values, one per channel.

    pDst Destination-Image Pointer.

    nDstStep Destination-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.828 NppStatus nppiSubC_32fc_C1IR (const Npp32fc nConstant, Npp32fc ∗ pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

One 32-bit complex floating point (32-bit floating point real, 32-bit floating point imaginary) channel in place image subtract constant.

Parameters:

    nConstant Constant.

    pSrcDst In-Place Image Pointer.

    nSrcDstStep In-Place-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.829 NppStatus nppiSubC_32fc_C1R (const Npp32fc ∗ *pSrc1*, int *nSrc1Step*, const Npp32fc *nConstant*, Npp32fc ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

One 32-bit complex floating point (32-bit floating point real, 32-bit floating point imaginary) channel image subtract constant.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

nConstant Constant.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.830 NppStatus nppiSubC_32fc_C3IR (const Npp32fc ∗ *pConstants*, Npp32fc ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Three 32-bit complex floating point (32-bit floating point real, 32-bit floating point imaginary) channel in place image subtract constant.

Parameters:

pConstants pointer to a list of constant values, one per channel.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.831 NppStatus nppiSubC_32fc_C3R (const Npp32fc ∗ *pSrc1*, int *nSrc1Step*, const Npp32fc ∗ *pConstants*, Npp32fc ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Three 32-bit complex floating point (32-bit floating point real, 32-bit floating point imaginary) channel image subtract constant.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pConstants pointer to a list of constant values, one per channel.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.832 NppStatus nppiSubC_32fc_C4IR (const Npp32fc ∗ *pConstants*, Npp32fc ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 32-bit complex floating point (32-bit floating point real, 32-bit floating point imaginary) channel in place image subtract constant.

Parameters:

pConstants pointer to a list of constant values, one per channel.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.833 NppStatus nppiSubC_32fc_C4R (const Npp32fc ∗ *pSrc1*, int *nSrc1Step*, const Npp32fc ∗ *pConstants*, Npp32fc ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Four 32-bit complex floating point (32-bit floating point real, 32-bit floating point imaginary) channel image subtract constant.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pConstants pointer to a list of constant values, one per channel.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.834 NppStatus nppiSubC_32s_C1IRSfs (const Npp32s *nConstant*, Npp32s ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 32-bit signed integer channel in place image subtract constant, scale, then clamp to saturated value.

Parameters:

nConstant Constant.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.835 NppStatus nppiSubC_32s_C1RSfs (const Npp32s ∗ *pSrc1*, int *nSrc1Step*, const Npp32s *nConstant*, Npp32s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 32-bit signed integer channel image subtract constant, scale, then clamp to saturated value.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

nConstant Constant.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.836 NppStatus nppiSubC_32s_C3IRSfs (const Npp32s ∗ *pConstants*, Npp32s ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Three 32-bit signed integer channel in place image subtract constant, scale, then clamp to saturated value.

Parameters:

pConstants pointer to a list of constant values, one per channel.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.837   NppStatus nppiSubC_32s_C3RSfs (const Npp32s * *pSrc1*, int *nSrc1Step*, const Npp32s * *pConstants*, Npp32s * *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Three 32-bit signed integer channel image subtract constant, scale, then clamp to saturated value.

Parameters:

    pSrc1 Source-Image Pointer.

    nSrc1Step Source-Image Line Step.

    pConstants pointer to a list of constant values, one per channel.

    pDst Destination-Image Pointer.

    nDstStep Destination-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

    nScaleFactor Integer Result Scaling.

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.838   NppStatus nppiSubC_32sc_AC4IRSfs (const Npp32sc * *pConstants*, Npp32sc * *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 32-bit signed complex integer (32-bit real, 32-bit imaginary) channel with unmodified alpha in place image subtract constant, scale, then clamp to saturated value.

Parameters:

    pConstants pointer to a list of constant values, one per channel.

    pSrcDst In-Place Image Pointer.

    nSrcDstStep In-Place-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

    nScaleFactor Integer Result Scaling.

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.839   NppStatus nppiSubC_32sc_AC4RSfs (const Npp32sc * *pSrc1*, int *nSrc1Step*, const Npp32sc * *pConstants*, Npp32sc * *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 32-bit signed complex integer (32-bit real, 32-bit imaginary) channel with unmodified alpha image subtract constant, scale, then clamp to saturated value.

Parameters:

    pSrc1 Source-Image Pointer.

    nSrc1Step Source-Image Line Step.

    pConstants pointer to a list of constant values, one per channel.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.840 NppStatus nppiSubC_32sc_C1IRSfs (const Npp32sc *nConstant*, Npp32sc *∗pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 32-bit signed complex integer (32-bit real, 32-bit imaginary) channel in place image subtract constant, scale, then clamp to saturated value.

Parameters:

nConstant Constant.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.841 NppStatus nppiSubC_32sc_C1RSfs (const Npp32sc *∗pSrc1*, int *nSrc1Step*, const Npp32sc *nConstant*, Npp32sc *∗pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 32-bit signed complex integer (32-bit real, 32-bit imaginary) channel image subtract constant, scale, then clamp to saturated value.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

nConstant Constant.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.842 NppStatus nppiSubC_32sc_C3IRSfs (const Npp32sc ∗ *pConstants*, Npp32sc ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Three 32-bit signed complex integer (32-bit real, 32-bit imaginary) channel in place image subtract constant, scale, then clamp to saturated value.

Parameters:

    pConstants pointer to a list of constant values, one per channel.

    pSrcDst In-Place Image Pointer.

    nSrcDstStep In-Place-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

    nScaleFactor Integer Result Scaling.

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.843 NppStatus nppiSubC_32sc_C3RSfs (const Npp32sc ∗ *pSrc1*, int *nSrc1Step*, const Npp32sc ∗ *pConstants*, Npp32sc ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Three 32-bit signed complex integer (32-bit real, 32-bit imaginary) channel image subtract constant, scale, then clamp to saturated value.

Parameters:

    pSrc1 Source-Image Pointer.

    nSrc1Step Source-Image Line Step.

    pConstants pointer to a list of constant values, one per channel.

    pDst Destination-Image Pointer.

    nDstStep Destination-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

    nScaleFactor Integer Result Scaling.

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.844 NppStatus nppiSubC_8u_AC4IRSfs (const Npp8u ∗ *pConstants*, Npp8u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 8-bit unsigned char channel with unmodified alpha in place image subtract constant, scale, then clamp to saturated value.

Parameters:

    pConstants pointer to a list of constant values, one per channel.

    pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.845 NppStatus nppiSubC_8u_AC4RSfs (const Npp8u ∗ *pSrc1*, int *nSrc1Step*, const Npp8u ∗ *pConstants*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 8-bit unsigned char channel with unmodified alpha image subtract constant, scale, then clamp to saturated value.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pConstants pointer to a list of constant values, one per channel.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.846 NppStatus nppiSubC_8u_C1IRSfs (const Npp8u *nConstant*, Npp8u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 8-bit unsigned char channel in place image subtract constant, scale, then clamp to saturated value.

Parameters:

nConstant Constant.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.847 NppStatus nppiSubC_8u_C1RSfs (const Npp8u ∗ *pSrc1*, int *nSrc1Step*, const Npp8u *nConstant*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 8-bit unsigned char channel image subtract constant, scale, then clamp to saturated value.

Parameters:

    pSrc1 Source-Image Pointer.

    nSrc1Step Source-Image Line Step.

    nConstant Constant.

    pDst Destination-Image Pointer.

    nDstStep Destination-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

    nScaleFactor Integer Result Scaling.

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.848 NppStatus nppiSubC_8u_C3IRSfs (const Npp8u ∗ *pConstants*, Npp8u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Three 8-bit unsigned char channel 8-bit unsigned char in place image subtract constant, scale, then clamp to saturated value.

Parameters:

    pConstants pointer to a list of constant values, one per channel.

    pSrcDst In-Place Image Pointer.

    nSrcDstStep In-Place-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

    nScaleFactor Integer Result Scaling.

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.849 NppStatus nppiSubC_8u_C3RSfs (const Npp8u ∗ *pSrc1*, int *nSrc1Step*, const Npp8u ∗ *pConstants*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Three 8-bit unsigned char channel image subtract constant, scale, then clamp to saturated value.

Parameters:

    pSrc1 Source-Image Pointer.

    nSrc1Step Source-Image Line Step.

    pConstants pointer to a list of constant values, one per channel.

    pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.850 NppStatus nppiSubC_8u_C4IRSfs (const Npp8u ∗ *pConstants*, Npp8u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 8-bit unsigned char channel in place image subtract constant, scale, then clamp to saturated value.

Parameters:

pConstants pointer to a list of constant values, one per channel.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.851 NppStatus nppiSubC_8u_C4RSfs (const Npp8u ∗ *pSrc1*, int *nSrc1Step*, const Npp8u ∗ *pConstants*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 8-bit unsigned char channel image subtract constant, scale, then clamp to saturated value.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pConstants pointer to a list of constant values, one per channel.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.852 NppStatus nppiXor_16u_AC4IR (const Npp16u ∗ *pSrc*, int *nSrcStep*, Npp16u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 16-bit unsigned short channel in place image logical exclusive or with unmodified alpha.

Parameters:

> *pSrc* Source-Image Pointer.
> *nSrcStep* Source-Image Line Step.
> *pSrcDst* In-Place Image Pointer.
> *nSrcDstStep* In-Place-Image Line Step.
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.853 NppStatus nppiXor_16u_AC4R (const Npp16u ∗ *pSrc1*, int *nSrc1Step*, const Npp16u ∗ *pSrc2*, int *nSrc2Step*, Npp16u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Four 16-bit unsigned short channel image logical exclusive or with unmodified alpha.

Parameters:

> *pSrc1* Source-Image Pointer.
> *nSrc1Step* Source-Image Line Step.
> *pSrc2* Source-Image Pointer.
> *nSrc2Step* Source-Image Line Step.
> *pDst* Destination-Image Pointer.
> *nDstStep* Destination-Image Line Step.
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.854 NppStatus nppiXor_16u_C1IR (const Npp16u ∗ *pSrc*, int *nSrcStep*, Npp16u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

One 16-bit unsigned short channel in place image logical exclusive or.

Parameters:

> *pSrc* Source-Image Pointer.
> *nSrcStep* Source-Image Line Step.
> *pSrcDst* In-Place Image Pointer.
> *nSrcDstStep* In-Place-Image Line Step.
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.855   NppStatus nppiXor_16u_C1R (const Npp16u ∗ *pSrc1*, int *nSrc1Step*, const Npp16u ∗ *pSrc2*, int *nSrc2Step*, Npp16u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

One 16-bit unsigned short channel image logical exclusive or.

Parameters:

> *pSrc1* Source-Image Pointer.
>
> *nSrc1Step* Source-Image Line Step.
>
> *pSrc2* Source-Image Pointer.
>
> *nSrc2Step* Source-Image Line Step.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.856   NppStatus nppiXor_16u_C3IR (const Npp16u ∗ *pSrc*, int *nSrcStep*, Npp16u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Three 16-bit unsigned short channel in place image logical exclusive or.

Parameters:

> *pSrc* Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *pSrcDst* In-Place Image Pointer.
>
> *nSrcDstStep* In-Place-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.857   NppStatus nppiXor_16u_C3R (const Npp16u ∗ *pSrc1*, int *nSrc1Step*, const Npp16u ∗ *pSrc2*, int *nSrc2Step*, Npp16u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Three 16-bit unsigned short channel image logical exclusive or.

Parameters:

> *pSrc1* Source-Image Pointer.
>
> *nSrc1Step* Source-Image Line Step.
>
> *pSrc2* Source-Image Pointer.
>
> *nSrc2Step* Source-Image Line Step.
>
> *pDst* Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.858 NppStatus nppiXor_16u_C4IR (const Npp16u ∗ *pSrc*, int *nSrcStep*, Npp16u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 16-bit unsigned short channel in place image logical exclusive or.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.859 NppStatus nppiXor_16u_C4R (const Npp16u ∗ *pSrc1*, int *nSrc1Step*, const Npp16u ∗ *pSrc2*, int *nSrc2Step*, Npp16u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Four 16-bit unsigned short channel image logical exclusive or.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pSrc2 Source-Image Pointer.

nSrc2Step Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.860 **NppStatus nppiXor_32s_AC4IR (const Npp32s ∗ *pSrc*, int *nSrcStep*, Npp32s ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)**

Four 32-bit signed integer channel in place image logical exclusive or with unmodified alpha.

Parameters:

> *pSrc* Source-Image Pointer.
> *nSrcStep* Source-Image Line Step.
> *pSrcDst* In-Place Image Pointer.
> *nSrcDstStep* In-Place-Image Line Step.
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.861 **NppStatus nppiXor_32s_AC4R (const Npp32s ∗ *pSrc1*, int *nSrc1Step*, const Npp32s ∗ *pSrc2*, int *nSrc2Step*, Npp32s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)**

Four 32-bit signed integer channel image logical exclusive or with unmodified alpha.

Parameters:

> *pSrc1* Source-Image Pointer.
> *nSrc1Step* Source-Image Line Step.
> *pSrc2* Source-Image Pointer.
> *nSrc2Step* Source-Image Line Step.
> *pDst* Destination-Image Pointer.
> *nDstStep* Destination-Image Line Step.
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.862 **NppStatus nppiXor_32s_C1IR (const Npp32s ∗ *pSrc*, int *nSrcStep*, Npp32s ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)**

One 32-bit signed integer channel in place image logical exclusive or.

Parameters:

> *pSrc* Source-Image Pointer.
> *nSrcStep* Source-Image Line Step.
> *pSrcDst* In-Place Image Pointer.
> *nSrcDstStep* In-Place-Image Line Step.
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.863 NppStatus nppiXor_32s_C1R (const Npp32s ∗ *pSrc1*, int *nSrc1Step*, const Npp32s ∗ *pSrc2*, int *nSrc2Step*, Npp32s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

One 32-bit signed integer channel image logical exclusive or.

Parameters:

>   *pSrc1* Source-Image Pointer.
>
>   *nSrc1Step* Source-Image Line Step.
>
>   *pSrc2* Source-Image Pointer.
>
>   *nSrc2Step* Source-Image Line Step.
>
>   *pDst* Destination-Image Pointer.
>
>   *nDstStep* Destination-Image Line Step.
>
>   *oSizeROI* Region-of-Interest (ROI).

Returns:

>   Image Data Related Error Codes, ROI Related Error Codes

7.7.1.864 NppStatus nppiXor_32s_C3IR (const Npp32s ∗ *pSrc*, int *nSrcStep*, Npp32s ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Three 32-bit signed integer channel in place image logical exclusive or.

Parameters:

>   *pSrc* Source-Image Pointer.
>
>   *nSrcStep* Source-Image Line Step.
>
>   *pSrcDst* In-Place Image Pointer.
>
>   *nSrcDstStep* In-Place-Image Line Step.
>
>   *oSizeROI* Region-of-Interest (ROI).

Returns:

>   Image Data Related Error Codes, ROI Related Error Codes

7.7.1.865 NppStatus nppiXor_32s_C3R (const Npp32s ∗ *pSrc1*, int *nSrc1Step*, const Npp32s ∗ *pSrc2*, int *nSrc2Step*, Npp32s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Three 32-bit signed integer channel image logical exclusive or.

Parameters:

>   *pSrc1* Source-Image Pointer.
>
>   *nSrc1Step* Source-Image Line Step.
>
>   *pSrc2* Source-Image Pointer.
>
>   *nSrc2Step* Source-Image Line Step.
>
>   *pDst* Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.866 NppStatus nppiXor_32s_C4IR (const Npp32s * *pSrc*, int *nSrcStep*, Npp32s * *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 32-bit signed integer channel in place image logical exclusive or.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.867 NppStatus nppiXor_32s_C4R (const Npp32s * *pSrc1*, int *nSrc1Step*, const Npp32s * *pSrc2*, int *nSrc2Step*, Npp32s * *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Four 32-bit signed integer channel image logical exclusive or.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pSrc2 Source-Image Pointer.

nSrc2Step Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.868 NppStatus nppiXor_8u_AC4IR (const Npp8u ∗ *pSrc*, int *nSrcStep*, Npp8u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 8-bit unsigned char channel in place image logical exclusive or with unmodified alpha.

Parameters:

>   *pSrc* Source-Image Pointer.
>   *nSrcStep* Source-Image Line Step.
>   *pSrcDst* In-Place Image Pointer.
>   *nSrcDstStep* In-Place-Image Line Step.
>   *oSizeROI* Region-of-Interest (ROI).

Returns:

>   Image Data Related Error Codes, ROI Related Error Codes

7.7.1.869 NppStatus nppiXor_8u_AC4R (const Npp8u ∗ *pSrc1*, int *nSrc1Step*, const Npp8u ∗ *pSrc2*, int *nSrc2Step*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Four 8-bit unsigned char channel image logical exclusive or with unmodified alpha.

Parameters:

>   *pSrc1* Source-Image Pointer.
>   *nSrc1Step* Source-Image Line Step.
>   *pSrc2* Source-Image Pointer.
>   *nSrc2Step* Source-Image Line Step.
>   *pDst* Destination-Image Pointer.
>   *nDstStep* Destination-Image Line Step.
>   *oSizeROI* Region-of-Interest (ROI).

Returns:

>   Image Data Related Error Codes, ROI Related Error Codes

7.7.1.870 NppStatus nppiXor_8u_C1IR (const Npp8u ∗ *pSrc*, int *nSrcStep*, Npp8u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

One 8-bit unsigned char channel in place image logical exclusive or.

Parameters:

>   *pSrc* Source-Image Pointer.
>   *nSrcStep* Source-Image Line Step.
>   *pSrcDst* In-Place Image Pointer.
>   *nSrcDstStep* In-Place-Image Line Step.
>   *oSizeROI* Region-of-Interest (ROI).

Returns:

>   Image Data Related Error Codes, ROI Related Error Codes

7.7.1.871 NppStatus nppiXor_8u_C1R (const Npp8u ∗ *pSrc1*, int *nSrc1Step*, const Npp8u ∗ *pSrc2*, int *nSrc2Step*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

One 8-bit unsigned char channel image logical exclusive or.

Parameters:

    pSrc1 Source-Image Pointer.

    nSrc1Step Source-Image Line Step.

    pSrc2 Source-Image Pointer.

    nSrc2Step Source-Image Line Step.

    pDst Destination-Image Pointer.

    nDstStep Destination-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.872 NppStatus nppiXor_8u_C3IR (const Npp8u ∗ *pSrc*, int *nSrcStep*, Npp8u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Three 8-bit unsigned char channel in place image logical exclusive or.

Parameters:

    pSrc Source-Image Pointer.

    nSrcStep Source-Image Line Step.

    pSrcDst In-Place Image Pointer.

    nSrcDstStep In-Place-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.873 NppStatus nppiXor_8u_C3R (const Npp8u ∗ *pSrc1*, int *nSrc1Step*, const Npp8u ∗ *pSrc2*, int *nSrc2Step*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Three 8-bit unsigned char channel image logical exclusive or.

Parameters:

    pSrc1 Source-Image Pointer.

    nSrc1Step Source-Image Line Step.

    pSrc2 Source-Image Pointer.

    nSrc2Step Source-Image Line Step.

    pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.874 NppStatus nppiXor_8u_C4IR (const Npp8u ∗ *pSrc*, int *nSrcStep*, Npp8u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 8-bit unsigned char channel in place image logical exclusive or.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.875 NppStatus nppiXor_8u_C4R (const Npp8u ∗ *pSrc1*, int *nSrc1Step*, const Npp8u ∗ *pSrc2*, int *nSrc2Step*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Four 8-bit unsigned char channel image logical exclusive or.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pSrc2 Source-Image Pointer.

nSrc2Step Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.876 NppStatus nppiXorC_16u_AC4IR (const Npp16u ∗ *pConstants*, **Npp16u** ∗ *pSrcDst*, **int** *nSrcDstStep*, **NppiSize** *oSizeROI*)

Four 16-bit unsigned short channel in place image logical exclusive or with constant with unmodified alpha.

Parameters:

pConstants pointer to a list of constant values, one per channel.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.877 NppStatus nppiXorC_16u_AC4R (const Npp16u ∗ *pSrc1*, **int** *nSrc1Step*, **const Npp16u** ∗ *pConstants*, **Npp16u** ∗ *pDst*, **int** *nDstStep*, **NppiSize** *oSizeROI*)

Four 16-bit unsigned short channel image logical exclusive or with constant with unmodified alpha.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

pConstants pointer to a list of constant values, one per channel.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.878 NppStatus nppiXorC_16u_C1IR (const Npp16u *nConstant*, **Npp16u** ∗ *pSrcDst*, **int** *nSrcDstStep*, **NppiSize** *oSizeROI*)

One 16-bit unsigned short channel in place image logical exclusive or with constant.

Parameters:

nConstant Constant.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.879 NppStatus nppiXorC_16u_C1R (const Npp16u ∗ *pSrc1*, int *nSrc1Step*, const Npp16u *nConstant*, Npp16u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

One 16-bit unsigned short channel image logical exclusive or with constant.

Parameters:

> *pSrc1* Source-Image Pointer.
>
> *nSrc1Step* Source-Image Line Step.
>
> *nConstant* Constant.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.880 NppStatus nppiXorC_16u_C3IR (const Npp16u ∗ *pConstants*, Npp16u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Three 16-bit unsigned short channel in place image logical exclusive or with constant.

Parameters:

> *pConstants* pointer to a list of constant values, one per channel.
>
> *pSrcDst* In-Place Image Pointer.
>
> *nSrcDstStep* In-Place-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.881 NppStatus nppiXorC_16u_C3R (const Npp16u ∗ *pSrc1*, int *nSrc1Step*, const Npp16u ∗ *pConstants*, Npp16u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Three 16-bit unsigned short channel image logical exclusive or with constant.

Parameters:

> *pSrc1* Source-Image Pointer.
>
> *nSrc1Step* Source-Image Line Step.
>
> *pConstants* pointer to a list of constant values, one per channel.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.882 NppStatus nppiXorC_16u_C4IR (const Npp16u ∗ *pConstants*, Npp16u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 16-bit unsigned short channel in place image logical exclusive or with constant.

Parameters:

>*pConstants* pointer to a list of constant values, one per channel.

>*pSrcDst* In-Place Image Pointer.

>*nSrcDstStep* In-Place-Image Line Step.

>*oSizeROI* Region-of-Interest (ROI).

Returns:

>Image Data Related Error Codes, ROI Related Error Codes

7.7.1.883 NppStatus nppiXorC_16u_C4R (const Npp16u ∗ *pSrc1*, int *nSrc1Step*, const Npp16u ∗ *pConstants*, Npp16u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Four 16-bit unsigned short channel image logical exclusive or with constant.

Parameters:

>*pSrc1* Source-Image Pointer.

>*nSrc1Step* Source-Image Line Step.

>*pConstants* pointer to a list of constant values, one per channel.

>*pDst* Destination-Image Pointer.

>*nDstStep* Destination-Image Line Step.

>*oSizeROI* Region-of-Interest (ROI).

Returns:

>Image Data Related Error Codes, ROI Related Error Codes

7.7.1.884 NppStatus nppiXorC_32s_AC4IR (const Npp32s ∗ *pConstants*, Npp32s ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 32-bit signed integer channel in place image logical exclusive or with constant with unmodified alpha.

Parameters:

>*pConstants* pointer to a list of constant values, one per channel.

>*pSrcDst* In-Place Image Pointer.

>*nSrcDstStep* In-Place-Image Line Step.

>*oSizeROI* Region-of-Interest (ROI).

Returns:

>Image Data Related Error Codes, ROI Related Error Codes

7.7.1.885 **NppStatus nppiXorC_32s_AC4R (const Npp32s** $*$ **pSrc1,** **int** *nSrc1Step*, **const Npp32s** $*$
pConstants, **Npp32s** $*$ **pDst,** **int** *nDstStep*, **NppiSize** *oSizeROI***)**

Four 32-bit signed integer channel image logical exclusive or with constant with unmodified alpha.

Parameters:

    pSrc1 Source-Image Pointer.

    nSrc1Step Source-Image Line Step.

    pConstants pointer to a list of constant values, one per channel.

    pDst Destination-Image Pointer.

    nDstStep Destination-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.886 **NppStatus nppiXorC_32s_C1IR (const Npp32s** *nConstant*, **Npp32s** $*$ **pSrcDst,** **int**
nSrcDstStep, **NppiSize** *oSizeROI***)**

One 32-bit signed integer channel in place image logical exclusive or with constant.

Parameters:

    nConstant Constant.

    pSrcDst In-Place Image Pointer.

    nSrcDstStep In-Place-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.887 **NppStatus nppiXorC_32s_C1R (const Npp32s** $*$ **pSrc1,** **int** *nSrc1Step*, **const Npp32s**
nConstant, **Npp32s** $*$ **pDst,** **int** *nDstStep*, **NppiSize** *oSizeROI***)**

One 32-bit signed integer channel image logical exclusive or with constant.

Parameters:

    pSrc1 Source-Image Pointer.

    nSrc1Step Source-Image Line Step.

    nConstant Constant.

    pDst Destination-Image Pointer.

    nDstStep Destination-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.888 NppStatus nppiXorC_32s_C3IR (const Npp32s ∗ *pConstants*, Npp32s ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Three 32-bit signed integer channel in place image logical exclusive or with constant.

Parameters:

    pConstants   pointer to a list of constant values, one per channel.

    pSrcDst   In-Place Image Pointer.

    nSrcDstStep   In-Place-Image Line Step.

    oSizeROI   Region-of-Interest (ROI).

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.889 NppStatus nppiXorC_32s_C3R (const Npp32s ∗ *pSrc1*, int *nSrc1Step*, const Npp32s ∗ *pConstants*, Npp32s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Three 32-bit signed integer channel image logical exclusive or with constant.

Parameters:

    pSrc1   Source-Image Pointer.

    nSrc1Step   Source-Image Line Step.

    pConstants   pointer to a list of constant values, one per channel.

    pDst   Destination-Image Pointer.

    nDstStep   Destination-Image Line Step.

    oSizeROI   Region-of-Interest (ROI).

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.890 NppStatus nppiXorC_32s_C4IR (const Npp32s ∗ *pConstants*, Npp32s ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 32-bit signed integer channel in place image logical exclusive or with constant.

Parameters:

    pConstants   pointer to a list of constant values, one per channel.

    pSrcDst   In-Place Image Pointer.

    nSrcDstStep   In-Place-Image Line Step.

    oSizeROI   Region-of-Interest (ROI).

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.891 NppStatus nppiXorC_32s_C4R (const Npp32s ∗ *pSrc1*, int *nSrc1Step*, const Npp32s ∗ *pConstants*, Npp32s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Four 32-bit signed integer channel image logical exclusive or with constant.

Parameters:

    pSrc1 Source-Image Pointer.

    nSrc1Step Source-Image Line Step.

    pConstants pointer to a list of constant values, one per channel.

    pDst Destination-Image Pointer.

    nDstStep Destination-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.892 NppStatus nppiXorC_8u_AC4IR (const Npp8u ∗ *pConstants*, Npp8u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 8-bit unsigned char channel in place image logical exclusive or with constant with unmodified alpha.

Parameters:

    pConstants pointer to a list of constant values, one per channel.

    pSrcDst In-Place Image Pointer.

    nSrcDstStep In-Place-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.893 NppStatus nppiXorC_8u_AC4R (const Npp8u ∗ *pSrc1*, int *nSrc1Step*, const Npp8u ∗ *pConstants*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Four 8-bit unsigned char channel image logical exclusive or with constant with unmodified alpha.

Parameters:

    pSrc1 Source-Image Pointer.

    nSrc1Step Source-Image Line Step.

    pConstants pointer to a list of constant values, one per channel.

    pDst Destination-Image Pointer.

    nDstStep Destination-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.7.1.894 NppStatus nppiXorC_8u_C1IR (const Npp8u *nConstant*, Npp8u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

One 8-bit unsigned char channel in place image logical exclusive or with constant.

Parameters:

nConstant Constant.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.895 NppStatus nppiXorC_8u_C1R (const Npp8u ∗ *pSrc1*, int *nSrc1Step*, const Npp8u *nConstant*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

One 8-bit unsigned char channel image logical exclusive or with constant.

Parameters:

pSrc1 Source-Image Pointer.

nSrc1Step Source-Image Line Step.

nConstant Constant.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.896 NppStatus nppiXorC_8u_C3IR (const Npp8u ∗ *pConstants*, Npp8u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Three 8-bit unsigned char channel in place image logical exclusive or with constant.

Parameters:

pConstants pointer to a list of constant values, one per channel.

pSrcDst In-Place Image Pointer.

nSrcDstStep In-Place-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.7.1.897 NppStatus nppiXorC_8u_C3R (const Npp8u ∗ *pSrc1*, int *nSrc1Step*, const Npp8u ∗ *pConstants*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Three 8-bit unsigned char channel image logical exclusive or with constant.

Parameters:

> *pSrc1* Source-Image Pointer.
>
> *nSrc1Step* Source-Image Line Step.
>
> *pConstants* pointer to a list of constant values, one per channel.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.898 NppStatus nppiXorC_8u_C4IR (const Npp8u ∗ *pConstants*, Npp8u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 8-bit unsigned char channel in place image logical exclusive or with constant.

Parameters:

> *pConstants* pointer to a list of constant values, one per channel.
>
> *pSrcDst* In-Place Image Pointer.
>
> *nSrcDstStep* In-Place-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.7.1.899 NppStatus nppiXorC_8u_C4R (const Npp8u ∗ *pSrc1*, int *nSrc1Step*, const Npp8u ∗ *pConstants*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Four 8-bit unsigned char channel image logical exclusive or with constant.

Parameters:

> *pSrc1* Source-Image Pointer.
>
> *nSrc1Step* Source-Image Line Step.
>
> *pConstants* pointer to a list of constant values, one per channel.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.8 Threshold and Compare Operations

Methods for pixel-wise threshold and compare operations.

Threshold

Threshold pixels.

- NppStatus nppiThreshold_32f_C1R (const Npp32f *pSrc, int nSrcStep, Npp32f *pDst, int nDstStep, NppiSize oSizeROI, Npp32f nThreshold, NppCmpOp eComparisonOperation)

    32-bit floating point threshold.

- NppStatus nppiThreshold_8u_AC4R (const Npp8u *pSrc, int nSrcStep, Npp8u *pDst, int nDstStep, NppiSize oSizeROI, const Npp8u aThresholds[3], NppCmpOp eComparisonOperation)

    4 channel 8-bit unsigned image threshold, not affecting Alpha.

Image Compare Methods

Compare the pixels of two images and create a binary result image.

In case of multi-channel image types, the condition must be fulfilled for all channels, otherwise the comparison is considered false. The "binary" result image is of type 8u_C1. False is represented by 0, true by NPP_MAX_8U.

- NppStatus nppiCompare_8u_C4R (const Npp8u *pSrc1, int nSrc1Step, const Npp8u *pSrc2, int nSrc2Step, Npp8u *pDst, int nDstStep, NppiSize oSizeROI, NppCmpOp eComparisonOperation)

    4 channel 8-bit unsigned image compare.

- NppStatus nppiCompare_8u_AC4R (const Npp8u *pSrc1, int nSrc1Step, const Npp8u *pSrc2, int nSrc2Step, Npp8u *pDst, int nDstStep, NppiSize oSizeROI, NppCmpOp eComparisonOperation)

    4 channel 8-bit unsigned image compare, not affecting Alpha.

- NppStatus nppiCompare_32f_C1R (const Npp32f *pSrc1, int nSrc1Step, const Npp32f *pSrc2, int nSrc2Step, Npp8u *pDst, int nDstStep, NppiSize oSizeROI, NppCmpOp eComparisonOperation)

    32-bit floating point image compare.

7.8.1 Detailed Description

Methods for pixel-wise threshold and compare operations.

7.8.2 Function Documentation

7.8.2.1 NppStatus nppiCompare_32f_C1R (const Npp32f * *pSrc1*, int *nSrc1Step*, const Npp32f * *pSrc2*, int *nSrc2Step*, Npp8u * *pDst*, int *nDstStep*, NppiSize *oSizeROI*, NppCmpOp *eComparisonOperation*)

32-bit floating point image compare.

Compare pSrc1's pixels with corresponding pixels in pSrc2.

Parameters:

> *pSrc1* Source-Image Pointer.
>
> *nSrc1Step* Source-Image Line Step.
>
> *pSrc2* Source-Image Pointer.
>
> *nSrc2Step* Source-Image Line Step.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *eComparisonOperation* Specifies the comparison operation to be used in the pixel comparison.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.8.2.2 NppStatus nppiCompare_8u_AC4R (const Npp8u ∗ *pSrc1*, int *nSrc1Step*, const Npp8u ∗ *pSrc2*, int *nSrc2Step*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, NppCmpOp *eComparisonOperation*)

4 channel 8-bit unsigned image compare, not affecting Alpha.

Compare pSrc1's pixels with corresponding pixels in pSrc2.

Parameters:

> *pSrc1* Source-Image Pointer.
>
> *nSrc1Step* Source-Image Line Step.
>
> *pSrc2* Source-Image Pointer.
>
> *nSrc2Step* Source-Image Line Step.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *eComparisonOperation* Specifies the comparison operation to be used in the pixel comparison.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.8.2.3 NppStatus nppiCompare_8u_C4R (const Npp8u ∗ *pSrc1*, int *nSrc1Step*, const Npp8u ∗ *pSrc2*, int *nSrc2Step*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, NppCmpOp *eComparisonOperation*)

4 channel 8-bit unsigned image compare.

Compare pSrc1's pixels with corresponding pixels in pSrc2.

Parameters:

> *pSrc1* Source-Image Pointer.
>
> *nSrc1Step* Source-Image Line Step.

pSrc2 Source-Image Pointer.

nSrc2Step Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

eComparisonOperation Specifies the comparison operation to be used in the pixel comparison.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.8.2.4 NppStatus nppiThreshold_32f_C1R (const Npp32f *∗ pSrc*, int *nSrcStep*, Npp32f *∗ pDst*, int *nDstStep*, NppiSize *oSizeROI*, Npp32f *nThreshold*, NppCmpOp *eComparisonOperation*)

32-bit floating point threshold.

If for a comparison operations OP the predicate (sourcePixel OP nThreshold) is true, the pixel is set to nThreshold, otherwise it is set to sourcePixel.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

nThreshold The threshold value.

eComparisonOperation The type of comparison operation to be used. The only valid values are: NPP_CMP_LESS and NPP_CMP_GREATER.

Returns:

Image Data Related Error Codes, ROI Related Error Codes, or NPP_NOT_SUPPORTED_MODE_-ERROR if an invalid comparison operation type is specified.

7.8.2.5 NppStatus nppiThreshold_8u_AC4R (const Npp8u *∗ pSrc*, int *nSrcStep*, Npp8u *∗ pDst*, int *nDstStep*, NppiSize *oSizeROI*, const Npp8u *aThresholds*[3], NppCmpOp *eComparisonOperation*)

4 channel 8-bit unsigned image threshold, not affecting Alpha.

If for a comparison operations OP the predicate (sourcePixel.channel OP nThreshold) is true, the channel value is set to nThreshold, otherwise it is set to sourcePixel.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

aThresholds The threshold values, one per color channel.

eComparisonOperation The type of comparison operation to be used. The only valid values are: NPP_CMP_LESS and NPP_CMP_GREATER.

Returns:

Image Data Related Error Codes, ROI Related Error Codes, or NPP_NOT_SUPPORTED_MODE_-ERROR if an invalid comparison operation type is specified.

7.9 Statistics Functions

Routines computing statistical image information.

Functions

- NppStatus nppiSqrIntegral_8u32s32f_C1R (Npp8u ∗pSrc, int nSrcStep, Npp32s ∗pDst, int nDst-Step, Npp32f ∗pSqr, int nSqrStep, NppiSize oSrcROI, Npp32s val, Npp32f valSqr, Npp32s integral-ImageNewHeight)

  SqrIntegral Transforms an image to integral and integral of pixel squares representation.

- NppStatus nppiRectStdDev_32s32f_C1R (const Npp32s ∗pSrc, int nSrcStep, const Npp64f ∗pSqr, int nSqrStep, Npp32f ∗pDst, int nDstStep, NppiSize oSizeROI, NppiRect rect)

  RectStdDev Computes the standard deviation of integral images.

Mean_StdDev

Computes the mean and standard deviation of image pixel values

- NppStatus nppiMeanStdDev8uC1RGetBufferHostSize (NppiSize oSizeROI, int ∗hpBufferSize)

  Device scratch buffer size (in bytes) for mean and standard deviation of image.

- NppStatus nppiMean_StdDev_8u_C1R (const Npp8u ∗pSrc, int nSrcStep, NppiSize oSizeROI, Npp8u ∗pDeviceBuffer, Npp64f ∗pMean, Npp64f ∗pStdDev)

  8-bit unsigned mean standard deviation.

NormDiff

Norm of pixel differences between two images.

- NppStatus nppiNormDiff_L1_8u_C1R (const Npp8u ∗pSrc1, int nSrcStep1, const Npp8u ∗pSrc2, int nSrcStep2, NppiSize oSizeROI, Npp64f ∗pRetVal)

  8-bit unsigned L1 norm of pixel differences.

- NppStatus nppiNormDiff_L2_8u_C1R (const Npp8u ∗pSrc1, int nSrcStep1, const Npp8u ∗pSrc2, int nSrcStep2, NppiSize oSizeROI, Npp64f ∗pRetVal)

  8-bit unsigned L2 norm of pixel differences.

- NppStatus nppiNormDiff_Inf_8u_C1R (const Npp8u ∗pSrc1, int nSrcStep1, const Npp8u ∗pSrc2, int nSrcStep2, NppiSize oSizeROI, Npp64f ∗pRetVal)

  8-bit unsigned Infinity Norm of pixel differences.

Sum

Sum of 8 bit images.

- NppStatus nppiReductionGetBufferHostSize_8u_C1R (NppiSize oSizeROI, int ∗hpBufferSize)

  Scratch-buffer size for nppiSum_8u_C1R.

- NppStatus nppiReductionGetBufferHostSize_8u_C4R (NppiSize oSizeROI, int ∗hpBufferSize)

  Scratch-buffer size for nppiSum_8u_C4R.

- NppStatus nppiSum_8u64s_C1R (const Npp8u ∗pSrc, int nSrcStep, NppiSize oSizeROI, Npp8u ∗pDeviceBuffer, Npp64s ∗pSum)

  8-bit unsigned image sum with 64-bit long long result.

- NppStatus nppiSum_8u_C1R (const Npp8u ∗pSrc, int nSrcStep, NppiSize oSizeROI, Npp8u ∗pDeviceBuffer, Npp64f ∗pSum)

  8-bit unsigned image sum with 64-bit double precision result.

- NppStatus nppiSum_8u64s_C4R (const Npp8u ∗pSrc, int nSrcStep, NppiSize oSizeROI, Npp8u ∗pDeviceBuffer, Npp64s aSum[4])

  4 channel 8-bit unsigned image sum with 64-bit long long result.

- NppStatus nppiSum_8u_C4R (const Npp8u ∗pSrc, int nSrcStep, NppiSize oSizeROI, Npp8u ∗pDeviceBuffer, Npp64f aSum[4])

  4 channel 8-bit unsigned image sum with 64-bit double precision result.

MinMax

Minimum and maximum of 8-bit images.

- NppStatus nppiMinMaxGetBufferSize_8u_C1R (NppiSize oSizeROI, int ∗hpBufferSize)

  Scratch-buffer size for nppiMinManx_8u_C1R.

- NppStatus nppiMinMax_8u_C1R (const Npp8u ∗pSrc, int nSrcStep, NppiSize oSizeROI, Npp8u ∗pMin, Npp8u ∗pMax, Npp8u ∗pDeviceBuffer)

  8-bit unsigned pixel minimum and maximum.

- NppStatus nppiMinMaxGetBufferSize_8u_C4R (NppiSize oSizeROI, int ∗hpBufferSize)

  Scratch-buffer size for nppiMinManx_8u_C4R.

- NppStatus nppiMinMax_8u_C4R (const Npp8u ∗pSrc, int nSrcStep, NppiSize oSizeROI, Npp8u aMin[4], Npp8u aMax[4], Npp8u ∗pDeviceBuffer)

  4 channel 8-bit unsigned pixel minimum and maximum.

Histogram

- NppStatus nppiEvenLevelsHost_32s (Npp32s ∗hpLevels, int nLevels, Npp32s nLowerLevel, Npp32s nUpperLevel)

  Compute levels with even distribution.

- NppStatus nppiHistogramEvenGetBufferSize_8u_C1R (NppiSize oSizeROI, int nLevels, int ∗hpBufferSize)

Scratch-buffer size for nppiHistogramEven_8u_C1R.

- NppStatus nppiHistogramEven_8u_C1R (const Npp8u *pSrc, int nSrcStep, NppiSize oSizeROI, Npp32s *pHist, int nLevels, Npp32s nLowerLevel, Npp32s nUpperLevel, Npp8u *pBuffer)

    8-bit unsigned histogram with evenly distributed bins.

- NppStatus nppiHistogramEvenGetBufferSize_8u_C4R (NppiSize oSizeROI, int nLevels[4], int *hpBufferSize)

    Scratch-buffer size for nppiHistogramEven_8u_C4R.

- NppStatus nppiHistogramEven_8u_C4R (const Npp8u *pSrc, int nSrcStep, NppiSize oSizeROI, Npp32s *pHist[4], int nLevels[4], Npp32s nLowerLevel[4], Npp32s nUpperLevel[4], Npp8u *pBuffer)

    4 channel 8-bit unsigned histogram with evenly distributed bins.

- NppStatus nppiHistogramEvenGetBufferSize_8u_AC4R (NppiSize oSizeROI, int nLevels[3], int *hpBufferSize)

    Scratch-buffer size for nppiHistogramEven_8u_AC4R.

- NppStatus nppiHistogramEven_8u_AC4R (const Npp8u *pSrc, int nSrcStep, NppiSize oSize-ROI, Npp32s *pHist[3], int nLevels[3], Npp32s nLowerLevel[3], Npp32s nUpperLevel[3], Npp8u *pBuffer)

    4 channel (alpha as the last channel) 8-bit unsigned histogram with evenly distributed bins.

- NppStatus nppiHistogramEvenGetBufferSize_16u_C1R (NppiSize oSizeROI, int nLevels, int *hpBufferSize)

    Scratch-buffer size for nppiHistogramEven_16u_C1R.

- NppStatus nppiHistogramEven_16u_C1R (const Npp16u *pSrc, int nSrcStep, NppiSize oSizeROI, Npp32s *pHist, int nLevels, Npp32s nLowerLevel, Npp32s nUpperLevel, Npp8u *pBuffer)

    16-bit unsigned histogram with evenly distributed bins.

- NppStatus nppiHistogramEvenGetBufferSize_16u_C4R (NppiSize oSizeROI, int nLevels[4], int *hpBufferSize)

    Scratch-buffer size for nppiHistogramEven_16u_C4R.

- NppStatus nppiHistogramEven_16u_C4R (const Npp16u *pSrc, int nSrcStep, NppiSize oSize-ROI, Npp32s *pHist[4], int nLevels[4], Npp32s nLowerLevel[4], Npp32s nUpperLevel[4], Npp8u *pBuffer)

    4 channel 16-bit unsigned histogram with evenly distributed bins.

- NppStatus nppiHistogramEvenGetBufferSize_16u_AC4R (NppiSize oSizeROI, int nLevels[3], int *hpBufferSize)

    Scratch-buffer size for nppiHistogramEven_16u_AC4R.

- NppStatus nppiHistogramEven_16u_AC4R (const Npp16u *pSrc, int nSrcStep, NppiSize oSize-ROI, Npp32s *pHist[3], int nLevels[3], Npp32s nLowerLevel[3], Npp32s nUpperLevel[3], Npp8u *pBuffer)

    4 channel (alpha as the last channel) 16-bit unsigned histogram with evenly distributed bins.

- NppStatus nppiHistogramEvenGetBufferSize_16s_C1R (NppiSize oSizeROI, int nLevels, int ∗hpBufferSize)

    Scratch-buffer size for nppiHistogramEven_16s_C1R.

- NppStatus nppiHistogramEven_16s_C1R (const Npp16s ∗pSrc, int nSrcStep, NppiSize oSizeROI, Npp32s ∗pHist, int nLevels, Npp32s nLowerLevel, Npp32s nUpperLevel, Npp8u ∗pBuffer)

    16-bit signed histogram with evenly distributed bins.

- NppStatus nppiHistogramEvenGetBufferSize_16s_C4R (NppiSize oSizeROI, int nLevels[4], int ∗hpBufferSize)

    Scratch-buffer size for nppiHistogramEven_16s_C4R.

- NppStatus nppiHistogramEven_16s_C4R (const Npp16s ∗pSrc, int nSrcStep, NppiSize oSize-ROI, Npp32s ∗pHist[4], int nLevels[4], Npp32s nLowerLevel[4], Npp32s nUpperLevel[4], Npp8u ∗pBuffer)

    4 channel 16-bit signed histogram with evenly distributed bins.

- NppStatus nppiHistogramEvenGetBufferSize_16s_AC4R (NppiSize oSizeROI, int nLevels[3], int ∗hpBufferSize)

    Scratch-buffer size for nppiHistogramEven_16s_AC4R.

- NppStatus nppiHistogramEven_16s_AC4R (const Npp16s ∗pSrc, int nSrcStep, NppiSize oSize-ROI, Npp32s ∗pHist[3], int nLevels[3], Npp32s nLowerLevel[3], Npp32s nUpperLevel[3], Npp8u ∗pBuffer)

    4 channel (alpha as the last channel) 16-bit signed histogram with evenly distributed bins.

- NppStatus nppiHistogramRangeGetBufferSize_8u_C1R (NppiSize oSizeROI, int nLevels, int ∗hpBufferSize)

    Scratch-buffer size for nppiHistogramRange_8u_C1R.

- NppStatus nppiHistogramRange_8u_C1R (const Npp8u ∗pSrc, int nSrcStep, NppiSize oSizeROI, Npp32s ∗pHist, const Npp32s ∗pLevels, int nLevels, Npp8u ∗pBuffer)

    8-bit unsigned histogram with bins determined by pLevels array.

- NppStatus nppiHistogramRangeGetBufferSize_8u_C4R (NppiSize oSizeROI, int nLevels[4], int ∗hpBufferSize)

    Scratch-buffer size for nppiHistogramRange_8u_C4R.

- NppStatus nppiHistogramRange_8u_C4R (const Npp8u ∗pSrc, int nSrcStep, NppiSize oSizeROI, Npp32s ∗pHist[4], const Npp32s ∗pLevels[4], int nLevels[4], Npp8u ∗pBuffer)

    4 channel 8-bit unsigned histogram with bins determined by pLevels.

- NppStatus nppiHistogramRangeGetBufferSize_8u_AC4R (NppiSize oSizeROI, int nLevels[3], int ∗hpBufferSize)

    Scratch-buffer size for nppiHistogramRange_8u_AC4R.

- NppStatus nppiHistogramRange_8u_AC4R (const Npp8u ∗pSrc, int nSrcStep, NppiSize oSizeROI, Npp32s ∗pHist[3], const Npp32s ∗pLevels[3], int nLevels[3], Npp8u ∗pBuffer)

    4 channel (alpha as a last channel) 8-bit unsigned histogram with bins determined by pLevels.

- NppStatus nppiHistogramRangeGetBufferSize_16u_C1R (NppiSize oSizeROI, int nLevels, int ∗hpBufferSize)

    Scratch-buffer size for nppiHistogramRange_16u_C1R.

- NppStatus nppiHistogramRange_16u_C1R (const Npp16u ∗pSrc, int nSrcStep, NppiSize oSizeROI, Npp32s ∗pHist, const Npp32s ∗pLevels, int nLevels, Npp8u ∗pBuffer)

    16-bit unsigned histogram with bins determined by pLevels array.

- NppStatus nppiHistogramRangeGetBufferSize_16u_C4R (NppiSize oSizeROI, int nLevels[4], int ∗hpBufferSize)

    Scratch-buffer size for nppiHistogramRange_16u_C4R.

- NppStatus nppiHistogramRange_16u_C4R (const Npp16u ∗pSrc, int nSrcStep, NppiSize oSizeROI, Npp32s ∗pHist[4], const Npp32s ∗pLevels[4], int nLevels[4], Npp8u ∗pBuffer)

    4 channel 16-bit unsigned histogram with bins determined by pLevels.

- NppStatus nppiHistogramRangeGetBufferSize_16u_AC4R (NppiSize oSizeROI, int nLevels[3], int ∗hpBufferSize)

    Scratch-buffer size for nppiHistogramRange_16u_AC4R.

- NppStatus nppiHistogramRange_16u_AC4R (const Npp16u ∗pSrc, int nSrcStep, NppiSize oSize-ROI, Npp32s ∗pHist[3], const Npp32s ∗pLevels[3], int nLevels[3], Npp8u ∗pBuffer)

    4 channel (alpha as a last channel) 16-bit unsigned histogram with bins determined by pLevels.

- NppStatus nppiHistogramRangeGetBufferSize_16s_C1R (NppiSize oSizeROI, int nLevels, int ∗hpBufferSize)

    Scratch-buffer size for nppiHistogramRange_16s_C1R.

- NppStatus nppiHistogramRange_16s_C1R (const Npp16s ∗pSrc, int nSrcStep, NppiSize oSizeROI, Npp32s ∗pHist, const Npp32s ∗pLevels, int nLevels, Npp8u ∗pBuffer)

    16-bit signed histogram with bins determined by pLevels array.

- NppStatus nppiHistogramRangeGetBufferSize_16s_C4R (NppiSize oSizeROI, int nLevels[4], int ∗hpBufferSize)

    Scratch-buffer size for nppiHistogramRange_16s_C4R.

- NppStatus nppiHistogramRange_16s_C4R (const Npp16s ∗pSrc, int nSrcStep, NppiSize oSizeROI, Npp32s ∗pHist[4], const Npp32s ∗pLevels[4], int nLevels[4], Npp8u ∗pBuffer)

    4 channel 16-bit signed histogram with bins determined by pLevels.

- NppStatus nppiHistogramRangeGetBufferSize_16s_AC4R (NppiSize oSizeROI, int nLevels[3], int ∗hpBufferSize)

    Scratch-buffer size for nppiHistogramRange_16s_AC4R.

- NppStatus nppiHistogramRange_16s_AC4R (const Npp16s ∗pSrc, int nSrcStep, NppiSize oSize-ROI, Npp32s ∗pHist[3], const Npp32s ∗pLevels[3], int nLevels[3], Npp8u ∗pBuffer)

    4 channel (alpha as a last channel) 16-bit signed histogram with bins determined by pLevels.

- NppStatus nppiHistogramRangeGetBufferSize_32f_C1R (NppiSize oSizeROI, int nLevels, int ∗hpBufferSize)

    Scratch-buffer size for nppiHistogramRange_32f_C1R.

- NppStatus nppiHistogramRange_32f_C1R (const Npp32f ∗pSrc, int nSrcStep, NppiSize oSizeROI, Npp32s ∗pHist, const Npp32f ∗pLevels, int nLevels, Npp8u ∗pBuffer)

    32-bit float histogram with bins determined by pLevels array.

- NppStatus nppiHistogramRangeGetBufferSize_32f_C4R (NppiSize oSizeROI, int nLevels[4], int ∗hpBufferSize)

    Scratch-buffer size for nppiHistogramRange_32f_C4R.

- NppStatus nppiHistogramRange_32f_C4R (const Npp32f ∗pSrc, int nSrcStep, NppiSize oSizeROI, Npp32s ∗pHist[4], const Npp32f ∗pLevels[4], int nLevels[4], Npp8u ∗pBuffer)

    4 channel 32-bit float histogram with bins determined by pLevels.

- NppStatus nppiHistogramRangeGetBufferSize_32f_AC4R (NppiSize oSizeROI, int nLevels[3], int ∗hpBufferSize)

    Scratch-buffer size for nppiHistogramRange_32f_AC4R.

- NppStatus nppiHistogramRange_32f_AC4R (const Npp32f ∗pSrc, int nSrcStep, NppiSize oSize-ROI, Npp32s ∗pHist[3], const Npp32f ∗pLevels[3], int nLevels[3], Npp8u ∗pBuffer)

    4 channel (alpha as a last channel) 32-bit float histogram with bins determined by pLevels.

7.9.1 Detailed Description

Routines computing statistical image information.

7.9.2 Function Documentation

7.9.2.1 NppStatus nppiEvenLevelsHost_32s (Npp32s ∗ *hpLevels*, int *nLevels*, Npp32s *nLowerLevel*, Npp32s *nUpperLevel*)

Compute levels with even distribution.

Parameters:

> *hpLevels* A host pointer to array which receives the levels being computed. The array needs to be of size nLevels.
>
> *nLevels* The number of levels being computed. nLevels must be at least 2, otherwise an NPP_-HISTO_NUMBER_OF_LEVELS_ERROR error is returned.
>
> *nLowerLevel* Lower boundary value of the lowest level.
>
> *nUpperLevel* Upper boundary value of the greatest level.

Returns:

> Error code.

7.9.2.2 **NppStatus nppiHistogramEven_16s_AC4R (const Npp16s ∗ *pSrc*, int *nSrcStep*, NppiSize *oSizeROI*, Npp32s ∗ *pHist*[3], int *nLevels*[3], Npp32s *nLowerLevel*[3], Npp32s *nUpperLevel*[3], Npp8u ∗ *pBuffer*)**

4 channel (alpha as the last channel) 16-bit signed histogram with evenly distributed bins.

Alpha channel is ignored during histogram computation.

Parameters:

> *pSrc* Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *pHist* Array of pointers which are receiving computed histograms per color channel. Array pointed by pHist[i] be of size nLevels[i]-1.
>
> *nLevels* Array containing number of levels per color channel.
>
> *nLowerLevel* Array containing lower-level of lowest bin per color channel.
>
> *nUpperLevel* Array containing upper-level of highest bin per color channel.
>
> *pBuffer* Pointer to appropriately sized (nppiHistogramEvenGetBufferSize_16s_AC4R) scratch buffer.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.9.2.3 **NppStatus nppiHistogramEven_16s_C1R (const Npp16s ∗ *pSrc*, int *nSrcStep*, NppiSize *oSizeROI*, Npp32s ∗ *pHist*, int *nLevels*, Npp32s *nLowerLevel*, Npp32s *nUpperLevel*, Npp8u ∗ *pBuffer*)**

16-bit signed histogram with evenly distributed bins.

Parameters:

> *pSrc* Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *pHist* Pointer to array that receives the computed histogram. The array must be of size nLevels-1.
>
> *nLevels* Number of levels.
>
> *nLowerLevel* Lower boundary of lowest level bin.
>
> *nUpperLevel* Upper boundary of highest level bin.
>
> *pBuffer* Pointer to appropriately sized (nppiHistogramEvenGetBufferSize_16s_C1R) scratch buffer.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.9.2.4 NppStatus nppiHistogramEven_16s_C4R (const Npp16s ∗ *pSrc*, int *nSrcStep*, NppiSize *oSizeROI*, Npp32s ∗ *pHist*[4], int *nLevels*[4], Npp32s *nLowerLevel*[4], Npp32s *nUpperLevel*[4], Npp8u ∗ *pBuffer*)

4 channel 16-bit signed histogram with evenly distributed bins.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

oSizeROI Region-of-Interest (ROI).

pHist Array of pointers which are receiving computed histograms per color channel. Array pointed by pHist[i] be of size nLevels[i]-1.

nLevels Array containing number of levels per color channel.

nLowerLevel Array containing lower-level of lowest bin per color channel.

nUpperLevel Array containing upper-level of highest bin per color channel.

pBuffer Pointer to appropriately sized (nppiHistogramEvenGetBufferSize_16s_C4R) scratch buffer.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.9.2.5 NppStatus nppiHistogramEven_16u_AC4R (const Npp16u ∗ *pSrc*, int *nSrcStep*, NppiSize *oSizeROI*, Npp32s ∗ *pHist*[3], int *nLevels*[3], Npp32s *nLowerLevel*[3], Npp32s *nUpperLevel*[3], Npp8u ∗ *pBuffer*)

4 channel (alpha as the last channel) 16-bit unsigned histogram with evenly distributed bins.

Alpha channel is ignored during histogram computation.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

oSizeROI Region-of-Interest (ROI).

pHist Array of pointers which are receiving computed histograms per color channel. Array pointed by pHist[i] be of size nLevels[i]-1.

nLevels Array containing number of levels per color channel.

nLowerLevel Array containing lower-level of lowest bin per color channel.

nUpperLevel Array containing upper-level of highest bin per color channel.

pBuffer Pointer to appropriately sized (nppiHistogramEvenGetBufferSize_16u_AC4R) scratch buffer.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.9.2.6 NppStatus nppiHistogramEven_16u_C1R (const Npp16u ∗ *pSrc*, int *nSrcStep*, NppiSize *oSizeROI*, Npp32s ∗ *pHist*, int *nLevels*, Npp32s *nLowerLevel*, Npp32s *nUpperLevel*, Npp8u ∗ *pBuffer*)

16-bit unsigned histogram with evenly distributed bins.

Parameters:

> *pSrc* Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *pHist* Pointer to array that receives the computed histogram. The array must be of size nLevels-1.
>
> *nLevels* Number of levels.
>
> *nLowerLevel* Lower boundary of lowest level bin.
>
> *nUpperLevel* Upper boundary of highest level bin.
>
> *pBuffer* Pointer to appropriately sized (nppiHistogramEvenGetBufferSize_16u_C1R) scratch buffer.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.9.2.7 NppStatus nppiHistogramEven_16u_C4R (const Npp16u ∗ *pSrc*, int *nSrcStep*, NppiSize *oSizeROI*, Npp32s ∗ *pHist*[4], int *nLevels*[4], Npp32s *nLowerLevel*[4], Npp32s *nUpperLevel*[4], Npp8u ∗ *pBuffer*)

4 channel 16-bit unsigned histogram with evenly distributed bins.

Parameters:

> *pSrc* Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *pHist* Array of pointers which are receiving computed histograms per color channel. Array pointed by pHist[i] be of size nLevels[i]-1.
>
> *nLevels* Array containing number of levels per color channel.
>
> *nLowerLevel* Array containing lower-level of lowest bin per color channel.
>
> *nUpperLevel* Array containing upper-level of highest bin per color channel.
>
> *pBuffer* Pointer to appropriately sized (nppiHistogramEvenGetBufferSize_16u_C4R) scratch buffer.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.9.2.8 NppStatus nppiHistogramEven_8u_AC4R (const Npp8u ∗ *pSrc*, int *nSrcStep*, NppiSize *oSizeROI*, Npp32s ∗ *pHist*[3], int *nLevels*[3], Npp32s *nLowerLevel*[3], Npp32s *nUpperLevel*[3], Npp8u ∗ *pBuffer*)

4 channel (alpha as the last channel) 8-bit unsigned histogram with evenly distributed bins.

Alpha channel is ignored during histogram computation.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

oSizeROI Region-of-Interest (ROI).

pHist Array of pointers which are receiving computed histograms per color channel. Array pointed by pHist[i] be of size nLevels[i]-1.

nLevels Array containing number of levels per color channel.

nLowerLevel Array containing lower-level of lowest bin per color channel.

nUpperLevel Array containing upper-level of highest bin per color channel.

pBuffer Pointer to appropriately sized (nppiHistogramEvenGetBufferSize_8u_AC4R) scratch buffer.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.9.2.9 NppStatus nppiHistogramEven_8u_C1R (const Npp8u ∗ *pSrc*, int *nSrcStep*, NppiSize *oSizeROI*, Npp32s ∗ *pHist*, int *nLevels*, Npp32s *nLowerLevel*, Npp32s *nUpperLevel*, Npp8u ∗ *pBuffer*)

8-bit unsigned histogram with evenly distributed bins.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

oSizeROI Region-of-Interest (ROI).

pHist Pointer to array that receives the computed histogram. The array must be of size nLevels-1.

nLevels Number of levels.

nLowerLevel Lower boundary of lowest level bin.

nUpperLevel Upper boundary of highest level bin.

pBuffer Pointer to appropriately sized (nppiHistogramEvenGetBufferSize_8u_C1R) scratch buffer.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.9.2.10 NppStatus nppiHistogramEven_8u_C4R (const Npp8u ∗ *pSrc*, int *nSrcStep*, NppiSize *oSizeROI*, Npp32s ∗ *pHist*[4], int *nLevels*[4], Npp32s *nLowerLevel*[4], Npp32s *nUpperLevel*[4], Npp8u ∗ *pBuffer*)

4 channel 8-bit unsigned histogram with evenly distributed bins.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

oSizeROI Region-of-Interest (ROI).

pHist Array of pointers which are receiving computed histograms per color channel. Array pointed by pHist[i] be of size nLevels[i]-1.

nLevels Array containing number of levels per color channel.

nLowerLevel Array containing lower-level of lowest bin per color channel.

nUpperLevel Array containing upper-level of highest bin per color channel.

pBuffer Pointer to appropriately sized (nppiHistogramEvenGetBufferSize_8u_C4R) scratch buffer.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.9.2.11 NppStatus nppiHistogramEvenGetBufferSize_16s_AC4R (NppiSize *oSizeROI*, int *nLevels*[3], int ∗ *hpBufferSize*)

Scratch-buffer size for nppiHistogramEven_16s_AC4R.

Parameters:

oSizeROI ROI size.

nLevels Array containing number of levels per color channel.

hpBufferSize Host pointer where required buffer size is returned.

Returns:

Error Code.

7.9.2.12 NppStatus nppiHistogramEvenGetBufferSize_16s_C1R (NppiSize *oSizeROI*, int *nLevels*, int ∗ *hpBufferSize*)

Scratch-buffer size for nppiHistogramEven_16s_C1R.

Parameters:

oSizeROI Region-of-Interest (ROI).

nLevels Number of levels in the histogram.

hpBufferSize Host pointer where required buffer size is returned.

Returns:

Error Code.

7.9.2.13 NppStatus nppiHistogramEvenGetBufferSize_16s_C4R (NppiSize *oSizeROI*, int *nLevels*[4], int ∗ *hpBufferSize*)

Scratch-buffer size for nppiHistogramEven_16s_C4R.

Parameters:

oSizeROI ROI size.

nLevels Array containing number of levels per color channel.

hpBufferSize Host pointer where required buffer size is returned.

Returns:

Error Code.

7.9.2.14 NppStatus nppiHistogramEvenGetBufferSize_16u_AC4R (NppiSize *oSizeROI*, int *nLevels*[3], int ∗ *hpBufferSize*)

Scratch-buffer size for nppiHistogramEven_16u_AC4R.

Parameters:

oSizeROI ROI size.

nLevels Array containing number of levels per color channel.

hpBufferSize Host pointer where required buffer size is returned.

Returns:

Error Code.

7.9.2.15 NppStatus nppiHistogramEvenGetBufferSize_16u_C1R (NppiSize *oSizeROI*, int *nLevels*, int ∗ *hpBufferSize*)

Scratch-buffer size for nppiHistogramEven_16u_C1R.

Parameters:

oSizeROI Region-of-Interest (ROI).

nLevels Number of levels in the histogram.

hpBufferSize Host pointer where required buffer size is returned.

Returns:

Error Code.

7.9.2.16 NppStatus nppiHistogramEvenGetBufferSize_16u_C4R (NppiSize *oSizeROI*, int *nLevels*[4], int ∗ *hpBufferSize*)

Scratch-buffer size for nppiHistogramEven_16u_C4R.

Parameters:

oSizeROI ROI size.

nLevels Array containing number of levels per color channel.

hpBufferSize Host pointer where required buffer size is returned.

Returns:

Error Code.

7.9.2.17 NppStatus nppiHistogramEvenGetBufferSize_8u_AC4R (NppiSize *oSizeROI*, int *nLevels*[3], int ∗ *hpBufferSize*)

Scratch-buffer size for nppiHistogramEven_8u_AC4R.

Parameters:

>   *oSizeROI* ROI size.

>   *nLevels* Array containing number of levels per color channel.

>   *hpBufferSize* Host pointer where required buffer size is returned.

Returns:

>   Error Code.

7.9.2.18 NppStatus nppiHistogramEvenGetBufferSize_8u_C1R (NppiSize *oSizeROI*, int *nLevels*, int ∗ *hpBufferSize*)

Scratch-buffer size for nppiHistogramEven_8u_C1R.

Parameters:

>   *oSizeROI* Region-of-Interest (ROI).

>   *nLevels* Number of levels in the histogram.

>   *hpBufferSize* Host pointer where required buffer size is returned.

Returns:

>   Error Code.

7.9.2.19 NppStatus nppiHistogramEvenGetBufferSize_8u_C4R (NppiSize *oSizeROI*, int *nLevels*[4], int ∗ *hpBufferSize*)

Scratch-buffer size for nppiHistogramEven_8u_C4R.

Parameters:

>   *oSizeROI* ROI size.

>   *nLevels* Array containing number of levels per color channel.

>   *hpBufferSize* Host pointer where required buffer size is returned.

Returns:

>   Error Code.

7.9.2.20 NppStatus nppiHistogramRange_16s_AC4R (const Npp16s ∗ *pSrc*, int *nSrcStep*, NppiSize *oSizeROI*, Npp32s ∗ *pHist*[3], const Npp32s ∗ *pLevels*[3], int *nLevels*[3], Npp8u ∗ *pBuffer*)

4 channel (alpha as a last channel) 16-bit signed histogram with bins determined by pLevels.

Alpha channel is ignored during the histograms computations.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

oSizeROI Region-of-Interest (ROI).

pHist Array of pointers which are receiving the computed histograms per color channel. Array pointed by pHist[i] must be of size nLevels[i]-1.

nLevels Array containing number of levels per color channel.

pLevels Array containing pointers to level-arrays per color channel. Array pointed by pLevel[i] must be of size nLevels[i].

pBuffer Pointer to appropriately sized (nppiHistogramRangeGetBufferSize_16_AC4R) scratch buffer.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.9.2.21 NppStatus nppiHistogramRange_16s_C1R (const Npp16s ∗ *pSrc*, int *nSrcStep*, NppiSize *oSizeROI*, Npp32s ∗ *pHist*, const Npp32s ∗ *pLevels*, int *nLevels*, Npp8u ∗ *pBuffer*)

16-bit signed histogram with bins determined by pLevels array.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

oSizeROI Region-of-Interest (ROI).

pHist Pointer to array that receives the computed histogram. The array must be of size nLevels-1.

pLevels Pointer to array containing the level sizes of the bins. The array must be of size nLevels.

nLevels Number of levels in histogram.

pBuffer Pointer to appropriately sized (nppiHistogramRangeGetBufferSize_16_C1R) scratch buffer.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.9.2.22 NppStatus nppiHistogramRange_16s_C4R (const Npp16s ∗ *pSrc*, int *nSrcStep*, NppiSize *oSizeROI*, Npp32s ∗ *pHist*[4], const Npp32s ∗ *pLevels*[4], int *nLevels*[4], Npp8u ∗ *pBuffer*)

4 channel 16-bit signed histogram with bins determined by pLevels.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

oSizeROI Region-of-Interest (ROI).

pHist Array of pointers which are receiving the computed histograms per color channel. Array pointed by pHist[i] must be of size nLevels[i]-1.

nLevels Array containing number of levels per color channel.

pLevels Array containing pointers to level-arrays per color channel. Array pointed by pLevel[i] must be of size nLevels[i].

pBuffer Pointer to appropriately sized (nppiHistogramRangeGetBufferSize_16s_C4R) scratch buffer.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.9.2.23 NppStatus nppiHistogramRange_16u_AC4R (const Npp16u ∗ *pSrc*, int *nSrcStep*, NppiSize *oSizeROI*, Npp32s ∗ *pHist*[3], const Npp32s ∗ *pLevels*[3], int *nLevels*[3], Npp8u ∗ *pBuffer*)

4 channel (alpha as a last channel) 16-bit unsigned histogram with bins determined by pLevels.

Alpha channel is ignored during the histograms computations.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

oSizeROI Region-of-Interest (ROI).

pHist Array of pointers which are receiving the computed histograms per color channel. Array pointed by pHist[i] must be of size nLevels[i]-1.

nLevels Array containing number of levels per color channel.

pLevels Array containing pointers to level-arrays per color channel. Array pointed by pLevel[i] must be of size nLevels[i].

pBuffer Pointer to appropriately sized (nppiHistogramRangeGetBufferSize_16u_AC4R) scratch buffer.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.9.2.24 NppStatus nppiHistogramRange_16u_C1R (const Npp16u ∗ *pSrc*, int *nSrcStep*, NppiSize *oSizeROI*, Npp32s ∗ *pHist*, const Npp32s ∗ *pLevels*, int *nLevels*, Npp8u ∗ *pBuffer*)

16-bit unsigned histogram with bins determined by pLevels array.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

oSizeROI Region-of-Interest (ROI).

pHist Pointer to array that receives the computed histogram. The array must be of size nLevels-1.

pLevels Pointer to array containing the level sizes of the bins. The array must be of size nLevels.

nLevels Number of levels in histogram.

pBuffer Pointer to appropriately sized (nppiHistogramRangeGetBufferSize_16u_C1R) scratch buffer.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.9.2.25 NppStatus nppiHistogramRange_16u_C4R (const Npp16u ∗ *pSrc*, int *nSrcStep*, NppiSize *oSizeROI*, Npp32s ∗ *pHist*[4], const Npp32s ∗ *pLevels*[4], int *nLevels*[4], Npp8u ∗ *pBuffer*)

4 channel 16-bit unsigned histogram with bins determined by pLevels.

Parameters:

>   *pSrc* Source-Image Pointer.
>
>   *nSrcStep* Source-Image Line Step.
>
>   *oSizeROI* Region-of-Interest (ROI).
>
>   *pHist* Array of pointers which are receiving the computed histograms per color channel. Array pointed by pHist[i] must be of size nLevels[i]-1.
>
>   *nLevels* Array containing number of levels per color channel.
>
>   *pLevels* Array containing pointers to level-arrays per color channel. Array pointed by pLevel[i] must be of size nLevels[i].
>
>   *pBuffer* Pointer to appropriately sized (nppiHistogramRangeGetBufferSize_16u_C4R) scratch buffer.

Returns:

>   Image Data Related Error Codes, ROI Related Error Codes

7.9.2.26 NppStatus nppiHistogramRange_32f_AC4R (const Npp32f ∗ *pSrc*, int *nSrcStep*, NppiSize *oSizeROI*, Npp32s ∗ *pHist*[3], const Npp32f ∗ *pLevels*[3], int *nLevels*[3], Npp8u ∗ *pBuffer*)

4 channel (alpha as a last channel) 32-bit float histogram with bins determined by pLevels.

Alpha channel is ignored during the histograms computations.

Parameters:

>   *pSrc* Source-Image Pointer.
>
>   *nSrcStep* Source-Image Line Step.
>
>   *oSizeROI* Region-of-Interest (ROI).
>
>   *pHist* Array of pointers which are receiving the computed histograms per color channel. Array pointed by pHist[i] must be of size nLevels[i]-1.
>
>   *nLevels* Array containing number of levels per color channel.
>
>   *pLevels* Array containing pointers to level-arrays per color channel. Array pointed by pLevel[i] must be of size nLevels[i].
>
>   *pBuffer* Pointer to appropriately sized (nppiHistogramRangeGetBufferSize_32f_AC4R) scratch buffer.

Returns:

>   Image Data Related Error Codes, ROI Related Error Codes

7.9.2.27 NppStatus nppiHistogramRange_32f_C1R (const Npp32f ∗ *pSrc*, int *nSrcStep*, NppiSize *oSizeROI*, Npp32s ∗ *pHist*, const Npp32f ∗ *pLevels*, int *nLevels*, Npp8u ∗ *pBuffer*)

32-bit float histogram with bins determined by pLevels array.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

oSizeROI Region-of-Interest (ROI).

pHist Pointer to array that receives the computed histogram. The array must be of size nLevels-1.

pLevels Pointer to array containing the level sizes of the bins. The array must be of size nLevels.

nLevels Number of levels in histogram.

pBuffer Pointer to appropriately sized (nppiHistogramRangeGetBufferSize_32f_C1R) scratch buffer.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.9.2.28 NppStatus nppiHistogramRange_32f_C4R (const Npp32f ∗ *pSrc*, int *nSrcStep*, NppiSize *oSizeROI*, Npp32s ∗ *pHist*[4], const Npp32f ∗ *pLevels*[4], int *nLevels*[4], Npp8u ∗ *pBuffer*)

4 channel 32-bit float histogram with bins determined by pLevels.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

oSizeROI Region-of-Interest (ROI).

pHist Array of pointers which are receiving the computed histograms per color channel. Array pointed by pHist[i] must be of size nLevels[i]-1.

nLevels Array containing number of levels per color channel.

pLevels Array containing pointers to level-arrays per color channel. Array pointed by pLevel[i] must be of size nLevels[i].

pBuffer Pointer to appropriately sized (nppiHistogramRangeGetBufferSize_32f_C4R) scratch buffer.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.9.2.29 NppStatus nppiHistogramRange_8u_AC4R (const Npp8u ∗ *pSrc*, int *nSrcStep*, NppiSize *oSizeROI*, Npp32s ∗ *pHist*[3], const Npp32s ∗ *pLevels*[3], int *nLevels*[3], Npp8u ∗ *pBuffer*)

4 channel (alpha as a last channel) 8-bit unsigned histogram with bins determined by pLevels.

Alpha channel is ignored during the histograms computations.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

oSizeROI Region-of-Interest (ROI).

pHist Array of pointers which are receiving the computed histograms per color channel. Array pointed by pHist[i] must be of size nLevels[i]-1.

nLevels Array containing number of levels per color channel.

pLevels Array containing pointers to level-arrays per color channel. Array pointed by pLevel[i] must be of size nLevels[i].

pBuffer Pointer to appropriately sized (nppiHistogramRangeGetBufferSize_8u_AC4R) scratch buffer.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.9.2.30 NppStatus nppiHistogramRange_8u_C1R (const Npp8u ∗ *pSrc*, int *nSrcStep*, NppiSize *oSizeROI*, Npp32s ∗ *pHist*, const Npp32s ∗ *pLevels*, int *nLevels*, Npp8u ∗ *pBuffer*)

8-bit unsigned histogram with bins determined by pLevels array.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

oSizeROI Region-of-Interest (ROI).

pHist Pointer to array that receives the computed histogram. The array must be of size nLevels-1.

pLevels Pointer to array containing the level sizes of the bins. The array must be of size nLevels.

nLevels Number of levels in histogram.

pBuffer Pointer to appropriately sized (nppiHistogramRangeGetBufferSize_8u_C1R) scratch buffer.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.9.2.31 NppStatus nppiHistogramRange_8u_C4R (const Npp8u ∗ *pSrc*, int *nSrcStep*, NppiSize *oSizeROI*, Npp32s ∗ *pHist*[4], const Npp32s ∗ *pLevels*[4], int *nLevels*[4], Npp8u ∗ *pBuffer*)

4 channel 8-bit unsigned histogram with bins determined by pLevels.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

oSizeROI Region-of-Interest (ROI).

pHist Array of pointers which are receiving the computed histograms per color channel. Array pointed by pHist[i] must be of size nLevels[i]-1.

> ***nLevels*** Array containing number of levels per color channel.
>
> ***pLevels*** Array containing pointers to level-arrays per color channel. Array pointed by pLevel[i] must be of size nLevels[i].
>
> ***pBuffer*** Pointer to appropriately sized (nppiHistogramRangeGetBufferSize_8u_C4R) scratch buffer.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.9.2.32 NppStatus nppiHistogramRangeGetBufferSize_16s_AC4R (NppiSize *oSizeROI*, int *nLevels*[3], int ∗ *hpBufferSize*)

Scratch-buffer size for nppiHistogramRange_16s_AC4R.

Parameters:

> ***oSizeROI*** ROI size.
>
> ***nLevels*** Array containing number of levels per color channel.
>
> ***hpBufferSize*** Host pointer where required buffer size is returned.

Returns:

> Error Code.

7.9.2.33 NppStatus nppiHistogramRangeGetBufferSize_16s_C1R (NppiSize *oSizeROI*, int *nLevels*, int ∗ *hpBufferSize*)

Scratch-buffer size for nppiHistogramRange_16s_C1R.

Parameters:

> ***oSizeROI*** Region-of-Interest (ROI).
>
> ***nLevels*** Number of levels in the histogram.
>
> ***hpBufferSize*** Host pointer where required buffer size is returned.

Returns:

> Error Code.

7.9.2.34 NppStatus nppiHistogramRangeGetBufferSize_16s_C4R (NppiSize *oSizeROI*, int *nLevels*[4], int ∗ *hpBufferSize*)

Scratch-buffer size for nppiHistogramRange_16s_C4R.

Parameters:

> ***oSizeROI*** ROI size.
>
> ***nLevels*** Array containing number of levels per color channel.
>
> ***hpBufferSize*** Host pointer where required buffer size is returned.

Returns:

> Error Code.

7.9.2.35 NppStatus nppiHistogramRangeGetBufferSize_16u_AC4R (NppiSize *oSizeROI*, int *nLevels*[3], int * *hpBufferSize*)

Scratch-buffer size for nppiHistogramRange_16u_AC4R.

Parameters:

> *oSizeROI* ROI size.
>
> *nLevels* Array containing number of levels per color channel.
>
> *hpBufferSize* Host pointer where required buffer size is returned.

Returns:

> Error Code.

7.9.2.36 NppStatus nppiHistogramRangeGetBufferSize_16u_C1R (NppiSize *oSizeROI*, int *nLevels*, int * *hpBufferSize*)

Scratch-buffer size for nppiHistogramRange_16u_C1R.

Parameters:

> *oSizeROI* Region-of-Interest (ROI).
>
> *nLevels* Number of levels in the histogram.
>
> *hpBufferSize* Host pointer where required buffer size is returned.

Returns:

> Error Code.

7.9.2.37 NppStatus nppiHistogramRangeGetBufferSize_16u_C4R (NppiSize *oSizeROI*, int *nLevels*[4], int * *hpBufferSize*)

Scratch-buffer size for nppiHistogramRange_16u_C4R.

Parameters:

> *oSizeROI* ROI size.
>
> *nLevels* Array containing number of levels per color channel.
>
> *hpBufferSize* Host pointer where required buffer size is returned.

Returns:

> Error Code.

7.9.2.38 NppStatus nppiHistogramRangeGetBufferSize_32f_AC4R (NppiSize *oSizeROI*, int *nLevels*[3], int * *hpBufferSize*)

Scratch-buffer size for nppiHistogramRange_32f_AC4R.

Parameters:

> *oSizeROI* ROI size.
>
> *nLevels* Array containing number of levels per color channel.
>
> *hpBufferSize* Host pointer where required buffer size is returned.

Returns:

> Error Code.

7.9.2.39 NppStatus nppiHistogramRangeGetBufferSize_32f_C1R (NppiSize *oSizeROI*, int *nLevels*, int ∗ *hpBufferSize*)

Scratch-buffer size for nppiHistogramRange_32f_C1R.

Parameters:

> *oSizeROI* Region-of-Interest (ROI).
>
> *nLevels* Number of levels in the histogram.
>
> *hpBufferSize* Host pointer where required buffer size is returned.

Returns:

> Error Code.

7.9.2.40 NppStatus nppiHistogramRangeGetBufferSize_32f_C4R (NppiSize *oSizeROI*, int *nLevels*[4], int ∗ *hpBufferSize*)

Scratch-buffer size for nppiHistogramRange_32f_C4R.

Parameters:

> *oSizeROI* ROI size.
>
> *nLevels* Array containing number of levels per color channel.
>
> *hpBufferSize* Host pointer where required buffer size is returned.

Returns:

> Error Code.

7.9.2.41 NppStatus nppiHistogramRangeGetBufferSize_8u_AC4R (NppiSize *oSizeROI*, int *nLevels*[3], int ∗ *hpBufferSize*)

Scratch-buffer size for nppiHistogramRange_8u_AC4R.

Parameters:

> *oSizeROI* ROI size.
>
> *nLevels* Array containing number of levels per color channel.
>
> *hpBufferSize* Host pointer where required buffer size is returned.

Returns:

> Error Code.

7.9.2.42 NppStatus nppiHistogramRangeGetBufferSize_8u_C1R (NppiSize *oSizeROI*, int *nLevels*, int ∗ *hpBufferSize*)

Scratch-buffer size for nppiHistogramRange_8u_C1R.

Parameters:

    oSizeROI Region-of-Interest (ROI).

    nLevels Number of levels in the histogram.

    hpBufferSize Host pointer where required buffer size is returned.

Returns:

    Error Code.

7.9.2.43 NppStatus nppiHistogramRangeGetBufferSize_8u_C4R (NppiSize *oSizeROI*, int *nLevels*[4], int ∗ *hpBufferSize*)

Scratch-buffer size for nppiHistogramRange_8u_C4R.

Parameters:

    oSizeROI ROI size.

    nLevels Array containing number of levels per color channel.

    hpBufferSize Host pointer where required buffer size is returned.

Returns:

    Error Code.

7.9.2.44 NppStatus nppiMean_StdDev_8u_C1R (const Npp8u ∗ *pSrc*, int *nSrcStep*, NppiSize *oSizeROI*, Npp8u ∗ *pDeviceBuffer*, Npp64f ∗ *pMean*, Npp64f ∗ *pStdDev*)

8-bit unsigned mean standard deviation.

Parameters:

    pSrc Source-Image Pointer.

    nSrcStep Source-Image Line Step.

    oSizeROI Region-of-Interest (ROI).

    pDeviceBuffer Pointer to the required device memory allocation, Scratch Buffer and Host Pointer

    pMean Contains computed mean.

    pStdDev Contains computed standard deviation.

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

7.9.2.45 NppStatus nppiMeanStdDev8uC1RGetBufferHostSize (NppiSize *oSizeROI*, int ∗ *hpBufferSize*)

Device scratch buffer size (in bytes) for mean and standard deviation of image.

This primitive provides the correct buffer size for nppiMean_StdDev_8u_C1R.

Parameters:

>*oSizeROI* Region-of-Interest (ROI).

>*hpBufferSize* Required buffer size. Important: hpBufferSize is a *host pointer*. Scratch Buffer and Host Pointer.

Returns:

>NPP_SUCCESS

7.9.2.46 NppStatus nppiMinMax_8u_C1R (const Npp8u ∗ *pSrc*, int *nSrcStep*, NppiSize *oSizeROI*, Npp8u ∗ *pMin*, Npp8u ∗ *pMax*, Npp8u ∗ *pDeviceBuffer*)

8-bit unsigned pixel minimum and maximum.

Parameters:

>*pSrc* Source-Image Pointer.

>*nSrcStep* Source-Image Line Step.

>*oSizeROI* Region-of-Interest (ROI).

>*pMin* Device-memory pointer receiving the minimum result.

>*pMax* Device-memory pointer receiving the maximum result.

>*pDeviceBuffer* Buffer to a scratch memory. Use nppiMinMaxGetBufferSize_8u_C1R to determine the minium number of bytes required.

Returns:

>Image Data Related Error Codes, ROI Related Error Codes

7.9.2.47 NppStatus nppiMinMax_8u_C4R (const Npp8u ∗ *pSrc*, int *nSrcStep*, NppiSize *oSizeROI*, Npp8u *aMin*[4], Npp8u *aMax*[4], Npp8u ∗ *pDeviceBuffer*)

4 channel 8-bit unsigned pixel minimum and maximum.

Parameters:

>*pSrc* Source-Image Pointer.

>*nSrcStep* Source-Image Line Step.

>*oSizeROI* Region-of-Interest (ROI).

>*aMin* Device-pointer (array) receiving the minimum result.

>*aMax* Device-pointer (array) receiving the maximum result.

>*pDeviceBuffer* Buffer to a scratch memory. Use nppiMinMaxGetBufferSize_8u_C4R to determine the minium number of bytes required.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

Note:

Unlike nppiMinMax_8u_C1R, this primitive returns its results as device pointers.

7.9.2.48   NppStatus nppiMinMaxGetBufferSize_8u_C1R (NppiSize *oSizeROI*, int ∗ *hpBufferSize*)

Scratch-buffer size for nppiMinManx_8u_C1R.

Parameters:

oSizeROI ROI size.

hpBufferSize Host pointer where required buffer size is returned.

Returns:

Error Code.

7.9.2.49   NppStatus nppiMinMaxGetBufferSize_8u_C4R (NppiSize *oSizeROI*, int ∗ *hpBufferSize*)

Scratch-buffer size for nppiMinManx_8u_C4R.

Parameters:

oSizeROI ROI size.

hpBufferSize Host pointer where required buffer size is returned.

Returns:

Error Code.

7.9.2.50   NppStatus nppiNormDiff_Inf_8u_C1R (const Npp8u ∗ *pSrc1*, int *nSrcStep1*, const Npp8u ∗ *pSrc2*, int *nSrcStep2*, NppiSize *oSizeROI*, Npp64f ∗ *pRetVal*)

8-bit unsigned Infinity Norm of pixel differences.

Parameters:

pSrc1 Source-Image Pointer.

nSrcStep1 Source-Image Line Step.

pSrc2 Source-Image Pointer.

nSrcStep2 Source-Image Line Step.

oSizeROI Region-of-Interest (ROI).

∗*pRetVal* Contains computed L1-norm of differences. This is a host pointer.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.9.2.51 NppStatus nppiNormDiff_L1_8u_C1R (const Npp8u ∗ *pSrc1*, int *nSrcStep1*, const Npp8u ∗ *pSrc2*, int *nSrcStep2*, NppiSize *oSizeROI*, Npp64f ∗ *pRetVal*)

8-bit unsigned L1 norm of pixel differences.

Parameters:

>*pSrc1* Source-Image Pointer.

>*nSrcStep1* Source-Image Line Step.

>*pSrc2* Source-Image Pointer.

>*nSrcStep2* Source-Image Line Step.

>*oSizeROI* Region-of-Interest (ROI).

>*pRetVal* Contains computed L1-norm of differences. This is a host pointer.

Returns:

>Image Data Related Error Codes, ROI Related Error Codes

7.9.2.52 NppStatus nppiNormDiff_L2_8u_C1R (const Npp8u ∗ *pSrc1*, int *nSrcStep1*, const Npp8u ∗ *pSrc2*, int *nSrcStep2*, NppiSize *oSizeROI*, Npp64f ∗ *pRetVal*)

8-bit unsigned L2 norm of pixel differences.

Parameters:

>*pSrc1* Source-Image Pointer.

>*nSrcStep1* Source-Image Line Step.

>*pSrc2* Source-Image Pointer.

>*nSrcStep2* Source-Image Line Step.

>*oSizeROI* Region-of-Interest (ROI).

>*pRetVal* Contains computed L1-norm of differences. This is a host pointer.

Returns:

>Image Data Related Error Codes, ROI Related Error Codes

7.9.2.53 NppStatus nppiRectStdDev_32s32f_C1R (const Npp32s ∗ *pSrc*, int *nSrcStep*, const Npp64f ∗ *pSqr*, int *nSqrStep*, Npp32f ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, NppiRect *rect*)

RectStdDev Computes the standard deviation of integral images.

Parameters:

>*pSrc* Source-Image Pointer.

>*nSrcStep* Source-Image Line Step.

>*pSqr* Destination-Image Pointer.

>*nSqrStep* Destination-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

rect rectangular window

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.9.2.54 NppStatus nppiReductionGetBufferHostSize_8u_C1R (NppiSize *oSizeROI*, int ∗ *hpBufferSize*)

Scratch-buffer size for nppiSum_8u_C1R.

Parameters:

oSizeROI ROI size.

hpBufferSize Host pointer where required buffer size is returned.

Returns:

Error Code.

7.9.2.55 NppStatus nppiReductionGetBufferHostSize_8u_C4R (NppiSize *oSizeROI*, int ∗ *hpBufferSize*)

Scratch-buffer size for nppiSum_8u_C4R.

Parameters:

oSizeROI ROI size.

hpBufferSize Host pointer where required buffer size is returned.

Returns:

Error Code.

7.9.2.56 NppStatus nppiSqrIntegral_8u32s32f_C1R (Npp8u ∗ *pSrc*, int *nSrcStep*, Npp32s ∗ *pDst*, int *nDstStep*, Npp32f ∗ *pSqr*, int *nSqrStep*, NppiSize *oSrcROI*, Npp32s *val*, Npp32f *valSqr*, Npp32s *integralImageNewHeight*)

SqrIntegral Transforms an image to integral and integral of pixel squares representation.

This function assumes that the integral and integral of squares images.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

pSqr Destination-Image Pointer.

nSqrStep Destination-Image Line Step.

oSrcROI Region-of-Interest (ROI).

val The value to add to pDst image pixels

valSqr The value to add to pSqr image pixels

integralImageNewHeight Extended height of output surfaces (needed by transpose in primitive)

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.9.2.57 NppStatus nppiSum_8u64s_C1R (const Npp8u ∗ *pSrc*, int *nSrcStep*, NppiSize *oSizeROI*, Npp8u ∗ *pDeviceBuffer*, Npp64s ∗ *pSum*)

8-bit unsigned image sum with 64-bit long long result.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

oSizeROI Region-of-Interest (ROI).

pDeviceBuffer Pointer to the required device memory allocation, Scratch Buffer and Host Pointer

∗*pSum* Contains computed sum.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.9.2.58 NppStatus nppiSum_8u64s_C4R (const Npp8u ∗ *pSrc*, int *nSrcStep*, NppiSize *oSizeROI*, Npp8u ∗ *pDeviceBuffer*, Npp64s *aSum*[4])

4 channel 8-bit unsigned image sum with 64-bit long long result.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

oSizeROI Region-of-Interest (ROI).

pDeviceBuffer Pointer to the required device memory allocation, Scratch Buffer and Host Pointer

aSum Array contains computed sum for each channel.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.9.2.59   NppStatus nppiSum_8u_C1R (const Npp8u ∗ *pSrc*, int *nSrcStep*, NppiSize *oSizeROI*, Npp8u ∗ *pDeviceBuffer*, Npp64f ∗ *pSum*)

8-bit unsigned image sum with 64-bit double precision result.

Parameters:

> *pSrc* Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *pDeviceBuffer* Pointer to the required device memory allocation, Scratch Buffer and Host Pointer
>
> ∗*pSum* Contains computed sum.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.9.2.60   NppStatus nppiSum_8u_C4R (const Npp8u ∗ *pSrc*, int *nSrcStep*, NppiSize *oSizeROI*, Npp8u ∗ *pDeviceBuffer*, Npp64f *aSum*[4])

4 channel 8-bit unsigned image sum with 64-bit double precision result.

Parameters:

> *pSrc* Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *pDeviceBuffer* Pointer to the required device memory allocation, Scratch Buffer and Host Pointer
>
> *aSum* Array contains computed sum for each channel.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.10 Filtering Functions

Linear and non-linear image filtering functions.

1D Linear Filter

1D mask Linear Convolution Filter, with rescaling, for 8 bit images.

- NppStatus nppiFilterColumn_8u_C1R (const Npp8u ∗pSrc, Npp32s nSrcStep, Npp8u ∗pDst, Npp32s nDstStep, NppiSize oROI, const Npp32s ∗pKernel, Npp32s nMaskSize, Npp32s nAnchor, Npp32s nDivisor)

  8-bit unsigned 1D (column) image convolution.

- NppStatus nppiFilterColumn_8u_C4R (const Npp8u ∗pSrc, Npp32s nSrcStep, Npp8u ∗pDst, Npp32s nDstStep, NppiSize oROI, const Npp32s ∗pKernel, Npp32s nMaskSize, Npp32s nAnchor, Npp32s nDivisor)

  4 channel 8-bit unsigned 1D (column) image convolution.

- NppStatus nppiFilterRow_8u_C1R (const Npp8u ∗pSrc, Npp32s nSrcStep, Npp8u ∗pDst, Npp32s nDstStep, NppiSize oROI, const Npp32s ∗pKernel, Npp32s nMaskSize, Npp32s nAnchor, Npp32s nDivisor)

  8-bit unsigned 1D (row) image convolution.

- NppStatus nppiFilterRow_8u_C4R (const Npp8u ∗pSrc, Npp32s nSrcStep, Npp8u ∗pDst, Npp32s nDstStep, NppiSize oROI, const Npp32s ∗pKernel, Npp32s nMaskSize, Npp32s nAnchor, Npp32s nDivisor)

  4 channel 8-bit unsigned 1D (row) image convolution.

1D Window Sum

1D mask Window Sum for 8 bit images.

- NppStatus nppiSumWindowColumn_8u32f_C1R (const Npp8u ∗pSrc, Npp32s nSrcStep, Npp32f ∗pDst, Npp32s nDstStep, NppiSize oROI, Npp32s nMaskSize, Npp32s nAnchor)

  8-bit unsigned 1D (column) sum to 32f.

- NppStatus nppiSumWindowRow_8u32f_C1R (const Npp8u ∗pSrc, Npp32s nSrcStep, Npp32f ∗pDst, Npp32s nDstStep, NppiSize oROI, Npp32s nMaskSize, Npp32s nAnchor)

  8-bit unsigned 1D (row) sum to 32f.

Convolution (2D Masks)

General purpose 2D convolution filters.

- NppStatus nppiFilter_8u_C1R (const Npp8u ∗pSrc, Npp32s nSrcStep, Npp8u ∗pDst, Npp32s nDstStep, NppiSize oSizeROI, const Npp32s ∗pKernel, NppiSize oKernelSize, NppiPoint oAnchor, Npp32s nDivisor)

8-bit unsigned convolution filter.

- NppStatus nppiFilter_8u_C4R (const Npp8u ∗pSrc, Npp32s nSrcStep, Npp8u ∗pDst, Npp32s nDstStep, NppiSize oSizeROI, const Npp32s ∗pKernel, NppiSize oKernelSize, NppiPoint oAnchor, Npp32s nDivisor)

    4 channel 8-bit unsigned convolution filter.

2D Linear Fixed Filters

2D linear fixed filters for 8 bit images.

- NppStatus nppiFilterBox_8u_C1R (const Npp8u ∗pSrc, Npp32s nSrcStep, Npp8u ∗pDst, Npp32s nDstStep, NppiSize oSizeROI, NppiSize oMaskSize, NppiPoint oAnchor)

    8-bit unsigned box filter.

- NppStatus nppiFilterBox_8u_C4R (const Npp8u ∗pSrc, Npp32s nSrcStep, Npp8u ∗pDst, Npp32s nDstStep, NppiSize oSizeROI, NppiSize oMaskSize, NppiPoint oAnchor)

    4 channel 8-bit unsigned box filter.

Image Rank Filters

Min, Median, and Max image filters.

- NppStatus nppiFilterMax_8u_C1R (const Npp8u ∗pSrc, Npp32s nSrcStep, Npp8u ∗pDst, Npp32s nDstStep, NppiSize oSizeROI, NppiSize oMaskSize, NppiPoint oAnchor)

    8-bit unsigned maximum filter.

- NppStatus nppiFilterMax_8u_C4R (const Npp8u ∗pSrc, Npp32s nSrcStep, Npp8u ∗pDst, Npp32s nDstStep, NppiSize oSizeROI, NppiSize oMaskSize, NppiPoint oAnchor)

    4 channel 8-bit unsigned maximum filter.

- NppStatus nppiFilterMin_8u_C1R (const Npp8u ∗pSrc, Npp32s nSrcStep, Npp8u ∗pDst, Npp32s nDstStep, NppiSize oSizeROI, NppiSize oMaskSize, NppiPoint oAnchor)

    8-bit unsigned minimum filter.

- NppStatus nppiFilterMin_8u_C4R (const Npp8u ∗pSrc, Npp32s nSrcStep, Npp8u ∗pDst, Npp32s nDstStep, NppiSize oSizeROI, NppiSize oMaskSize, NppiPoint oAnchor)

    4 channel 8-bit unsigned minimum filter.

7.10.1 Detailed Description

Linear and non-linear image filtering functions.

7.10.2 Function Documentation

7.10.2.1 NppStatus nppiFilter_8u_C1R (const Npp8u ∗ *pSrc*, Npp32s *nSrcStep*, Npp8u ∗ *pDst*, Npp32s *nDstStep*, NppiSize *oSizeROI*, const Npp32s ∗ *pKernel*, NppiSize *oKernelSize*, NppiPoint *oAnchor*, Npp32s *nDivisor*)

8-bit unsigned convolution filter.

Pixels under the mask are multiplied by the respective weights in the mask and the results are summed. Before writing the result pixel the sum is scaled back via division by nDivisor.

Parameters:

> *pSrc* Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *pKernel* Pointer to the start address of the kernel coefficient array. Coeffcients are expected to be stored in reverse order.
>
> *oKernelSize* Width and Height of the rectangular kernel.
>
> *oAnchor* X and Y offsets of the kernel origin frame of reference w.r.t the source pixel.
>
> *nDivisor* The factor by which the convolved summation from the Filter operation should be divided. If equal to the sum of coefficients, this will keep the maximum result value within full scale.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.10.2.2 NppStatus nppiFilter_8u_C4R (const Npp8u ∗ *pSrc*, Npp32s *nSrcStep*, Npp8u ∗ *pDst*, Npp32s *nDstStep*, NppiSize *oSizeROI*, const Npp32s ∗ *pKernel*, NppiSize *oKernelSize*, NppiPoint *oAnchor*, Npp32s *nDivisor*)

4 channel 8-bit unsigned convolution filter.

Pixels under the mask are multiplied by the respective weights in the mask and the results are summed. Before writing the result pixel the sum is scaled back via division by nDivisor.

Parameters:

> *pSrc* Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *pKernel* Pointer to the start address of the kernel coefficient array. Coeffcients are expected to be stored in reverse order.
>
> *oKernelSize* Width and Height of the rectangular kernel.
>
> *oAnchor* X and Y offsets of the kernel origin frame of reference w.r.t the source pixel.

nDivisor The factor by which the convolved summation from the Filter operation should be divided. If equal to the sum of coefficients, this will keep the maximum result value within full scale.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.10.2.3 NppStatus nppiFilterBox_8u_C1R (const Npp8u ∗ *pSrc*, Npp32s *nSrcStep*, Npp8u ∗ *pDst*, Npp32s *nDstStep*, NppiSize *oSizeROI*, NppiSize *oMaskSize*, NppiPoint *oAnchor*)

8-bit unsigned box filter.

Computes the average pixel values of the pixels under a rectangular mask.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

oMaskSize Width and Height of the neighborhood region for the local Avg operation.

oAnchor X and Y offsets of the kernel origin frame of reference w.r.t the source pixel.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.10.2.4 NppStatus nppiFilterBox_8u_C4R (const Npp8u ∗ *pSrc*, Npp32s *nSrcStep*, Npp8u ∗ *pDst*, Npp32s *nDstStep*, NppiSize *oSizeROI*, NppiSize *oMaskSize*, NppiPoint *oAnchor*)

4 channel 8-bit unsigned box filter.

Computes the average pixel values of the pixels under a rectangular mask.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

oMaskSize Width and Height of the neighborhood region for the local Avg operation.

oAnchor X and Y offsets of the kernel origin frame of reference w.r.t the source pixel.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.10.2.5 NppStatus nppiFilterColumn_8u_C1R (const Npp8u * *pSrc*, Npp32s *nSrcStep*, Npp8u * *pDst*, Npp32s *nDstStep*, NppiSize *oROI*, const Npp32s * *pKernel*, Npp32s *nMaskSize*, Npp32s *nAnchor*, Npp32s *nDivisor*)

8-bit unsigned 1D (column) image convolution.

Apply convolution filter with user specified 1D column of weights. Result pixel is equal to the sum of the products between the kernel coefficients (pKernel array) and corresponding neighboring column pixel values in the source image defined by nKernelDim and nAnchorY, divided by nDivisor.

Parameters:

> *pSrc* Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oROI* Region-of-Interest (ROI).
>
> *pKernel* Pointer to the start address of the kernel coefficient array. Coefficients are expected to be stored in reverse order.
>
> *nMaskSize* Length of the linear kernel array.
>
> *nAnchor* Y offset of the kernel origin frame of reference w.r.t the source pixel.
>
> *nDivisor* The factor by which the convolved summation from the Filter operation should be divided. If equal to the sum of coefficients, this will keep the maximum result value within full scale.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.10.2.6 NppStatus nppiFilterColumn_8u_C4R (const Npp8u * *pSrc*, Npp32s *nSrcStep*, Npp8u * *pDst*, Npp32s *nDstStep*, NppiSize *oROI*, const Npp32s * *pKernel*, Npp32s *nMaskSize*, Npp32s *nAnchor*, Npp32s *nDivisor*)

4 channel 8-bit unsigned 1D (column) image convolution.

Apply convolution filter with user specified 1D column of weights. Result pixel is equal to the sum of the products between the kernel coefficients (pKernel array) and corresponding neighboring column pixel values in the source image defined by nKernelDim and nAnchorY, divided by nDivisor.

Parameters:

> *pSrc* Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oROI* Region-of-Interest (ROI).
>
> *pKernel* Pointer to the start address of the kernel coefficient array. Coefficients are expected to be stored in reverse order.
>
> *nMaskSize* Length of the linear kernel array.
>
> *nAnchor* Y offset of the kernel origin frame of reference w.r.t the source pixel.

nDivisor The factor by which the convolved summation from the Filter operation should be divided. If equal to the sum of coefficients, this will keep the maximum result value within full scale.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.10.2.7 NppStatus nppiFilterMax_8u_C1R (const Npp8u ∗ *pSrc*, Npp32s *nSrcStep*, Npp8u ∗ *pDst*, Npp32s *nDstStep*, NppiSize *oSizeROI*, NppiSize *oMaskSize*, NppiPoint *oAnchor*)

8-bit unsigned maximum filter.

Result pixel value is the maximum of pixel values under the rectangular mask region.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

oMaskSize Width and Height of the neighborhood region for the local Max operation.

oAnchor X and Y offsets of the kernel origin frame of reference w.r.t the source pixel.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.10.2.8 NppStatus nppiFilterMax_8u_C4R (const Npp8u ∗ *pSrc*, Npp32s *nSrcStep*, Npp8u ∗ *pDst*, Npp32s *nDstStep*, NppiSize *oSizeROI*, NppiSize *oMaskSize*, NppiPoint *oAnchor*)

4 channel 8-bit unsigned maximum filter.

Result pixel value is the maximum of pixel values under the rectangular mask region.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

oMaskSize Width and Height of the neighborhood region for the local Max operation.

oAnchor X and Y offsets of the kernel origin frame of reference w.r.t the source pixel.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.10.2.9   NppStatus nppiFilterMin_8u_C1R (const Npp8u ∗ *pSrc*, Npp32s *nSrcStep*, Npp8u ∗ *pDst*, Npp32s *nDstStep*, NppiSize *oSizeROI*, NppiSize *oMaskSize*, NppiPoint *oAnchor*)

8-bit unsigned minimum filter.

Result pixel value is the minimum of pixel values under the rectangular mask region.

Parameters:

> *pSrc* Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *oMaskSize* Width and Height of the neighborhood region for the local Max operation.
>
> *oAnchor* X and Y offsets of the kernel origin frame of reference w.r.t the source pixel.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.10.2.10   NppStatus nppiFilterMin_8u_C4R (const Npp8u ∗ *pSrc*, Npp32s *nSrcStep*, Npp8u ∗ *pDst*, Npp32s *nDstStep*, NppiSize *oSizeROI*, NppiSize *oMaskSize*, NppiPoint *oAnchor*)

4 channel 8-bit unsigned minimum filter.

Result pixel value is the minimum of pixel values under the rectangular mask region.

Parameters:

> *pSrc* Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *oMaskSize* Width and Height of the neighborhood region for the local Max operation.
>
> *oAnchor* X and Y offsets of the kernel origin frame of reference w.r.t the source pixel.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.10.2.11   NppStatus nppiFilterRow_8u_C1R (const Npp8u ∗ *pSrc*, Npp32s *nSrcStep*, Npp8u ∗ *pDst*, Npp32s *nDstStep*, NppiSize *oROI*, const Npp32s ∗ *pKernel*, Npp32s *nMaskSize*, Npp32s *nAnchor*, Npp32s *nDivisor*)

8-bit unsigned 1D (row) image convolution.

Apply general linear Row convolution filter, with rescaling, in a 1D mask region around each source pixel for 1-channel 8 bit/pixel images. Result pixel is equal to the sum of the products between the kernel coefficients (pKernel array) and corresponding neighboring row pixel values in the source image defined by iKernelDim and iAnchorX, divided by iDivisor.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oROI Region-of-Interest (ROI).

pKernel Pointer to the start address of the kernel coefficient array. Coefficients are expected to be stored in reverse order.

nMaskSize Length of the linear kernel array.

nAnchor X offset of the kernel origin frame of reference w.r.t the source pixel.

nDivisor The factor by which the convolved summation from the Filter operation should be divided. If equal to the sum of coefficients, this will keep the maximum result value within full scale.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.10.2.12 NppStatus nppiFilterRow_8u_C4R (const Npp8u ∗ *pSrc*, Npp32s *nSrcStep*, Npp8u ∗ *pDst*, Npp32s *nDstStep*, NppiSize *oROI*, const Npp32s ∗ *pKernel*, Npp32s *nMaskSize*, Npp32s *nAnchor*, Npp32s *nDivisor*)

4 channel 8-bit unsigned 1D (row) image convolution.

Apply general linear Row convolution filter, with rescaling, in a 1D mask region around each source pixel for 1-channel 8 bit/pixel images. Result pixel is equal to the sum of the products between the kernel coefficients (pKernel array) and corresponding neighboring row pixel values in the source image defined by iKernelDim and iAnchorX, divided by iDivisor.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oROI Region-of-Interest (ROI).

pKernel Pointer to the start address of the kernel coefficient array. Coefficients are expected to be stored in reverse order.

nMaskSize Length of the linear kernel array.

nAnchor X offset of the kernel origin frame of reference w.r.t the source pixel.

nDivisor The factor by which the convolved summation from the Filter operation should be divided. If equal to the sum of coefficients, this will keep the maximum result value within full scale.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.10.2.13   NppStatus nppiSumWindowColumn_8u32f_C1R (const Npp8u ∗ *pSrc*, Npp32s *nSrcStep*, Npp32f ∗ *pDst*, Npp32s *nDstStep*, NppiSize *oROI*, Npp32s *nMaskSize*, Npp32s *nAnchor*)

8-bit unsigned 1D (column) sum to 32f.

Apply Column Window Summation filter over a 1D mask region around each source pixel for 1-channel 8 bit/pixel input images with 32-bit floating point output. Result 32-bit floating point pixel is equal to the sum of the corresponding and neighboring column pixel values in a mask region of the source image defined by nMaskSize and nAnchor.

Parameters:

> *pSrc* Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oROI* Region-of-Interest (ROI).
>
> *nMaskSize* Length of the linear kernel array.
>
> *nAnchor* Y offset of the kernel origin frame of reference w.r.t the source pixel.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.10.2.14   NppStatus nppiSumWindowRow_8u32f_C1R (const Npp8u ∗ *pSrc*, Npp32s *nSrcStep*, Npp32f ∗ *pDst*, Npp32s *nDstStep*, NppiSize *oROI*, Npp32s *nMaskSize*, Npp32s *nAnchor*)

8-bit unsigned 1D (row) sum to 32f.

Apply Row Window Summation filter over a 1D mask region around each source pixel for 1-channel 8-bit pixel input images with 32-bit floating point output. Result 32-bit floating point pixel is equal to the sum of the corresponding and neighboring row pixel values in a mask region of the source image defined by iKernelDim and iAnchorX.

Parameters:

> *pSrc* Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oROI* Region-of-Interest (ROI).
>
> *nMaskSize* Length of the linear kernel array.
>
> *nAnchor* X offset of the kernel origin frame of reference w.r.t the source pixel.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.11 Morphological Operations

Morphological image operations.

Functions

- NppStatus nppiDilate_8u_C1R (const Npp8u ∗pSrc, Npp32s nSrcStep, Npp8u ∗pDst, Npp32s nDst-Step, NppiSize oSizeROI, const Npp8u ∗pMask, NppiSize oMaskSize, NppiPoint oAnchor)

  8-bit unsigned image dilation.

- NppStatus nppiDilate_8u_C4R (const Npp8u ∗pSrc, int nSrcStep, Npp8u ∗pDst, int nDstStep, Nppi-Size oSizeROI, const Npp8u ∗pMask, NppiSize oMaskSize, NppiPoint oAnchor)

  4 channel 8-bit unsigned image dilation.

- NppStatus nppiErode_8u_C1R (const Npp8u ∗pSrc, Npp32s nSrcStep, Npp8u ∗pDst, Npp32s nDst-Step, NppiSize oSizeROI, const Npp8u ∗pMask, NppiSize oMaskSize, NppiPoint oAnchor)

  8-bit unsigned image erosion.

- NppStatus nppiErode_8u_C4R (const Npp8u ∗pSrc, Npp32s nSrcStep, Npp8u ∗pDst, Npp32s nDst-Step, NppiSize oSizeROI, const Npp8u ∗pMask, NppiSize oMaskSize, NppiPoint oAnchor)

  4 channel 8-bit unsigned image erosion.

7.11.1 Detailed Description

Morphological image operations.

7.11.2 Function Documentation

7.11.2.1 NppStatus nppiDilate_8u_C1R (const Npp8u ∗ *pSrc*, Npp32s *nSrcStep*, Npp8u ∗ *pDst*, Npp32s *nDstStep*, NppiSize *oSizeROI*, const Npp8u ∗ *pMask*, NppiSize *oMaskSize*, NppiPoint *oAnchor*)

8-bit unsigned image dilation.

Dilation computes the output pixel as the maximum pixel value of the pixels under the mask. Pixels who's corresponding mask values are zero to not participate in the maximum search.

Parameters:

   pSrc Source-Image Pointer.

   nSrcStep Source-Image Line Step.

   pDst Destination-Image Pointer.

   nDstStep Destination-Image Line Step.

   oSizeROI Region-of-Interest (ROI).

   pMask Pointer to the start address of the mask array

   oMaskSize Width and Height mask array.

   oAnchor X and Y offsets of the mask origin frame of reference w.r.t the source pixel.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.11.2.2 **NppStatus nppiDilate_8u_C4R (const Npp8u ∗ *pSrc*, int *nSrcStep*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, const Npp8u ∗ *pMask*, NppiSize *oMaskSize*, NppiPoint *oAnchor*)**

4 channel 8-bit unsigned image dilation.

Dilation computes the output pixel as the maximum pixel value of the pixels under the mask. Pixels who's corresponding mask values are zero to not participate in the maximum search.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

pMask Pointer to the start address of the mask array

oMaskSize Width and Height mask array.

oAnchor X and Y offsets of the mask origin frame of reference w.r.t the source pixel.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.11.2.3 **NppStatus nppiErode_8u_C1R (const Npp8u ∗ *pSrc*, Npp32s *nSrcStep*, Npp8u ∗ *pDst*, Npp32s *nDstStep*, NppiSize *oSizeROI*, const Npp8u ∗ *pMask*, NppiSize *oMaskSize*, NppiPoint *oAnchor*)**

8-bit unsigned image erosion.

Erosion computes the output pixel as the minimum pixel value of the pixels under the mask. Pixels who's corresponding mask values are zero to not participate in the maximum search.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

pMask Pointer to the start address of the mask array

oMaskSize Width and Height mask array.

oAnchor X and Y offsets of the mask origin frame of reference w.r.t the source pixel.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.11.2.4 NppStatus nppiErode_8u_C4R (const Npp8u ∗ *pSrc*, Npp32s *nSrcStep*, Npp8u ∗ *pDst*, Npp32s *nDstStep*, NppiSize *oSizeROI*, const Npp8u ∗ *pMask*, NppiSize *oMaskSize*, NppiPoint *oAnchor*)

4 channel 8-bit unsigned image erosion.

Erosion computes the output pixel as the minimum pixel value of the pixels under the mask. Pixels who's corresponding mask values are zero to not participate in the maximum search.

Parameters:

> *pSrc* Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *pMask* Pointer to the start address of the mask array
>
> *oMaskSize* Width and Height mask array.
>
> *oAnchor* X and Y offsets of the mask origin frame of reference w.r.t the source pixel.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.12   Image Linear Transforms

Linear image transformations.

Functions

- NppStatus nppiMagnitude_32fc32f_C1R (const Npp32fc ∗pSrc, int nSrcStep, Npp32f ∗pDst, int nDstStep, NppiSize oSizeROI)

    32-bit floating point complex to 32-bit floating point magnitude.

- NppStatus nppiMagnitudeSqr_32fc32f_C1R (const Npp32fc ∗pSrc, int nSrcStep, Npp32f ∗pDst, int nDstStep, NppiSize oSizeROI)

    32-bit floating point complex to 32-bit floating point squared magnitude.

7.12.1   Detailed Description

Linear image transformations.

7.12.2   Function Documentation

7.12.2.1   NppStatus nppiMagnitude_32fc32f_C1R (const Npp32fc ∗ *pSrc*, int *nSrcStep*, Npp32f ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

32-bit floating point complex to 32-bit floating point magnitude.

Converts complex-number pixel image to single channel image computing the result pixels as the magnitude of the complex values.

Parameters:

  pSrc Source-Image Pointer.
  nSrcStep Source-Image Line Step.
  pDst Destination-Image Pointer.
  nDstStep Destination-Image Line Step.
  oSizeROI Region-of-Interest (ROI).

Returns:

  Image Data Related Error Codes, ROI Related Error Codes

7.12.2.2   NppStatus nppiMagnitudeSqr_32fc32f_C1R (const Npp32fc ∗ *pSrc*, int *nSrcStep*, Npp32f ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

32-bit floating point complex to 32-bit floating point squared magnitude.

Converts complex-number pixel image to single channel image computing the result pixels as the squared magnitude of the complex values.

The squared magnitude is an itermediate result of magnitude computation and can thus be computed faster than actual magnitude. If magnitudes are required for sorting/comparing only, using this function instead of nppiMagnitude_32fc32f_C1R can be a worthwhile performance optimization.

Parameters:

> ***pSrc*** Source-Image Pointer.
>
> ***nSrcStep*** Source-Image Line Step.
>
> ***pDst*** Destination-Image Pointer.
>
> ***nDstStep*** Destination-Image Line Step.
>
> ***oSizeROI*** Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.13   Compression

Image compression primitives.

Functions

- NppStatus nppiQuantFwdRawTableInit_JPEG_8u (Npp8u ∗hpQuantRawTable, int nQualityFactor)

  Apply quality factor to raw 8-bit quantization table.

- NppStatus nppiQuantFwdTableInit_JPEG_8u16u (const Npp8u ∗hpQuantRawTable, Npp16u ∗hpQuantFwdRawTable)

  Initializes a quantization table for nppiDCTQuantFwd8x8LS_JPEG_8u16s_C1R().

- NppStatus nppiQuantInvTableInit_JPEG_8u16u (const Npp8u ∗hpQuantRawTable, Npp16u ∗hpQuantFwdRawTable)

  Initializes a quantization table for nppiDCTQuantInv8x8LS_JPEG_16s8u_C1R().

- NppStatus nppiDCTQuantFwd8x8LS_JPEG_8u16s_C1R (const Npp8u ∗pSrc, int nSrcStep, Npp16s ∗pDst, int nDstStep, const Npp16u ∗pQuantFwdTable, NppiSize oSizeROI)

  Forward DCT, quantization and level shift part of the JPEG encoding.

- NppStatus nppiDCTQuantInv8x8LS_JPEG_16s8u_C1R (const Npp16s ∗pSrc, int nSrcStep, Npp8u ∗pDst, int nDstStep, const Npp16u ∗pQuantInvTable, NppiSize oSizeROI)

  Inverse DCT, de-quantization and level shift part of the JPEG decoding.

7.13.1   Detailed Description

Image compression primitives.

The JPEG standard defines a flow of level shift, DCT and quantization for forward JPEG transform and inverse level shift, IDCT and de-quantization for inverse JPEG transform. This group has the functions for both forward and inverse functions.

7.13.2   Function Documentation

7.13.2.1   NppStatus nppiDCTQuantFwd8x8LS_JPEG_8u16s_C1R (const Npp8u ∗ *pSrc*, int *nSrcStep*, Npp16s ∗ *pDst*, int *nDstStep*, const Npp16u ∗ *pQuantFwdTable*, NppiSize *oSizeROI*)

Forward DCT, quantization and level shift part of the JPEG encoding.

Input is expected in 8x8 macro blocks and output is expected to be in 64x1 macro blocks.

Parameters:

    pSrc Source-Image Pointer.

    nSrcStep Source-Image Line Step.

    pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

pQuantFwdTable Forward quantization tables for JPEG encoding created using nppiQuantInvTableInit_JPEG_8u16u().

oSizeROI Region-of-Interest (ROI).

Returns:

Error codes:

- NPP_SIZE_ERROR For negative input height/width or not a multiple of 8 width/height.
- NPP_STEP_ERROR If input image width is not multiple of 8 or does not match ROI.
- NPP_NULL_POINTER_ERROR If the destination pointer is 0.

7.13.2.2 NppStatus nppiDCTQuantInv8x8LS_JPEG_16s8u_C1R (const Npp16s ∗ *pSrc*, int *nSrcStep*, Npp8u ∗ *pDst*, int *nDstStep*, const Npp16u ∗ *pQuantInvTable*, NppiSize *oSizeROI*)

Inverse DCT, de-quantization and level shift part of the JPEG decoding.

Input is expected in 64x1 macro blocks and output is expected to be in 8x8 macro blocks.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

pQuantInvTable Inverse quantization tables for JPEG decoding created using nppiQuantInvTableInit_JPEG_8u16u().

oSizeROI Region-of-Interest (ROI).

Returns:

Error codes:

- NPP_SIZE_ERROR For negative input height/width or not a multiple of 8 width/height.
- NPP_STEP_ERROR If input image width is not multiple of 8 or does not match ROI.
- NPP_NULL_POINTER_ERROR If the destination pointer is 0.

7.13.2.3 NppStatus nppiQuantFwdRawTableInit_JPEG_8u (Npp8u ∗ *hpQuantRawTable*, int *nQualityFactor*)

Apply quality factor to raw 8-bit quantization table.

This is effectively and in-place method that modifies a given raw quantization table based on a quality factor. Note that this method is a host method and that the pointer to the raw quantization table is a host pointer.

Parameters:

hpQuantRawTable Raw quantization table.

nQualityFactor Quality factor for the table. Range is [1:100].

Returns:

Error code: NPP_NULL_POINTER_ERROR is returned if hpQuantRawTable is 0.

7.13.2.4 NppStatus nppiQuantFwdTableInit_JPEG_8u16u (const Npp8u ∗ *hpQuantRawTable*, Npp16u ∗ *hpQuantFwdRawTable*)

Initializes a quantization table for nppiDCTQuantFwd8x8LS_JPEG_8u16s_C1R().

The method creates a 16-bit version of the raw table and converts the data order from zigzag layout to original row-order layout since raw quantization tables are typically stored in zigzag format.

This method is a host method. It consumes and produces host data. I.e. the pointers passed to this function must be host pointers. The resulting table needs to be transferred to device memory in order to be used with nppiDCTQuantFwd8x8LS_JPEG_8u16s_C1R() function.

Parameters:

hpQuantRawTable Host pointer to raw quantization table as returned by nppiQuantFwdRawTableInit_JPEG_8u(). The raw quantization table is assumed to be in zigzag order.

hpQuantFwdRawTable Forward quantization table for use with nppiDCTQuantFwd8x8LS_JPEG_-8u16s_C1R().

Returns:

Error code: NPP_NULL_POINTER_ERROR pQuantRawTable is 0.

7.13.2.5 NppStatus nppiQuantInvTableInit_JPEG_8u16u (const Npp8u ∗ *hpQuantRawTable*, Npp16u ∗ *hpQuantFwdRawTable*)

Initializes a quantization table for nppiDCTQuantInv8x8LS_JPEG_16s8u_C1R().

The nppiDCTQuantFwd8x8LS_JPEG_8u16s_C1R() method uses a quantization table in a 16-bit format allowing for faster processing. In addition it converts the data order from zigzag layout to original row-order layout. Typically raw quantization tables are stored in zigzag format.

This method is a host method and consumes and produces host data. I.e. the pointers passed to this function must be host pointers. The resulting table needs to be transferred to device memory in order to be used with nppiDCTQuantFwd8x8LS_JPEG_8u16s_C1R() function.

Parameters:

hpQuantRawTable Raw quantization table.

hpQuantFwdRawTable Inverse quantization table.

Returns:

NPP_NULL_POINTER_ERROR pQuantRawTable or pQuantFwdRawTable is0.

7.14 Geometric Transforms

Routines manipulating an image's geometry.

Resize

Resizes 8 bit images.

Handles C1 and C4 images.

- NppStatus nppiResize_8u_C1R (const Npp8u *pSrc, NppiSize oSrcSize, int nSrcStep, NppiRect oSrcROI, Npp8u *pDst, int nDstStep, NppiSize dstROISize, double xFactor, double yFactor, int eInterpolation)

  8-bit unsigned image resize.

- NppStatus nppiResize_8u_C4R (const Npp8u *pSrc, NppiSize oSrcSize, int nSrcStep, NppiRect oSrcROI, Npp8u *pDst, int nDstStep, NppiSize dstROISize, double xFactor, double yFactor, int eInterpolation)

  4 channel 8-bit unsigned image resize.

Rotate

Rotates an image around the origin (0,0) and then shifts it.

- NppStatus nppiGetRotateQuad (NppiRect oSrcROI, double aQuad[4][2], double nAngle, double nShiftX, double nShiftY)

  Compute shape of rotated image.

- NppStatus nppiGetRotateBound (NppiRect oSrcROI, double aBoundingBox[2][2], double nAngle, double nShiftX, double nShiftY)

  Compute bounding-box of rotated image.

- NppStatus nppiRotate_8u_C1R (const Npp8u *pSrc, NppiSize oSrcSize, int nSrcStep, NppiRect oSrcROI, Npp8u *pDst, int nDstStep, NppiRect oDstROI, double nAngle, double nShiftX, double nShiftY, int eInterpolation)

  8-bit unsigned image rotate.

- NppStatus nppiRotate_8u_C3R (const Npp8u *pSrc, NppiSize oSrcSize, int nSrcStep, NppiRect oSrcROI, Npp8u *pDst, int nDstStep, NppiRect oDstROI, double nAngle, double nShiftX, double nShiftY, int eInterpolation)

  3 channel 8-bit unsigned image rotate.

- NppStatus nppiRotate_8u_C4R (const Npp8u *pSrc, NppiSize oSrcSize, int nSrcStep, NppiRect oSrcROI, Npp8u *pDst, int nDstStep, NppiRect oDstROI, double nAngle, double nShiftX, double nShiftY, int eInterpolation)

  4 channel 8-bit unsigned image rotate.

- NppStatus nppiRotate_8u_AC4R (const Npp8u *pSrc, NppiSize oSrcSize, int nSrcStep, NppiRect oSrcROI, Npp8u *pDst, int nDstStep, NppiRect oDstROI, double nAngle, double nShiftX, double nShiftY, int eInterpolation)

4 channel 8-bit unsigned image rotate ignoring alpha channel.

- NppStatus nppiRotate_16u_C1R (const Npp16u ∗pSrc, NppiSize oSrcSize, int nSrcStep, NppiRect oSrcROI, Npp16u ∗pDst, int nDstStep, NppiRect oDstROI, double nAngle, double nShiftX, double nShiftY, int eInterpolation)

  16-bit unsigned image rotate.

- NppStatus nppiRotate_16u_C3R (const Npp16u ∗pSrc, NppiSize oSrcSize, int nSrcStep, NppiRect oSrcROI, Npp16u ∗pDst, int nDstStep, NppiRect oDstROI, double nAngle, double nShiftX, double nShiftY, int eInterpolation)

  3 channel 16-bit unsigned image rotate.

- NppStatus nppiRotate_16u_C4R (const Npp16u ∗pSrc, NppiSize oSrcSize, int nSrcStep, NppiRect oSrcROI, Npp16u ∗pDst, int nDstStep, NppiRect oDstROI, double nAngle, double nShiftX, double nShiftY, int eInterpolation)

  4 channel 16-bit unsigned image rotate.

- NppStatus nppiRotate_16u_AC4R (const Npp16u ∗pSrc, NppiSize oSrcSize, int nSrcStep, NppiRect oSrcROI, Npp16u ∗pDst, int nDstStep, NppiRect oDstROI, double nAngle, double nShiftX, double nShiftY, int eInterpolation)

  4 channel 16-bit unsigned image rotate ignoring alpha channel.

- NppStatus nppiRotate_32f_C1R (const Npp32f ∗pSrc, NppiSize oSrcSize, int nSrcStep, NppiRect oSrcROI, Npp32f ∗pDst, int nDstStep, NppiRect oDstROI, double nAngle, double nShiftX, double nShiftY, int eInterpolation)

  32-bit float image rotate.

- NppStatus nppiRotate_32f_C3R (const Npp32f ∗pSrc, NppiSize oSrcSize, int nSrcStep, NppiRect oSrcROI, Npp32f ∗pDst, int nDstStep, NppiRect oDstROI, double nAngle, double nShiftX, double nShiftY, int eInterpolation)

  3 channel 32-bit float image rotate.

- NppStatus nppiRotate_32f_C4R (const Npp32f ∗pSrc, NppiSize oSrcSize, int nSrcStep, NppiRect oSrcROI, Npp32f ∗pDst, int nDstStep, NppiRect oDstROI, double nAngle, double nShiftX, double nShiftY, int eInterpolation)

  4 channel 32-bit float image rotate.

- NppStatus nppiRotate_32f_AC4R (const Npp32f ∗pSrc, NppiSize oSrcSize, int nSrcStep, NppiRect oSrcROI, Npp32f ∗pDst, int nDstStep, NppiRect oDstROI, double nAngle, double nShiftX, double nShiftY, int eInterpolation)

  4 channel 32-bit float image rotate ignoring alpha channel.

Mirror

Mirrors images horizontally, vertically and diagonally.

- NppStatus nppiMirror_8u_C1R (const Npp8u ∗pSrc, int nSrcStep, Npp8u ∗pDst, int nDstStep, NppiSize oROI, NppiAxis flip)

  8-bit unsigned image mirror.

- NppStatus nppiMirror_8u_C3R (const Npp8u *pSrc, int nSrcStep, Npp8u *pDst, int nDstStep, Nppi-Size oROI, NppiAxis flip)

    3 channel 8-bit unsigned image mirror.

- NppStatus nppiMirror_8u_C4R (const Npp8u *pSrc, int nSrcStep, Npp8u *pDst, int nDstStep, Nppi-Size oROI, NppiAxis flip)

    4 channel 8-bit unsigned image mirror.

- NppStatus nppiMirror_8u_AC4R (const Npp8u *pSrc, int nSrcStep, Npp8u *pDst, int nDstStep, NppiSize oROI, NppiAxis flip)

    4 channel 8-bit unsigned image mirror not affecting alpha.

- NppStatus nppiMirror_16u_C1R (const Npp16u *pSrc, int nSrcStep, Npp16u *pDst, int nDstStep, NppiSize oROI, NppiAxis flip)

    16-bit unsigned image mirror.

- NppStatus nppiMirror_16u_C3R (const Npp16u *pSrc, int nSrcStep, Npp16u *pDst, int nDstStep, NppiSize oROI, NppiAxis flip)

    3 channel 16-bit unsigned image mirror.

- NppStatus nppiMirror_16u_C4R (const Npp16u *pSrc, int nSrcStep, Npp16u *pDst, int nDstStep, NppiSize oROI, NppiAxis flip)

    4 channel 16-bit unsigned image mirror.

- NppStatus nppiMirror_16u_AC4R (const Npp16u *pSrc, int nSrcStep, Npp16u *pDst, int nDstStep, NppiSize oROI, NppiAxis flip)

    4 channel 16-bit unsigned image mirror not affecting alpha.

- NppStatus nppiMirror_32s_C1R (const Npp32s *pSrc, int nSrcStep, Npp32s *pDst, int nDstStep, NppiSize oROI, NppiAxis flip)

    32-bit image mirror.

- NppStatus nppiMirror_32s_C3R (const Npp32s *pSrc, int nSrcStep, Npp32s *pDst, int nDstStep, NppiSize oROI, NppiAxis flip)

    3 channel 32-bit image mirror.

- NppStatus nppiMirror_32s_C4R (const Npp32s *pSrc, int nSrcStep, Npp32s *pDst, int nDstStep, NppiSize oROI, NppiAxis flip)

    4 channel 32-bit image mirror.

- NppStatus nppiMirror_32s_AC4R (const Npp32s *pSrc, int nSrcStep, Npp32s *pDst, int nDstStep, NppiSize oROI, NppiAxis flip)

    4 channel 32-bit image mirror not affecting alpha.

- NppStatus nppiMirror_32f_C1R (const Npp32f *pSrc, int nSrcStep, Npp32f *pDst, int nDstStep, NppiSize oROI, NppiAxis flip)

    32-bit float image mirror.

- NppStatus nppiMirror_32f_C3R (const Npp32f *pSrc, int nSrcStep, Npp32f *pDst, int nDstStep, NppiSize oROI, NppiAxis flip)

    3 channel 32-bit float image mirror.

- NppStatus nppiMirror_32f_C4R (const Npp32f *pSrc, int nSrcStep, Npp32f *pDst, int nDstStep, NppiSize oROI, NppiAxis flip)

    4 channel 32-bit float image mirror.

- NppStatus nppiMirror_32f_AC4R (const Npp32f *pSrc, int nSrcStep, Npp32f *pDst, int nDstStep, NppiSize oROI, NppiAxis flip)

    4 channel 32-bit float image mirror not affecting alpha.

Affine warping, affine transform calculation

Affine warping of an image is the transform of image pixel positions, defined by the following formulas:

$$X_{new} = C_{00} * x + C_{01} * y + C_{02} \qquad Y_{new} = C_{10} * x + C_{11} * y + C_{12} \qquad C = \begin{bmatrix} C_{00} & C_{01} & C_{02} \\ C_{10} & C_{11} & C_{12} \end{bmatrix}$$

That is, any pixel with coordinates (X_{new}, Y_{new}) in the transformed image is sourced from coordinates (x, y) in the original image.

The mapping C is completely specified by 6 values $C_{ij}, i = \overline{0,1}, j = \overline{0,2}$. The transform maps parallel lines to parallel lines and preserves ratios of distances of points to lines. Implementation specific properties are discussed in each function's documentation.

- NppStatus nppiGetAffineTransform (NppiRect srcRoi, const double quad[4][2], double coeffs[2][3])

    Calculates affine transform coefficients given source rectangular ROI and its destination quadrangle projection.

- NppStatus nppiGetAffineQuad (NppiRect srcRoi, double quad[4][2], const double coeffs[2][3])

    Calculates affine transform projection of given source rectangular ROI.

- NppStatus nppiGetAffineBound (NppiRect srcRoi, double bound[2][2], const double coeffs[2][3])

    Calculates bounding box of the affine transform projection of the given source rectangular ROI.

- NppStatus nppiWarpAffine_8u_C1R (const Npp8u *pSrc, NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, Npp8u *pDst, int nDstStep, NppiRect dstRoi, const double coeffs[2][3], int eInterpolation)

    Affine transform of an image (8bit unsigned integer, single channel).

- NppStatus nppiWarpAffine_8u_C3R (const Npp8u *pSrc, NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, Npp8u *pDst, int nDstStep, NppiRect dstRoi, const double coeffs[2][3], int eInterpolation)

    Affine transform of an image (8bit unsigned integer, three channels).

- NppStatus nppiWarpAffine_8u_C4R (const Npp8u *pSrc, NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, Npp8u *pDst, int nDstStep, NppiRect dstRoi, const double coeffs[2][3], int eInterpolation)

    Affine transform of an image (8bit unsigned integer, four channels).

- NppStatus nppiWarpAffine_8u_AC4R (const Npp8u *pSrc, NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, Npp8u *pDst, int nDstStep, NppiRect dstRoi, const double coeffs[2][3], int eInterpolation)

Affine transform of an image (8bit unsigned integer, four channels RGBA).

- NppStatus nppiWarpAffine_8u_P3R (const Npp8u *pSrc[3], NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, Npp8u *pDst[3], int nDstStep, NppiRect dstRoi, const double coeffs[2][3], int eInterpolation)

  Affine transform of an image (8bit unsigned integer, three planes).

- NppStatus nppiWarpAffine_8u_P4R (const Npp8u *pSrc[4], NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, Npp8u *pDst[4], int nDstStep, NppiRect dstRoi, const double coeffs[2][3], int eInterpolation)

  Affine transform of an image (8bit unsigned integer, four planes).

- NppStatus nppiWarpAffineBack_8u_C1R (const Npp8u *pSrc, NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, Npp8u *pDst, int nDstStep, NppiRect dstRoi, const double coeffs[2][3], int eInterpolation)

  Inverse affine transform of an image (8bit unsigned integer, single channel).

- NppStatus nppiWarpAffineBack_8u_C3R (const Npp8u *pSrc, NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, Npp8u *pDst, int nDstStep, NppiRect dstRoi, const double coeffs[2][3], int eInterpolation)

  Inverse affine transform of an image (8bit unsigned integer, three channels).

- NppStatus nppiWarpAffineBack_8u_C4R (const Npp8u *pSrc, NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, Npp8u *pDst, int nDstStep, NppiRect dstRoi, const double coeffs[2][3], int eInterpolation)

  Inverse affine transform of an image (8bit unsigned integer, four channels).

- NppStatus nppiWarpAffineBack_8u_AC4R (const Npp8u *pSrc, NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, Npp8u *pDst, int nDstStep, NppiRect dstRoi, const double coeffs[2][3], int eInterpolation)

  Inverse affine transform of an image (8bit unsigned integer, four channels RGBA).

- NppStatus nppiWarpAffineBack_8u_P3R (const Npp8u *pSrc[3], NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, Npp8u *pDst[3], int nDstStep, NppiRect dstRoi, const double coeffs[2][3], int eInterpolation)

  Inverse affine transform of an image (8bit unsigned integer, three planes).

- NppStatus nppiWarpAffineBack_8u_P4R (const Npp8u *pSrc[4], NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, Npp8u *pDst[4], int nDstStep, NppiRect dstRoi, const double coeffs[2][3], int eInterpolation)

  Inverse affine transform of an image (8bit unsigned integer, four planes).

- NppStatus nppiWarpAffineQuad_8u_C1R (const Npp8u *pSrc, NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, const double srcQuad[4][2], Npp8u *pDst, int nDstStep, NppiRect dstRoi, const double dstQuad[4][2], int eInterpolation)

  Affine transform of an image (8bit unsigned integer, single channel).

- NppStatus nppiWarpAffineQuad_8u_C3R (const Npp8u *pSrc, NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, const double srcQuad[4][2], Npp8u *pDst, int nDstStep, NppiRect dstRoi, const double dstQuad[4][2], int eInterpolation)

  Affine transform of an image (8bit unsigned integer, three channels).

- NppStatus nppiWarpAffineQuad_8u_C4R (const Npp8u *pSrc, NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, const double srcQuad[4][2], Npp8u *pDst, int nDstStep, NppiRect dstRoi, const double dstQuad[4][2], int eInterpolation)

    Affine transform of an image (8bit unsigned integer, four channels).

- NppStatus nppiWarpAffineQuad_8u_AC4R (const Npp8u *pSrc, NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, const double srcQuad[4][2], Npp8u *pDst, int nDstStep, NppiRect dstRoi, const double dstQuad[4][2], int eInterpolation)

    Affine transform of an image (8bit unsigned integer, four channels RGBA).

- NppStatus nppiWarpAffineQuad_8u_P3R (const Npp8u *pSrc[3], NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, const double srcQuad[4][2], Npp8u *pDst[3], int nDstStep, NppiRect dstRoi, const double dstQuad[4][2], int eInterpolation)

    Affine transform of an image (8bit unsigned integer, three planes).

- NppStatus nppiWarpAffineQuad_8u_P4R (const Npp8u *pSrc[4], NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, const double srcQuad[4][2], Npp8u *pDst[4], int nDstStep, NppiRect dstRoi, const double dstQuad[4][2], int eInterpolation)

    Affine transform of an image (8bit unsigned integer, four planes).

- NppStatus nppiWarpAffine_16u_C1R (const Npp16u *pSrc, NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, Npp16u *pDst, int nDstStep, NppiRect dstRoi, const double coeffs[2][3], int eInterpolation)

    Affine transform of an image (16bit unsigned integer, single channel).

- NppStatus nppiWarpAffine_16u_C3R (const Npp16u *pSrc, NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, Npp16u *pDst, int nDstStep, NppiRect dstRoi, const double coeffs[2][3], int eInterpolation)

    Affine transform of an image (16bit unsigned integer, three channels).

- NppStatus nppiWarpAffine_16u_C4R (const Npp16u *pSrc, NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, Npp16u *pDst, int nDstStep, NppiRect dstRoi, const double coeffs[2][3], int eInterpolation)

    Affine transform of an image (16bit unsigned integer, four channels).

- NppStatus nppiWarpAffine_16u_AC4R (const Npp16u *pSrc, NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, Npp16u *pDst, int nDstStep, NppiRect dstRoi, const double coeffs[2][3], int eInterpolation)

    Affine transform of an image (16bit unsigned integer, four channels RGBA).

- NppStatus nppiWarpAffine_16u_P3R (const Npp16u *pSrc[3], NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, Npp16u *pDst[3], int nDstStep, NppiRect dstRoi, const double coeffs[2][3], int eInterpolation)

    Affine transform of an image (16bit unsigned integer, three planes).

- NppStatus nppiWarpAffine_16u_P4R (const Npp16u *pSrc[4], NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, Npp16u *pDst[4], int nDstStep, NppiRect dstRoi, const double coeffs[2][3], int eInterpolation)

    Affine transform of an image (16bit unsigned integer, four planes).

- NppStatus nppiWarpAffineBack_16u_C1R (const Npp16u ∗pSrc, NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, Npp16u ∗pDst, int nDstStep, NppiRect dstRoi, const double coeffs[2][3], int eInterpolation)

    Inverse affine transform of an image (16bit unsigned integer, single channel).

- NppStatus nppiWarpAffineBack_16u_C3R (const Npp16u ∗pSrc, NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, Npp16u ∗pDst, int nDstStep, NppiRect dstRoi, const double coeffs[2][3], int eInterpolation)

    Inverse affine transform of an image (16bit unsigned integer, three channels).

- NppStatus nppiWarpAffineBack_16u_C4R (const Npp16u ∗pSrc, NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, Npp16u ∗pDst, int nDstStep, NppiRect dstRoi, const double coeffs[2][3], int eInterpolation)

    Inverse affine transform of an image (16bit unsigned integer, four channels).

- NppStatus nppiWarpAffineBack_16u_AC4R (const Npp16u ∗pSrc, NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, Npp16u ∗pDst, int nDstStep, NppiRect dstRoi, const double coeffs[2][3], int eInterpolation)

    Inverse affine transform of an image (16bit unsigned integer, four channels RGBA).

- NppStatus nppiWarpAffineBack_16u_P3R (const Npp16u ∗pSrc[3], NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, Npp16u ∗pDst[3], int nDstStep, NppiRect dstRoi, const double coeffs[2][3], int eInterpolation)

    Inverse affine transform of an image (16bit unsigned integer, three planes).

- NppStatus nppiWarpAffineBack_16u_P4R (const Npp16u ∗pSrc[4], NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, Npp16u ∗pDst[4], int nDstStep, NppiRect dstRoi, const double coeffs[2][3], int eInterpolation)

    Inverse affine transform of an image (16bit unsigned integer, four planes).

- NppStatus nppiWarpAffineQuad_16u_C1R (const Npp16u ∗pSrc, NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, const double srcQuad[4][2], Npp16u ∗pDst, int nDstStep, NppiRect dstRoi, const double dstQuad[4][2], int eInterpolation)

    Affine transform of an image (16bit unsigned integer, single channel).

- NppStatus nppiWarpAffineQuad_16u_C3R (const Npp16u ∗pSrc, NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, const double srcQuad[4][2], Npp16u ∗pDst, int nDstStep, NppiRect dstRoi, const double dstQuad[4][2], int eInterpolation)

    Affine transform of an image (16bit unsigned integer, three channels).

- NppStatus nppiWarpAffineQuad_16u_C4R (const Npp16u ∗pSrc, NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, const double srcQuad[4][2], Npp16u ∗pDst, int nDstStep, NppiRect dstRoi, const double dstQuad[4][2], int eInterpolation)

    Affine transform of an image (16bit unsigned integer, four channels).

- NppStatus nppiWarpAffineQuad_16u_AC4R (const Npp16u ∗pSrc, NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, const double srcQuad[4][2], Npp16u ∗pDst, int nDstStep, NppiRect dstRoi, const double dstQuad[4][2], int eInterpolation)

    Affine transform of an image (16bit unsigned integer, four channels RGBA).

- NppStatus nppiWarpAffineQuad_16u_P3R (const Npp16u *pSrc[3], NppiSize oSrcSize, int nSrc-Step, NppiRect srcRoi, const double srcQuad[4][2], Npp16u *pDst[3], int nDstStep, NppiRect dstRoi, const double dstQuad[4][2], int eInterpolation)

    Affine transform of an image (16bit unsigned integer, three planes).

- NppStatus nppiWarpAffineQuad_16u_P4R (const Npp16u *pSrc[4], NppiSize oSrcSize, int nSrc-Step, NppiRect srcRoi, const double srcQuad[4][2], Npp16u *pDst[4], int nDstStep, NppiRect dstRoi, const double dstQuad[4][2], int eInterpolation)

    Affine transform of an image (16bit unsigned integer, four planes).

- NppStatus nppiWarpAffine_32f_C1R (const Npp32f *pSrc, NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, Npp32f *pDst, int nDstStep, NppiRect dstRoi, const double coeffs[2][3], int eInterpolation)

    Affine transform of an image (32bit float, single channel).

- NppStatus nppiWarpAffine_32f_C3R (const Npp32f *pSrc, NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, Npp32f *pDst, int nDstStep, NppiRect dstRoi, const double coeffs[2][3], int eInterpolation)

    Affine transform of an image (32bit float, three channels).

- NppStatus nppiWarpAffine_32f_C4R (const Npp32f *pSrc, NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, Npp32f *pDst, int nDstStep, NppiRect dstRoi, const double coeffs[2][3], int eInterpolation)

    Affine transform of an image (32bit float, four channels).

- NppStatus nppiWarpAffine_32f_AC4R (const Npp32f *pSrc, NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, Npp32f *pDst, int nDstStep, NppiRect dstRoi, const double coeffs[2][3], int eInterpolation)

    Affine transform of an image (32bit float, four channels RGBA).

- NppStatus nppiWarpAffine_32f_P3R (const Npp32f *pSrc[3], NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, Npp32f *pDst[3], int nDstStep, NppiRect dstRoi, const double coeffs[2][3], int eInterpolation)

    Affine transform of an image (32bit float, three planes).

- NppStatus nppiWarpAffine_32f_P4R (const Npp32f *pSrc[4], NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, Npp32f *pDst[4], int nDstStep, NppiRect dstRoi, const double coeffs[2][3], int eInterpolation)

    Affine transform of an image (32bit float, four planes).

- NppStatus nppiWarpAffineBack_32f_C1R (const Npp32f *pSrc, NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, Npp32f *pDst, int nDstStep, NppiRect dstRoi, const double coeffs[2][3], int eInterpolation)

    Inverse affine transform of an image (32bit float, single channel).

- NppStatus nppiWarpAffineBack_32f_C3R (const Npp32f *pSrc, NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, Npp32f *pDst, int nDstStep, NppiRect dstRoi, const double coeffs[2][3], int eInterpolation)

    Inverse affine transform of an image (32bit float, three channels).

- NppStatus nppiWarpAffineBack_32f_C4R (const Npp32f *pSrc, NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, Npp32f *pDst, int nDstStep, NppiRect dstRoi, const double coeffs[2][3], int eInterpolation)

    Inverse affine transform of an image (32bit float, four channels).

- NppStatus nppiWarpAffineBack_32f_AC4R (const Npp32f *pSrc, NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, Npp32f *pDst, int nDstStep, NppiRect dstRoi, const double coeffs[2][3], int eInterpolation)

    Inverse affine transform of an image (32bit float, four channels RGBA).

- NppStatus nppiWarpAffineBack_32f_P3R (const Npp32f *pSrc[3], NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, Npp32f *pDst[3], int nDstStep, NppiRect dstRoi, const double coeffs[2][3], int eInterpolation)

    Inverse affine transform of an image (32bit float, three planes).

- NppStatus nppiWarpAffineBack_32f_P4R (const Npp32f *pSrc[4], NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, Npp32f *pDst[4], int nDstStep, NppiRect dstRoi, const double coeffs[2][3], int eInterpolation)

    Inverse affine transform of an image (32bit float, four planes).

- NppStatus nppiWarpAffineQuad_32f_C1R (const Npp32f *pSrc, NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, const double srcQuad[4][2], Npp32f *pDst, int nDstStep, NppiRect dstRoi, const double dstQuad[4][2], int eInterpolation)

    Affine transform of an image (32bit float, single channel).

- NppStatus nppiWarpAffineQuad_32f_C3R (const Npp32f *pSrc, NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, const double srcQuad[4][2], Npp32f *pDst, int nDstStep, NppiRect dstRoi, const double dstQuad[4][2], int eInterpolation)

    Affine transform of an image (32bit float, three channels).

- NppStatus nppiWarpAffineQuad_32f_C4R (const Npp32f *pSrc, NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, const double srcQuad[4][2], Npp32f *pDst, int nDstStep, NppiRect dstRoi, const double dstQuad[4][2], int eInterpolation)

    Affine transform of an image (32bit float, four channels).

- NppStatus nppiWarpAffineQuad_32f_AC4R (const Npp32f *pSrc, NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, const double srcQuad[4][2], Npp32f *pDst, int nDstStep, NppiRect dstRoi, const double dstQuad[4][2], int eInterpolation)

    Affine transform of an image (32bit float, four channels RGBA).

- NppStatus nppiWarpAffineQuad_32f_P3R (const Npp32f *pSrc[3], NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, const double srcQuad[4][2], Npp32f *pDst[3], int nDstStep, NppiRect dstRoi, const double dstQuad[4][2], int eInterpolation)

    Affine transform of an image (32bit float, three planes).

- NppStatus nppiWarpAffineQuad_32f_P4R (const Npp32f *pSrc[4], NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, const double srcQuad[4][2], Npp32f *pDst[4], int nDstStep, NppiRect dstRoi, const double dstQuad[4][2], int eInterpolation)

    Affine transform of an image (32bit float, four planes).

- NppStatus nppiWarpAffine_32s_C1R (const Npp32s *pSrc, NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, Npp32s *pDst, int nDstStep, NppiRect dstRoi, const double coeffs[2][3], int eInterpolation)

    Affine transform of an image (32bit signed integer, single channel).

- NppStatus nppiWarpAffine_32s_C3R (const Npp32s *pSrc, NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, Npp32s *pDst, int nDstStep, NppiRect dstRoi, const double coeffs[2][3], int interpolation)

    Affine transform of an image (32bit signed integer, three channels).

- NppStatus nppiWarpAffine_32s_C4R (const Npp32s *pSrc, NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, Npp32s *pDst, int nDstStep, NppiRect dstRoi, const double coeffs[2][3], int eInterpolation)

    Affine transform of an image (32bit signed integer, four channels).

- NppStatus nppiWarpAffine_32s_AC4R (const Npp32s *pSrc, NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, Npp32s *pDst, int nDstStep, NppiRect dstRoi, const double coeffs[2][3], int eInterpolation)

    Affine transform of an image (32bit signed integer, four channels RGBA).

- NppStatus nppiWarpAffine_32s_P3R (const Npp32s *pSrc[3], NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, Npp32s *pDst[3], int nDstStep, NppiRect dstRoi, const double coeffs[2][3], int eInterpolation)

    Affine transform of an image (32bit signed integer, three planes).

- NppStatus nppiWarpAffine_32s_P4R (const Npp32s *pSrc[4], NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, Npp32s *pDst[4], int nDstStep, NppiRect dstRoi, const double coeffs[2][3], int eInterpolation)

    Affine transform of an image (32bit signed integer, four planes).

- NppStatus nppiWarpAffineBack_32s_C1R (const Npp32s *pSrc, NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, Npp32s *pDst, int nDstStep, NppiRect dstRoi, const double coeffs[2][3], int eInterpolation)

    Inverse affine transform of an image (32bit signed integer, single channel).

- NppStatus nppiWarpAffineBack_32s_C3R (const Npp32s *pSrc, NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, Npp32s *pDst, int nDstStep, NppiRect dstRoi, const double coeffs[2][3], int eInterpolation)

    Inverse affine transform of an image (32bit signed integer, three channels).

- NppStatus nppiWarpAffineBack_32s_C4R (const Npp32s *pSrc, NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, Npp32s *pDst, int nDstStep, NppiRect dstRoi, const double coeffs[2][3], int eInterpolation)

    Inverse affine transform of an image (32bit signed integer, four channels).

- NppStatus nppiWarpAffineBack_32s_AC4R (const Npp32s *pSrc, NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, Npp32s *pDst, int nDstStep, NppiRect dstRoi, const double coeffs[2][3], int eInterpolation)

    Inverse affine transform of an image (32bit signed integer, four channels RGBA).

- NppStatus nppiWarpAffineBack_32s_P3R (const Npp32s ∗pSrc[3], NppiSize oSrcSize, int nSrc-Step, NppiRect srcRoi, Npp32s ∗pDst[3], int nDstStep, NppiRect dstRoi, const double coeffs[2][3], int eInterpolation)

    Inverse affine transform of an image (32bit signed integer, three planes).

- NppStatus nppiWarpAffineBack_32s_P4R (const Npp32s ∗pSrc[4], NppiSize oSrcSize, int nSrc-Step, NppiRect srcRoi, Npp32s ∗pDst[4], int nDstStep, NppiRect dstRoi, const double coeffs[2][3], int eInterpolation)

    Inverse affine transform of an image (32bit signed integer, four planes).

- NppStatus nppiWarpAffineQuad_32s_C1R (const Npp32s ∗pSrc, NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, const double srcQuad[4][2], Npp32s ∗pDst, int nDstStep, NppiRect dstRoi, const double dstQuad[4][2], int eInterpolation)

    Affine transform of an image (32bit signed integer, single channel).

- NppStatus nppiWarpAffineQuad_32s_C3R (const Npp32s ∗pSrc, NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, const double srcQuad[4][2], Npp32s ∗pDst, int nDstStep, NppiRect dstRoi, const double dstQuad[4][2], int eInterpolation)

    Affine transform of an image (32bit signed integer, three channels).

- NppStatus nppiWarpAffineQuad_32s_C4R (const Npp32s ∗pSrc, NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, const double srcQuad[4][2], Npp32s ∗pDst, int nDstStep, NppiRect dstRoi, const double dstQuad[4][2], int eInterpolation)

    Affine transform of an image (32bit signed integer, four channels).

- NppStatus nppiWarpAffineQuad_32s_AC4R (const Npp32s ∗pSrc, NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, const double srcQuad[4][2], Npp32s ∗pDst, int nDstStep, NppiRect dstRoi, const double dstQuad[4][2], int eInterpolation)

    Affine transform of an image (32bit signed integer, four channels RGBA).

- NppStatus nppiWarpAffineQuad_32s_P3R (const Npp32s ∗pSrc[3], NppiSize oSrcSize, int nSrc-Step, NppiRect srcRoi, const double srcQuad[4][2], Npp32s ∗pDst[3], int nDstStep, NppiRect dstRoi, const double dstQuad[4][2], int eInterpolation)

    Affine transform of an image (32bit signed integer, three planes).

- NppStatus nppiWarpAffineQuad_32s_P4R (const Npp32s ∗pSrc[4], NppiSize oSrcSize, int nSrc-Step, NppiRect srcRoi, const double srcQuad[4][2], Npp32s ∗pDst[4], int nDstStep, NppiRect dstRoi, const double dstQuad[4][2], int eInterpolation)

    Affine transform of an image (32bit signed integer, four planes).

Perspective warping, perspective transform calculation

Perspective warping of an image is the transform of image pixel positions, defined by the following formulas:

$$X_{new} = \frac{C_{00} * x + C_{01} * y + C_{02}}{C_{20} * x + C_{21} * y + C_{22}} \qquad Y_{new} = \frac{C_{10} * x + C_{11} * y + C_{12}}{C_{20} * x + C_{21} * y + C_{22}} \qquad C = \begin{bmatrix} C_{00} & C_{01} & C_{02} \\ C_{10} & C_{11} & C_{12} \\ C_{20} & C_{21} & C_{22} \end{bmatrix}$$

That is, any pixel of the transformed image with coordinates (X_{new}, Y_{new}) has a preimage with coordinates (x, y).

The mapping C is fully defined by 8 values $C_{ij}, (i, j) = \overline{0, 2}$, except of C_{22}, which is a normalizer. The transform has a property of mapping any convex quadrangle to a convex quadrangle, which is used in a group of functions nppiWarpPerspectiveQuad. The NPPI implementation of perspective transform has some issues which are discussed in each function's documentation.

- NppStatus nppiGetPerspectiveTransform (NppiRect srcRoi, const double quad[4][2], double coeffs[3][3])

  Calculates perspective transform coefficients given source rectangular ROI and its destination quadrangle projection.

- NppStatus nppiGetPerspectiveQuad (NppiRect srcRoi, double quad[4][2], const double coeffs[3][3])

  Calculates perspective transform projection of given source rectangular ROI.

- NppStatus nppiGetPerspectiveBound (NppiRect srcRoi, double bound[2][2], const double coeffs[3][3])

  Calculates bounding box of the perspective transform projection of the given source rectangular ROI.

- NppStatus nppiWarpPerspective_8u_C1R (const Npp8u *pSrc, NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, Npp8u *pDst, int nDstStep, NppiRect dstRoi, const double coeffs[3][3], int eInterpolation)

  Perspective transform of an image (8bit unsigned integer, single channel).

- NppStatus nppiWarpPerspective_8u_C3R (const Npp8u *pSrc, NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, Npp8u *pDst, int nDstStep, NppiRect dstRoi, const double coeffs[3][3], int eInterpolation)

  Perspective transform of an image (8bit unsigned integer, three channels).

- NppStatus nppiWarpPerspective_8u_C4R (const Npp8u *pSrc, NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, Npp8u *pDst, int nDstStep, NppiRect dstRoi, const double coeffs[3][3], int eInterpolation)

  Perspective transform of an image (8bit unsigned integer, four channels).

- NppStatus nppiWarpPerspective_8u_AC4R (const Npp8u *pSrc, NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, Npp8u *pDst, int nDstStep, NppiRect dstRoi, const double coeffs[3][3], int eInterpolation)

  Perspective transform of an image (8bit unsigned integer, four channels RGBA).

- NppStatus nppiWarpPerspective_8u_P3R (const Npp8u *pSrc[3], NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, Npp8u *pDst[3], int nDstStep, NppiRect dstRoi, const double coeffs[3][3], int eInterpolation)

  Perspective transform of an image (8bit unsigned integer, three planes).

- NppStatus nppiWarpPerspective_8u_P4R (const Npp8u *pSrc[4], NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, Npp8u *pDst[4], int nDstStep, NppiRect dstRoi, const double coeffs[3][3], int eInterpolation)

  Perspective transform of an image (8bit unsigned integer, four planes).

- NppStatus nppiWarpPerspectiveBack_8u_C1R (const Npp8u *pSrc, NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, Npp8u *pDst, int nDstStep, NppiRect dstRoi, const double coeffs[3][3], int eInterpolation)

Inverse perspective transform of an image (8bit unsigned integer, single channel).

- NppStatus nppiWarpPerspectiveBack_8u_C3R (const Npp8u ∗pSrc, NppiSize oSrcSize, int nSrc-Step, NppiRect srcRoi, Npp8u ∗pDst, int nDstStep, NppiRect dstRoi, const double coeffs[3][3], int eInterpolation)

    Inverse perspective transform of an image (8bit unsigned integer, three channels).

- NppStatus nppiWarpPerspectiveBack_8u_C4R (const Npp8u ∗pSrc, NppiSize oSrcSize, int nSrc-Step, NppiRect srcRoi, Npp8u ∗pDst, int nDstStep, NppiRect dstRoi, const double coeffs[3][3], int eInterpolation)

    Inverse perspective transform of an image (8bit unsigned integer, four channels).

- NppStatus nppiWarpPerspectiveBack_8u_AC4R (const Npp8u ∗pSrc, NppiSize oSrcSize, int nSrc-Step, NppiRect srcRoi, Npp8u ∗pDst, int nDstStep, NppiRect dstRoi, const double coeffs[3][3], int eInterpolation)

    Inverse perspective transform of an image (8bit unsigned integer, four channels RGBA).

- NppStatus nppiWarpPerspectiveBack_8u_P3R (const Npp8u ∗pSrc[3], NppiSize oSrcSize, int nSrc-Step, NppiRect srcRoi, Npp8u ∗pDst[3], int nDstStep, NppiRect dstRoi, const double coeffs[3][3], int eInterpolation)

    Inverse perspective transform of an image (8bit unsigned integer, three planes).

- NppStatus nppiWarpPerspectiveBack_8u_P4R (const Npp8u ∗pSrc[4], NppiSize oSrcSize, int nSrc-Step, NppiRect srcRoi, Npp8u ∗pDst[4], int nDstStep, NppiRect dstRoi, const double coeffs[3][3], int eInterpolation)

    Inverse perspective transform of an image (8bit unsigned integer, four planes).

- NppStatus nppiWarpPerspectiveQuad_8u_C1R (const Npp8u ∗pSrc, NppiSize oSrcSize, int nSrc-Step, NppiRect srcRoi, const double srcQuad[4][2], Npp8u ∗pDst, int nDstStep, NppiRect dstRoi, const double dstQuad[4][2], int eInterpolation)

    Perspective transform of an image (8bit unsigned integer, single channel).

- NppStatus nppiWarpPerspectiveQuad_8u_C3R (const Npp8u ∗pSrc, NppiSize oSrcSize, int nSrc-Step, NppiRect srcRoi, const double srcQuad[4][2], Npp8u ∗pDst, int nDstStep, NppiRect dstRoi, const double dstQuad[4][2], int eInterpolation)

    Perspective transform of an image (8bit unsigned integer, three channels).

- NppStatus nppiWarpPerspectiveQuad_8u_C4R (const Npp8u ∗pSrc, NppiSize oSrcSize, int nSrc-Step, NppiRect srcRoi, const double srcQuad[4][2], Npp8u ∗pDst, int nDstStep, NppiRect dstRoi, const double dstQuad[4][2], int eInterpolation)

    Perspective transform of an image (8bit unsigned integer, four channels).

- NppStatus nppiWarpPerspectiveQuad_8u_AC4R (const Npp8u ∗pSrc, NppiSize oSrcSize, int nSrc-Step, NppiRect srcRoi, const double srcQuad[4][2], Npp8u ∗pDst, int nDstStep, NppiRect dstRoi, const double dstQuad[4][2], int eInterpolation)

    Perspective transform of an image (8bit unsigned integer, four channels RGBA).

- NppStatus nppiWarpPerspectiveQuad_8u_P3R (const Npp8u ∗pSrc[3], NppiSize oSrcSize, int nSrc-Step, NppiRect srcRoi, const double srcQuad[4][2], Npp8u ∗pDst[3], int nDstStep, NppiRect dstRoi, const double dstQuad[4][2], int eInterpolation)

    Perspective transform of an image (8bit unsigned integer, three planes).

- NppStatus nppiWarpPerspectiveQuad_8u_P4R (const Npp8u ∗pSrc[4], NppiSize oSrcSize, int nSrc-Step, NppiRect srcRoi, const double srcQuad[4][2], Npp8u ∗pDst[4], int nDstStep, NppiRect dstRoi, const double dstQuad[4][2], int eInterpolation)

    Perspective transform of an image (8bit unsigned integer, four planes).

- NppStatus nppiWarpPerspective_16u_C1R (const Npp16u ∗pSrc, NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, Npp16u ∗pDst, int nDstStep, NppiRect dstRoi, const double coeffs[3][3], int eInterpolation)

    Perspective transform of an image (16bit unsigned integer, single channel).

- NppStatus nppiWarpPerspective_16u_C3R (const Npp16u ∗pSrc, NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, Npp16u ∗pDst, int nDstStep, NppiRect dstRoi, const double coeffs[3][3], int eInterpolation)

    Perspective transform of an image (16bit unsigned integer, three channels).

- NppStatus nppiWarpPerspective_16u_C4R (const Npp16u ∗pSrc, NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, Npp16u ∗pDst, int nDstStep, NppiRect dstRoi, const double coeffs[3][3], int eInterpolation)

    Perspective transform of an image (16bit unsigned integer, four channels).

- NppStatus nppiWarpPerspective_16u_AC4R (const Npp16u ∗pSrc, NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, Npp16u ∗pDst, int nDstStep, NppiRect dstRoi, const double coeffs[3][3], int eInterpolation)

    Perspective transform of an image (16bit unsigned integer, four channels RGBA).

- NppStatus nppiWarpPerspective_16u_P3R (const Npp16u ∗pSrc[3], NppiSize oSrcSize, int nSrc-Step, NppiRect srcRoi, Npp16u ∗pDst[3], int nDstStep, NppiRect dstRoi, const double coeffs[3][3], int eInterpolation)

    Perspective transform of an image (16bit unsigned integer, three planes).

- NppStatus nppiWarpPerspective_16u_P4R (const Npp16u ∗pSrc[4], NppiSize oSrcSize, int nSrc-Step, NppiRect srcRoi, Npp16u ∗pDst[4], int nDstStep, NppiRect dstRoi, const double coeffs[3][3], int eInterpolation)

    Perspective transform of an image (16bit unsigned integer, four planes).

- NppStatus nppiWarpPerspectiveBack_16u_C1R (const Npp16u ∗pSrc, NppiSize oSrcSize, int nSrc-Step, NppiRect srcRoi, Npp16u ∗pDst, int nDstStep, NppiRect dstRoi, const double coeffs[3][3], int eInterpolation)

    Inverse perspective transform of an image (16bit unsigned integer, single channel).

- NppStatus nppiWarpPerspectiveBack_16u_C3R (const Npp16u ∗pSrc, NppiSize oSrcSize, int nSrc-Step, NppiRect srcRoi, Npp16u ∗pDst, int nDstStep, NppiRect dstRoi, const double coeffs[3][3], int eInterpolation)

    Inverse perspective transform of an image (16bit unsigned integer, three channels).

- NppStatus nppiWarpPerspectiveBack_16u_C4R (const Npp16u ∗pSrc, NppiSize oSrcSize, int nSrc-Step, NppiRect srcRoi, Npp16u ∗pDst, int nDstStep, NppiRect dstRoi, const double coeffs[3][3], int eInterpolation)

    Inverse perspective transform of an image (16bit unsigned integer, four channels).

- NppStatus nppiWarpPerspectiveBack_16u_AC4R (const Npp16u *pSrc, NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, Npp16u *pDst, int nDstStep, NppiRect dstRoi, const double coeffs[3][3], int eInterpolation)

  Inverse perspective transform of an image (16bit unsigned integer, four channels RGBA).

- NppStatus nppiWarpPerspectiveBack_16u_P3R (const Npp16u *pSrc[3], NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, Npp16u *pDst[3], int nDstStep, NppiRect dstRoi, const double coeffs[3][3], int eInterpolation)

  Inverse perspective transform of an image (16bit unsigned integer, three planes).

- NppStatus nppiWarpPerspectiveBack_16u_P4R (const Npp16u *pSrc[4], NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, Npp16u *pDst[4], int nDstStep, NppiRect dstRoi, const double coeffs[3][3], int eInterpolation)

  Inverse perspective transform of an image (16bit unsigned integer, four planes).

- NppStatus nppiWarpPerspectiveQuad_16u_C1R (const Npp16u *pSrc, NppiSize oSrcSize, int nSrc-Step, NppiRect srcRoi, const double srcQuad[4][2], Npp16u *pDst, int nDstStep, NppiRect dstRoi, const double dstQuad[4][2], int eInterpolation)

  Perspective transform of an image (16bit unsigned integer, single channel).

- NppStatus nppiWarpPerspectiveQuad_16u_C3R (const Npp16u *pSrc, NppiSize oSrcSize, int nSrc-Step, NppiRect srcRoi, const double srcQuad[4][2], Npp16u *pDst, int nDstStep, NppiRect dstRoi, const double dstQuad[4][2], int eInterpolation)

  Perspective transform of an image (16bit unsigned integer, three channels).

- NppStatus nppiWarpPerspectiveQuad_16u_C4R (const Npp16u *pSrc, NppiSize oSrcSize, int nSrc-Step, NppiRect srcRoi, const double srcQuad[4][2], Npp16u *pDst, int nDstStep, NppiRect dstRoi, const double dstQuad[4][2], int eInterpolation)

  Perspective transform of an image (16bit unsigned integer, four channels).

- NppStatus nppiWarpPerspectiveQuad_16u_AC4R (const Npp16u *pSrc, NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, const double srcQuad[4][2], Npp16u *pDst, int nDstStep, NppiRect dstRoi, const double dstQuad[4][2], int eInterpolation)

  Perspective transform of an image (16bit unsigned integer, four channels RGBA).

- NppStatus nppiWarpPerspectiveQuad_16u_P3R (const Npp16u *pSrc[3], NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, const double srcQuad[4][2], Npp16u *pDst[3], int nDstStep, NppiRect dstRoi, const double dstQuad[4][2], int eInterpolation)

  Perspective transform of an image (16bit unsigned integer, three planes).

- NppStatus nppiWarpPerspectiveQuad_16u_P4R (const Npp16u *pSrc[4], NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, const double srcQuad[4][2], Npp16u *pDst[4], int nDstStep, NppiRect dstRoi, const double dstQuad[4][2], int eInterpolation)

  Perspective transform of an image (16bit unsigned integer, four planes).

- NppStatus nppiWarpPerspective_32f_C1R (const Npp32f *pSrc, NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, Npp32f *pDst, int nDstStep, NppiRect dstRoi, const double coeffs[3][3], int eInterpolation)

  Perspective transform of an image (32bit float, single channel).

- NppStatus nppiWarpPerspective_32f_C3R (const Npp32f *pSrc, NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, Npp32f *pDst, int nDstStep, NppiRect dstRoi, const double coeffs[3][3], int eInterpolation)

    Perspective transform of an image (32bit float, three channels).

- NppStatus nppiWarpPerspective_32f_C4R (const Npp32f *pSrc, NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, Npp32f *pDst, int nDstStep, NppiRect dstRoi, const double coeffs[3][3], int eInterpolation)

    Perspective transform of an image (32bit float, four channels).

- NppStatus nppiWarpPerspective_32f_AC4R (const Npp32f *pSrc, NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, Npp32f *pDst, int nDstStep, NppiRect dstRoi, const double coeffs[3][3], int eInterpolation)

    Perspective transform of an image (32bit float, four channels RGBA).

- NppStatus nppiWarpPerspective_32f_P3R (const Npp32f *pSrc[3], NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, Npp32f *pDst[3], int nDstStep, NppiRect dstRoi, const double coeffs[3][3], int eInterpolation)

    Perspective transform of an image (32bit float, three planes).

- NppStatus nppiWarpPerspective_32f_P4R (const Npp32f *pSrc[4], NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, Npp32f *pDst[4], int nDstStep, NppiRect dstRoi, const double coeffs[3][3], int eInterpolation)

    Perspective transform of an image (32bit float, four planes).

- NppStatus nppiWarpPerspectiveBack_32f_C1R (const Npp32f *pSrc, NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, Npp32f *pDst, int nDstStep, NppiRect dstRoi, const double coeffs[3][3], int eInterpolation)

    Inverse perspective transform of an image (32bit float, single channel).

- NppStatus nppiWarpPerspectiveBack_32f_C3R (const Npp32f *pSrc, NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, Npp32f *pDst, int nDstStep, NppiRect dstRoi, const double coeffs[3][3], int eInterpolation)

    Inverse perspective transform of an image (32bit float, three channels).

- NppStatus nppiWarpPerspectiveBack_32f_C4R (const Npp32f *pSrc, NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, Npp32f *pDst, int nDstStep, NppiRect dstRoi, const double coeffs[3][3], int eInterpolation)

    Inverse perspective transform of an image (32bit float, four channels).

- NppStatus nppiWarpPerspectiveBack_32f_AC4R (const Npp32f *pSrc, NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, Npp32f *pDst, int nDstStep, NppiRect dstRoi, const double coeffs[3][3], int eInterpolation)

    Inverse perspective transform of an image (32bit float, four channels RGBA).

- NppStatus nppiWarpPerspectiveBack_32f_P3R (const Npp32f *pSrc[3], NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, Npp32f *pDst[3], int nDstStep, NppiRect dstRoi, const double coeffs[3][3], int eInterpolation)

    Inverse perspective transform of an image (32bit float, three planes).

- NppStatus nppiWarpPerspectiveBack_32f_P4R (const Npp32f *pSrc[4], NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, Npp32f *pDst[4], int nDstStep, NppiRect dstRoi, const double coeffs[3][3], int eInterpolation)

    Inverse perspective transform of an image (32bit float, four planes).

- NppStatus nppiWarpPerspectiveQuad_32f_C1R (const Npp32f *pSrc, NppiSize oSrcSize, int nSrc-Step, NppiRect srcRoi, const double srcQuad[4][2], Npp32f *pDst, int nDstStep, NppiRect dstRoi, const double dstQuad[4][2], int eInterpolation)

    Perspective transform of an image (32bit float, single channel).

- NppStatus nppiWarpPerspectiveQuad_32f_C3R (const Npp32f *pSrc, NppiSize oSrcSize, int nSrc-Step, NppiRect srcRoi, const double srcQuad[4][2], Npp32f *pDst, int nDstStep, NppiRect dstRoi, const double dstQuad[4][2], int eInterpolation)

    Perspective transform of an image (32bit float, three channels).

- NppStatus nppiWarpPerspectiveQuad_32f_C4R (const Npp32f *pSrc, NppiSize oSrcSize, int nSrc-Step, NppiRect srcRoi, const double srcQuad[4][2], Npp32f *pDst, int nDstStep, NppiRect dstRoi, const double dstQuad[4][2], int eInterpolation)

    Perspective transform of an image (32bit float, four channels).

- NppStatus nppiWarpPerspectiveQuad_32f_AC4R (const Npp32f *pSrc, NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, const double srcQuad[4][2], Npp32f *pDst, int nDstStep, NppiRect dstRoi, const double dstQuad[4][2], int eInterpolation)

    Perspective transform of an image (32bit float, four channels RGBA).

- NppStatus nppiWarpPerspectiveQuad_32f_P3R (const Npp32f *pSrc[3], NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, const double srcQuad[4][2], Npp32f *pDst[3], int nDstStep, NppiRect dstRoi, const double dstQuad[4][2], int eInterpolation)

    Perspective transform of an image (32bit float, three planes).

- NppStatus nppiWarpPerspectiveQuad_32f_P4R (const Npp32f *pSrc[4], NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, const double srcQuad[4][2], Npp32f *pDst[4], int nDstStep, NppiRect dstRoi, const double dstQuad[4][2], int eInterpolation)

    Perspective transform of an image (32bit float, four planes).

- NppStatus nppiWarpPerspective_32s_C1R (const Npp32s *pSrc, NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, Npp32s *pDst, int nDstStep, NppiRect dstRoi, const double coeffs[3][3], int eInterpolation)

    Perspective transform of an image (32bit signed integer, single channel).

- NppStatus nppiWarpPerspective_32s_C3R (const Npp32s *pSrc, NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, Npp32s *pDst, int nDstStep, NppiRect dstRoi, const double coeffs[3][3], int eInterpolation)

    Perspective transform of an image (32bit signed integer, three channels).

- NppStatus nppiWarpPerspective_32s_C4R (const Npp32s *pSrc, NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, Npp32s *pDst, int nDstStep, NppiRect dstRoi, const double coeffs[3][3], int eInterpolation)

    Perspective transform of an image (32bit signed integer, four channels).

- NppStatus nppiWarpPerspective_32s_AC4R (const Npp32s *pSrc, NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, Npp32s *pDst, int nDstStep, NppiRect dstRoi, const double coeffs[3][3], int eInterpolation)

    Perspective transform of an image (32bit signed integer, four channels RGBA).

- NppStatus nppiWarpPerspective_32s_P3R (const Npp32s *pSrc[3], NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, Npp32s *pDst[3], int nDstStep, NppiRect dstRoi, const double coeffs[3][3], int eInterpolation)

    Perspective transform of an image (32bit signed integer, three planes).

- NppStatus nppiWarpPerspective_32s_P4R (const Npp32s *pSrc[4], NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, Npp32s *pDst[4], int nDstStep, NppiRect dstRoi, const double coeffs[3][3], int eInterpolation)

    Perspective transform of an image (32bit signed integer, four planes).

- NppStatus nppiWarpPerspectiveBack_32s_C1R (const Npp32s *pSrc, NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, Npp32s *pDst, int nDstStep, NppiRect dstRoi, const double coeffs[3][3], int eInterpolation)

    Inverse perspective transform of an image (32bit signed integer, single channel).

- NppStatus nppiWarpPerspectiveBack_32s_C3R (const Npp32s *pSrc, NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, Npp32s *pDst, int nDstStep, NppiRect dstRoi, const double coeffs[3][3], int eInterpolation)

    Inverse perspective transform of an image (32bit signed integer, three channels).

- NppStatus nppiWarpPerspectiveBack_32s_C4R (const Npp32s *pSrc, NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, Npp32s *pDst, int nDstStep, NppiRect dstRoi, const double coeffs[3][3], int eInterpolation)

    Inverse perspective transform of an image (32bit signed integer, four channels).

- NppStatus nppiWarpPerspectiveBack_32s_AC4R (const Npp32s *pSrc, NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, Npp32s *pDst, int nDstStep, NppiRect dstRoi, const double coeffs[3][3], int eInterpolation)

    Inverse perspective transform of an image (32bit signed integer, four channels RGBA).

- NppStatus nppiWarpPerspectiveBack_32s_P3R (const Npp32s *pSrc[3], NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, Npp32s *pDst[3], int nDstStep, NppiRect dstRoi, const double coeffs[3][3], int eInterpolation)

    Inverse perspective transform of an image (32bit signed integer, three planes).

- NppStatus nppiWarpPerspectiveBack_32s_P4R (const Npp32s *pSrc[4], NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, Npp32s *pDst[4], int nDstStep, NppiRect dstRoi, const double coeffs[3][3], int eInterpolation)

    Inverse perspective transform of an image (32bit signed integer, four planes).

- NppStatus nppiWarpPerspectiveQuad_32s_C1R (const Npp32s *pSrc, NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, const double srcQuad[4][2], Npp32s *pDst, int nDstStep, NppiRect dstRoi, const double dstQuad[4][2], int eInterpolation)

    Perspective transform of an image (32bit signed integer, single channel).

- NppStatus nppiWarpPerspectiveQuad_32s_C3R (const Npp32s ∗pSrc, NppiSize oSrcSize, int nSrc-Step, NppiRect srcRoi, const double srcQuad[4][2], Npp32s ∗pDst, int nDstStep, NppiRect dstRoi, const double dstQuad[4][2], int eInterpolation)

    Perspective transform of an image (32bit signed integer, three channels).

- NppStatus nppiWarpPerspectiveQuad_32s_C4R (const Npp32s ∗pSrc, NppiSize oSrcSize, int nSrc-Step, NppiRect srcRoi, const double srcQuad[4][2], Npp32s ∗pDst, int nDstStep, NppiRect dstRoi, const double dstQuad[4][2], int eInterpolation)

    Perspective transform of an image (32bit signed integer, four channels).

- NppStatus nppiWarpPerspectiveQuad_32s_AC4R (const Npp32s ∗pSrc, NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, const double srcQuad[4][2], Npp32s ∗pDst, int nDstStep, NppiRect dstRoi, const double dstQuad[4][2], int eInterpolation)

    Perspective transform of an image (32bit signed integer, four channels RGBA).

- NppStatus nppiWarpPerspectiveQuad_32s_P3R (const Npp32s ∗pSrc[3], NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, const double srcQuad[4][2], Npp32s ∗pDst[3], int nDstStep, NppiRect dstRoi, const double dstQuad[4][2], int eInterpolation)

    Perspective transform of an image (32bit signed integer, three planes).

- NppStatus nppiWarpPerspectiveQuad_32s_P4R (const Npp32s ∗pSrc[4], NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, const double srcQuad[4][2], Npp32s ∗pDst[4], int nDstStep, NppiRect dstRoi, const double dstQuad[4][2], int eInterpolation)

    Perspective transform of an image (32bit signed integer, four planes).

7.14.1 Detailed Description

Routines manipulating an image's geometry.

7.14.2 Function Documentation

7.14.2.1 NppStatus nppiGetAffineBound (NppiRect *srcRoi*, double *bound*[2][2], const double *coeffs*[2][3])

Calculates bounding box of the affine transform projection of the given source rectangular ROI.

Parameters:

> *srcRoi* Source ROI
>
> *bound* Bounding box of the transformed source ROI
>
> *coeffs* Affine transform coefficients

Returns:

> Error codes:
>
> - NPP_SIZE_ERROR Indicates an error condition if any image dimension has zero or negative value
> - NPP_RECT_ERROR Indicates an error condition if width or height of the intersection of the srcRoi and source image is less than or equal to 1
> - NPP_COEFF_ERROR Indicates an error condition if coefficient values are invalid

7.14.2.2 NppStatus nppiGetAffineQuad (NppiRect *srcRoi*, double *quad*[4][2], const double *coeffs*[2][3])

Calculates affine transform projection of given source rectangular ROI.

Parameters:

    srcRoi Source ROI

    quad Destination quadrangle

    coeffs Affine transform coefficients

Returns:

    Error codes:

- NPP_SIZE_ERROR Indicates an error condition if any image dimension has zero or negative value
- NPP_RECT_ERROR Indicates an error condition if width or height of the intersection of the srcRoi and source image is less than or equal to 1
- NPP_COEFF_ERROR Indicates an error condition if coefficient values are invalid

7.14.2.3 NppStatus nppiGetAffineTransform (NppiRect *srcRoi*, const double *quad*[4][2], double *coeffs*[2][3])

Calculates affine transform coefficients given source rectangular ROI and its destination quadrangle projection.

Parameters:

    srcRoi Source ROI

    quad Destination quadrangle

    coeffs Affine transform coefficients

Returns:

    Error codes:

- NPP_SIZE_ERROR Indicates an error condition if any image dimension has zero or negative value
- NPP_RECT_ERROR Indicates an error condition if width or height of the intersection of the srcRoi and source image is less than or equal to 1
- NPP_COEFF_ERROR Indicates an error condition if coefficient values are invalid
- NPP_AFFINE_QUAD_INCORRECT_WARNING Indicates a warning when quad does not conform to the transform properties. Fourth vertex is ignored, internally computed coordinates are used instead

7.14.2.4 NppStatus nppiGetPerspectiveBound (NppiRect *srcRoi*, double *bound*[2][2], const double *coeffs*[3][3])

Calculates bounding box of the perspective transform projection of the given source rectangular ROI.

Parameters:

> *srcRoi* Source ROI
>
> *bound* Bounding box of the transformed source ROI
>
> *coeffs* Perspective transform coefficients

Returns:

> Error codes:
>
> - NPP_SIZE_ERROR Indicates an error condition if any image dimension has zero or negative value
> - NPP_RECT_ERROR Indicates an error condition if width or height of the intersection of the srcRoi and source image is less than or equal to 1
> - NPP_COEFF_ERROR Indicates an error condition if coefficient values are invalid

7.14.2.5 NppStatus nppiGetPerspectiveQuad (NppiRect *srcRoi*, double *quad*[4][2], const double *coeffs*[3][3])

Calculates perspective transform projection of given source rectangular ROI.

Parameters:

> *srcRoi* Source ROI
>
> *quad* Destination quadrangle
>
> *coeffs* Perspective transform coefficients

Returns:

> Error codes:
>
> - NPP_SIZE_ERROR Indicates an error condition if any image dimension has zero or negative value
> - NPP_RECT_ERROR Indicates an error condition if width or height of the intersection of the srcRoi and source image is less than or equal to 1
> - NPP_COEFF_ERROR Indicates an error condition if coefficient values are invalid

7.14.2.6 NppStatus nppiGetPerspectiveTransform (NppiRect *srcRoi*, const double *quad*[4][2], double *coeffs*[3][3])

Calculates perspective transform coefficients given source rectangular ROI and its destination quadrangle projection.

Parameters:

> *srcRoi* Source ROI
>
> *quad* Destination quadrangle
>
> *coeffs* Perspective transform coefficients

Returns:

> Error codes:

- NPP_SIZE_ERROR Indicates an error condition if any image dimension has zero or negative value
- NPP_RECT_ERROR Indicates an error condition if width or height of the intersection of the srcRoi and source image is less than or equal to 1
- NPP_COEFF_ERROR Indicates an error condition if coefficient values are invalid

7.14.2.7 NppStatus nppiGetRotateBound (NppiRect *oSrcROI*, double *aBoundingBox*[2][2], double *nAngle*, double *nShiftX*, double *nShiftY*)

Compute bounding-box of rotated image.

Parameters:

oSrcROI Region-of-interest of the source image.

aBoundingBox Two 2D points representing the bounding-box of the rotated image. All four points from nppiGetRotateQuad are contained inside the axis-aligned rectangle spanned by the the two points of this bounding box.

nAngle The rotation angle.

nShiftX Post-rotation shift in x-direction.

nShiftY Post-rotation shift in y-direction.

Returns:

ROI Related Error Codes.

7.14.2.8 NppStatus nppiGetRotateQuad (NppiRect *oSrcROI*, double *aQuad*[4][2], double *nAngle*, double *nShiftX*, double *nShiftY*)

Compute shape of rotated image.

Parameters:

oSrcROI Region-of-interest of the source image.

aQuad Array of 2D points. These points are the locations of the corners of the rotated ROI.

nAngle The rotation nAngle.

nShiftX Post-rotation shift in x-direction

nShiftY Post-rotation shift in y-direction

Returns:

ROI Related Error Codes.

7.14.2.9 NppStatus nppiMirror_16u_AC4R (const Npp16u * *pSrc*, int *nSrcStep*, Npp16u * *pDst*, int *nDstStep*, NppiSize *oROI*, NppiAxis *flip*)

4 channel 16-bit unsigned image mirror not affecting alpha.

Parameters:

> ***pSrc*** Source-Image Pointer.
>
> ***nSrcStep*** Source-Image Line Step.
>
> ***pDst*** Destination-Image Pointer.
>
> ***nDstStep*** Distance in bytes between starts of consecutive lines of the destination image.
>
> ***oROI*** Region-of-Interest (ROI).
>
> ***flip*** Specifies the axis about which the image is to be mirrored.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes
>
> - NPP_MIRROR_FLIP_ERR if flip has an illegal value.

7.14.2.10 NppStatus nppiMirror_16u_C1R (const Npp16u ∗ *pSrc*, int *nSrcStep*, Npp16u ∗ *pDst*, int *nDstStep*, NppiSize *oROI*, NppiAxis *flip*)

16-bit unsigned image mirror.

Parameters:

> ***pSrc*** Source-Image Pointer.
>
> ***nSrcStep*** Source-Image Line Step.
>
> ***pDst*** Destination-Image Pointer.
>
> ***nDstStep*** Destination-Image Line Step.
>
> ***oROI*** Region-of-Interest (ROI).
>
> ***flip*** Specifies the axis about which the image is to be mirrored.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes
>
> - NPP_MIRROR_FLIP_ERR if flip has an illegal value.

7.14.2.11 NppStatus nppiMirror_16u_C3R (const Npp16u ∗ *pSrc*, int *nSrcStep*, Npp16u ∗ *pDst*, int *nDstStep*, NppiSize *oROI*, NppiAxis *flip*)

3 channel 16-bit unsigned image mirror.

Parameters:

> ***pSrc*** Source-Image Pointer.
>
> ***nSrcStep*** Source-Image Line Step.
>
> ***pDst*** Destination-Image Pointer.
>
> ***nDstStep*** Destination-Image Line Step.
>
> ***oROI*** Region-of-Interest (ROI).
>
> ***flip*** Specifies the axis about which the image is to be mirrored.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes
>
> - NPP_MIRROR_FLIP_ERR if flip has an illegal value.

7.14.2.12   NppStatus nppiMirror_16u_C4R (const Npp16u ∗ *pSrc*, int *nSrcStep*, Npp16u ∗ *pDst*, int *nDstStep*, NppiSize *oROI*, NppiAxis *flip*)

4 channel 16-bit unsigned image mirror.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Distance in bytes between starts of consecutive lines of the destination image.

oROI Region-of-Interest (ROI).

flip Specifies the axis about which the image is to be mirrored.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

- NPP_MIRROR_FLIP_ERR if flip has an illegal value.

7.14.2.13   NppStatus nppiMirror_32f_AC4R (const Npp32f ∗ *pSrc*, int *nSrcStep*, Npp32f ∗ *pDst*, int *nDstStep*, NppiSize *oROI*, NppiAxis *flip*)

4 channel 32-bit float image mirror not affecting alpha.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Distance in bytes between starts of consecutive lines of the destination image.

oROI Region-of-Interest (ROI).

flip Specifies the axis about which the image is to be mirrored.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

- NPP_MIRROR_FLIP_ERR if flip has an illegal value.

7.14.2.14   NppStatus nppiMirror_32f_C1R (const Npp32f ∗ *pSrc*, int *nSrcStep*, Npp32f ∗ *pDst*, int *nDstStep*, NppiSize *oROI*, NppiAxis *flip*)

32-bit float image mirror.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oROI Region-of-Interest (ROI).

flip Specifies the axis about which the image is to be mirrored.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

- NPP_MIRROR_FLIP_ERR if flip has an illegal value.

7.14.2.15 NppStatus nppiMirror_32f_C3R (const Npp32f ∗ *pSrc*, int *nSrcStep*, Npp32f ∗ *pDst*, int *nDstStep*, NppiSize *oROI*, NppiAxis *flip*)

3 channel 32-bit float image mirror.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oROI Region-of-Interest (ROI).

flip Specifies the axis about which the image is to be mirrored.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

- NPP_MIRROR_FLIP_ERR if flip has an illegal value.

7.14.2.16 NppStatus nppiMirror_32f_C4R (const Npp32f ∗ *pSrc*, int *nSrcStep*, Npp32f ∗ *pDst*, int *nDstStep*, NppiSize *oROI*, NppiAxis *flip*)

4 channel 32-bit float image mirror.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Distance in bytes between starts of consecutive lines of the destination image.

oROI Region-of-Interest (ROI).

flip Specifies the axis about which the image is to be mirrored.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

- NPP_MIRROR_FLIP_ERR if flip has an illegal value.

7.14.2.17   NppStatus nppiMirror_32s_AC4R (const Npp32s ∗ *pSrc*, int *nSrcStep*, Npp32s ∗ *pDst*, int *nDstStep*, NppiSize *oROI*, NppiAxis *flip*)

4 channel 32-bit image mirror not affecting alpha.

Parameters:

> *pSrc* Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Distance in bytes between starts of consecutive lines of the destination image.
>
> *oROI* Region-of-Interest (ROI).
>
> *flip* Specifies the axis about which the image is to be mirrored.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes
>
> - NPP_MIRROR_FLIP_ERR if flip has an illegal value.

7.14.2.18   NppStatus nppiMirror_32s_C1R (const Npp32s ∗ *pSrc*, int *nSrcStep*, Npp32s ∗ *pDst*, int *nDstStep*, NppiSize *oROI*, NppiAxis *flip*)

32-bit image mirror.

Parameters:

> *pSrc* Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oROI* Region-of-Interest (ROI).
>
> *flip* Specifies the axis about which the image is to be mirrored.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes
>
> - NPP_MIRROR_FLIP_ERR if flip has an illegal value.

7.14.2.19   NppStatus nppiMirror_32s_C3R (const Npp32s ∗ *pSrc*, int *nSrcStep*, Npp32s ∗ *pDst*, int *nDstStep*, NppiSize *oROI*, NppiAxis *flip*)

3 channel 32-bit image mirror.

Parameters:

> *pSrc* Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *pDst* Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oROI Region-of-Interest (ROI).

flip Specifies the axis about which the image is to be mirrored.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

- NPP_MIRROR_FLIP_ERR if flip has an illegal value.

7.14.2.20 NppStatus nppiMirror_32s_C4R (const Npp32s ∗ *pSrc*, int *nSrcStep*, Npp32s ∗ *pDst*, int *nDstStep*, NppiSize *oROI*, NppiAxis *flip*)

4 channel 32-bit image mirror.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Distance in bytes between starts of consecutive lines of the destination image.

oROI Region-of-Interest (ROI).

flip Specifies the axis about which the image is to be mirrored.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

- NPP_MIRROR_FLIP_ERR if flip has an illegal value.

7.14.2.21 NppStatus nppiMirror_8u_AC4R (const Npp8u ∗ *pSrc*, int *nSrcStep*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oROI*, NppiAxis *flip*)

4 channel 8-bit unsigned image mirror not affecting alpha.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Distance in bytes between starts of consecutive lines of the destination image.

oROI Region-of-Interest (ROI).

flip Specifies the axis about which the image is to be mirrored.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

- NPP_MIRROR_FLIP_ERR if flip has an illegal value.

7.14.2.22 NppStatus nppiMirror_8u_C1R (const Npp8u ∗ *pSrc*, int *nSrcStep*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oROI*, NppiAxis *flip*)

8-bit unsigned image mirror.

Parameters:

    pSrc Source-Image Pointer.

    nSrcStep Source-Image Line Step.

    pDst Destination-Image Pointer.

    nDstStep Destination-Image Line Step.

    oROI Region-of-Interest (ROI).

    flip Specifies the axis about which the image is to be mirrored.

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

        • NPP_MIRROR_FLIP_ERR if flip has an illegal value.

7.14.2.23 NppStatus nppiMirror_8u_C3R (const Npp8u ∗ *pSrc*, int *nSrcStep*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oROI*, NppiAxis *flip*)

3 channel 8-bit unsigned image mirror.

Parameters:

    pSrc Source-Image Pointer.

    nSrcStep Source-Image Line Step.

    pDst Destination-Image Pointer.

    nDstStep Destination-Image Line Step.

    oROI Region-of-Interest (ROI).

    flip Specifies the axis about which the image is to be mirrored.

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

        • NPP_MIRROR_FLIP_ERR if flip has an illegal value.

7.14.2.24 NppStatus nppiMirror_8u_C4R (const Npp8u ∗ *pSrc*, int *nSrcStep*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oROI*, NppiAxis *flip*)

4 channel 8-bit unsigned image mirror.

Parameters:

    pSrc Source-Image Pointer.

    nSrcStep Source-Image Line Step.

    pDst Destination-Image Pointer.

nDstStep Distance in bytes between starts of consecutive lines of the destination image.

oROI Region-of-Interest (ROI).

flip Specifies the axis about which the image is to be mirrored.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

- NPP_MIRROR_FLIP_ERR if flip has an illegal value.

7.14.2.25 NppStatus nppiResize_8u_C1R (const Npp8u ∗ *pSrc*, NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *oSrcROI*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *dstROISize*, double *xFactor*, double *yFactor*, int *eInterpolation*)

8-bit unsigned image resize.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

oSrcSize Size in pixels of the source image

oSrcROI Region of interest in the source image.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

dstROISize Size in pixels of the destination image

xFactor Factors by which x dimension is changed

yFactor Factors by which y dimension is changed

eInterpolation The type of eInterpolation to perform resampling

Returns:

Image Data Related Error Codes, ROI Related Error Codes

- NPP_WRONG_INTERSECTION_ROI_ERROR indicates an error condition if srcROIRect has no intersection with the source image.
- NPP_RESIZE_NO_OPERATION_ERROR if either destination ROI width or height is less than 1 pixel.
- NPP_RESIZE_FACTOR_ERROR Indicates an error condition if either xFactor or yFactor is less than or equal to zero.
- NPP_INTERPOLATION_ERROR if eInterpolation has an illegal value.

7.14.2.26 NppStatus nppiResize_8u_C4R (const Npp8u ∗ *pSrc*, NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *oSrcROI*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *dstROISize*, double *xFactor*, double *yFactor*, int *eInterpolation*)

4 channel 8-bit unsigned image resize.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

oSrcSize Size in pixels of the source image

oSrcROI Region of interest in the source image.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

dstROISize Size in pixels of the destination image

xFactor Factors by which x dimension is changed

yFactor Factors by which y dimension is changed

eInterpolation The type of interpolation to perform resampling

Returns:

Image Data Related Error Codes, ROI Related Error Codes

- NPP_WRONG_INTERSECTION_ROI_ERROR indicates an error condition if srcROIRect has no intersection with the source image.

- NPP_RESIZE_NO_OPERATION_ERROR if either destination ROI width or height is less than 1 pixel.

- NPP_RESIZE_FACTOR_ERROR Indicates an error condition if either xFactor or yFactor is less than or equal to zero.

- NPP_INTERPOLATION_ERROR if eInterpolation has an illegal value.

7.14.2.27 NppStatus nppiRotate_16u_AC4R (const Npp16u ∗ *pSrc*, NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *oSrcROI*, Npp16u ∗ *pDst*, int *nDstStep*, NppiRect *oDstROI*, double *nAngle*, double *nShiftX*, double *nShiftY*, int *eInterpolation*)

4 channel 16-bit unsigned image rotate ignoring alpha channel.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

oSrcSize Size in pixels of the source image

oSrcROI Region of interest in the source image.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oDstROI Region of interest in the destination image.

nAngle The angle of rotation in degrees.

nShiftX Shift along horizontal axis

nShiftY Shift along vertical axis

eInterpolation The type of interpolation to perform resampling

Returns:

Image Data Related Error Codes, ROI Related Error Codes, Rotate specific Error Codes

7.14.2.28   NppStatus nppiRotate_16u_C1R (const Npp16u ∗ *pSrc*, NppiSize *oSrcSize*, int
**   *nSrcStep*, NppiRect *oSrcROI*, Npp16u ∗ *pDst*, int *nDstStep*, NppiRect *oDstROI*, double**
**   *nAngle*, double *nShiftX*, double *nShiftY*, int *eInterpolation*)**

16-bit unsigned image rotate.

Parameters:

> *pSrc* Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *oSrcSize* Size in pixels of the source image
>
> *oSrcROI* Region of interest in the source image.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oDstROI* Region of interest in the destination image.
>
> *nAngle* The angle of rotation in degrees.
>
> *nShiftX* Shift along horizontal axis
>
> *nShiftY* Shift along vertical axis
>
> *eInterpolation* The type of interpolation to perform resampling

Returns:

> Image Data Related Error Codes, ROI Related Error Codes, Rotate specific Error Codes

7.14.2.29   NppStatus nppiRotate_16u_C3R (const Npp16u ∗ *pSrc*, NppiSize *oSrcSize*, int
**   *nSrcStep*, NppiRect *oSrcROI*, Npp16u ∗ *pDst*, int *nDstStep*, NppiRect *oDstROI*, double**
**   *nAngle*, double *nShiftX*, double *nShiftY*, int *eInterpolation*)**

3 channel 16-bit unsigned image rotate.

Parameters:

> *pSrc* Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *oSrcSize* Size in pixels of the source image
>
> *oSrcROI* Region of interest in the source image.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oDstROI* Region of interest in the destination image.
>
> *nAngle* The angle of rotation in degrees.
>
> *nShiftX* Shift along horizontal axis
>
> *nShiftY* Shift along vertical axis
>
> *eInterpolation* The type of interpolation to perform resampling

Returns:

> Image Data Related Error Codes, ROI Related Error Codes, Rotate specific Error Codes

7.14.2.30   NppStatus nppiRotate_16u_C4R (const Npp16u ∗ *pSrc*,   NppiSize *oSrcSize*,   int *nSrcStep*,   NppiRect *oSrcROI*,   Npp16u ∗ *pDst*,   int *nDstStep*,   NppiRect *oDstROI*,   double *nAngle*,   double *nShiftX*,   double *nShiftY*,   int *eInterpolation*)

4 channel 16-bit unsigned image rotate.

Parameters:

> *pSrc* Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *oSrcSize* Size in pixels of the source image
>
> *oSrcROI* Region of interest in the source image.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oDstROI* Region of interest in the destination image.
>
> *nAngle* The angle of rotation in degrees.
>
> *nShiftX* Shift along horizontal axis
>
> *nShiftY* Shift along vertical axis
>
> *eInterpolation* The type of interpolation to perform resampling

Returns:

> Image Data Related Error Codes, ROI Related Error Codes, Rotate specific Error Codes

7.14.2.31   NppStatus nppiRotate_32f_AC4R (const Npp32f ∗ *pSrc*,   NppiSize *oSrcSize*,   int *nSrcStep*,   NppiRect *oSrcROI*,   Npp32f ∗ *pDst*,   int *nDstStep*,   NppiRect *oDstROI*,   double *nAngle*,   double *nShiftX*,   double *nShiftY*,   int *eInterpolation*)

4 channel 32-bit float image rotate ignoring alpha channel.

Parameters:

> *pSrc* Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *oSrcSize* Size in pixels of the source image
>
> *oSrcROI* Region of interest in the source image.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oDstROI* Region of interest in the destination image.
>
> *nAngle* The angle of rotation in degrees.
>
> *nShiftX* Shift along horizontal axis
>
> *nShiftY* Shift along vertical axis
>
> *eInterpolation* The type of interpolation to perform resampling

Returns:

> Image Data Related Error Codes, ROI Related Error Codes, Rotate specific Error Codes

7.14.2.32 NppStatus nppiRotate_32f_C1R (const Npp32f ∗ *pSrc*, **NppiSize** *oSrcSize*, **int** *nSrcStep*,
         NppiRect *oSrcROI*, **Npp32f** ∗ *pDst*, **int** *nDstStep*, **NppiRect** *oDstROI*, **double** *nAngle*,
         double *nShiftX*, **double** *nShiftY*, **int** *eInterpolation*)

32-bit float image rotate.

Parameters:

> *pSrc* Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *oSrcSize* Size in pixels of the source image
>
> *oSrcROI* Region of interest in the source image.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oDstROI* Region of interest in the destination image.
>
> *nAngle* The angle of rotation in degrees.
>
> *nShiftX* Shift along horizontal axis
>
> *nShiftY* Shift along vertical axis
>
> *eInterpolation* The type of interpolation to perform resampling

Returns:

> Image Data Related Error Codes, ROI Related Error Codes, Rotate specific Error Codes

7.14.2.33 NppStatus nppiRotate_32f_C3R (const Npp32f ∗ *pSrc*, **NppiSize** *oSrcSize*, **int** *nSrcStep*,
         NppiRect *oSrcROI*, **Npp32f** ∗ *pDst*, **int** *nDstStep*, **NppiRect** *oDstROI*, **double** *nAngle*,
         double *nShiftX*, **double** *nShiftY*, **int** *eInterpolation*)

3 channel 32-bit float image rotate.

Parameters:

> *pSrc* Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *oSrcSize* Size in pixels of the source image
>
> *oSrcROI* Region of interest in the source image.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oDstROI* Region of interest in the destination image.
>
> *nAngle* The angle of rotation in degrees.
>
> *nShiftX* Shift along horizontal axis
>
> *nShiftY* Shift along vertical axis
>
> *eInterpolation* The type of interpolation to perform resampling

Returns:

> Image Data Related Error Codes, ROI Related Error Codes, Rotate specific Error Codes

7.14.2.34 **NppStatus nppiRotate_32f_C4R (const Npp32f ∗ *pSrc*, NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *oSrcROI*, Npp32f ∗ *pDst*, int *nDstStep*, NppiRect *oDstROI*, double *nAngle*, double *nShiftX*, double *nShiftY*, int *eInterpolation*)**

4 channel 32-bit float image rotate.

Parameters:

    pSrc Source-Image Pointer.

    nSrcStep Source-Image Line Step.

    oSrcSize Size in pixels of the source image

    oSrcROI Region of interest in the source image.

    pDst Destination-Image Pointer.

    nDstStep Destination-Image Line Step.

    oDstROI Region of interest in the destination image.

    nAngle The angle of rotation in degrees.

    nShiftX Shift along horizontal axis

    nShiftY Shift along vertical axis

    eInterpolation The type of interpolation to perform resampling

Returns:

    Image Data Related Error Codes, ROI Related Error Codes, Rotate specific Error Codes

7.14.2.35 **NppStatus nppiRotate_8u_AC4R (const Npp8u ∗ *pSrc*, NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *oSrcROI*, Npp8u ∗ *pDst*, int *nDstStep*, NppiRect *oDstROI*, double *nAngle*, double *nShiftX*, double *nShiftY*, int *eInterpolation*)**

4 channel 8-bit unsigned image rotate ignoring alpha channel.

Parameters:

    pSrc Source-Image Pointer.

    nSrcStep Source-Image Line Step.

    oSrcSize Size in pixels of the source image

    oSrcROI Region of interest in the source image.

    pDst Destination-Image Pointer.

    nDstStep Destination-Image Line Step.

    oDstROI Region of interest in the destination image.

    nAngle The angle of rotation in degrees.

    nShiftX Shift along horizontal axis

    nShiftY Shift along vertical axis

    eInterpolation The type of interpolation to perform resampling

Returns:

    Image Data Related Error Codes, ROI Related Error Codes, Rotate specific Error Codes

7.14.2.36 NppStatus nppiRotate_8u_C1R (const Npp8u * *pSrc*, NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *oSrcROI*, Npp8u * *pDst*, int *nDstStep*, NppiRect *oDstROI*, double *nAngle*, double *nShiftX*, double *nShiftY*, int *eInterpolation*)

8-bit unsigned image rotate.

Parameters:

> *pSrc* Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *oSrcSize* Size in pixels of the source image
>
> *oSrcROI* Region of interest in the source image.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oDstROI* Region of interest in the destination image.
>
> *nAngle* The angle of rotation in degrees.
>
> *nShiftX* Shift along horizontal axis
>
> *nShiftY* Shift along vertical axis
>
> *eInterpolation* The type of interpolation to perform resampling

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.14.2.37 NppStatus nppiRotate_8u_C3R (const Npp8u * *pSrc*, NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *oSrcROI*, Npp8u * *pDst*, int *nDstStep*, NppiRect *oDstROI*, double *nAngle*, double *nShiftX*, double *nShiftY*, int *eInterpolation*)

3 channel 8-bit unsigned image rotate.

Parameters:

> *pSrc* Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *oSrcSize* Size in pixels of the source image
>
> *oSrcROI* Region of interest in the source image.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oDstROI* Region of interest in the destination image.
>
> *nAngle* The angle of rotation in degrees.
>
> *nShiftX* Shift along horizontal axis
>
> *nShiftY* Shift along vertical axis
>
> *eInterpolation* The type of interpolation to perform resampling

Returns:

> Image Data Related Error Codes, ROI Related Error Codes, Rotate specific Error Codes

7.14.2.38 **NppStatus nppiRotate_8u_C4R (const Npp8u** ∗ *pSrc*, **NppiSize** *oSrcSize*, **int** *nSrcStep*, **NppiRect** *oSrcROI*, **Npp8u** ∗ *pDst*, **int** *nDstStep*, **NppiRect** *oDstROI*, **double** *nAngle*, **double** *nShiftX*, **double** *nShiftY*, **int** *eInterpolation*)

4 channel 8-bit unsigned image rotate.

Parameters:

    pSrc Source-Image Pointer.

    nSrcStep Source-Image Line Step.

    oSrcSize Size in pixels of the source image

    oSrcROI Region of interest in the source image.

    pDst Destination-Image Pointer.

    nDstStep Destination-Image Line Step.

    oDstROI Region of interest in the destination image.

    nAngle The angle of rotation in degrees.

    nShiftX Shift along horizontal axis

    nShiftY Shift along vertical axis

    eInterpolation The type of interpolation to perform resampling

Returns:

    Image Data Related Error Codes, ROI Related Error Codes, Rotate specific Error Codes

7.14.2.39 **NppStatus nppiWarpAffine_16u_AC4R (const Npp16u** ∗ *pSrc*, **NppiSize** *oSrcSize*, **int** *nSrcStep*, **NppiRect** *srcRoi*, **Npp16u** ∗ *pDst*, **int** *nDstStep*, **NppiRect** *dstRoi*, **const double** *coeffs*[2][3], **int** *eInterpolation*)

Affine transform of an image (16bit unsigned integer, four channels RGBA).

See also:

    nppiWarpAffine_16u_C1R

7.14.2.40 **NppStatus nppiWarpAffine_16u_C1R (const Npp16u** ∗ *pSrc*, **NppiSize** *oSrcSize*, **int** *nSrcStep*, **NppiRect** *srcRoi*, **Npp16u** ∗ *pDst*, **int** *nDstStep*, **NppiRect** *dstRoi*, **const double** *coeffs*[2][3], **int** *eInterpolation*)

Affine transform of an image (16bit unsigned integer, single channel).

This function operates using given transform coefficients that can be obtained by using nppiGetAffineTransform function or set explicitly. The function operates on source and destination regions of interest. The affine warp function transforms the source image pixel coordinates (x, y) according to the following formulas:

$$X_{new} = C_{00} * x + C_{01} * y + C_{02} \qquad Y_{new} = C_{10} * x + C_{11} * y + C_{12}$$

The transformed part of the source image is resampled using the specified interpolation method and written to the destination ROI. The functions nppiGetAffineQuad and nppiGetAffineBound can help with destination ROI specification.

NPPI specific recommendation: The function operates using 2 types of kernels: fast and accurate. The fast method is about 4 times faster than its accurate variant, but does not perform memory access checks and requires the destination ROI to be 64 bytes aligned. Hence any destination ROI is chunked into 3 vertical stripes: the first and the third are processed by accurate kernels and the central one is processed by the fast one. In order to get the maximum available speed of execution, the projection of destination ROI onto image addresses must be 64 bytes aligned. This is always true if the values `(int)((void *)(pDst + dstRoi.x))` and `(int)((void *)(pDst + dstRoi.x + dstRoi.width))` are multiples of 64. Another rule of thumb is to specify destination ROI in such way that left and right sides of the projected image are separated from the ROI by at least 63 bytes from each side. However, this requires the whole ROI to be part of allocated memory. In case when the conditions above are not satisfied, the function may decrease in speed slightly and will return NPP_MISALIGNED_DST_ROI_WARNING warning.

Parameters:

> ***pSrc*** Source-Image Pointer.
>
> ***oSrcSize*** Size of source image in pixels
>
> ***nSrcStep*** Source-Image Line Step.
>
> ***srcRoi*** Source ROI
>
> ***pDst*** Destination-Image Pointer.
>
> ***nDstStep*** Destination-Image Line Step.
>
> ***dstRoi*** Destination ROI
>
> ***coeffs*** Affine transform coefficients
>
> ***eInterpolation*** Interpolation mode: can be NPPI_INTER_NN, NPPI_INTER_LINEAR or NPPI_-
> INTER_CUBIC

Returns:

> Image Data Related Error Codes, ROI Related Error Codes
>
> - NPP_RECT_ERROR Indicates an error condition if width or height of the intersection of the srcRoi and source image is less than or equal to 1
> - NPP_WRONG_INTERSECTION_ROI_ERROR Indicates an error condition if srcRoi has no intersection with the source image
> - NPP_INTERPOLATION_ERROR Indicates an error condition if eInterpolation has an illegal value
> - NPP_COEFF_ERROR Indicates an error condition if coefficient values are invalid
> - NPP_WRONG_INTERSECTION_QUAD_WARNING Indicates a warning that no operation is performed if the transformed source ROI has no intersection with the destination ROI
> - NPP_MISALIGNED_DST_ROI_WARNING Indicates a warning that the speed of primitive execution was reduced due to destination ROI misalignment

7.14.2.41 NppStatus nppiWarpAffine_16u_C3R (const Npp16u ∗ *pSrc*, NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, Npp16u ∗ *pDst*, int *nDstStep*, NppiRect *dstRoi*, const double *coeffs*[2][3], int *eInterpolation*)

Affine transform of an image (16bit unsigned integer, three channels).

See also:

> nppiWarpAffine_16u_C1R

7.14.2.42 **NppStatus nppiWarpAffine_16u_C4R (const Npp16u ∗ *pSrc*, NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, Npp16u ∗ *pDst*, int *nDstStep*, NppiRect *dstRoi*, const double *coeffs*[2][3], int *eInterpolation*)**

Affine transform of an image (16bit unsigned integer, four channels).

See also:

nppiWarpAffine_16u_C1R

7.14.2.43 **NppStatus nppiWarpAffine_16u_P3R (const Npp16u ∗ *pSrc*[3], NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, Npp16u ∗ *pDst*[3], int *nDstStep*, NppiRect *dstRoi*, const double *coeffs*[2][3], int *eInterpolation*)**

Affine transform of an image (16bit unsigned integer, three planes).

See also:

nppiWarpAffine_16u_C1R

7.14.2.44 **NppStatus nppiWarpAffine_16u_P4R (const Npp16u ∗ *pSrc*[4], NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, Npp16u ∗ *pDst*[4], int *nDstStep*, NppiRect *dstRoi*, const double *coeffs*[2][3], int *eInterpolation*)**

Affine transform of an image (16bit unsigned integer, four planes).

See also:

nppiWarpAffine_16u_C1R

7.14.2.45 **NppStatus nppiWarpAffine_32f_AC4R (const Npp32f ∗ *pSrc*, NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, Npp32f ∗ *pDst*, int *nDstStep*, NppiRect *dstRoi*, const double *coeffs*[2][3], int *eInterpolation*)**

Affine transform of an image (32bit float, four channels RGBA).

See also:

nppiWarpAffine_32f_C1R

7.14.2.46 **NppStatus nppiWarpAffine_32f_C1R (const Npp32f ∗ *pSrc*, NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, Npp32f ∗ *pDst*, int *nDstStep*, NppiRect *dstRoi*, const double *coeffs*[2][3], int *eInterpolation*)**

Affine transform of an image (32bit float, single channel).

This function operates using given transform coefficients that can be obtained by using nppiGetAffine-Transform function or set explicitly. The function operates on source and destination regions of interest.

The affine warp function transforms the source image pixel coordinates (x, y) according to the following formulas:

$$X_{new} = C_{00} * x + C_{01} * y + C_{02} \qquad Y_{new} = C_{10} * x + C_{11} * y + C_{12}$$

The transformed part of the source image is resampled using the specified interpolation method and written to the destination ROI. The functions nppiGetAffineQuad and nppiGetAffineBound can help with destination ROI specification.

Parameters:

  pSrc Source-Image Pointer.

  oSrcSize Size of source image in pixels

  nSrcStep Source-Image Line Step.

  srcRoi Source ROI

  pDst Destination-Image Pointer.

  nDstStep Destination-Image Line Step.

  dstRoi Destination ROI

  coeffs Affine transform coefficients

  eInterpolation Interpolation mode: can be NPPI_INTER_NN, NPPI_INTER_LINEAR or NPPI_-INTER_CUBIC

Returns:

  Image Data Related Error Codes, ROI Related Error Codes

- NPP_RECT_ERROR Indicates an error condition if width or height of the intersection of the srcRoi and source image is less than or equal to 1
- NPP_WRONG_INTERSECTION_ROI_ERROR Indicates an error condition if srcRoi has no intersection with the source image
- NPP_INTERPOLATION_ERROR Indicates an error condition if eInterpolation has an illegal value
- NPP_COEFF_ERROR Indicates an error condition if coefficient values are invalid
- NPP_WRONG_INTERSECTION_QUAD_WARNING Indicates a warning that no operation is performed if the transformed source ROI has no intersection with the destination ROI
- NPP_MISALIGNED_DST_ROI_WARNING Indicates a warning that the speed of primitive execution was reduced due to destination ROI misalignment

7.14.2.47 NppStatus nppiWarpAffine_32f_C3R (const Npp32f ∗ *pSrc*, NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, Npp32f ∗ *pDst*, int *nDstStep*, NppiRect *dstRoi*, const double *coeffs*[2][3], int *eInterpolation*)

Affine transform of an image (32bit float, three channels).

See also:

  nppiWarpAffine_32f_C1R

7.14.2.48   NppStatus nppiWarpAffine_32f_C4R (const Npp32f ∗ *pSrc*, NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, Npp32f ∗ *pDst*, int *nDstStep*, NppiRect *dstRoi*, const double *coeffs*[2][3], int *eInterpolation*)

Affine transform of an image (32bit float, four channels).

See also:

   nppiWarpAffine_32f_C1R

7.14.2.49   NppStatus nppiWarpAffine_32f_P3R (const Npp32f ∗ *pSrc*[3], NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, Npp32f ∗ *pDst*[3], int *nDstStep*, NppiRect *dstRoi*, const double *coeffs*[2][3], int *eInterpolation*)

Affine transform of an image (32bit float, three planes).

See also:

   nppiWarpAffine_32f_C1R

7.14.2.50   NppStatus nppiWarpAffine_32f_P4R (const Npp32f ∗ *pSrc*[4], NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, Npp32f ∗ *pDst*[4], int *nDstStep*, NppiRect *dstRoi*, const double *coeffs*[2][3], int *eInterpolation*)

Affine transform of an image (32bit float, four planes).

See also:

   nppiWarpAffine_32f_C1R

7.14.2.51   NppStatus nppiWarpAffine_32s_AC4R (const Npp32s ∗ *pSrc*, NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, Npp32s ∗ *pDst*, int *nDstStep*, NppiRect *dstRoi*, const double *coeffs*[2][3], int *eInterpolation*)

Affine transform of an image (32bit signed integer, four channels RGBA).

See also:

   nppiWarpAffine_32s_C1R

7.14.2.52   NppStatus nppiWarpAffine_32s_C1R (const Npp32s ∗ *pSrc*, NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, Npp32s ∗ *pDst*, int *nDstStep*, NppiRect *dstRoi*, const double *coeffs*[2][3], int *eInterpolation*)

Affine transform of an image (32bit signed integer, single channel).

This function operates using given transform coefficients that can be obtained by using nppiGetAffine-Transform function or set explicitly. The function operates on source and destination regions of interest.

The affine warp function transforms the source image pixel coordinates (x, y) according to the following formulas:

$$X_{new} = C_{00} * x + C_{01} * y + C_{02} \qquad Y_{new} = C_{10} * x + C_{11} * y + C_{12}$$

The transformed part of the source image is resampled using the specified interpolation method and written to the destination ROI. The functions nppiGetAffineQuad and nppiGetAffineBound can help with destination ROI specification.

Parameters:

    pSrc Source-Image Pointer.

    oSrcSize Size of source image in pixels

    nSrcStep Source-Image Line Step.

    srcRoi Source ROI

    pDst Destination-Image Pointer.

    nDstStep Destination-Image Line Step.

    dstRoi Destination ROI

    coeffs Affine transform coefficients

    eInterpolation Interpolation mode: can be NPPI_INTER_NN, NPPI_INTER_LINEAR or NPPI_-INTER_CUBIC

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

- NPP_RECT_ERROR Indicates an error condition if width or height of the intersection of the srcRoi and source image is less than or equal to 1

- NPP_WRONG_INTERSECTION_ROI_ERROR Indicates an error condition if srcRoi has no intersection with the source image

- NPP_INTERPOLATION_ERROR Indicates an error condition if eInterpolation has an illegal value

- NPP_COEFF_ERROR Indicates an error condition if coefficient values are invalid

- NPP_WRONG_INTERSECTION_QUAD_WARNING Indicates a warning that no operation is performed if the transformed source ROI has no intersection with the destination ROI

- NPP_MISALIGNED_DST_ROI_WARNING Indicates a warning that the speed of primitive execution was reduced due to destination ROI misalignment

7.14.2.53 NppStatus nppiWarpAffine_32s_C3R (const Npp32s ∗ *pSrc*, NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, Npp32s ∗ *pDst*, int *nDstStep*, NppiRect *dstRoi*, const double *coeffs*[2][3], int *interpolation*)

Affine transform of an image (32bit signed integer, three channels).

See also:

    nppiWarpAffine_32s_C1R

7.14.2.54   NppStatus nppiWarpAffine_32s_C4R (const Npp32s ∗ *pSrc*, NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, Npp32s ∗ *pDst*, int *nDstStep*, NppiRect *dstRoi*, const double *coeffs*[2][3], int *eInterpolation*)

Affine transform of an image (32bit signed integer, four channels).

See also:

nppiWarpAffine_32s_C1R

7.14.2.55   NppStatus nppiWarpAffine_32s_P3R (const Npp32s ∗ *pSrc*[3], NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, Npp32s ∗ *pDst*[3], int *nDstStep*, NppiRect *dstRoi*, const double *coeffs*[2][3], int *eInterpolation*)

Affine transform of an image (32bit signed integer, three planes).

See also:

nppiWarpAffine_32s_C1R

7.14.2.56   NppStatus nppiWarpAffine_32s_P4R (const Npp32s ∗ *pSrc*[4], NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, Npp32s ∗ *pDst*[4], int *nDstStep*, NppiRect *dstRoi*, const double *coeffs*[2][3], int *eInterpolation*)

Affine transform of an image (32bit signed integer, four planes).

See also:

nppiWarpAffine_32s_C1R

7.14.2.57   NppStatus nppiWarpAffine_8u_AC4R (const Npp8u ∗ *pSrc*, NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, Npp8u ∗ *pDst*, int *nDstStep*, NppiRect *dstRoi*, const double *coeffs*[2][3], int *eInterpolation*)

Affine transform of an image (8bit unsigned integer, four channels RGBA).

See also:

nppiWarpAffine_8u_C1R

7.14.2.58   NppStatus nppiWarpAffine_8u_C1R (const Npp8u ∗ *pSrc*, NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, Npp8u ∗ *pDst*, int *nDstStep*, NppiRect *dstRoi*, const double *coeffs*[2][3], int *eInterpolation*)

Affine transform of an image (8bit unsigned integer, single channel).

This function operates using given transform coefficients that can be obtained by using nppiGetAffine-Transform function or set explicitly. The function operates on source and destination regions of interest.

The affine warp function transforms the source image pixel coordinates (x, y) according to the following formulas:

$$X_{new} = C_{00} * x + C_{01} * y + C_{02} \qquad Y_{new} = C_{10} * x + C_{11} * y + C_{12}$$

The transformed part of the source image is resampled using the specified interpolation method and written to the destination ROI. The functions nppiGetAffineQuad and nppiGetAffineBound can help with destination ROI specification.

NPPI specific recommendation: The function operates using 2 types of kernels: fast and accurate. The fast method is about 4 times faster than its accurate variant, but does not perform memory access checks and requires the destination ROI to be 64 bytes aligned. Hence any destination ROI is chunked into 3 vertical stripes: the first and the third are processed by accurate kernels and the central one is processed by the fast one. In order to get the maximum available speed of execution, the projection of destination ROI onto image addresses must be 64 bytes aligned. This is always true if the values `(int)((void *)(pDst + dstRoi.x))` and `(int)((void *)(pDst + dstRoi.x + dstRoi.width))` are multiples of 64. Another rule of thumb is to specify destination ROI in such way that left and right sides of the projected image are separated from the ROI by at least 63 bytes from each side. However, this requires the whole ROI to be part of allocated memory. In case when the conditions above are not satisfied, the function may decrease in speed slightly and will return NPP_MISALIGNED_DST_ROI_WARNING warning.

Parameters:

> ***pSrc*** Source-Image Pointer.
>
> ***oSrcSize*** Size of source image in pixels
>
> ***nSrcStep*** Source-Image Line Step.
>
> ***srcRoi*** Source ROI
>
> ***pDst*** Destination-Image Pointer.
>
> ***nDstStep*** Destination-Image Line Step.
>
> ***dstRoi*** Destination ROI
>
> ***coeffs*** Affine transform coefficients
>
> ***eInterpolation*** Interpolation mode: can be NPPI_INTER_NN, NPPI_INTER_LINEAR or NPPI_-INTER_CUBIC

Returns:

Image Data Related Error Codes, ROI Related Error Codes

- NPP_RECT_ERROR Indicates an error condition if width or height of the intersection of the srcRoi and source image is less than or equal to 1
- NPP_WRONG_INTERSECTION_ROI_ERROR Indicates an error condition if srcRoi has no intersection with the source image
- NPP_INTERPOLATION_ERROR Indicates an error condition if interpolation has an illegal value
- NPP_COEFF_ERROR Indicates an error condition if coefficient values are invalid
- NPP_WRONG_INTERSECTION_QUAD_WARNING Indicates a warning that no operation is performed if the transformed source ROI has no intersection with the destination ROI
- NPP_MISALIGNED_DST_ROI_WARNING Indicates a warning that the speed of primitive execution was reduced due to destination ROI misalignment

7.14.2.59 NppStatus nppiWarpAffine_8u_C3R (const Npp8u ∗ *pSrc*, NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, Npp8u ∗ *pDst*, int *nDstStep*, NppiRect *dstRoi*, const double *coeffs*[2][3], int *eInterpolation*)

Affine transform of an image (8bit unsigned integer, three channels).

See also:

nppiWarpAffine_8u_C1R

7.14.2.60 NppStatus nppiWarpAffine_8u_C4R (const Npp8u ∗ *pSrc*, NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, Npp8u ∗ *pDst*, int *nDstStep*, NppiRect *dstRoi*, const double *coeffs*[2][3], int *eInterpolation*)

Affine transform of an image (8bit unsigned integer, four channels).

See also:

nppiWarpAffine_8u_C1R

7.14.2.61 NppStatus nppiWarpAffine_8u_P3R (const Npp8u ∗ *pSrc*[3], NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, Npp8u ∗ *pDst*[3], int *nDstStep*, NppiRect *dstRoi*, const double *coeffs*[2][3], int *eInterpolation*)

Affine transform of an image (8bit unsigned integer, three planes).

See also:

nppiWarpAffine_8u_C1R

7.14.2.62 NppStatus nppiWarpAffine_8u_P4R (const Npp8u ∗ *pSrc*[4], NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, Npp8u ∗ *pDst*[4], int *nDstStep*, NppiRect *dstRoi*, const double *coeffs*[2][3], int *eInterpolation*)

Affine transform of an image (8bit unsigned integer, four planes).

See also:

nppiWarpAffine_8u_C1R

7.14.2.63 NppStatus nppiWarpAffineBack_16u_AC4R (const Npp16u ∗ *pSrc*, NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, Npp16u ∗ *pDst*, int *nDstStep*, NppiRect *dstRoi*, const double *coeffs*[2][3], int *eInterpolation*)

Inverse affine transform of an image (16bit unsigned integer, four channels RGBA).

See also:

nppiWarpAffineBack_16u_C1R

7.14.2.64 NppStatus nppiWarpAffineBack_16u_C1R (const Npp16u ∗ *pSrc*, NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, Npp16u ∗ *pDst*, int *nDstStep*, NppiRect *dstRoi*, const double *coeffs*[2][3], int *eInterpolation*)

Inverse affine transform of an image (16bit unsigned integer, single channel).

This function operates using given transform coefficients that can be obtained by using nppiGetAffine-Transform function or set explicitly. Thus there is no need to invert coefficients in your application before calling WarpAffineBack. The function operates on source and destination regions of interest. The affine warp function transforms the source image pixel coordinates (x, y) according to the following formulas:

$$C_{00} * X_{new} + C_{01} * Y_{new} + C_{02} = x \qquad C_{10} * X_{new} + C_{11} * Y_{new} + C_{12} = y$$

The transformed part of the source image is resampled using the specified interpolation method and written to the destination ROI. The functions nppiGetAffineQuad and nppiGetAffineBound can help with destination ROI specification.

NPPI specific recommendation: The function operates using 2 types of kernels: fast and accurate. The fast method is about 4 times faster than its accurate variant, but doesn't perform memory access checks and requires the destination ROI to be 64 bytes aligned. Hence any destination ROI is chunked into 3 vertical stripes: the first and the third are processed by accurate kernels and the central one is processed by the fast one. In order to get the maximum available speed of execution, the projection of destination ROI onto image addresses must be 64 bytes aligned. This is always true if the values `(int)((void *)(pDst + dstRoi.x))` and `(int)((void *)(pDst + dstRoi.x + dstRoi.width))` are multiples of 64. Another rule of thumb is to specify destination ROI in such way that left and right sides of the projected image are separated from the ROI by at least 63 bytes from each side. However, this requires the whole ROI to be part of allocated memory. In case when the conditions above are not satisfied, the function may decrease in speed slightly and will return NPP_MISALIGNED_DST_ROI_WARNING warning.

Parameters:

    pSrc Source-Image Pointer.

    oSrcSize Size of source image in pixels

    nSrcStep Source-Image Line Step.

    srcRoi Source ROI

    pDst Destination-Image Pointer.

    nDstStep Destination-Image Line Step.

    dstRoi Destination ROI

    coeffs Affine transform coefficients

    eInterpolation Interpolation mode: can be NPPI_INTER_NN, NPPI_INTER_LINEAR or NPPI_-INTER_CUBIC

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

- NPP_RECT_ERROR Indicates an error condition if width or height of the intersection of the srcRoi and source image is less than or equal to 1

- NPP_WRONG_INTERSECTION_ROI_ERROR Indicates an error condition if srcRoi has no intersection with the source image

- NPP_INTERPOLATION_ERROR Indicates an error condition if eInterpolation has an illegal value

- NPP_COEFF_ERROR Indicates an error condition if coefficient values are invalid

- NPP_WRONG_INTERSECTION_QUAD_WARNING Indicates a warning that no operation is performed if the transformed source ROI has no intersection with the destination ROI

- NPP_MISALIGNED_DST_ROI_WARNING Indicates a warning that the speed of primitive execution was reduced due to destination ROI misalignment

7.14.2.65 NppStatus nppiWarpAffineBack_16u_C3R (const Npp16u ∗ *pSrc*, NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, Npp16u ∗ *pDst*, int *nDstStep*, NppiRect *dstRoi*, const double *coeffs*[2][3], int *eInterpolation*)

Inverse affine transform of an image (16bit unsigned integer, three channels).

See also:

nppiWarpAffineBack_16u_C1R

7.14.2.66 NppStatus nppiWarpAffineBack_16u_C4R (const Npp16u ∗ *pSrc*, NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, Npp16u ∗ *pDst*, int *nDstStep*, NppiRect *dstRoi*, const double *coeffs*[2][3], int *eInterpolation*)

Inverse affine transform of an image (16bit unsigned integer, four channels).

See also:

nppiWarpAffineBack_16u_C1R

7.14.2.67 NppStatus nppiWarpAffineBack_16u_P3R (const Npp16u ∗ *pSrc*[3], NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, Npp16u ∗ *pDst*[3], int *nDstStep*, NppiRect *dstRoi*, const double *coeffs*[2][3], int *eInterpolation*)

Inverse affine transform of an image (16bit unsigned integer, three planes).

See also:

nppiWarpAffineBack_16u_C1R

7.14.2.68 NppStatus nppiWarpAffineBack_16u_P4R (const Npp16u ∗ *pSrc*[4], NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, Npp16u ∗ *pDst*[4], int *nDstStep*, NppiRect *dstRoi*, const double *coeffs*[2][3], int *eInterpolation*)

Inverse affine transform of an image (16bit unsigned integer, four planes).

See also:

nppiWarpAffineBack_16u_C1R

7.14.2.69 NppStatus nppiWarpAffineBack_32f_AC4R (const Npp32f ∗ *pSrc*, NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, Npp32f ∗ *pDst*, int *nDstStep*, NppiRect *dstRoi*, const double *coeffs*[2][3], int *eInterpolation*)

Inverse affine transform of an image (32bit float, four channels RGBA).

See also:

nppiWarpAffineBack_32f_C1R

7.14.2.70 NppStatus nppiWarpAffineBack_32f_C1R (const Npp32f ∗ *pSrc*, NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, Npp32f ∗ *pDst*, int *nDstStep*, NppiRect *dstRoi*, const double *coeffs*[2][3], int *eInterpolation*)

Inverse affine transform of an image (32bit float, single channel).

This function operates using given transform coefficients that can be obtained by using nppiGetAffine-Transform function or set explicitly. Thus there is no need to invert coefficients in your application before calling WarpAffineBack. The function operates on source and destination regions of interest. The affine warp function transforms the source image pixel coordinates (x, y) according to the following formulas:

$$C_{00} * X_{new} + C_{01} * Y_{new} + C_{02} = x \qquad C_{10} * X_{new} + C_{11} * Y_{new} + C_{12} = y$$

The transformed part of the source image is resampled using the specified interpolation method and written to the destination ROI. The functions nppiGetAffineQuad and nppiGetAffineBound can help with destination ROI specification.

Parameters:

pSrc Source-Image Pointer.

oSrcSize Size of source image in pixels

nSrcStep Source-Image Line Step.

srcRoi Source ROI

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

dstRoi Destination ROI

coeffs Affine transform coefficients

eInterpolation Interpolation mode: can be NPPI_INTER_NN, NPPI_INTER_LINEAR or NPPI_-INTER_CUBIC

Returns:

Image Data Related Error Codes, ROI Related Error Codes

- NPP_RECT_ERROR Indicates an error condition if width or height of the intersection of the srcRoi and source image is less than or equal to 1
- NPP_WRONG_INTERSECTION_ROI_ERROR Indicates an error condition if srcRoi has no intersection with the source image
- NPP_INTERPOLATION_ERROR Indicates an error condition if eInterpolation has an illegal value
- NPP_COEFF_ERROR Indicates an error condition if coefficient values are invalid

- **NPP_WRONG_INTERSECTION_QUAD_WARNING** Indicates a warning that no operation is performed if the transformed source ROI has no intersection with the destination ROI

- **NPP_MISALIGNED_DST_ROI_WARNING** Indicates a warning that the speed of primitive execution was reduced due to destination ROI misalignment

7.14.2.71 NppStatus nppiWarpAffineBack_32f_C3R (const Npp32f ∗ *pSrc*, NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, Npp32f ∗ *pDst*, int *nDstStep*, NppiRect *dstRoi*, const double *coeffs*[2][3], int *eInterpolation*)

Inverse affine transform of an image (32bit float, three channels).

See also:

nppiWarpAffineBack_32f_C1R

7.14.2.72 NppStatus nppiWarpAffineBack_32f_C4R (const Npp32f ∗ *pSrc*, NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, Npp32f ∗ *pDst*, int *nDstStep*, NppiRect *dstRoi*, const double *coeffs*[2][3], int *eInterpolation*)

Inverse affine transform of an image (32bit float, four channels).

See also:

nppiWarpAffineBack_32f_C1R

7.14.2.73 NppStatus nppiWarpAffineBack_32f_P3R (const Npp32f ∗ *pSrc*[3], NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, Npp32f ∗ *pDst*[3], int *nDstStep*, NppiRect *dstRoi*, const double *coeffs*[2][3], int *eInterpolation*)

Inverse affine transform of an image (32bit float, three planes).

See also:

nppiWarpAffineBack_32f_C1R

7.14.2.74 NppStatus nppiWarpAffineBack_32f_P4R (const Npp32f ∗ *pSrc*[4], NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, Npp32f ∗ *pDst*[4], int *nDstStep*, NppiRect *dstRoi*, const double *coeffs*[2][3], int *eInterpolation*)

Inverse affine transform of an image (32bit float, four planes).

See also:

nppiWarpAffineBack_32f_C1R

7.14.2.75 NppStatus nppiWarpAffineBack_32s_AC4R (const Npp32s ∗ *pSrc*, NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, Npp32s ∗ *pDst*, int *nDstStep*, NppiRect *dstRoi*, const double *coeffs*[2][3], int *eInterpolation*)

Inverse affine transform of an image (32bit signed integer, four channels RGBA).

See also:

nppiWarpAffineBack_32s_C1R

7.14.2.76 NppStatus nppiWarpAffineBack_32s_C1R (const Npp32s ∗ *pSrc*, NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, Npp32s ∗ *pDst*, int *nDstStep*, NppiRect *dstRoi*, const double *coeffs*[2][3], int *eInterpolation*)

Inverse affine transform of an image (32bit signed integer, single channel).

This function operates using given transform coefficients that can be obtained by using nppiGetAffine-Transform function or set explicitly. Thus there is no need to invert coefficients in your application before calling WarpAffineBack. The function operates on source and destination regions of interest. The affine warp function transforms the source image pixel coordinates (x, y) according to the following formulas:

$$C_{00} * X_{new} + C_{01} * Y_{new} + C_{02} = x \qquad C_{10} * X_{new} + C_{11} * Y_{new} + C_{12} = y$$

The transformed part of the source image is resampled using the specified interpolation method and written to the destination ROI. The functions nppiGetAffineQuad and nppiGetAffineBound can help with destination ROI specification.

Parameters:

pSrc Source-Image Pointer.

oSrcSize Size of source image in pixels

nSrcStep Source-Image Line Step.

srcRoi Source ROI

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

dstRoi Destination ROI

coeffs Affine transform coefficients

eInterpolation Interpolation mode: can be NPPI_INTER_NN, NPPI_INTER_LINEAR or NPPI_-INTER_CUBIC

Returns:

Image Data Related Error Codes, ROI Related Error Codes

- NPP_RECT_ERROR Indicates an error condition if width or height of the intersection of the srcRoi and source image is less than or equal to 1
- NPP_WRONG_INTERSECTION_ROI_ERROR Indicates an error condition if srcRoi has no intersection with the source image
- NPP_INTERPOLATION_ERROR Indicates an error condition if eInterpolation has an illegal value
- NPP_COEFF_ERROR Indicates an error condition if coefficient values are invalid

- **NPP_WRONG_INTERSECTION_QUAD_WARNING** Indicates a warning that no operation is performed if the transformed source ROI has no intersection with the destination ROI

- **NPP_MISALIGNED_DST_ROI_WARNING** Indicates a warning that the speed of primitive execution was reduced due to destination ROI misalignment

7.14.2.77 NppStatus nppiWarpAffineBack_32s_C3R (const Npp32s ∗ *pSrc*, NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, Npp32s ∗ *pDst*, int *nDstStep*, NppiRect *dstRoi*, const double *coeffs*[2][3], int *eInterpolation*)

Inverse affine transform of an image (32bit signed integer, three channels).

See also:

nppiWarpAffineBack_32s_C1R

7.14.2.78 NppStatus nppiWarpAffineBack_32s_C4R (const Npp32s ∗ *pSrc*, NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, Npp32s ∗ *pDst*, int *nDstStep*, NppiRect *dstRoi*, const double *coeffs*[2][3], int *eInterpolation*)

Inverse affine transform of an image (32bit signed integer, four channels).

See also:

nppiWarpAffineBack_32s_C1R

7.14.2.79 NppStatus nppiWarpAffineBack_32s_P3R (const Npp32s ∗ *pSrc*[3], NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, Npp32s ∗ *pDst*[3], int *nDstStep*, NppiRect *dstRoi*, const double *coeffs*[2][3], int *eInterpolation*)

Inverse affine transform of an image (32bit signed integer, three planes).

See also:

nppiWarpAffineBack_32s_C1R

7.14.2.80 NppStatus nppiWarpAffineBack_32s_P4R (const Npp32s ∗ *pSrc*[4], NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, Npp32s ∗ *pDst*[4], int *nDstStep*, NppiRect *dstRoi*, const double *coeffs*[2][3], int *eInterpolation*)

Inverse affine transform of an image (32bit signed integer, four planes).

See also:

nppiWarpAffineBack_32s_C1R

7.14.2.81 NppStatus nppiWarpAffineBack_8u_AC4R (const Npp8u ∗ pSrc, NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, Npp8u ∗ pDst, int nDstStep, NppiRect dstRoi, const double coeffs[2][3], int eInterpolation)

Inverse affine transform of an image (8bit unsigned integer, four channels RGBA).

See also:

  nppiWarpAffineBack_8u_C1R

7.14.2.82 NppStatus nppiWarpAffineBack_8u_C1R (const Npp8u ∗ pSrc, NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, Npp8u ∗ pDst, int nDstStep, NppiRect dstRoi, const double coeffs[2][3], int eInterpolation)

Inverse affine transform of an image (8bit unsigned integer, single channel).

This function operates using given transform coefficients that can be obtained by using nppiGetAffine-Transform function or set explicitly. Thus there is no need to invert coefficients in your application before calling WarpAffineBack. The function operates on source and destination regions of interest. The affine warp function transforms the source image pixel coordinates (x, y) according to the following formulas:

$$C_{00} * X_{new} + C_{01} * Y_{new} + C_{02} = x \qquad C_{10} * X_{new} + C_{11} * Y_{new} + C_{12} = y$$

The transformed part of the source image is resampled using the specified interpolation method and written to the destination ROI. The functions nppiGetAffineQuad and nppiGetAffineBound can help with destination ROI specification.

NPPI specific recommendation: The function operates using 2 types of kernels: fast and accurate. The fast method is about 4 times faster than its accurate variant, but doesn't perform memory access checks and requires the destination ROI to be 64 bytes aligned. Hence any destination ROI is chunked into 3 vertical stripes: the first and the third are processed by accurate kernels and the central one is processed by the fast one. In order to get the maximum available speed of execution, the projection of destination ROI onto image addresses must be 64 bytes aligned. This is always true if the values `(int)((void *)(pDst + dstRoi.x))` and `(int)((void *)(pDst + dstRoi.x + dstRoi.width))` are multiples of 64. Another rule of thumb is to specify destination ROI in such way that left and right sides of the projected image are separated from the ROI by at least 63 bytes from each side. However, this requires the whole ROI to be part of allocated memory. In case when the conditions above are not satisfied, the function may decrease in speed slightly and will return NPP_MISALIGNED_DST_ROI_WARNING warning.

Parameters:

  pSrc Source-Image Pointer.

  oSrcSize Size of source image in pixels

  nSrcStep Source-Image Line Step.

  srcRoi Source ROI

  pDst Destination-Image Pointer.

  nDstStep Destination-Image Line Step.

  dstRoi Destination ROI

  coeffs Affine transform coefficients

  eInterpolation Interpolation mode: can be NPPI_INTER_NN, NPPI_INTER_LINEAR or NPPI_-INTER_CUBIC

Returns:

Image Data Related Error Codes, ROI Related Error Codes

- NPP_RECT_ERROR Indicates an error condition if width or height of the intersection of the srcRoi and source image is less than or equal to 1

- NPP_WRONG_INTERSECTION_ROI_ERROR Indicates an error condition if srcRoi has no intersection with the source image

- NPP_INTERPOLATION_ERROR Indicates an error condition if interpolation has an illegal value

- NPP_COEFF_ERROR Indicates an error condition if coefficient values are invalid

- NPP_WRONG_INTERSECTION_QUAD_WARNING Indicates a warning that no operation is performed if the transformed source ROI has no intersection with the destination ROI

- NPP_MISALIGNED_DST_ROI_WARNING Indicates a warning that the speed of primitive execution was reduced due to destination ROI misalignment

7.14.2.83 NppStatus nppiWarpAffineBack_8u_C3R (const Npp8u ∗ *pSrc*, NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, Npp8u ∗ *pDst*, int *nDstStep*, NppiRect *dstRoi*, const double *coeffs*[2][3], int *eInterpolation*)

Inverse affine transform of an image (8bit unsigned integer, three channels).

See also:

nppiWarpAffineBack_8u_C1R

7.14.2.84 NppStatus nppiWarpAffineBack_8u_C4R (const Npp8u ∗ *pSrc*, NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, Npp8u ∗ *pDst*, int *nDstStep*, NppiRect *dstRoi*, const double *coeffs*[2][3], int *eInterpolation*)

Inverse affine transform of an image (8bit unsigned integer, four channels).

See also:

nppiWarpAffineBack_8u_C1R

7.14.2.85 NppStatus nppiWarpAffineBack_8u_P3R (const Npp8u ∗ *pSrc*[3], NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, Npp8u ∗ *pDst*[3], int *nDstStep*, NppiRect *dstRoi*, const double *coeffs*[2][3], int *eInterpolation*)

Inverse affine transform of an image (8bit unsigned integer, three planes).

See also:

nppiWarpAffineBack_8u_C1R

7.14.2.86 NppStatus nppiWarpAffineBack_8u_P4R (const Npp8u ∗ *pSrc*[4], NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, Npp8u ∗ *pDst*[4], int *nDstStep*, NppiRect *dstRoi*, const double *coeffs*[2][3], int *eInterpolation*)

Inverse affine transform of an image (8bit unsigned integer, four planes).

See also:

nppiWarpAffineBack_8u_C1R

7.14.2.87 NppStatus nppiWarpAffineQuad_16u_AC4R (const Npp16u ∗ *pSrc*, NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, const double *srcQuad*[4][2], Npp16u ∗ *pDst*, int *nDstStep*, NppiRect *dstRoi*, const double *dstQuad*[4][2], int *eInterpolation*)

Affine transform of an image (16bit unsigned integer, four channels RGBA).

See also:

nppiWarpAffineQuad_16u_C1R

7.14.2.88 NppStatus nppiWarpAffineQuad_16u_C1R (const Npp16u ∗ *pSrc*, NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, const double *srcQuad*[4][2], Npp16u ∗ *pDst*, int *nDstStep*, NppiRect *dstRoi*, const double *dstQuad*[4][2], int *eInterpolation*)

Affine transform of an image (16bit unsigned integer, single channel).

This function performs affine warping of a the specified quadrangle in the source image to the specified quadrangle in the destination image. The function nppiWarpAffineQuad uses the same formulas for pixel mapping as in nppiWarpAffine function. The transform coefficients are computed internally. The transformed part of the source image is resampled using the specified interpolation method and written to the destination ROI.

NPPI specific recommendation: The function operates using 2 types of kernels: fast and accurate. The fast method is about 4 times faster than its accurate variant, but doesn't perform memory access checks and requires the destination ROI to be 64 bytes aligned. Hence any destination ROI is chunked into 3 vertical stripes: the first and the third are processed by accurate kernels and the central one is processed by the fast one. In order to get the maximum available speed of execution, the projection of destination ROI onto image addresses must be 64 bytes aligned. This is always true if the values `(int)((void *)(pDst + dstRoi.x))` and `(int)((void *)(pDst + dstRoi.x + dstRoi.width))` are multiples of 64. Another rule of thumb is to specify destination ROI in such way that left and right sides of the projected image are separated from the ROI by at least 63 bytes from each side. However, this requires the whole ROI to be part of allocated memory. In case when the conditions above are not satisfied, the function may decrease in speed slightly and will return NPP_MISALIGNED_DST_ROI_WARNING warning.

Parameters:

pSrc Source-Image Pointer.

oSrcSize Size of source image in pixels

nSrcStep Source-Image Line Step.

srcRoi Source ROI

srcQuad Source quadrangle

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

dstRoi Destination ROI

dstQuad Destination quadrangle

eInterpolation Interpolation mode: can be NPPI_INTER_NN, NPPI_INTER_LINEAR or NPPI_-
INTER_CUBIC

Returns:

Image Data Related Error Codes, ROI Related Error Codes

- NPP_RECT_ERROR Indicates an error condition if width or height of the intersection of the
  srcRoi and source image is less than or equal to 1
- NPP_WRONG_INTERSECTION_ROI_ERROR Indicates an error condition if srcRoi has no
  intersection with the source image
- NPP_INTERPOLATION_ERROR Indicates an error condition if eInterpolation has an illegal
  value
- NPP_COEFF_ERROR Indicates an error condition if coefficient values are invalid
- NPP_WRONG_INTERSECTION_QUAD_WARNING Indicates a warning that no operation is
  performed if the transformed source ROI has no intersection with the destination ROI
- NPP_MISALIGNED_DST_ROI_WARNING Indicates a warning that the speed of primitive ex-
  ecution was reduced due to destination ROI misalignment

7.14.2.89 NppStatus nppiWarpAffineQuad_16u_C3R (const Npp16u ∗ *pSrc*, NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, const double *srcQuad*[4][2], Npp16u ∗ *pDst*, int *nDstStep*, NppiRect *dstRoi*, const double *dstQuad*[4][2], int *eInterpolation*)

Affine transform of an image (16bit unsigned integer, three channels).

See also:

nppiWarpAffineQuad_16u_C1R

7.14.2.90 NppStatus nppiWarpAffineQuad_16u_C4R (const Npp16u ∗ *pSrc*, NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, const double *srcQuad*[4][2], Npp16u ∗ *pDst*, int *nDstStep*, NppiRect *dstRoi*, const double *dstQuad*[4][2], int *eInterpolation*)

Affine transform of an image (16bit unsigned integer, four channels).

See also:

nppiWarpAffineQuad_16u_C1R

7.14.2.91 NppStatus nppiWarpAffineQuad_16u_P3R (const Npp16u ∗ *pSrc*[3], NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, const double *srcQuad*[4][2], Npp16u ∗ *pDst*[3], int *nDstStep*, NppiRect *dstRoi*, const double *dstQuad*[4][2], int *eInterpolation*)

Affine transform of an image (16bit unsigned integer, three planes).

See also:

nppiWarpAffineQuad_16u_C1R

7.14.2.92 NppStatus nppiWarpAffineQuad_16u_P4R (const Npp16u ∗ pSrc[4], NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, const double srcQuad[4][2], Npp16u ∗ pDst[4], int nDstStep, NppiRect dstRoi, const double dstQuad[4][2], int eInterpolation)

Affine transform of an image (16bit unsigned integer, four planes).

See also:

nppiWarpAffineQuad_16u_C1R

7.14.2.93 NppStatus nppiWarpAffineQuad_32f_AC4R (const Npp32f ∗ pSrc, NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, const double srcQuad[4][2], Npp32f ∗ pDst, int nDstStep, NppiRect dstRoi, const double dstQuad[4][2], int eInterpolation)

Affine transform of an image (32bit float, four channels RGBA).

See also:

nppiWarpAffineQuad_32f_C1R

7.14.2.94 NppStatus nppiWarpAffineQuad_32f_C1R (const Npp32f ∗ pSrc, NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, const double srcQuad[4][2], Npp32f ∗ pDst, int nDstStep, NppiRect dstRoi, const double dstQuad[4][2], int eInterpolation)

Affine transform of an image (32bit float, single channel).

This function performs affine warping of a the specified quadrangle in the source image to the specified quadrangle in the destination image. The function nppiWarpAffineQuad uses the same formulas for pixel mapping as in nppiWarpAffine function. The transform coefficients are computed internally. The transformed part of the source image is resampled using the specified interpolation method and written to the destination ROI.

Parameters:

  pSrc Source-Image Pointer.

  oSrcSize Size of source image in pixels

  nSrcStep Source-Image Line Step.

  srcRoi Source ROI

  srcQuad Source quadrangle

  pDst Destination-Image Pointer.

  nDstStep Destination-Image Line Step.

  dstRoi Destination ROI

  dstQuad Destination quadrangle

  eInterpolation Interpolation mode: can be NPPI_INTER_NN, NPPI_INTER_LINEAR or NPPI_-INTER_CUBIC

Returns:

  Image Data Related Error Codes, ROI Related Error Codes

- NPP_RECT_ERROR Indicates an error condition if width or height of the intersection of the srcRoi and source image is less than or equal to 1
- NPP_WRONG_INTERSECTION_ROI_ERROR Indicates an error condition if srcRoi has no intersection with the source image
- NPP_INTERPOLATION_ERROR Indicates an error condition if eInterpolation has an illegal value
- NPP_COEFF_ERROR Indicates an error condition if coefficient values are invalid
- NPP_WRONG_INTERSECTION_QUAD_WARNING Indicates a warning that no operation is performed if the transformed source ROI has no intersection with the destination ROI
- NPP_MISALIGNED_DST_ROI_WARNING Indicates a warning that the speed of primitive execution was reduced due to destination ROI misalignment

7.14.2.95 NppStatus nppiWarpAffineQuad_32f_C3R (const Npp32f ∗ *pSrc*, NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, const double *srcQuad*[4][2], Npp32f ∗ *pDst*, int *nDstStep*, NppiRect *dstRoi*, const double *dstQuad*[4][2], int *eInterpolation*)

Affine transform of an image (32bit float, three channels).

See also:

nppiWarpAffineQuad_32f_C1R

7.14.2.96 NppStatus nppiWarpAffineQuad_32f_C4R (const Npp32f ∗ *pSrc*, NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, const double *srcQuad*[4][2], Npp32f ∗ *pDst*, int *nDstStep*, NppiRect *dstRoi*, const double *dstQuad*[4][2], int *eInterpolation*)

Affine transform of an image (32bit float, four channels).

See also:

nppiWarpAffineQuad_32f_C1R

7.14.2.97 NppStatus nppiWarpAffineQuad_32f_P3R (const Npp32f ∗ *pSrc*[3], NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, const double *srcQuad*[4][2], Npp32f ∗ *pDst*[3], int *nDstStep*, NppiRect *dstRoi*, const double *dstQuad*[4][2], int *eInterpolation*)

Affine transform of an image (32bit float, three planes).

See also:

nppiWarpAffineQuad_32f_C1R

7.14.2.98 NppStatus nppiWarpAffineQuad_32f_P4R (const Npp32f ∗ *pSrc*[4], NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, const double *srcQuad*[4][2], Npp32f ∗ *pDst*[4], int *nDstStep*, NppiRect *dstRoi*, const double *dstQuad*[4][2], int *eInterpolation*)

Affine transform of an image (32bit float, four planes).

See also:

nppiWarpAffineQuad_32f_C1R

7.14.2.99   NppStatus nppiWarpAffineQuad_32s_AC4R (const Npp32s ∗ *pSrc*, NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, const double *srcQuad*[4][2], Npp32s ∗ *pDst*, int *nDstStep*, NppiRect *dstRoi*, const double *dstQuad*[4][2], int *eInterpolation*)

Affine transform of an image (32bit signed integer, four channels RGBA).

See also:

nppiWarpAffineQuad_32s_C1R

7.14.2.100   NppStatus nppiWarpAffineQuad_32s_C1R (const Npp32s ∗ *pSrc*, NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, const double *srcQuad*[4][2], Npp32s ∗ *pDst*, int *nDstStep*, NppiRect *dstRoi*, const double *dstQuad*[4][2], int *eInterpolation*)

Affine transform of an image (32bit signed integer, single channel).

This function performs affine warping of a the specified quadrangle in the source image to the specified quadrangle in the destination image. The function nppiWarpAffineQuad uses the same formulas for pixel mapping as in nppiWarpAffine function. The transform coefficients are computed internally. The transformed part of the source image is resampled using the specified interpolation method and written to the destination ROI.

Parameters:

pSrc   Source-Image Pointer.

oSrcSize   Size of source image in pixels

nSrcStep   Source-Image Line Step.

srcRoi   Source ROI

srcQuad   Source quadrangle

pDst   Destination-Image Pointer.

nDstStep   Destination-Image Line Step.

dstRoi   Destination ROI

dstQuad   Destination quadrangle

eInterpolation   Interpolation mode: can be NPPI_INTER_NN, NPPI_INTER_LINEAR or NPPI_-INTER_CUBIC

Returns:

Image Data Related Error Codes, ROI Related Error Codes

- NPP_RECT_ERROR Indicates an error condition if width or height of the intersection of the srcRoi and source image is less than or equal to 1
- NPP_WRONG_INTERSECTION_ROI_ERROR Indicates an error condition if srcRoi has no intersection with the source image
- NPP_INTERPOLATION_ERROR Indicates an error condition if eInterpolation has an illegal value
- NPP_COEFF_ERROR Indicates an error condition if coefficient values are invalid
- NPP_WRONG_INTERSECTION_QUAD_WARNING Indicates a warning that no operation is performed if the transformed source ROI has no intersection with the destination ROI
- NPP_MISALIGNED_DST_ROI_WARNING Indicates a warning that the speed of primitive execution was reduced due to destination ROI misalignment

7.14.2.101 NppStatus nppiWarpAffineQuad_32s_C3R (const Npp32s ∗ *pSrc*, NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, const double *srcQuad*[4][2], Npp32s ∗ *pDst*, int *nDstStep*, NppiRect *dstRoi*, const double *dstQuad*[4][2], int *eInterpolation*)

Affine transform of an image (32bit signed integer, three channels).

See also:

   nppiWarpAffineQuad_32s_C1R

7.14.2.102 NppStatus nppiWarpAffineQuad_32s_C4R (const Npp32s ∗ *pSrc*, NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, const double *srcQuad*[4][2], Npp32s ∗ *pDst*, int *nDstStep*, NppiRect *dstRoi*, const double *dstQuad*[4][2], int *eInterpolation*)

Affine transform of an image (32bit signed integer, four channels).

See also:

   nppiWarpAffineQuad_32s_C1R

7.14.2.103 NppStatus nppiWarpAffineQuad_32s_P3R (const Npp32s ∗ *pSrc*[3], NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, const double *srcQuad*[4][2], Npp32s ∗ *pDst*[3], int *nDstStep*, NppiRect *dstRoi*, const double *dstQuad*[4][2], int *eInterpolation*)

Affine transform of an image (32bit signed integer, three planes).

See also:

   nppiWarpAffineQuad_32s_C1R

7.14.2.104 NppStatus nppiWarpAffineQuad_32s_P4R (const Npp32s ∗ *pSrc*[4], NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, const double *srcQuad*[4][2], Npp32s ∗ *pDst*[4], int *nDstStep*, NppiRect *dstRoi*, const double *dstQuad*[4][2], int *eInterpolation*)

Affine transform of an image (32bit signed integer, four planes).

See also:

   nppiWarpAffineQuad_32s_C1R

7.14.2.105 NppStatus nppiWarpAffineQuad_8u_AC4R (const Npp8u ∗ *pSrc*, NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, const double *srcQuad*[4][2], Npp8u ∗ *pDst*, int *nDstStep*, NppiRect *dstRoi*, const double *dstQuad*[4][2], int *eInterpolation*)

Affine transform of an image (8bit unsigned integer, four channels RGBA).

See also:

   nppiWarpAffineQuad_8u_C1R

7.14.2.106 NppStatus nppiWarpAffineQuad_8u_C1R (const Npp8u ∗ *pSrc*, NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, const double *srcQuad*[4][2], Npp8u ∗ *pDst*, int *nDstStep*, NppiRect *dstRoi*, const double *dstQuad*[4][2], int *eInterpolation*)

Affine transform of an image (8bit unsigned integer, single channel).

This function performs affine warping of a the specified quadrangle in the source image to the specified quadrangle in the destination image. The function nppiWarpAffineQuad uses the same formulas for pixel mapping as in nppiWarpAffine function. The transform coefficients are computed internally. The transformed part of the source image is resampled using the specified eInterpolation method and written to the destination ROI.

NPPI specific recommendation: The function operates using 2 types of kernels: fast and accurate. The fast method is about 4 times faster than its accurate variant, but does not perform memory access checks and requires the destination ROI to be 64 bytes aligned. Hence any destination ROI is chunked into 3 vertical stripes: the first and the third are processed by accurate kernels and the central one is processed by the fast one. In order to get the maximum available speed of execution, the projection of destination ROI onto image addresses must be 64 bytes aligned. This is always true if the values `(int)((void *)(pDst + dstRoi.x))` and `(int)((void *)(pDst + dstRoi.x + dstRoi.width))` are multiples of 64. Another rule of thumb is to specify destination ROI in such way that left and right sides of the projected image are separated from the ROI by at least 63 bytes from each side. However, this requires the whole ROI to be part of allocated memory. In case when the conditions above are not satisfied, the function may decrease in speed slightly and will return NPP_MISALIGNED_DST_ROI_WARNING warning.

Parameters:

pSrc Source-Image Pointer.

oSrcSize Size of source image in pixels

nSrcStep Source-Image Line Step.

srcRoi Source ROI

srcQuad Source quadrangle

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

dstRoi Destination ROI

dstQuad Destination quadrangle

eInterpolation Interpolation mode: can be NPPI_INTER_NN, NPPI_INTER_LINEAR or NPPI_-INTER_CUBIC

Returns:

Image Data Related Error Codes, ROI Related Error Codes

- NPP_RECT_ERROR Indicates an error condition if width or height of the intersection of the srcRoi and source image is less than or equal to 1
- NPP_WRONG_INTERSECTION_ROI_ERROR Indicates an error condition if srcRoi has no intersection with the source image
- NPP_INTERPOLATION_ERROR Indicates an error condition if eInterpolation has an illegal value
- NPP_COEFF_ERROR Indicates an error condition if coefficient values are invalid
- NPP_WRONG_INTERSECTION_QUAD_WARNING Indicates a warning that no operation is performed if the transformed source ROI has no intersection with the destination ROI
- NPP_MISALIGNED_DST_ROI_WARNING Indicates a warning that the speed of primitive execution was reduced due to destination ROI misalignment ignored, internally computed coordinates are used instead

7.14.2.107 **NppStatus nppiWarpAffineQuad_8u_C3R (const Npp8u ∗ *pSrc*, NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, const double *srcQuad*[4][2], Npp8u ∗ *pDst*, int *nDstStep*, NppiRect *dstRoi*, const double *dstQuad*[4][2], int *eInterpolation*)**

Affine transform of an image (8bit unsigned integer, three channels).

See also:

> nppiWarpAffineQuad_8u_C1R

7.14.2.108 **NppStatus nppiWarpAffineQuad_8u_C4R (const Npp8u ∗ *pSrc*, NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, const double *srcQuad*[4][2], Npp8u ∗ *pDst*, int *nDstStep*, NppiRect *dstRoi*, const double *dstQuad*[4][2], int *eInterpolation*)**

Affine transform of an image (8bit unsigned integer, four channels).

See also:

> nppiWarpAffineQuad_8u_C1R

7.14.2.109 **NppStatus nppiWarpAffineQuad_8u_P3R (const Npp8u ∗ *pSrc*[3], NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, const double *srcQuad*[4][2], Npp8u ∗ *pDst*[3], int *nDstStep*, NppiRect *dstRoi*, const double *dstQuad*[4][2], int *eInterpolation*)**

Affine transform of an image (8bit unsigned integer, three planes).

See also:

> nppiWarpAffineQuad_8u_C1R

7.14.2.110 **NppStatus nppiWarpAffineQuad_8u_P4R (const Npp8u ∗ *pSrc*[4], NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, const double *srcQuad*[4][2], Npp8u ∗ *pDst*[4], int *nDstStep*, NppiRect *dstRoi*, const double *dstQuad*[4][2], int *eInterpolation*)**

Affine transform of an image (8bit unsigned integer, four planes).

See also:

> nppiWarpAffineQuad_8u_C1R

7.14.2.111 **NppStatus nppiWarpPerspective_16u_AC4R (const Npp16u ∗ *pSrc*, NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, Npp16u ∗ *pDst*, int *nDstStep*, NppiRect *dstRoi*, const double *coeffs*[3][3], int *eInterpolation*)**

Perspective transform of an image (16bit unsigned integer, four channels RGBA).

See also:

> nppiWarpPerspective_16u_C1R

7.14.2.112 NppStatus nppiWarpPerspective_16u_C1R (const Npp16u ∗ *pSrc*, NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, Npp16u ∗ *pDst*, int *nDstStep*, NppiRect *dstRoi*, const double *coeffs*[3][3], int *eInterpolation*)

Perspective transform of an image (16bit unsigned integer, single channel).

This function operates using given transform coefficients that can be obtained by using nppiGetPerspectiveTransform function or set explicitly. The function operates on source and destination regions of interest. The perspective warp function transforms the source image pixel coordinates (x, y) according to the following formulas:

$$X_{new} = \frac{C_{00} * x + C_{01} * y + C_{02}}{C_{20} * x + C_{21} * y + C_{22}} \qquad Y_{new} = \frac{C_{10} * x + C_{11} * y + C_{12}}{C_{20} * x + C_{21} * y + C_{22}}$$

The transformed part of the source image is resampled using the specified interpolation method and written to the destination ROI. The functions nppiGetPerspectiveQuad and nppiGetPerspectiveBound can help with destination ROI specification.

NPPI specific recommendation: The function operates using 2 types of kernels: fast and accurate. The fast method is about 4 times faster than its accurate variant, but does not perform memory access checks and requires the destination ROI to be 64 bytes aligned. Hence any destination ROI is chunked into 3 vertical stripes: the first and the third are processed by accurate kernels and the central one is processed by the fast one. In order to get the maximum available speed of execution, the projection of destination ROI onto image addresses must be 64 bytes aligned. This is always true if the values `(int)((void *)(pDst + dstRoi.x))` and `(int)((void *)(pDst + dstRoi.x + dstRoi.width))` are multiples of 64. Another rule of thumb is to specify destination ROI in such way that left and right sides of the projected image are separated from the ROI by at least 63 bytes from each side. However, this requires the whole ROI to be part of allocated memory. In case when the conditions above are not satisfied, the function may decrease in speed slightly and will return NPP_MISALIGNED_DST_ROI_WARNING warning.

Parameters:

>   *pSrc* Source-Image Pointer.
>
>   *oSrcSize* Size of source image in pixels
>
>   *nSrcStep* Source-Image Line Step.
>
>   *srcRoi* Source ROI
>
>   *pDst* Destination-Image Pointer.
>
>   *nDstStep* Destination-Image Line Step.
>
>   *dstRoi* Destination ROI
>
>   *coeffs* Perspective transform coefficients
>
>   *eInterpolation* Interpolation mode: can be NPPI_INTER_NN, NPPI_INTER_LINEAR or NPPI_-INTER_CUBIC

Returns:

>   Image Data Related Error Codes, ROI Related Error Codes
>
>   - NPP_RECT_ERROR Indicates an error condition if width or height of the intersection of the srcRoi and source image is less than or equal to 1
>   - NPP_WRONG_INTERSECTION_ROI_ERROR Indicates an error condition if srcRoi has no intersection with the source image
>   - NPP_INTERPOLATION_ERROR Indicates an error condition if eInterpolation has an illegal value
>   - NPP_COEFF_ERROR Indicates an error condition if coefficient values are invalid

- NPP_WRONG_INTERSECTION_QUAD_WARNING Indicates a warning that no operation is performed if the transformed source ROI has no intersection with the destination ROI

- NPP_MISALIGNED_DST_ROI_WARNING Indicates a warning that the speed of primitive execution was reduced due to destination ROI

7.14.2.113 NppStatus nppiWarpPerspective_16u_C3R (const Npp16u ∗ *pSrc*, NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, Npp16u ∗ *pDst*, int *nDstStep*, NppiRect *dstRoi*, const double *coeffs*[3][3], int *eInterpolation*)

Perspective transform of an image (16bit unsigned integer, three channels).

See also:

nppiWarpPerspective_16u_C1R

7.14.2.114 NppStatus nppiWarpPerspective_16u_C4R (const Npp16u ∗ *pSrc*, NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, Npp16u ∗ *pDst*, int *nDstStep*, NppiRect *dstRoi*, const double *coeffs*[3][3], int *eInterpolation*)

Perspective transform of an image (16bit unsigned integer, four channels).

See also:

nppiWarpPerspective_16u_C1R

7.14.2.115 NppStatus nppiWarpPerspective_16u_P3R (const Npp16u ∗ *pSrc*[3], NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, Npp16u ∗ *pDst*[3], int *nDstStep*, NppiRect *dstRoi*, const double *coeffs*[3][3], int *eInterpolation*)

Perspective transform of an image (16bit unsigned integer, three planes).

See also:

nppiWarpPerspective_16u_C1R

7.14.2.116 NppStatus nppiWarpPerspective_16u_P4R (const Npp16u ∗ *pSrc*[4], NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, Npp16u ∗ *pDst*[4], int *nDstStep*, NppiRect *dstRoi*, const double *coeffs*[3][3], int *eInterpolation*)

Perspective transform of an image (16bit unsigned integer, four planes).

See also:

nppiWarpPerspective_16u_C1R

7.14.2.117 NppStatus nppiWarpPerspective_32f_AC4R (const Npp32f ∗ *pSrc*, NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, Npp32f ∗ *pDst*, int *nDstStep*, NppiRect *dstRoi*, const double *coeffs*[3][3], int *eInterpolation*)

Perspective transform of an image (32bit float, four channels RGBA).

See also:

nppiWarpPerspective_32f_C1R

7.14.2.118 NppStatus nppiWarpPerspective_32f_C1R (const Npp32f ∗ *pSrc*, NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, Npp32f ∗ *pDst*, int *nDstStep*, NppiRect *dstRoi*, const double *coeffs*[3][3], int *eInterpolation*)

Perspective transform of an image (32bit float, single channel).

This function operates using given transform coefficients that can be obtained by using nppiGetPerspectiveTransform function or set explicitly. The function operates on source and destination regions of interest. The perspective warp function transforms the source image pixel coordinates (x, y) according to the following formulas:

$$X_{new} = \frac{C_{00} * x + C_{01} * y + C_{02}}{C_{20} * x + C_{21} * y + C_{22}} \qquad Y_{new} = \frac{C_{10} * x + C_{11} * y + C_{12}}{C_{20} * x + C_{21} * y + C_{22}}$$

The transformed part of the source image is resampled using the specified interpolation method and written to the destination ROI. The functions nppiGetPerspectiveQuad and nppiGetPerspectiveBound can help with destination ROI specification.

Parameters:

> *pSrc* Source-Image Pointer.
>
> *oSrcSize* Size of source image in pixels
>
> *nSrcStep* Source-Image Line Step.
>
> *srcRoi* Source ROI
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *dstRoi* Destination ROI
>
> *coeffs* Perspective transform coefficients
>
> *eInterpolation* Interpolation mode: can be NPPI_INTER_NN, NPPI_INTER_LINEAR or NPPI_-INTER_CUBIC

Returns:

Image Data Related Error Codes, ROI Related Error Codes

- • NPP_RECT_ERROR Indicates an error condition if width or height of the intersection of the srcRoi and source image is less than or equal to 1
- • NPP_WRONG_INTERSECTION_ROI_ERROR Indicates an error condition if srcRoi has no intersection with the source image
- • NPP_INTERPOLATION_ERROR Indicates an error condition if eInterpolation has an illegal value
- • NPP_COEFF_ERROR Indicates an error condition if coefficient values are invalid

- NPP_WRONG_INTERSECTION_QUAD_WARNING Indicates a warning that no operation is performed if the transformed source ROI has no intersection with the destination ROI

- NPP_MISALIGNED_DST_ROI_WARNING Indicates a warning that the speed of primitive execution was reduced due to destination ROI

7.14.2.119 NppStatus nppiWarpPerspective_32f_C3R (const Npp32f ∗ *pSrc*, NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, Npp32f ∗ *pDst*, int *nDstStep*, NppiRect *dstRoi*, const double *coeffs*[3][3], int *eInterpolation*)

Perspective transform of an image (32bit float, three channels).

See also:

nppiWarpPerspective_32f_C1R

7.14.2.120 NppStatus nppiWarpPerspective_32f_C4R (const Npp32f ∗ *pSrc*, NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, Npp32f ∗ *pDst*, int *nDstStep*, NppiRect *dstRoi*, const double *coeffs*[3][3], int *eInterpolation*)

Perspective transform of an image (32bit float, four channels).

See also:

nppiWarpPerspective_32f_C1R

7.14.2.121 NppStatus nppiWarpPerspective_32f_P3R (const Npp32f ∗ *pSrc*[3], NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, Npp32f ∗ *pDst*[3], int *nDstStep*, NppiRect *dstRoi*, const double *coeffs*[3][3], int *eInterpolation*)

Perspective transform of an image (32bit float, three planes).

See also:

nppiWarpPerspective_32f_C1R

7.14.2.122 NppStatus nppiWarpPerspective_32f_P4R (const Npp32f ∗ *pSrc*[4], NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, Npp32f ∗ *pDst*[4], int *nDstStep*, NppiRect *dstRoi*, const double *coeffs*[3][3], int *eInterpolation*)

Perspective transform of an image (32bit float, four planes).

See also:

nppiWarpPerspective_32f_C1R

7.14.2.123 NppStatus nppiWarpPerspective_32s_AC4R (const Npp32s ∗ *pSrc*, NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, Npp32s ∗ *pDst*, int *nDstStep*, NppiRect *dstRoi*, const double *coeffs*[3][3], int *eInterpolation*)

Perspective transform of an image (32bit signed integer, four channels RGBA).

See also:

nppiWarpPerspective_32s_C1R

7.14.2.124 NppStatus nppiWarpPerspective_32s_C1R (const Npp32s ∗ *pSrc*, NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, Npp32s ∗ *pDst*, int *nDstStep*, NppiRect *dstRoi*, const double *coeffs*[3][3], int *eInterpolation*)

Perspective transform of an image (32bit signed integer, single channel).

This function operates using given transform coefficients that can be obtained by using nppiGetPerspectiveTransform function or set explicitly. The function operates on source and destination regions of interest. The perspective warp function transforms the source image pixel coordinates (x, y) according to the following formulas:

$$X_{new} = \frac{C_{00} * x + C_{01} * y + C_{02}}{C_{20} * x + C_{21} * y + C_{22}} \qquad Y_{new} = \frac{C_{10} * x + C_{11} * y + C_{12}}{C_{20} * x + C_{21} * y + C_{22}}$$

The transformed part of the source image is resampled using the specified interpolation method and written to the destination ROI. The functions nppiGetPerspectiveQuad and nppiGetPerspectiveBound can help with destination ROI specification.

Parameters:

   pSrc Source-Image Pointer.

   oSrcSize Size of source image in pixels

   nSrcStep Source-Image Line Step.

   srcRoi Source ROI

   pDst Destination-Image Pointer.

   nDstStep Destination-Image Line Step.

   dstRoi Destination ROI

   coeffs Perspective transform coefficients

   eInterpolation Interpolation mode: can be NPPI_INTER_NN, NPPI_INTER_LINEAR or NPPI_-INTER_CUBIC

Returns:

   Image Data Related Error Codes, ROI Related Error Codes

   • NPP_RECT_ERROR Indicates an error condition if width or height of the intersection of the srcRoi and source image is less than or equal to 1

   • NPP_WRONG_INTERSECTION_ROI_ERROR Indicates an error condition if srcRoi has no intersection with the source image

   • NPP_INTERPOLATION_ERROR Indicates an error condition if eInterpolation has an illegal value

   • NPP_COEFF_ERROR Indicates an error condition if coefficient values are invalid

- NPP_WRONG_INTERSECTION_QUAD_WARNING Indicates a warning that no operation is performed if the transformed source ROI has no intersection with the destination ROI

- NPP_MISALIGNED_DST_ROI_WARNING Indicates a warning that the speed of primitive execution was reduced due to destination ROI

7.14.2.125   NppStatus nppiWarpPerspective_32s_C3R (const Npp32s ∗ *pSrc*, NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, Npp32s ∗ *pDst*, int *nDstStep*, NppiRect *dstRoi*, const double *coeffs*[3][3], int *eInterpolation*)

Perspective transform of an image (32bit signed integer, three channels).

See also:

nppiWarpPerspective_32s_C1R

7.14.2.126   NppStatus nppiWarpPerspective_32s_C4R (const Npp32s ∗ *pSrc*, NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, Npp32s ∗ *pDst*, int *nDstStep*, NppiRect *dstRoi*, const double *coeffs*[3][3], int *eInterpolation*)

Perspective transform of an image (32bit signed integer, four channels).

See also:

nppiWarpPerspective_32s_C1R

7.14.2.127   NppStatus nppiWarpPerspective_32s_P3R (const Npp32s ∗ *pSrc*[3], NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, Npp32s ∗ *pDst*[3], int *nDstStep*, NppiRect *dstRoi*, const double *coeffs*[3][3], int *eInterpolation*)

Perspective transform of an image (32bit signed integer, three planes).

See also:

nppiWarpPerspective_32s_C1R

7.14.2.128   NppStatus nppiWarpPerspective_32s_P4R (const Npp32s ∗ *pSrc*[4], NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, Npp32s ∗ *pDst*[4], int *nDstStep*, NppiRect *dstRoi*, const double *coeffs*[3][3], int *eInterpolation*)

Perspective transform of an image (32bit signed integer, four planes).

See also:

nppiWarpPerspective_32s_C1R

7.14.2.129 NppStatus nppiWarpPerspective_8u_AC4R (const Npp8u ∗ *pSrc*, NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, Npp8u ∗ *pDst*, int *nDstStep*, NppiRect *dstRoi*, const double *coeffs*[3][3], int *eInterpolation*)

Perspective transform of an image (8bit unsigned integer, four channels RGBA).

See also:

nppiWarpPerspective_8u_C1R

7.14.2.130 NppStatus nppiWarpPerspective_8u_C1R (const Npp8u ∗ *pSrc*, NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, Npp8u ∗ *pDst*, int *nDstStep*, NppiRect *dstRoi*, const double *coeffs*[3][3], int *eInterpolation*)

Perspective transform of an image (8bit unsigned integer, single channel).

This function operates using given transform coefficients that can be obtained by using nppiGetPerspectiveTransform function or set explicitly. The function operates on source and destination regions of interest. The perspective warp function transforms the source image pixel coordinates (x, y) according to the following formulas:

$$X_{new} = \frac{C_{00} * x + C_{01} * y + C_{02}}{C_{20} * x + C_{21} * y + C_{22}} \qquad Y_{new} = \frac{C_{10} * x + C_{11} * y + C_{12}}{C_{20} * x + C_{21} * y + C_{22}}$$

The transformed part of the source image is resampled using the specified interpolation method and written to the destination ROI. The functions nppiGetPerspectiveQuad and nppiGetPerspectiveBound can help with destination ROI specification.

NPPI specific recommendation: The function operates using 2 types of kernels: fast and accurate. The fast method is about 4 times faster than its accurate variant, but does not perform memory access checks and requires the destination ROI to be 64 bytes aligned. Hence any destination ROI is chunked into 3 vertical stripes: the first and the third are processed by accurate kernels and the central one is processed by the fast one. In order to get the maximum available speed of execution, the projection of destination ROI onto image addresses must be 64 bytes aligned. This is always true if the values `(int)((void *)(pDst + dstRoi.x))` and `(int)((void *)(pDst + dstRoi.x + dstRoi.width))` are multiples of 64. Another rule of thumb is to specify destination ROI in such way that left and right sides of the projected image are separated from the ROI by at least 63 bytes from each side. However, this requires the whole ROI to be part of allocated memory. In case when the conditions above are not satisfied, the function may decrease in speed slightly and will return NPP_MISALIGNED_DST_ROI_WARNING warning.

Parameters:

> *pSrc* Source-Image Pointer.
>
> *oSrcSize* Size of source image in pixels
>
> *nSrcStep* Source-Image Line Step.
>
> *srcRoi* Source ROI
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *dstRoi* Destination ROI
>
> *coeffs* Perspective transform coefficients
>
> *eInterpolation* Interpolation mode: can be NPPI_INTER_NN, NPPI_INTER_LINEAR or NPPI_-INTER_CUBIC

Returns:

Image Data Related Error Codes, ROI Related Error Codes

- NPP_RECT_ERROR Indicates an error condition if width or height of the intersection of the srcRoi and source image is less than or equal to 1

- NPP_WRONG_INTERSECTION_ROI_ERROR Indicates an error condition if srcRoi has no intersection with the source image

- NPP_INTERPOLATION_ERROR Indicates an error condition if eInterpolation has an illegal value

- NPP_COEFF_ERROR Indicates an error condition if coefficient values are invalid

- NPP_WRONG_INTERSECTION_QUAD_WARNING Indicates a warning that no operation is performed if the transformed source ROI has no intersection with the destination ROI

- NPP_MISALIGNED_DST_ROI_WARNING Indicates a warning that the speed of primitive execution was reduced due to destination ROI

7.14.2.131 NppStatus nppiWarpPerspective_8u_C3R (const Npp8u ∗ *pSrc*, NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, Npp8u ∗ *pDst*, int *nDstStep*, NppiRect *dstRoi*, const double *coeffs*[3][3], int *eInterpolation*)

Perspective transform of an image (8bit unsigned integer, three channels).

See also:

nppiWarpPerspective_8u_C1R

7.14.2.132 NppStatus nppiWarpPerspective_8u_C4R (const Npp8u ∗ *pSrc*, NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, Npp8u ∗ *pDst*, int *nDstStep*, NppiRect *dstRoi*, const double *coeffs*[3][3], int *eInterpolation*)

Perspective transform of an image (8bit unsigned integer, four channels).

See also:

nppiWarpPerspective_8u_C1R

7.14.2.133 NppStatus nppiWarpPerspective_8u_P3R (const Npp8u ∗ *pSrc*[3], NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, Npp8u ∗ *pDst*[3], int *nDstStep*, NppiRect *dstRoi*, const double *coeffs*[3][3], int *eInterpolation*)

Perspective transform of an image (8bit unsigned integer, three planes).

See also:

nppiWarpPerspective_8u_C1R

7.14.2.134 NppStatus nppiWarpPerspective_8u_P4R (const Npp8u ∗ *pSrc*[4], NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, Npp8u ∗ *pDst*[4], int *nDstStep*, NppiRect *dstRoi*, const double *coeffs*[3][3], int *eInterpolation*)

Perspective transform of an image (8bit unsigned integer, four planes).

See also:

nppiWarpPerspective_8u_C1R

7.14.2.135 NppStatus nppiWarpPerspectiveBack_16u_AC4R (const Npp16u ∗ *pSrc*, NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, Npp16u ∗ *pDst*, int *nDstStep*, NppiRect *dstRoi*, const double *coeffs*[3][3], int *eInterpolation*)

Inverse perspective transform of an image (16bit unsigned integer, four channels RGBA).

See also:

nppiWarpPerspectiveBack_16u_C1R

7.14.2.136 NppStatus nppiWarpPerspectiveBack_16u_C1R (const Npp16u ∗ *pSrc*, NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, Npp16u ∗ *pDst*, int *nDstStep*, NppiRect *dstRoi*, const double *coeffs*[3][3], int *eInterpolation*)

Inverse perspective transform of an image (16bit unsigned integer, single channel).

This function operates using given transform coefficients that can be obtained by using nppiGetPerspective-Transform function or set explicitly. Thus there is no need to invert coefficients in your application before calling WarpPerspectiveBack. The function operates on source and destination regions of interest. The perspective warp function transforms the source image pixel coordinates (x, y) according to the following formulas:

$$\frac{C_{00} * X_{new} + C_{01} * Y_{new} + C_{02}}{C_{20} * X_{new} + C_{21} * Y_{new} + C_{22}} = x \qquad \frac{C_{10} * X_{new} + C_{11} * Y_{new} + C_{12}}{C_{20} * X_{new} + C_{21} * Y_{new} + C_{22}} = y$$

The transformed part of the source image is resampled using the specified interpolation method and written to the destination ROI. The functions nppiGetPerspectiveQuad and nppiGetPerspectiveBound can help with destination ROI specification.

NPPI specific recommendation: The function operates using 2 types of kernels: fast and accurate. The fast method is about 4 times faster than its accurate variant, but does not perform memory access checks and requires the destination ROI to be 64 bytes aligned. Hence any destination ROI is chunked into 3 vertical stripes: the first and the third are processed by accurate kernels and the central one is processed by the fast one. In order to get the maximum available speed of execution, the projection of destination ROI onto image addresses must be 64 bytes aligned. This is always true if the values `(int)((void *)(pDst + dstRoi.x))` and `(int)((void *)(pDst + dstRoi.x + dstRoi.width))` are multiples of 64. Another rule of thumb is to specify destination ROI in such way that left and right sides of the projected image are separated from the ROI by at least 63 bytes from each side. However, this requires the whole ROI to be part of allocated memory. In case when the conditions above are not satisfied, the function may decrease in speed slightly and will return NPP_MISALIGNED_DST_ROI_WARNING warning.

Parameters:

pSrc Source-Image Pointer.

oSrcSize Size of source image in pixels

nSrcStep Source-Image Line Step.

srcRoi Source ROI

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

dstRoi Destination ROI

coeffs Perspective transform coefficients

eInterpolation Interpolation mode: can be NPPI_INTER_NN, NPPI_INTER_LINEAR or NPPI_-INTER_CUBIC

Returns:

Image Data Related Error Codes, ROI Related Error Codes

- NPP_RECT_ERROR Indicates an error condition if width or height of the intersection of the srcRoi and source image is less than or equal to 1

- NPP_WRONG_INTERSECTION_ROI_ERROR Indicates an error condition if srcRoi has no intersection with the source image

- NPP_INTERPOLATION_ERROR Indicates an error condition if eInterpolation has an illegal value

- NPP_COEFF_ERROR Indicates an error condition if coefficient values are invalid

- NPP_WRONG_INTERSECTION_QUAD_WARNING Indicates a warning that no operation is performed if the transformed source ROI has no intersection with the destination ROI

- NPP_MISALIGNED_DST_ROI_WARNING Indicates a warning that the speed of primitive execution was reduced due to destination ROI

7.14.2.137 NppStatus nppiWarpPerspectiveBack_16u_C3R (const Npp16u * *pSrc*, NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, Npp16u * *pDst*, int *nDstStep*, NppiRect *dstRoi*, const double *coeffs*[3][3], int *eInterpolation*)

Inverse perspective transform of an image (16bit unsigned integer, three channels).

See also:

nppiWarpPerspectiveBack_16u_C1R

7.14.2.138 NppStatus nppiWarpPerspectiveBack_16u_C4R (const Npp16u * *pSrc*, NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, Npp16u * *pDst*, int *nDstStep*, NppiRect *dstRoi*, const double *coeffs*[3][3], int *eInterpolation*)

Inverse perspective transform of an image (16bit unsigned integer, four channels).

See also:

nppiWarpPerspectiveBack_16u_C1R

7.14.2.139 NppStatus nppiWarpPerspectiveBack_16u_P3R (const Npp16u ∗ *pSrc*[3], NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, Npp16u ∗ *pDst*[3], int *nDstStep*, NppiRect *dstRoi*, const double *coeffs*[3][3], int *eInterpolation*)

Inverse perspective transform of an image (16bit unsigned integer, three planes).

See also:

nppiWarpPerspectiveBack_16u_C1R

7.14.2.140 NppStatus nppiWarpPerspectiveBack_16u_P4R (const Npp16u ∗ *pSrc*[4], NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, Npp16u ∗ *pDst*[4], int *nDstStep*, NppiRect *dstRoi*, const double *coeffs*[3][3], int *eInterpolation*)

Inverse perspective transform of an image (16bit unsigned integer, four planes).

See also:

nppiWarpPerspectiveBack_16u_C1R

7.14.2.141 NppStatus nppiWarpPerspectiveBack_32f_AC4R (const Npp32f ∗ *pSrc*, NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, Npp32f ∗ *pDst*, int *nDstStep*, NppiRect *dstRoi*, const double *coeffs*[3][3], int *eInterpolation*)

Inverse perspective transform of an image (32bit float, four channels RGBA).

See also:

nppiWarpPerspectiveBack_32f_C1R

7.14.2.142 NppStatus nppiWarpPerspectiveBack_32f_C1R (const Npp32f ∗ *pSrc*, NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, Npp32f ∗ *pDst*, int *nDstStep*, NppiRect *dstRoi*, const double *coeffs*[3][3], int *eInterpolation*)

Inverse perspective transform of an image (32bit float, single channel).

This function operates using given transform coefficients that can be obtained by using nppiGetPerspective-Transform function or set explicitly. Thus there is no need to invert coefficients in your application before calling WarpPerspectiveBack. The function operates on source and destination regions of interest. The perspective warp function transforms the source image pixel coordinates (x, y) according to the following formulas:

$$\frac{C_{00} * X_{new} + C_{01} * Y_{new} + C_{02}}{C_{20} * X_{new} + C_{21} * Y_{new} + C_{22}} = x \qquad \frac{C_{10} * X_{new} + C_{11} * Y_{new} + C_{12}}{C_{20} * X_{new} + C_{21} * Y_{new} + C_{22}} = y$$

The transformed part of the source image is resampled using the specified interpolation method and written to the destination ROI. The functions nppiGetPerspectiveQuad and nppiGetPerspectiveBound can help with destination ROI specification.

Parameters:

pSrc Source-Image Pointer.

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oSrcSize Size of source image in pixels

nSrcStep Source-Image Line Step.

srcRoi Source ROI

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

dstRoi Destination ROI

coeffs Perspective transform coefficients

eInterpolation Interpolation mode: can be NPPI_INTER_NN, NPPI_INTER_LINEAR or NPPI_-
INTER_CUBIC

Returns:

Image Data Related Error Codes, ROI Related Error Codes

- NPP_RECT_ERROR Indicates an error condition if width or height of the intersection of the
  srcRoi and source image is less than or equal to 1
- NPP_WRONG_INTERSECTION_ROI_ERROR Indicates an error condition if srcRoi has no
  intersection with the source image
- NPP_INTERPOLATION_ERROR Indicates an error condition if eInterpolation has an illegal
  value
- NPP_COEFF_ERROR Indicates an error condition if coefficient values are invalid
- NPP_WRONG_INTERSECTION_QUAD_WARNING Indicates a warning that no operation is
  performed if the transformed source ROI has no intersection with the destination ROI
- NPP_MISALIGNED_DST_ROI_WARNING Indicates a warning that the speed of primitive ex-
  ecution was reduced due to destination ROI

7.14.2.143 NppStatus nppiWarpPerspectiveBack_32f_C3R (const Npp32f ∗ *pSrc*, NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, Npp32f ∗ *pDst*, int *nDstStep*, NppiRect *dstRoi*, const double *coeffs*[3][3], int *eInterpolation*)

Inverse perspective transform of an image (32bit float, three channels).

See also:

nppiWarpPerspectiveBack_32f_C1R

7.14.2.144 NppStatus nppiWarpPerspectiveBack_32f_C4R (const Npp32f ∗ *pSrc*, NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, Npp32f ∗ *pDst*, int *nDstStep*, NppiRect *dstRoi*, const double *coeffs*[3][3], int *eInterpolation*)

Inverse perspective transform of an image (32bit float, four channels).

See also:

nppiWarpPerspectiveBack_32f_C1R

7.14.2.145 NppStatus nppiWarpPerspectiveBack_32f_P3R (const Npp32f ∗ *pSrc*[3], NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, Npp32f ∗ *pDst*[3], int *nDstStep*, NppiRect *dstRoi*, const double *coeffs*[3][3], int *eInterpolation*)

Inverse perspective transform of an image (32bit float, three planes).

See also:

nppiWarpPerspectiveBack_32f_C1R

7.14.2.146 NppStatus nppiWarpPerspectiveBack_32f_P4R (const Npp32f ∗ *pSrc*[4], NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, Npp32f ∗ *pDst*[4], int *nDstStep*, NppiRect *dstRoi*, const double *coeffs*[3][3], int *eInterpolation*)

Inverse perspective transform of an image (32bit float, four planes).

See also:

nppiWarpPerspectiveBack_32f_C1R

7.14.2.147 NppStatus nppiWarpPerspectiveBack_32s_AC4R (const Npp32s ∗ *pSrc*, NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, Npp32s ∗ *pDst*, int *nDstStep*, NppiRect *dstRoi*, const double *coeffs*[3][3], int *eInterpolation*)

Inverse perspective transform of an image (32bit signed integer, four channels RGBA).

See also:

nppiWarpPerspectiveBack_32s_C1R

7.14.2.148 NppStatus nppiWarpPerspectiveBack_32s_C1R (const Npp32s ∗ *pSrc*, NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, Npp32s ∗ *pDst*, int *nDstStep*, NppiRect *dstRoi*, const double *coeffs*[3][3], int *eInterpolation*)

Inverse perspective transform of an image (32bit signed integer, single channel).

This function operates using given transform coefficients that can be obtained by using nppiGetPerspective-Transform function or set explicitly. Thus there is no need to invert coefficients in your application before calling WarpPerspectiveBack. The function operates on source and destination regions of interest. The perspective warp function transforms the source image pixel coordinates (x, y) according to the following formulas:

$$\frac{C_{00} * X_{new} + C_{01} * Y_{new} + C_{02}}{C_{20} * X_{new} + C_{21} * Y_{new} + C_{22}} = x \qquad \frac{C_{10} * X_{new} + C_{11} * Y_{new} + C_{12}}{C_{20} * X_{new} + C_{21} * Y_{new} + C_{22}} = y$$

The transformed part of the source image is resampled using the specified interpolation method and written to the destination ROI. The functions nppiGetPerspectiveQuad and nppiGetPerspectiveBound can help with destination ROI specification.

Parameters:

pSrc Source-Image Pointer.

---

oSrcSize Size of source image in pixels

nSrcStep Source-Image Line Step.

srcRoi Source ROI

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

dstRoi Destination ROI

coeffs Perspective transform coefficients

eInterpolation Interpolation mode: can be NPPI_INTER_NN, NPPI_INTER_LINEAR or NPPI_-INTER_CUBIC

Returns:

Image Data Related Error Codes, ROI Related Error Codes

- NPP_RECT_ERROR Indicates an error condition if width or height of the intersection of the srcRoi and source image is less than or equal to 1

- NPP_WRONG_INTERSECTION_ROI_ERROR Indicates an error condition if srcRoi has no intersection with the source image

- NPP_INTERPOLATION_ERROR Indicates an error condition if eInterpolation has an illegal value

- NPP_COEFF_ERROR Indicates an error condition if coefficient values are invalid

- NPP_WRONG_INTERSECTION_QUAD_WARNING Indicates a warning that no operation is performed if the transformed source ROI has no intersection with the destination ROI

- NPP_MISALIGNED_DST_ROI_WARNING Indicates a warning that the speed of primitive execution was reduced due to destination ROI

7.14.2.149 NppStatus nppiWarpPerspectiveBack_32s_C3R (const Npp32s ∗ *pSrc*, NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, Npp32s ∗ *pDst*, int *nDstStep*, NppiRect *dstRoi*, const double *coeffs*[3][3], int *eInterpolation*)

Inverse perspective transform of an image (32bit signed integer, three channels).

See also:

nppiWarpPerspectiveBack_32s_C1R

7.14.2.150 NppStatus nppiWarpPerspectiveBack_32s_C4R (const Npp32s ∗ *pSrc*, NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, Npp32s ∗ *pDst*, int *nDstStep*, NppiRect *dstRoi*, const double *coeffs*[3][3], int *eInterpolation*)

Inverse perspective transform of an image (32bit signed integer, four channels).

See also:

nppiWarpPerspectiveBack_32s_C1R

7.14.2.151 NppStatus nppiWarpPerspectiveBack_32s_P3R (const Npp32s ∗ *pSrc*[3], NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, Npp32s ∗ *pDst*[3], int *nDstStep*, NppiRect *dstRoi*, const double *coeffs*[3][3], int *eInterpolation*)

Inverse perspective transform of an image (32bit signed integer, three planes).

See also:

nppiWarpPerspectiveBack_32s_C1R

7.14.2.152 NppStatus nppiWarpPerspectiveBack_32s_P4R (const Npp32s ∗ *pSrc*[4], NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, Npp32s ∗ *pDst*[4], int *nDstStep*, NppiRect *dstRoi*, const double *coeffs*[3][3], int *eInterpolation*)

Inverse perspective transform of an image (32bit signed integer, four planes).

See also:

nppiWarpPerspectiveBack_32s_C1R

7.14.2.153 NppStatus nppiWarpPerspectiveBack_8u_AC4R (const Npp8u ∗ *pSrc*, NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, Npp8u ∗ *pDst*, int *nDstStep*, NppiRect *dstRoi*, const double *coeffs*[3][3], int *eInterpolation*)

Inverse perspective transform of an image (8bit unsigned integer, four channels RGBA).

See also:

nppiWarpPerspectiveBack_8u_C1R

7.14.2.154 NppStatus nppiWarpPerspectiveBack_8u_C1R (const Npp8u ∗ *pSrc*, NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, Npp8u ∗ *pDst*, int *nDstStep*, NppiRect *dstRoi*, const double *coeffs*[3][3], int *eInterpolation*)

Inverse perspective transform of an image (8bit unsigned integer, single channel).

This function operates using given transform coefficients that can be obtained by using nppiGetPerspective-Transform function or set explicitly. Thus there is no need to invert coefficients in your application before calling WarpPerspectiveBack. The function operates on source and destination regions of interest. The perspective warp function transforms the source image pixel coordinates (x, y) according to the following formulas:

$$\frac{C_{00} * X_{new} + C_{01} * Y_{new} + C_{02}}{C_{20} * X_{new} + C_{21} * Y_{new} + C_{22}} = x \qquad \frac{C_{10} * X_{new} + C_{11} * Y_{new} + C_{12}}{C_{20} * X_{new} + C_{21} * Y_{new} + C_{22}} = y$$

The transformed part of the source image is resampled using the specified interpolation method and written to the destination ROI. The functions nppiGetPerspectiveQuad and nppiGetPerspectiveBound can help with destination ROI specification.

NPPI specific recommendation: The function operates using 2 types of kernels: fast and accurate. The fast method is about 4 times faster than its accurate variant, but does not perform memory access checks and requires the destination ROI to be 64 bytes aligned. Hence any destination ROI is chunked into 3 vertical

stripes: the first and the third are processed by accurate kernels and the central one is processed by the fast one. In order to get the maximum available speed of execution, the projection of destination ROI onto image addresses must be 64 bytes aligned. This is always true if the values `(int)((void *)(pDst + dstRoi.x))` and `(int)((void *)(pDst + dstRoi.x + dstRoi.width))` are multiples of 64. Another rule of thumb is to specify destination ROI in such way that left and right sides of the projected image are separated from the ROI by at least 63 bytes from each side. However, this requires the whole ROI to be part of allocated memory. In case when the conditions above are not satisfied, the function may decrease in speed slightly and will return NPP_MISALIGNED_DST_ROI_WARNING warning.

Parameters:

pSrc Source-Image Pointer.

oSrcSize Size of source image in pixels

nSrcStep Source-Image Line Step.

srcRoi Source ROI

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

dstRoi Destination ROI

coeffs Perspective transform coefficients

eInterpolation Interpolation mode: can be NPPI_INTER_NN, NPPI_INTER_LINEAR or NPPI_-INTER_CUBIC

Returns:

Image Data Related Error Codes, ROI Related Error Codes

- NPP_RECT_ERROR Indicates an error condition if width or height of the intersection of the srcRoi and source image is less than or equal to 1

- NPP_WRONG_INTERSECTION_ROI_ERROR Indicates an error condition if srcRoi has no intersection with the source image

- NPP_INTERPOLATION_ERROR Indicates an error condition if eInterpolation has an illegal value

- NPP_COEFF_ERROR Indicates an error condition if coefficient values are invalid

- NPP_WRONG_INTERSECTION_QUAD_WARNING Indicates a warning that no operation is performed if the transformed source ROI has no intersection with the destination ROI

- NPP_MISALIGNED_DST_ROI_WARNING Indicates a warning that the speed of primitive execution was reduced due to destination ROI

7.14.2.155 NppStatus nppiWarpPerspectiveBack_8u_C3R (const Npp8u ∗ *pSrc*, NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, Npp8u ∗ *pDst*, int *nDstStep*, NppiRect *dstRoi*, const double *coeffs*[3][3], int *eInterpolation*)

Inverse perspective transform of an image (8bit unsigned integer, three channels).

See also:

nppiWarpPerspectiveBack_8u_C1R

7.14.2.156 NppStatus nppiWarpPerspectiveBack_8u_C4R (const Npp8u ∗ *pSrc*, NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, Npp8u ∗ *pDst*, int *nDstStep*, NppiRect *dstRoi*, const double *coeffs*[3][3], int *eInterpolation*)

Inverse perspective transform of an image (8bit unsigned integer, four channels).

See also:

nppiWarpPerspectiveBack_8u_C1R

7.14.2.157 NppStatus nppiWarpPerspectiveBack_8u_P3R (const Npp8u ∗ *pSrc*[3], NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, Npp8u ∗ *pDst*[3], int *nDstStep*, NppiRect *dstRoi*, const double *coeffs*[3][3], int *eInterpolation*)

Inverse perspective transform of an image (8bit unsigned integer, three planes).

See also:

nppiWarpPerspectiveBack_8u_C1R

7.14.2.158 NppStatus nppiWarpPerspectiveBack_8u_P4R (const Npp8u ∗ *pSrc*[4], NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, Npp8u ∗ *pDst*[4], int *nDstStep*, NppiRect *dstRoi*, const double *coeffs*[3][3], int *eInterpolation*)

Inverse perspective transform of an image (8bit unsigned integer, four planes).

See also:

nppiWarpPerspectiveBack_8u_C1R

7.14.2.159 NppStatus nppiWarpPerspectiveQuad_16u_AC4R (const Npp16u ∗ *pSrc*, NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, const double *srcQuad*[4][2], Npp16u ∗ *pDst*, int *nDstStep*, NppiRect *dstRoi*, const double *dstQuad*[4][2], int *eInterpolation*)

Perspective transform of an image (16bit unsigned integer, four channels RGBA).

See also:

nppiWarpPerspectiveQuad_16u_C1R

7.14.2.160 NppStatus nppiWarpPerspectiveQuad_16u_C1R (const Npp16u ∗ *pSrc*, NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, const double *srcQuad*[4][2], Npp16u ∗ *pDst*, int *nDstStep*, NppiRect *dstRoi*, const double *dstQuad*[4][2], int *eInterpolation*)

Perspective transform of an image (16bit unsigned integer, single channel).

This function performs perspective warping of a the specified quadrangle in the source image to the specified quadrangle in the destination image. The function nppiWarpPerspectiveQuad uses the same formulas for pixel mapping as in nppiWarpPerspective function. The transform coefficients are computed internally.

The transformed part of the source image is resampled using the specified interpolation method and written to the destination ROI.

NPPI specific recommendation: The function operates using 2 types of kernels: fast and accurate. The fast method is about 4 times faster than its accurate variant, but does not perform memory access checks and requires the destination ROI to be 64 bytes aligned. Hence any destination ROI is chunked into 3 vertical stripes: the first and the third are processed by accurate kernels and the central one is processed by the fast one. In order to get the maximum available speed of execution, the projection of destination ROI onto image addresses must be 64 bytes aligned. This is always true if the values `(int)((void *)(pDst + dstRoi.x))` and `(int)((void *)(pDst + dstRoi.x + dstRoi.width))` are multiples of 64. Another rule of thumb is to specify destination ROI in such way that left and right sides of the projected image are separated from the ROI by at least 63 bytes from each side. However, this requires the whole ROI to be part of allocated memory. In case when the conditions above are not satisfied, the function may decrease in speed slightly and will return NPP_MISALIGNED_DST_ROI_WARNING warning.

Parameters:

> *pSrc* Source-Image Pointer.
>
> *oSrcSize* Size of source image in pixels
>
> *nSrcStep* Source-Image Line Step.
>
> *srcRoi* Source ROI
>
> *srcQuad* Source quadrangle
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *dstRoi* Destination ROI
>
> *dstQuad* Destination quadrangle
>
> *eInterpolation* Interpolation mode: can be NPPI_INTER_NN, NPPI_INTER_LINEAR or NPPI_-INTER_CUBIC

Returns:

Image Data Related Error Codes, ROI Related Error Codes

- NPP_RECT_ERROR Indicates an error condition if width or height of the intersection of the srcRoi and source image is less than or equal to 1
- NPP_WRONG_INTERSECTION_ROI_ERROR Indicates an error condition if srcRoi has no intersection with the source image
- NPP_INTERPOLATION_ERROR Indicates an error condition if eInterpolation has an illegal value
- NPP_COEFF_ERROR Indicates an error condition if coefficient values are invalid
- NPP_WRONG_INTERSECTION_QUAD_WARNING Indicates a warning that no operation is performed if the transformed source ROI has no intersection with the destination ROI
- NPP_MISALIGNED_DST_ROI_WARNING Indicates a warning that the speed of primitive execution was reduced due to destination ROI

7.14.2.161 NppStatus nppiWarpPerspectiveQuad_16u_C3R (const Npp16u ∗ *pSrc*, NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, const double *srcQuad*[4][2], Npp16u ∗ *pDst*, int *nDstStep*, NppiRect *dstRoi*, const double *dstQuad*[4][2], int *eInterpolation*)

Perspective transform of an image (16bit unsigned integer, three channels).

See also:

  nppiWarpPerspectiveQuad_16u_C1R

7.14.2.162 NppStatus nppiWarpPerspectiveQuad_16u_C4R (const Npp16u ∗ pSrc, NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, const double srcQuad[4][2], Npp16u ∗ pDst, int nDstStep, NppiRect dstRoi, const double dstQuad[4][2], int eInterpolation)

Perspective transform of an image (16bit unsigned integer, four channels).

See also:

  nppiWarpPerspectiveQuad_16u_C1R

7.14.2.163 NppStatus nppiWarpPerspectiveQuad_16u_P3R (const Npp16u ∗ pSrc[3], NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, const double srcQuad[4][2], Npp16u ∗ pDst[3], int nDstStep, NppiRect dstRoi, const double dstQuad[4][2], int eInterpolation)

Perspective transform of an image (16bit unsigned integer, three planes).

See also:

  nppiWarpPerspectiveQuad_16u_C1R

7.14.2.164 NppStatus nppiWarpPerspectiveQuad_16u_P4R (const Npp16u ∗ pSrc[4], NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, const double srcQuad[4][2], Npp16u ∗ pDst[4], int nDstStep, NppiRect dstRoi, const double dstQuad[4][2], int eInterpolation)

Perspective transform of an image (16bit unsigned integer, four planes).

See also:

  nppiWarpPerspectiveQuad_16u_C1R

7.14.2.165 NppStatus nppiWarpPerspectiveQuad_32f_AC4R (const Npp32f ∗ pSrc, NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, const double srcQuad[4][2], Npp32f ∗ pDst, int nDstStep, NppiRect dstRoi, const double dstQuad[4][2], int eInterpolation)

Perspective transform of an image (32bit float, four channels RGBA).

See also:

  nppiWarpPerspectiveQuad_32f_C1R

7.14.2.166 NppStatus nppiWarpPerspectiveQuad_32f_C1R (const Npp32f ∗ pSrc, NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, const double srcQuad[4][2], Npp32f ∗ pDst, int nDstStep, NppiRect dstRoi, const double dstQuad[4][2], int eInterpolation)

Perspective transform of an image (32bit float, single channel).

This function performs perspective warping of a the specified quadrangle in the source image to the specified quadrangle in the destination image. The function nppiWarpPerspectiveQuad uses the same formulas for pixel mapping as in nppiWarpPerspective function. The transform coefficients are computed internally. The transformed part of the source image is resampled using the specified interpolation method and written to the destination ROI.

Parameters:

pSrc Source-Image Pointer.

oSrcSize Size of source image in pixels

nSrcStep Source-Image Line Step.

srcRoi Source ROI

srcQuad Source quadrangle

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

dstRoi Destination ROI

dstQuad Destination quadrangle

eInterpolation Interpolation mode: can be NPPI_INTER_NN, NPPI_INTER_LINEAR or NPPI_-
INTER_CUBIC

Returns:

Image Data Related Error Codes, ROI Related Error Codes

- NPP_RECT_ERROR Indicates an error condition if width or height of the intersection of the srcRoi and source image is less than or equal to 1

- NPP_WRONG_INTERSECTION_ROI_ERROR Indicates an error condition if srcRoi has no intersection with the source image

- NPP_INTERPOLATION_ERROR Indicates an error condition if eInterpolation has an illegal value

- NPP_COEFF_ERROR Indicates an error condition if coefficient values are invalid

- NPP_WRONG_INTERSECTION_QUAD_WARNING Indicates a warning that no operation is performed if the transformed source ROI has no intersection with the destination ROI

- NPP_MISALIGNED_DST_ROI_WARNING Indicates a warning that the speed of primitive execution was reduced due to destination ROI

7.14.2.167 NppStatus nppiWarpPerspectiveQuad_32f_C3R (const Npp32f $*$ **pSrc**, **NppiSize** **oSrcSize**, **int** **nSrcStep**, **NppiRect** **srcRoi**, **const double** **srcQuad[4][2]**, **Npp32f** $*$ **pDst**, **int** **nDstStep**, **NppiRect** **dstRoi**, **const double** **dstQuad[4][2]**, **int** **eInterpolation**)

Perspective transform of an image (32bit float, three channels).

See also:

nppiWarpPerspectiveQuad_32f_C1R

7.14.2.168 NppStatus nppiWarpPerspectiveQuad_32f_C4R (const Npp32f * *pSrc*, NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, const double *srcQuad*[4][2], Npp32f * *pDst*, int *nDstStep*, NppiRect *dstRoi*, const double *dstQuad*[4][2], int *eInterpolation*)

Perspective transform of an image (32bit float, four channels).

See also:

nppiWarpPerspectiveQuad_32f_C1R

7.14.2.169 NppStatus nppiWarpPerspectiveQuad_32f_P3R (const Npp32f * *pSrc*[3], NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, const double *srcQuad*[4][2], Npp32f * *pDst*[3], int *nDstStep*, NppiRect *dstRoi*, const double *dstQuad*[4][2], int *eInterpolation*)

Perspective transform of an image (32bit float, three planes).

See also:

nppiWarpPerspectiveQuad_32f_C1R

7.14.2.170 NppStatus nppiWarpPerspectiveQuad_32f_P4R (const Npp32f * *pSrc*[4], NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, const double *srcQuad*[4][2], Npp32f * *pDst*[4], int *nDstStep*, NppiRect *dstRoi*, const double *dstQuad*[4][2], int *eInterpolation*)

Perspective transform of an image (32bit float, four planes).

See also:

nppiWarpPerspectiveQuad_32f_C1R

7.14.2.171 NppStatus nppiWarpPerspectiveQuad_32s_AC4R (const Npp32s * *pSrc*, NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, const double *srcQuad*[4][2], Npp32s * *pDst*, int *nDstStep*, NppiRect *dstRoi*, const double *dstQuad*[4][2], int *eInterpolation*)

Perspective transform of an image (32bit signed integer, four channels RGBA).

See also:

nppiWarpPerspectiveQuad_32s_C1R

7.14.2.172 NppStatus nppiWarpPerspectiveQuad_32s_C1R (const Npp32s * *pSrc*, NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, const double *srcQuad*[4][2], Npp32s * *pDst*, int *nDstStep*, NppiRect *dstRoi*, const double *dstQuad*[4][2], int *eInterpolation*)

Perspective transform of an image (32bit signed integer, single channel).

This function performs perspective warping of a the specified quadrangle in the source image to the specified quadrangle in the destination image. The function nppiWarpPerspectiveQuad uses the same formulas for pixel mapping as in nppiWarpPerspective function. The transform coefficients are computed internally. The transformed part of the source image is resampled using the specified interpolation method and written to the destination ROI.

Parameters:

> *pSrc* Source-Image Pointer.
>
> *oSrcSize* Size of source image in pixels
>
> *nSrcStep* Source-Image Line Step.
>
> *srcRoi* Source ROI
>
> *srcQuad* Source quadrangle
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *dstRoi* Destination ROI
>
> *dstQuad* Destination quadrangle
>
> *eInterpolation* Interpolation mode: can be NPPI_INTER_NN, NPPI_INTER_LINEAR or NPPI_-INTER_CUBIC

Returns:

> Image Data Related Error Codes, ROI Related Error Codes
>
> - NPP_RECT_ERROR Indicates an error condition if width or height of the intersection of the srcRoi and source image is less than or equal to 1
> - NPP_WRONG_INTERSECTION_ROI_ERROR Indicates an error condition if srcRoi has no intersection with the source image
> - NPP_INTERPOLATION_ERROR Indicates an error condition if eInterpolation has an illegal value
> - NPP_COEFF_ERROR Indicates an error condition if coefficient values are invalid
> - NPP_WRONG_INTERSECTION_QUAD_WARNING Indicates a warning that no operation is performed if the transformed source ROI has no intersection with the destination ROI
> - NPP_MISALIGNED_DST_ROI_WARNING Indicates a warning that the speed of primitive execution was reduced due to destination ROI

7.14.2.173 NppStatus nppiWarpPerspectiveQuad_32s_C3R (const Npp32s ∗ *pSrc*, NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, const double *srcQuad*[4][2], Npp32s ∗ *pDst*, int *nDstStep*, NppiRect *dstRoi*, const double *dstQuad*[4][2], int *eInterpolation*)

Perspective transform of an image (32bit signed integer, three channels).

See also:

> nppiWarpPerspectiveQuad_32s_C1R

7.14.2.174 NppStatus nppiWarpPerspectiveQuad_32s_C4R (const Npp32s ∗ *pSrc*, NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, const double *srcQuad*[4][2], Npp32s ∗ *pDst*, int *nDstStep*, NppiRect *dstRoi*, const double *dstQuad*[4][2], int *eInterpolation*)

Perspective transform of an image (32bit signed integer, four channels).

See also:

> nppiWarpPerspectiveQuad_32s_C1R

7.14.2.175   NppStatus nppiWarpPerspectiveQuad_32s_P3R (const Npp32s ∗ pSrc[3], NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, const double srcQuad[4][2], Npp32s ∗ pDst[3], int nDstStep, NppiRect dstRoi, const double dstQuad[4][2], int eInterpolation)

Perspective transform of an image (32bit signed integer, three planes).

See also:

nppiWarpPerspectiveQuad_32s_C1R

7.14.2.176   NppStatus nppiWarpPerspectiveQuad_32s_P4R (const Npp32s ∗ pSrc[4], NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, const double srcQuad[4][2], Npp32s ∗ pDst[4], int nDstStep, NppiRect dstRoi, const double dstQuad[4][2], int eInterpolation)

Perspective transform of an image (32bit signed integer, four planes).

See also:

nppiWarpPerspectiveQuad_32s_C1R

7.14.2.177   NppStatus nppiWarpPerspectiveQuad_8u_AC4R (const Npp8u ∗ pSrc, NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, const double srcQuad[4][2], Npp8u ∗ pDst, int nDstStep, NppiRect dstRoi, const double dstQuad[4][2], int eInterpolation)

Perspective transform of an image (8bit unsigned integer, four channels RGBA).

See also:

nppiWarpPerspectiveQuad_8u_C1R

7.14.2.178   NppStatus nppiWarpPerspectiveQuad_8u_C1R (const Npp8u ∗ pSrc, NppiSize oSrcSize, int nSrcStep, NppiRect srcRoi, const double srcQuad[4][2], Npp8u ∗ pDst, int nDstStep, NppiRect dstRoi, const double dstQuad[4][2], int eInterpolation)

Perspective transform of an image (8bit unsigned integer, single channel).

This function performs perspective warping of a the specified quadrangle in the source image to the specified quadrangle in the destination image. The function nppiWarpPerspectiveQuad uses the same formulas for pixel mapping as in nppiWarpPerspective function. The transform coefficients are computed internally. The transformed part of the source image is resampled using the specified interpolation method and written to the destination ROI.

NPPI specific recommendation: The function operates using 2 types of kernels: fast and accurate. The fast method is about 4 times faster than its accurate variant, but does not perform memory access checks and requires the destination ROI to be 64 bytes aligned. Hence any destination ROI is chunked into 3 vertical stripes: the first and the third are processed by accurate kernels and the central one is processed by the fast one. In order to get the maximum available speed of execution, the projection of destination ROI onto image addresses must be 64 bytes aligned. This is always true if the values `(int)((void *)(pDst + dstRoi.x))` and `(int)((void *)(pDst + dstRoi.x + dstRoi.width))` are multiples of 64. Another rule of thumb is to specify destination ROI in such way that left and right sides of the projected image are separated from the ROI by at least 63 bytes from each side. However, this requires the whole ROI to be part of allocated memory. In case when the conditions above are not satisfied, the function may decrease in speed slightly and will return NPP_MISALIGNED_DST_ROI_WARNING warning.

Parameters:

    pSrc Source-Image Pointer.

    oSrcSize Size of source image in pixels

    nSrcStep Source-Image Line Step.

    srcRoi Source ROI

    srcQuad Source quadrangle

    pDst Destination-Image Pointer.

    nDstStep Destination-Image Line Step.

    dstRoi Destination ROI

    dstQuad Destination quadrangle

    eInterpolation Interpolation mode: can be NPPI_INTER_NN, NPPI_INTER_LINEAR or NPPI_-
        INTER_CUBIC

Returns:

    Image Data Related Error Codes, ROI Related Error Codes

- NPP_RECT_ERROR Indicates an error condition if width or height of the intersection of the srcRoi and source image is less than or equal to 1

- NPP_WRONG_INTERSECTION_ROI_ERROR Indicates an error condition if srcRoi has no intersection with the source image

- NPP_INTERPOLATION_ERROR Indicates an error condition if eInterpolation has an illegal value

- NPP_COEFF_ERROR Indicates an error condition if coefficient values are invalid

- NPP_WRONG_INTERSECTION_QUAD_WARNING Indicates a warning that no operation is performed if the transformed source ROI has no intersection with the destination ROI

- NPP_MISALIGNED_DST_ROI_WARNING Indicates a warning that the speed of primitive execution was reduced due to destination ROI

7.14.2.179 NppStatus nppiWarpPerspectiveQuad_8u_C3R (const Npp8u ∗ *pSrc*, NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, const double *srcQuad*[4][2], Npp8u ∗ *pDst*, int *nDstStep*, NppiRect *dstRoi*, const double *dstQuad*[4][2], int *eInterpolation*)

Perspective transform of an image (8bit unsigned integer, three channels).

See also:

    nppiWarpPerspectiveQuad_8u_C1R

7.14.2.180 NppStatus nppiWarpPerspectiveQuad_8u_C4R (const Npp8u ∗ *pSrc*, NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, const double *srcQuad*[4][2], Npp8u ∗ *pDst*, int *nDstStep*, NppiRect *dstRoi*, const double *dstQuad*[4][2], int *eInterpolation*)

Perspective transform of an image (8bit unsigned integer, four channels).

See also:

    nppiWarpPerspectiveQuad_8u_C1R

7.14.2.181 NppStatus nppiWarpPerspectiveQuad_8u_P3R (const Npp8u ∗ *pSrc*[3], NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, const double *srcQuad*[4][2], Npp8u ∗ *pDst*[3], int *nDstStep*, NppiRect *dstRoi*, const double *dstQuad*[4][2], int *eInterpolation*)

Perspective transform of an image (8bit unsigned integer, three planes).

See also:

nppiWarpPerspectiveQuad_8u_C1R

7.14.2.182 NppStatus nppiWarpPerspectiveQuad_8u_P4R (const Npp8u ∗ *pSrc*[4], NppiSize *oSrcSize*, int *nSrcStep*, NppiRect *srcRoi*, const double *srcQuad*[4][2], Npp8u ∗ *pDst*[4], int *nDstStep*, NppiRect *dstRoi*, const double *dstQuad*[4][2], int *eInterpolation*)

Perspective transform of an image (8bit unsigned integer, four planes).

See also:

nppiWarpPerspectiveQuad_8u_C1R

7.15   Color Conversion

Image color space and sample conversion operations.

RGBToYCbCr

RGB to YCbCr color conversion.

- NppStatus nppiRGBToYCbCr_8u_C3R (const Npp8u ∗pSrc, int nSrcStep, Npp8u ∗pDst, int nDst-Step, NppiSize oSizeROI)

    3 channel 8-bit unsigned packed RGB to packed YCbCr color conversion.

- NppStatus nppiRGBToYCbCr422_8u_C3C2R (const Npp8u ∗pSrc, int nSrcStep, Npp8u ∗pDst, int nDstStep, NppiSize oSizeROI)

    3 channel 8-bit unsigned RGB to 2 channel chroma packed YCbCr422 color conversion.

- NppStatus nppiRGBToYCbCr420_8u_C3P3R (const Npp8u ∗pSrc, int nSrcStep, Npp8u ∗∗pDst, int nDstStep[3], NppiSize oSizeROI)

    3 channel 8-bit unsigned packed RGB to planar YCbCr420 color conversion.

- NppStatus nppiRGBToYCbCr_8u_P3R (const Npp8u ∗const ∗pSrc, int nSrcStep, Npp8u ∗∗pDst, int nDstStep, NppiSize oSizeROI)

    3 channel planar 8-bit unsigned RGB to YCbCr color conversion.

- NppStatus nppiRGBToYCbCr_8u_AC4R (const Npp8u ∗pSrc, int nSrcStep, Npp8u ∗pDst, int nD-stStep, NppiSize oSizeROI)

    4 channel 8-bit unsigned RGB to YCbCr color conversion, ignoring Alpha.

YCbCrToRGB

YCbCr to RGB color conversion.

- NppStatus nppiYCbCrToRGB_8u_C3R (const Npp8u ∗pSrc, int nSrcStep, Npp8u ∗pDst, int nDst-Step, NppiSize oSizeROI)

    3 channel 8-bit unsigned packed YCbCr to RGB color conversion.

- NppStatus nppiYCbCrToRGB_8u_P3R (const Npp8u ∗const ∗pSrc, int nSrcStep, Npp8u ∗∗pDst, int nDstStep, NppiSize oSizeROI)

    3 channel 8-bit unsigned planar YCbCr to RGB color conversion.

- NppStatus nppiYCbCrToRGB_8u_AC4R (const Npp8u ∗pSrc, int nSrcStep, Npp8u ∗pDst, int nD-stStep, NppiSize oSizeROI)

    4 channel 8-bit unsigned packed YCbCr to RGB color conversion, not affecting Alpha.

- NppStatus nppiYCbCr422ToRGB_8u_C2C3R (const Npp8u ∗pSrc, int nSrcStep, Npp8u ∗pDst, int nDstStep, NppiSize oSizeROI)

    2 channel 8-bit unsigned YCbCr422 to 3 channel packed RGB color conversion.

- NppStatus nppiYCbCr420ToRGB_8u_P3C3R (const Npp8u *const *pSrc, int nSrcStep[3], Npp8u *pDst, int nDstStep, NppiSize oSizeROI)

    3 channel 8-bit unsigned planar YCbCr420 to packed RGB color conversion.

Sample Pattern Conversion.

- NppStatus nppiYCbCr422ToYCbCr420_8u_P3R (const Npp8u *const *pSrc, int nSrcStep[3], Npp8u **pDst, int nDstStep[3], NppiSize oSizeROI)

    3 channel 8-bit unsigned planar YCbCr:422 to YCbCr:420 resampling.

- NppStatus nppiYCbCr422ToYCbCr411_8u_P3R (const Npp8u *const *pSrc, int nSrcStep[3], Npp8u **pDst, int nDstStep[3], NppiSize oSizeROI)

    3 channel 8-bit unsigned planar YCbCr:422 to YCbCr:411 resampling.

- NppStatus nppiYCbCr420ToYCbCr422_8u_P3R (const Npp8u *const *pSrc, int nSrcStep[3], Npp8u **pDst, int nDstStep[3], NppiSize oSizeROI)

    3 channel 8-bit unsigned planar YCbCr:420 to YCbCr:422 resampling.

- NppStatus nppiYCbCr420ToYCbCr411_8u_P3P2R (const Npp8u *const *pSrc, int aSrcStep[3], Npp8u *pDstY, int nDstYStep, Npp8u *pDstCbCr, int nDstCbCrStep, NppiSize oSizeROI)

    3 channel 8-bit unsigned planar YCbCr:420 to YCbCr:411 resampling.

Color Processing

Color manipuliation functions.

- NppStatus nppiColorTwist32f_8u_C3R (const Npp8u *pSrc, int nSrcStep, Npp8u *pDst, int nDstStep, NppiSize oSizeROI, const Npp32f twist[3][4])

    3 channel 8-bit unsigned color twist.

- NppStatus nppiColorTwist32f_8u_P3R (const Npp8u *const *pSrc, int nSrcStep, Npp8u **pDst, int nDstStep, NppiSize oSizeROI, const Npp32f twist[3][4])

    3 channel planar 8-bit unsigned color twist.

- NppStatus nppiColorTwist32f_8u_AC4R (const Npp8u *pSrc, int nSrcStep, Npp8u *pDst, int nDstStep, NppiSize oSizeROI, const Npp32f twist[3][4])

    4 channel 8-bit unsigned color twist, not affecting Alpha.

- NppStatus nppiLUT_Linear_8u_C1R (const Npp8u *pSrc, int nSrcStep, Npp8u *pDst, int nDstStep, NppiSize oSizeROI, const Npp32s *pValues, const Npp32s *pLevels, int nLevels)

    8-bit unsigned look-up-table color conversion.

- NppStatus nppiLUT_Linear_8u_C3R (const Npp8u *pSrc, int nSrcStep, Npp8u *pDst, int nDstStep, NppiSize oSizeROI, const Npp32s *pValues[3], const Npp32s *pLevels[3], int nLevels[3])

    3 channel 8-bit unsigned look-up-table color conversion.

- NppStatus nppiLUT_Linear_8u_AC4R (const Npp8u *pSrc, int nSrcStep, Npp8u *pDst, int nDstStep, NppiSize oSizeROI, const Npp32s *pValues[4], const Npp32s *pLevels[4], int nLevels[4])

4 channel 8-bit unsigned look-up-table color conversion, not affecting Alpha.

7.15.1 Detailed Description

Image color space and sample conversion operations.

7.15.2 Function Documentation

7.15.2.1 NppStatus nppiColorTwist32f_8u_AC4R (const Npp8u ∗ *pSrc*, int *nSrcStep*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, const Npp32f *twist*[3][4])

4 channel 8-bit unsigned color twist, not affecting Alpha.

An input color twist matrix with floating-point pixel values is applied with in ROI. Alpha channel is the last channel and is not processed.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

twist The color twist matrix with floating-point pixel values.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.15.2.2 NppStatus nppiColorTwist32f_8u_C3R (const Npp8u ∗ *pSrc*, int *nSrcStep*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, const Npp32f *twist*[3][4])

3 channel 8-bit unsigned color twist.

An input color twist matrix with floating-point pixel values is applied within ROI.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

twist The color twist matrix with floating-point pixel values.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.15.2.3 NppStatus nppiColorTwist32f_8u_P3R (const Npp8u *const * *pSrc*, int *nSrcStep*, Npp8u ** *pDst*, int *nDstStep*, NppiSize *oSizeROI*, const Npp32f *twist*[3][4])

3 channel planar 8-bit unsigned color twist.

An input color twist matrix with floating-point pixel values is applied within ROI.

Parameters:

> *pSrc* Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *twist* The color twist matrix with floating-point pixel values.

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.15.2.4 NppStatus nppiLUT_Linear_8u_AC4R (const Npp8u * *pSrc*, int *nSrcStep*, Npp8u * *pDst*, int *nDstStep*, NppiSize *oSizeROI*, const Npp32s * *pValues*[4], const Npp32s * *pLevels*[4], int *nLevels*[4])

4 channel 8-bit unsigned look-up-table color conversion, not affecting Alpha.

The LUT is derived from a set of user defined mapping points through linear interpolation. Alpha channel is the last channel and is not processed.

Parameters:

> *pSrc* Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).
>
> *pValues* Double pointer to an [4] of arrays of user defined OUTPUT values per CHANNEL
>
> *pLevels* Double pointer to an [4] of arrays of user defined INPUT values per CHANNEL
>
> *nLevels* A [4] array of user defined input/output mapping points (levels) per CHANNEL

Returns:

Image Data Related Error Codes, ROI Related Error Codes

- NPP_LUT_NUMBER_OF_LEVELS_ERROR if the number of levels is less than 2.

7.15.2.5 NppStatus nppiLUT_Linear_8u_C1R (const Npp8u ∗ *pSrc*, int *nSrcStep*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, const Npp32s ∗ *pValues*, const Npp32s ∗ *pLevels*, int *nLevels*)

8-bit unsigned look-up-table color conversion.

The LUT is derived from a set of user defined mapping points through linear interpolation.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

pValues Pointer to an array of user defined OUTPUT values

pLevels Pointer to an array of user defined INPUT values

nLevels Number of user defined input/output mapping points (levels)

Returns:

Image Data Related Error Codes, ROI Related Error Codes

- NPP_LUT_NUMBER_OF_LEVELS_ERROR if the number of levels is less than 2.

7.15.2.6 NppStatus nppiLUT_Linear_8u_C3R (const Npp8u ∗ *pSrc*, int *nSrcStep*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, const Npp32s ∗ *pValues*[3], const Npp32s ∗ *pLevels*[3], int *nLevels*[3])

3 channel 8-bit unsigned look-up-table color conversion.

The LUT is derived from a set of user defined mapping points through linear interpolation.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

pValues Double pointer to an [3] of arrays of user defined OUTPUT values per CHANNEL

pLevels Double pointer to an [3] of arrays of user defined INPUT values per CHANNEL

nLevels A [3] array of user defined input/output mapping points (levels) per CHANNEL

Returns:

Image Data Related Error Codes, ROI Related Error Codes

- NPP_LUT_NUMBER_OF_LEVELS_ERROR if the number of levels is less than 2.

7.15.2.7 NppStatus nppiRGBToYCbCr420_8u_C3P3R (const Npp8u ∗ *pSrc*, int *nSrcStep*, Npp8u ∗∗ *pDst*, int *nDstStep*[3], NppiSize *oSizeROI*)

3 channel 8-bit unsigned packed RGB to planar YCbCr420 color conversion.

Parameters:

>   *pSrc* Source-Image Pointer.
>
>   *nSrcStep* Source-Image Line Step.
>
>   *pDst* Destination-Image Pointer.
>
>   *nDstStep* Destination-Image Line Step.
>
>   *oSizeROI* Region-of-Interest (ROI).

Returns:

>   Image Data Related Error Codes, ROI Related Error Codes

7.15.2.8 NppStatus nppiRGBToYCbCr422_8u_C3C2R (const Npp8u ∗ *pSrc*, int *nSrcStep*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

3 channel 8-bit unsigned RGB to 2 channel chroma packed YCbCr422 color conversion.

images.

Parameters:

>   *pSrc* Source-Image Pointer.
>
>   *nSrcStep* Source-Image Line Step.
>
>   *pDst* Destination-Image Pointer.
>
>   *nDstStep* Destination-Image Line Step.
>
>   *oSizeROI* Region-of-Interest (ROI).

Returns:

>   Image Data Related Error Codes, ROI Related Error Codes

7.15.2.9 NppStatus nppiRGBToYCbCr_8u_AC4R (const Npp8u ∗ *pSrc*, int *nSrcStep*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

4 channel 8-bit unsigned RGB to YCbCr color conversion, ignoring Alpha.

Alpha channel is the last channel and is not processed.

Parameters:

>   *pSrc* Source-Image Pointer.
>
>   *nSrcStep* Source-Image Line Step.
>
>   *pDst* Destination-Image Pointer.
>
>   *nDstStep* Destination-Image Line Step.
>
>   *oSizeROI* Region-of-Interest (ROI).

Returns:

>   Image Data Related Error Codes, ROI Related Error Codes

7.15.2.10 NppStatus nppiRGBToYCbCr_8u_C3R (const Npp8u $*$ *pSrc***, int** *nSrcStep***, Npp8u** $*$ *pDst***, int** *nDstStep***, NppiSize** *oSizeROI***)**

3 channel 8-bit unsigned packed RGB to packed YCbCr color conversion.

Parameters:

> *pSrc* Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.15.2.11 NppStatus nppiRGBToYCbCr_8u_P3R (const Npp8u $*$**const** $*$ *pSrc***, int** *nSrcStep***, Npp8u** $**$ *pDst***, int** *nDstStep***, NppiSize** *oSizeROI***)**

3 channel planar 8-bit unsigned RGB to YCbCr color conversion.

Parameters:

> *pSrc* Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.15.2.12 NppStatus nppiYCbCr420ToRGB_8u_P3C3R (const Npp8u $*$**const** $*$ *pSrc***, int** *nSrcStep*[3]**, Npp8u** $*$ *pDst***, int** *nDstStep***, NppiSize** *oSizeROI***)**

3 channel 8-bit unsigned planar YCbCr420 to packed RGB color conversion.

Parameters:

> *pSrc* Source-Image Pointer.
>
> *nSrcStep* Source-Image Line Step.
>
> *pDst* Destination-Image Pointer.
>
> *nDstStep* Destination-Image Line Step.
>
> *oSizeROI* Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.15.2.13 NppStatus nppiYCbCr420ToYCbCr411_8u_P3P2R (const Npp8u ∗const ∗ pSrc, int aSrcStep[3], Npp8u ∗ pDstY, int nDstYStep, Npp8u ∗ pDstCbCr, int nDstCbCrStep, NppiSize oSizeROI)

3 channel 8-bit unsigned planar YCbCr:420 to YCbCr:411 resampling.

Parameters:

>*pSrc* Array of pointers to the source image planes.

>*aSrcStep* Array with distances in bytes between starts of consecutive lines of the source image planes.

>*pDstY* Destination-Image Pointer. Y-channel.

>*nDstYStep* Destination-Image Line Step. Y-channel.

>*pDstCbCr* Destination-Image Pointer. CbCr image.

>*nDstCbCrStep* Destination-Image Line Step. CbCr image.

>*oSizeROI* Region-of-Interest (ROI).

Returns:

>Image Data Related Error Codes, ROI Related Error Codes

7.15.2.14 NppStatus nppiYCbCr420ToYCbCr422_8u_P3R (const Npp8u ∗const ∗ pSrc, int nSrcStep[3], Npp8u ∗∗ pDst, int nDstStep[3], NppiSize oSizeROI)

3 channel 8-bit unsigned planar YCbCr:420 to YCbCr:422 resampling.

Parameters:

>*pSrc* Source-Image Pointer.

>*nSrcStep* Source-Image Line Step.

>*pDst* Destination-Image Pointer.

>*nDstStep* Destination-Image Line Step.

>*oSizeROI* Region-of-Interest (ROI).

Returns:

>Image Data Related Error Codes, ROI Related Error Codes

7.15.2.15 NppStatus nppiYCbCr422ToRGB_8u_C2C3R (const Npp8u ∗ pSrc, int nSrcStep, Npp8u ∗ pDst, int nDstStep, NppiSize oSizeROI)

2 channel 8-bit unsigned YCbCr422 to 3 channel packed RGB color conversion.

images.

Parameters:

>*pSrc* Source-Image Pointer.

>*nSrcStep* Source-Image Line Step.

>*pDst* Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.15.2.16 NppStatus nppiYCbCr422ToYCbCr411_8u_P3R (const Npp8u ∗const ∗ *pSrc*, int *nSrcStep*[3], Npp8u ∗∗ *pDst*, int *nDstStep*[3], NppiSize *oSizeROI*)

3 channel 8-bit unsigned planar YCbCr:422 to YCbCr:411 resampling.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.15.2.17 NppStatus nppiYCbCr422ToYCbCr420_8u_P3R (const Npp8u ∗const ∗ *pSrc*, int *nSrcStep*[3], Npp8u ∗∗ *pDst*, int *nDstStep*[3], NppiSize *oSizeROI*)

3 channel 8-bit unsigned planar YCbCr:422 to YCbCr:420 resampling.

Parameters:

pSrc Source-Image Pointer.

nSrcStep Source-Image Line Step.

pDst Destination-Image Pointer.

nDstStep Destination-Image Line Step.

oSizeROI Region-of-Interest (ROI).

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.15.2.18 NppStatus nppiYCbCrToRGB_8u_AC4R (const Npp8u ∗ *pSrc*, int *nSrcStep*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

4 channel 8-bit unsigned packed YCbCr to RGB color conversion, not affecting Alpha.

Alpha channel is the last channel and is not processed.

Parameters:

> ***pSrc*** Source-Image Pointer.
>
> ***nSrcStep*** Source-Image Line Step.
>
> ***pDst*** Destination-Image Pointer.
>
> ***nDstStep*** Destination-Image Line Step.
>
> ***oSizeROI*** Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.15.2.19 NppStatus nppiYCbCrToRGB_8u_C3R (const Npp8u ∗ *pSrc*, int *nSrcStep*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

3 channel 8-bit unsigned packed YCbCr to RGB color conversion.

Parameters:

> ***pSrc*** Source-Image Pointer.
>
> ***nSrcStep*** Source-Image Line Step.
>
> ***pDst*** Destination-Image Pointer.
>
> ***nDstStep*** Destination-Image Line Step.
>
> ***oSizeROI*** Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.15.2.20 NppStatus nppiYCbCrToRGB_8u_P3R (const Npp8u ∗const ∗ *pSrc*, int *nSrcStep*, Npp8u ∗∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

3 channel 8-bit unsigned planar YCbCr to RGB color conversion.

Parameters:

> ***pSrc*** Source-Image Pointer.
>
> ***nSrcStep*** Source-Image Line Step.
>
> ***pDst*** Destination-Image Pointer.
>
> ***nDstStep*** Destination-Image Line Step.
>
> ***oSizeROI*** Region-of-Interest (ROI).

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.16 Labeling and Segmentation

Pixel labeling and image segementation operations.

Typedefs

- typedef struct NppiGraphcutState NppiGraphcutState

Functions

- NppStatus nppiGraphcutGetSize (NppiSize oSize, int ∗pBufSize)

    Calculates the size of the temporary buffer for graph-cut with 4 neighborhood labeling.

- NppStatus nppiGraphcut8GetSize (NppiSize oSize, int ∗pBufSize)

    Calculates the size of the temporary buffer for graph-cut with 8 neighborhood labeling.

- NppStatus nppiGraphcutInitAlloc (NppiSize oSize, NppiGraphcutState ∗∗ppState, Npp8u ∗pDeviceMem)

    Initializes graph-cut state structure and allocates additional resources for graph-cut with 8 neighborhood labeling.

- NppStatus nppiGraphcut8InitAlloc (NppiSize oSize, NppiGraphcutState ∗∗ppState, Npp8u ∗pDeviceMem)

    Allocates and initializes the graph-cut state structure and additional resources for graph-cut with 8 neighborhood labeling.

- NppStatus nppiGraphcutFree (NppiGraphcutState ∗pState)

    Frees the additional resources of the graph-cut state structure.

- NppStatus nppiGraphcut_32s8u (Npp32s ∗pTerminals, Npp32s ∗pLeftTransposed, Npp32s ∗pRightTransposed, Npp32s ∗pTop, Npp32s ∗pBottom, int nStep, int nTransposedStep, NppiSize size, Npp8u ∗pLabel, int nLabelStep, NppiGraphcutState ∗pState)

    Graphcut of a flow network (32bit signed integer edge capacities).

- NppStatus nppiGraphcut8_32s8u (Npp32s ∗pTerminals, Npp32s ∗pLeftTransposed, Npp32s ∗pRightTransposed, Npp32s ∗pTop, Npp32s ∗pTopLeft, Npp32s ∗pTopRight, Npp32s ∗pBottom, Npp32s ∗pBottomLeft, Npp32s ∗pBottomRight, int nStep, int nTransposedStep, NppiSize size, Npp8u ∗pLabel, int nLabelStep, NppiGraphcutState ∗pState)

    Graphcut of a flow network (32bit signed integer edge capacities).

7.16.1 Detailed Description

Pixel labeling and image segementation operations.

7.16.2 Typedef Documentation

7.16.2.1 typedef struct NppiGraphcutState NppiGraphcutState

7.16.3 Function Documentation

7.16.3.1 NppStatus nppiGraphcut8_32s8u (Npp32s ∗ *pTerminals*, Npp32s ∗ *pLeftTransposed*, Npp32s ∗ *pRightTransposed*, Npp32s ∗ *pTop*, Npp32s ∗ *pTopLeft*, Npp32s ∗ *pTopRight*, Npp32s ∗ *pBottom*, Npp32s ∗ *pBottomLeft*, Npp32s ∗ *pBottomRight*, int *nStep*, int *nTransposedStep*, NppiSize *size*, Npp8u ∗ *pLabel*, int *nLabelStep*, NppiGraphcutState ∗ *pState*)

Graphcut of a flow network (32bit signed integer edge capacities).

The function computes the minimal cut (graphcut) of a 2D regular 8-connected graph. The inputs are the capacities of the horizontal (in transposed form), vertical and terminal (source and sink) edges. The capacities to source and sink are stored as capacity differences in the terminals array (terminals(x) = source(x) - sink(x)). The implementation assumes that the edge capacities for boundary edges that would connect to nodes outside the specified domain are set to 0 (for example left(0,∗) == 0). If this is not fulfilled the computed labeling may be wrong! The computed binary labeling is encoded as unsigned 8bit values (0 / 255).

See also:

> nppiGraphcut8InitAlloc(), nppiGraphcutFree(), nppiGraphcut8GetSize().

Parameters:

> *pTerminals* Pointer to differences of terminal edge capacities (terminal(x) = source(x) - sink(x))
>
> *pLeftTransposed* Pointer to transposed left edge capacities (left(0,∗) must be 0)
>
> *pRightTransposed* Pointer to transposed right edge capacities (right(width-1,∗) must be 0)
>
> *pTop* Pointer to top edge capacities (top(∗,0) must be 0)
>
> *pTopLeft* Pointer to top left edge capacities (topleft(∗,0) & topleft(0,∗) must be 0)
>
> *pTopRight* Pointer to top right edge capacities (topright(∗,0) & topright(width-1,∗) must be 0)
>
> *pBottom* Pointer to bottom edge capacities (bottom(∗,height-1) must be 0)
>
> *pBottomLeft* Pointer to bottom left edge capacities (bottomleft(∗,height-1) && bottomleft(0,∗) must be 0)
>
> *pBottomRight* Pointer to bottom right edge capacities (bottomright(∗,height-1) && bottomright(width-1,∗) must be 0)
>
> *nStep* Step in bytes between any pair of sequential rows of edge capacities
>
> *nTransposedStep* Step in bytes between any pair of sequential rows of tranposed edge capacities
>
> *size* Graph size
>
> *pLabel* Pointer to destination label image
>
> *nLabelStep* Step in bytes between any pair of sequential rows of label image
>
> *pState* Pointer to graph-cut state structure. This structure must be initialized allocated and initialized using nppiGraphcut8InitAlloc().

Returns:

> Image Data Related Error Codes, ROI Related Error Codes

7.16.3.2 NppStatus nppiGraphcut8GetSize (NppiSize *oSize*, int * *pBufSize*)

Calculates the size of the temporary buffer for graph-cut with 8 neighborhood labeling.

See also:

nppiGraphcut8InitAlloc(), nppiGraphcut8_32s8u().

Parameters:

oSize Graph size.

pBufSize Pointer to variable that returns the size of the temporary buffer.

Returns:

NPP_SUCCESS Indicates no error. Any other value indicates an error or a warning
NPP_SIZE_ERROR Indicates an error condition if any image dimension has zero or negative value
NPP_NULL_POINTER_ERROR Indicates an error condition if pBufSize pointer is NULL

7.16.3.3 NppStatus nppiGraphcut8InitAlloc (NppiSize *oSize*, NppiGraphcutState ** *ppState*, Npp8u * *pDeviceMem*)

Allocates and initializes the graph-cut state structure and additional resources for graph-cut with 8 neighborhood labeling.

See also:

nppiGraphcut8_32s8u(), nppiGraphcut8GetSize().

Parameters:

oSize Graph size

ppState Pointer to pointer to graph-cut state structure.

pDeviceMem to the sufficient amount of device memory. The CUDA runtime or NPP memory allocators must be used to allocate this memory. The minimum amount of device memory required to run graph-cut on a for a specific image size is computed by nppiGraphcut8GetSize().

Returns:

NPP_SUCCESS Indicates no error. Any other value indicates an error or a warning
NPP_SIZE_ERROR Indicates an error condition if any image dimension has zero or negative value
NPP_NULL_POINTER_ERROR Indicates an error condition if pBufSize pointer is NULL

7.16.3.4 NppStatus nppiGraphcut_32s8u (Npp32s * *pTerminals*, Npp32s * *pLeftTransposed*, Npp32s * *pRightTransposed*, Npp32s * *pTop*, Npp32s * *pBottom*, int *nStep*, int *nTransposedStep*, NppiSize *size*, Npp8u * *pLabel*, int *nLabelStep*, NppiGraphcutState * *pState*)

Graphcut of a flow network (32bit signed integer edge capacities).

The function computes the minimal cut (graphcut) of a 2D regular 4-connected graph. The inputs are the capacities of the horizontal (in transposed form), vertical and terminal (source and sink) edges. The capacities to source and sink are stored as capacity differences in the terminals array (terminals(x) =

source(x) - sink(x)). The implementation assumes that the edge capacities for boundary edges that would connect to nodes outside the specified domain are set to 0 (for example left(0,∗) == 0). If this is not fulfilled the computed labeling may be wrong! The computed binary labeling is encoded as unsigned 8bit values (0 / 255).

See also:

nppiGraphcutInitAlloc(), nppiGraphcutFree(), nppiGraphcutGetSize().

Parameters:

pTerminals Pointer to differences of terminal edge capacities (terminal(x) = source(x) - sink(x))

pLeftTransposed Pointer to transposed left edge capacities (left(0,∗) must be 0)

pRightTransposed Pointer to transposed right edge capacities (right(width-1,∗) must be 0)

pTop Pointer to top edge capacities (top(∗,0) must be 0)

pBottom Pointer to bottom edge capacities (bottom(∗,height-1) must be 0)

nStep Step in bytes between any pair of sequential rows of edge capacities

nTransposedStep Step in bytes between any pair of sequential rows of tranposed edge capacities

size Graph size

pLabel Pointer to destination label image

nLabelStep Step in bytes between any pair of sequential rows of label image

pState Pointer to graph-cut state structure. This structure must be initialized allocated and initialized using nppiGraphcutInitAlloc().

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.16.3.5   NppStatus nppiGraphcutFree (NppiGraphcutState ∗ *pState*)

Frees the additional resources of the graph-cut state structure.

See also:

nppiGraphcutInitAlloc
nppiGraphcut8InitAlloc

Parameters:

pState Pointer to graph-cut state structure.

Returns:

NPP_SUCCESS Indicates no error. Any other value indicates an error or a warning
NPP_SIZE_ERROR Indicates an error condition if any image dimension has zero or negative value
NPP_NULL_POINTER_ERROR Indicates an error condition if pState pointer is NULL

7.16.3.6 NppStatus nppiGraphcutGetSize (NppiSize *oSize*, int * *pBufSize*)

Calculates the size of the temporary buffer for graph-cut with 4 neighborhood labeling.

See also:

nppiGraphcutInitAlloc(), nppiGraphcut_32s8u().

Parameters:

oSize Graph size.

pBufSize Pointer to variable that returns the size of the temporary buffer.

Returns:

NPP_SUCCESS Indicates no error. Any other value indicates an error or a warning
NPP_SIZE_ERROR Indicates an error condition if any image dimension has zero or negative value
NPP_NULL_POINTER_ERROR Indicates an error condition if pBufSize pointer is NULL

7.16.3.7 NppStatus nppiGraphcutInitAlloc (NppiSize *oSize*, NppiGraphcutState * * *ppState*, Npp8u * *pDeviceMem*)

Initializes graph-cut state structure and allocates additional resources for graph-cut with 8 neighborhood labeling.

See also:

nppiGraphcut_32s8u(), nppiGraphcutGetSize().

Parameters:

oSize Graph size

ppState Pointer to pointer to graph-cut state structure.

pDeviceMem pDeviceMem to the sufficient amount of device memory. The CUDA runtime or NPP memory allocators must be used to allocate this memory. The minimum amount of device memory required to run graph-cut on a for a specific image size is computed by nppiGraphcutGetSize().

Returns:

NPP_SUCCESS Indicates no error. Any other value indicates an error or a warning
NPP_SIZE_ERROR Indicates an error condition if any image dimension has zero or negative value
NPP_NULL_POINTER_ERROR Indicates an error condition if pBufSize pointer is NULL

7.17 NPP Signal Processing

Memory Allocation

Signal-allocator methods for allocating 1D arrays of data in device memory.

All allocators have size parameters to specify the size of the signal (1D array) being allocated.

The allocator methods return a pointer to the newly allocated memory of appropriate type. If device-memory allocation is not possible due to resource constaints the allocators return 0 (i.e. NULL pointer).

All signal allocators allocate memory aligned such that it is beneficial to the performance of the majority of the signal-processing primitives. It is no mandatory however to use these allocators. Any valid CUDA device-memory pointers can be passed to NPP primitives.

- Npp8u * nppsMalloc_8u (int nSize)

  8-bit unsigned signal allocator.

- Npp16u * nppsMalloc_16u (int nSize)

  16-bit unsigned signal allocator.

- Npp16s * nppsMalloc_16s (int nSize)

  16-bit signal allocator.

- Npp16sc * nppsMalloc_16sc (int nSize)

  16-bit complex-value signal allocator.

- Npp32u * nppsMalloc_32u (int nSize)

  32-bit unsigned signal allocator.

- Npp32s * nppsMalloc_32s (int nSize)

  32-bit integer signal allocator.

- Npp32sc * nppsMalloc_32sc (int nSize)

  32-bit complex integer signal allocator.

- Npp32f * nppsMalloc_32f (int nSize)

  32-bit float signal allocator.

- Npp32fc * nppsMalloc_32fc (int nSize)

  32-bit complex float signal allocator.

- Npp64s * nppsMalloc_64s (int nSize)

  64-bit long integer signal allocator.

- Npp64sc * nppsMalloc_64sc (int nSize)

  64-bit complex long integer signal allocator.

- Npp64f * nppsMalloc_64f (int nSize)

  64-bit float (double) signal allocator.

- Npp64fc * nppsMalloc_64fc (int nSize)

64-bit complex complex signal allocator.

- void nppsFree (void ∗pValues)

    Free method for any 2D allocated memory.

Set

Set methods for 1D vectors of various types.

The copy methods operate on vector data given as a pointer to the underlying data-type (e.g. 8-bit vectors would be passed as pointers to Npp8u type) and length of the vectors, i.e. the number of items.

- NppStatus nppsSet_8u (Npp8u nValue, Npp8u ∗pDst, int nLength)

    8-bit unsigned char, vector set method.

- NppStatus nppsSet_16s (Npp16s nValue, Npp16s ∗pDst, int nLength)

    16-bit integer, vector set method.

- NppStatus nppsSet_16sc (Npp16sc nValue, Npp16sc ∗pDst, int nLength)

    16-bit integer complex, vector set method.

- NppStatus nppsSet_32s (Npp32s nValue, Npp32s ∗pDst, int nLength)

    32-bit integer, vector set method.

- NppStatus nppsSet_32sc (Npp32sc nValue, Npp32sc ∗pDst, int nLength)

    32-bit integer complex, vector set method.

- NppStatus nppsSet_32f (Npp32f nValue, Npp32f ∗pDst, int nLength)

    32-bit float, vector set method.

- NppStatus nppsSet_32fc (Npp32fc nValue, Npp32fc ∗pDst, int nLength)

    32-bit float complex, vector set method.

- NppStatus nppsSet_64s (Npp64s nValue, Npp64s ∗pDst, int nLength)

    64-bit long long integer, vector set method.

- NppStatus nppsSet_64sc (Npp64sc nValue, Npp64sc ∗pDst, int nLength)

    64-bit long long integer complex, vector set method.

- NppStatus nppsSet_64f (Npp64f nValue, Npp64f ∗pDst, int nLength)

    64-bit double, vector set method.

- NppStatus nppsSet_64fc (Npp64fc nValue, Npp64fc ∗pDst, int nLength)

    64-bit double complex, vector set method.

Zero

Set signals to zero.

- NppStatus nppsZero_8u (Npp8u *pDst, int nLength)
    8-bit unsigned char, vector zero method.

- NppStatus nppsZero_16s (Npp16s *pDst, int nLength)
    16-bit integer, vector zero method.

- NppStatus nppsZero_16sc (Npp16sc *pDst, int nLength)
    16-bit integer complex, vector zero method.

- NppStatus nppsZero_32s (Npp32s *pDst, int nLength)
    32-bit integer, vector zero method.

- NppStatus nppsZero_32sc (Npp32sc *pDst, int nLength)
    32-bit integer complex, vector zero method.

- NppStatus nppsZero_32f (Npp32f *pDst, int nLength)
    32-bit float, vector zero method.

- NppStatus nppsZero_32fc (Npp32fc *pDst, int nLength)
    32-bit float complex, vector zero method.

- NppStatus nppsZero_64s (Npp64s *pDst, int nLength)
    64-bit long long integer, vector zero method.

- NppStatus nppsZero_64sc (Npp64sc *pDst, int nLength)
    64-bit long long integer complex, vector zero method.

- NppStatus nppsZero_64f (Npp64f *pDst, int nLength)
    64-bit double, vector zero method.

- NppStatus nppsZero_64fc (Npp64fc *pDst, int nLength)
    64-bit double complex, vector zero method.

Copy

Copy methods for various type signals.

Copy methods operate on signal data given as a pointer to the underlying data-type (e.g. 8-bit vectors would be passed as pointers to Npp8u type) and length of the vectors, i.e. the number of items.

- NppStatus nppsCopy_8u (const Npp8u *pSrc, Npp8u *pDst, int len)
    8-bit unsigned char, vector copy method

- NppStatus nppsCopy_16s (const Npp16s *pSrc, Npp16s *pDst, int len)
    16-bit signed short, vector copy method.

- NppStatus nppsCopy_32s (const Npp32s ∗pSrc, Npp32s ∗pDst, int nLength)
    32-bit signed integer, vector copy method.

- NppStatus nppsCopy_32f (const Npp32f ∗pSrc, Npp32f ∗pDst, int len)
    32-bit float, vector copy method.

- NppStatus nppsCopy_64s (const Npp64s ∗pSrc, Npp64s ∗pDst, int len)
    64-bit signed integer, vector copy method.

- NppStatus nppsCopy_16sc (const Npp16sc ∗pSrc, Npp16sc ∗pDst, int len)
    16-bit complex short, vector copy method.

- NppStatus nppsCopy_32sc (const Npp32sc ∗pSrc, Npp32sc ∗pDst, int len)
    32-bit complex signed integer, vector copy method.

- NppStatus nppsCopy_32fc (const Npp32fc ∗pSrc, Npp32fc ∗pDst, int len)
    32-bit complex float, vector copy method.

- NppStatus nppsCopy_64sc (const Npp64sc ∗pSrc, Npp64sc ∗pDst, int len)
    64-bit complex signed integer, vector copy method.

- NppStatus nppsCopy_64fc (const Npp64fc ∗pSrc, Npp64fc ∗pDst, int len)
    64-bit complex double, vector copy method.

AddC

Adds a constant value to each sample of a signal.

- NppStatus nppsAddC_8u_ISfs (Npp8u nValue, Npp8u ∗pSrcDst, int nLength, int nScaleFactor)
    8-bit unsigned char in place signal add constant, scale, then clamp to saturated value

- NppStatus nppsAddC_8u_Sfs (const Npp8u ∗pSrc, Npp8u nValue, Npp8u ∗pDst, int nLength, int nScaleFactor)
    8-bit unsigned charvector add constant, scale, then clamp to saturated value.

- NppStatus nppsAddC_16u_ISfs (Npp16u nValue, Npp16u ∗pSrcDst, int nLength, int nScaleFactor)
    16-bit unsigned short in place signal add constant, scale, then clamp to saturated value.

- NppStatus nppsAddC_16u_Sfs (const Npp16u ∗pSrc, Npp16u nValue, Npp16u ∗pDst, int nLength, int nScaleFactor)
    16-bit unsigned short vector add constant, scale, then clamp to saturated value.

- NppStatus nppsAddC_16s_ISfs (Npp16s nValue, Npp16s ∗pSrcDst, int nLength, int nScaleFactor)
    16-bit signed short in place signal add constant, scale, then clamp to saturated value.

- NppStatus nppsAddC_16s_Sfs (const Npp16s ∗pSrc, Npp16s nValue, Npp16s ∗pDst, int nLength, int nScaleFactor)

16-bit signed short signal add constant, scale, then clamp to saturated value.

- NppStatus nppsAddC_16sc_ISfs (Npp16sc nValue, Npp16sc ∗pSrcDst, int nLength, int nScaleFactor)

  16-bit integer complex number (16 bit real, 16 bit imaginary)signal add constant, scale, then clamp to saturated value.

- NppStatus nppsAddC_16sc_Sfs (const Npp16sc ∗pSrc, Npp16sc nValue, Npp16sc ∗pDst, int nLength, int nScaleFactor)

  16-bit integer complex number (16 bit real, 16 bit imaginary) signal add constant, scale, then clamp to saturated value.

- NppStatus nppsAddC_32s_ISfs (Npp32s nValue, Npp32s ∗pSrcDst, int nLength, int nScaleFactor)

  32-bit signed integer in place signal add constant and scale.

- NppStatus nppsAddC_32s_Sfs (const Npp32s ∗pSrc, Npp32s nValue, Npp32s ∗pDst, int nLength, int nScaleFactor)

  32-bit signed integersignal add constant and scale.

- NppStatus nppsAddC_32sc_ISfs (Npp32sc nValue, Npp32sc ∗pSrcDst, int nLength, int nScaleFactor)

  32-bit integer complex number (32 bit real, 32 bit imaginary) in place signal add constant and scale.

- NppStatus nppsAddC_32sc_Sfs (const Npp32sc ∗pSrc, Npp32sc nValue, Npp32sc ∗pDst, int nLength, int nScaleFactor)

  32-bit integer complex number (32 bit real, 32 bit imaginary) signal add constant and scale.

- NppStatus nppsAddC_32f_I (Npp32f nValue, Npp32f ∗pSrcDst, int nLength)

  32-bit floating point in place signal add constant.

- NppStatus nppsAddC_32f (const Npp32f ∗pSrc, Npp32f nValue, Npp32f ∗pDst, int nLength)

  32-bit floating point signal add constant.

- NppStatus nppsAddC_32fc_I (Npp32fc nValue, Npp32fc ∗pSrcDst, int nLength)

  32-bit floating point complex number (32 bit real, 32 bit imaginary) in place signal add constant.

- NppStatus nppsAddC_32fc (const Npp32fc ∗pSrc, Npp32fc nValue, Npp32fc ∗pDst, int nLength)

  32-bit floating point complex number (32 bit real, 32 bit imaginary) signal add constant.

- NppStatus nppsAddC_64f_I (Npp64f nValue, Npp64f ∗pSrcDst, int nLength)

  64-bit floating point, in place signal add constant.

- NppStatus nppsAddC_64f (const Npp64f ∗pSrc, Npp64f nValue, Npp64f ∗pDst, int nLength)

  64-bit floating pointsignal add constant.

- NppStatus nppsAddC_64fc_I (Npp64fc nValue, Npp64fc ∗pSrcDst, int nLength)

  64-bit floating point complex number (64 bit real, 64 bit imaginary) in place signal add constant.

- NppStatus nppsAddC_64fc (const Npp64fc ∗pSrc, Npp64fc nValue, Npp64fc ∗pDst, int nLength)

  64-bit floating point complex number (64 bit real, 64 bit imaginary) signal add constant.

AddProductC

Adds product of a constant and each sample of a source signal to the each sample of destination signal.

- NppStatus nppsAddProductC_8u_ISfs (Npp8u nValue, Npp8u *pSrcDst, int nLength, int nScaleFactor)

    8-bit unsigned char in place signal add product of signal times constant to destination signal, scale, then clamp to saturated value

- NppStatus nppsAddProductC_8u_Sfs (const Npp8u *pSrc, Npp8u nValue, Npp8u *pDst, int nLength, int nScaleFactor)

    8-bit unsigned char add product of signal times constant to destination signal, scale, then clamp to saturated value.

- NppStatus nppsAddProductC_16u_ISfs (Npp16u nValue, Npp16u *pSrcDst, int nLength, int nScaleFactor)

    16-bit unsigned short in place signal add product of signal times constant to destination signal, scale, then clamp to saturated value.

- NppStatus nppsAddProductC_16u_Sfs (const Npp16u *pSrc, Npp16u nValue, Npp16u *pDst, int nLength, int nScaleFactor)

    16-bit unsigned short add product of signal times constant to destination signal, scale, then clamp to saturated value.

- NppStatus nppsAddProductC_16s_ISfs (Npp16s nValue, Npp16s *pSrcDst, int nLength, int nScaleFactor)

    16-bit signed short in place signal add product of signal times constant to destination signal, scale, then clamp to saturated value.

- NppStatus nppsAddProductC_16s_Sfs (const Npp16s *pSrc, Npp16s nValue, Npp16s *pDst, int nLength, int nScaleFactor)

    16-bit signed short signal add product of signal times constant to destination signal, scale, then clamp to saturated value.

- NppStatus nppsAddProductC_16sc_ISfs (Npp16sc nValue, Npp16sc *pSrcDst, int nLength, int nScaleFactor)

    16-bit integer complex number (16 bit real, 16 bit imaginary)signal add product of signal times constant to destination signal, scale, then clamp to saturated value.

- NppStatus nppsAddProductC_16sc_Sfs (const Npp16sc *pSrc, Npp16sc nValue, Npp16sc *pDst, int nLength, int nScaleFactor)

    16-bit integer complex number (16 bit real, 16 bit imaginary)signal add product of signal times constant to destination signal, scale, then clamp to saturated value.

- NppStatus nppsAddProductC_32s_ISfs (Npp32s nValue, Npp32s *pSrcDst, int nLength, int nScaleFactor)

    32-bit signed integer in place signal add product of signal times constant to destination signal and scale.

- NppStatus nppsAddProductC_32s_Sfs (const Npp32s *pSrc, Npp32s nValue, Npp32s *pDst, int nLength, int nScaleFactor)

    32-bit signed integer signal add product of signal times constant to destination signal and scale.

- NppStatus nppsAddProductC_32sc_ISfs (Npp32sc nValue, Npp32sc ∗pSrcDst, int nLength, int nScaleFactor)

  32-bit integer complex number (32 bit real, 32 bit imaginary) in place signal add product of signal times constant to destination signal and scale.

- NppStatus nppsAddProductC_32sc_Sfs (const Npp32sc ∗pSrc, Npp32sc nValue, Npp32sc ∗pDst, int nLength, int nScaleFactor)

  32-bit integer complex number (32 bit real, 32 bit imaginary)signal add product of signal times constant to destination signal and scale.

- NppStatus nppsAddProductC_32f_I (Npp32f nValue, Npp32f ∗pSrcDst, int nLength)

  32-bit floating point in place signal add product of signal times constant to destination signal.

- NppStatus nppsAddProductC_32f (const Npp32f ∗pSrc, Npp32f nValue, Npp32f ∗pDst, int nLength)

  32-bit floating point signal add product of signal times constant to destination signal.

- NppStatus nppsAddProductC_32fc_I (Npp32fc nValue, Npp32fc ∗pSrcDst, int nLength)

  32-bit floating point complex number (32 bit real, 32 bit imaginary) in place signal add product of signal times constant to destination signal.

- NppStatus nppsAddProductC_32fc (const Npp32fc ∗pSrc, Npp32fc nValue, Npp32fc ∗pDst, int nLength)

  32-bit floating point complex number (32 bit real, 32 bit imaginary)signal add product of signal times constant to destination signal.

- NppStatus nppsAddProductC_64f_I (Npp64f nValue, Npp64f ∗pSrcDst, int nLength)

  64-bit floating point, in place signal add product of signal times constant to destination signal.

- NppStatus nppsAddProductC_64f (const Npp64f ∗pSrc, Npp64f nValue, Npp64f ∗pDst, int nLength)

  64-bit floating point signal add product of signal times constant to destination signal.

- NppStatus nppsAddProductC_64fc_I (Npp64fc nValue, Npp64fc ∗pSrcDst, int nLength)

  64-bit floating point complex number (64 bit real, 64 bit imaginary) in place signal add product of signal times constant to destination signal.

- NppStatus nppsAddProductC_64fc (const Npp64fc ∗pSrc, Npp64fc nValue, Npp64fc ∗pDst, int nLength)

  64-bit floating point complex number (64 bit real, 64 bit imaginary)signal add product of signal times constant to destination signal.

MulC

Multiplies each sample of a signal by a constant value.

- NppStatus nppsMulC_8u_ISfs (Npp8u nValue, Npp8u ∗pSrcDst, int nLength, int nScaleFactor)

  8-bit unsigned char in place signal times constant, scale, then clamp to saturated value

- NppStatus nppsMulC_8u_Sfs (const Npp8u *pSrc, Npp8u nValue, Npp8u *pDst, int nLength, int nScaleFactor)

  8-bit unsigned char signal times constant, scale, then clamp to saturated value.

- NppStatus nppsMulC_16u_ISfs (Npp16u nValue, Npp16u *pSrcDst, int nLength, int nScaleFactor)

  16-bit unsigned short in place signal times constant, scale, then clamp to saturated value.

- NppStatus nppsMulC_16u_Sfs (const Npp16u *pSrc, Npp16u nValue, Npp16u *pDst, int nLength, int nScaleFactor)

  16-bit unsigned short signal times constant, scale, then clamp to saturated value.

- NppStatus nppsMulC_16s_ISfs (Npp16s nValue, Npp16s *pSrcDst, int nLength, int nScaleFactor)

  16-bit signed short in place signal times constant, scale, then clamp to saturated value.

- NppStatus nppsMulC_16s_Sfs (const Npp16s *pSrc, Npp16s nValue, Npp16s *pDst, int nLength, int nScaleFactor)

  16-bit signed short signal times constant, scale, then clamp to saturated value.

- NppStatus nppsMulC_16sc_ISfs (Npp16sc nValue, Npp16sc *pSrcDst, int nLength, int nScaleFactor)

  16-bit integer complex number (16 bit real, 16 bit imaginary)signal times constant, scale, then clamp to saturated value.

- NppStatus nppsMulC_16sc_Sfs (const Npp16sc *pSrc, Npp16sc nValue, Npp16sc *pDst, int nLength, int nScaleFactor)

  16-bit integer complex number (16 bit real, 16 bit imaginary)signal times constant, scale, then clamp to saturated value.

- NppStatus nppsMulC_32s_ISfs (Npp32s nValue, Npp32s *pSrcDst, int nLength, int nScaleFactor)

  32-bit signed integer in place signal times constant and scale.

- NppStatus nppsMulC_32s_Sfs (const Npp32s *pSrc, Npp32s nValue, Npp32s *pDst, int nLength, int nScaleFactor)

  32-bit signed integer signal times constant and scale.

- NppStatus nppsMulC_32sc_ISfs (Npp32sc nValue, Npp32sc *pSrcDst, int nLength, int nScaleFactor)

  32-bit integer complex number (32 bit real, 32 bit imaginary) in place signal times constant and scale.

- NppStatus nppsMulC_32sc_Sfs (const Npp32sc *pSrc, Npp32sc nValue, Npp32sc *pDst, int nLength, int nScaleFactor)

  32-bit integer complex number (32 bit real, 32 bit imaginary) signal times constant and scale.

- NppStatus nppsMulC_32f_I (Npp32f nValue, Npp32f *pSrcDst, int nLength)

  32-bit floating point in place signal times constant.

- NppStatus nppsMulC_32f (const Npp32f *pSrc, Npp32f nValue, Npp32f *pDst, int nLength)

  32-bit floating point signal times constant.

- NppStatus nppsMulC_Low_32f16s (const Npp32f *pSrc, Npp32f nValue, Npp16s *pDst, int nLength)

  32-bit floating point signal times constant with output converted to 16-bit signed integer.

- NppStatus nppsMulC_32f16s_Sfs (const Npp32f *pSrc, Npp32f nValue, Npp16s *pDst, int nLength, int nScaleFactor)

  32-bit floating point signal times constant with output converted to 16-bit signed integer with scaling and saturation of output result.

- NppStatus nppsMulC_32fc_I (Npp32fc nValue, Npp32fc *pSrcDst, int nLength)

  32-bit floating point complex number (32 bit real, 32 bit imaginary) in place signal times constant.

- NppStatus nppsMulC_32fc (const Npp32fc *pSrc, Npp32fc nValue, Npp32fc *pDst, int nLength)

  32-bit floating point complex number (32 bit real, 32 bit imaginary) signal times constant.

- NppStatus nppsMulC_64f_I (Npp64f nValue, Npp64f *pSrcDst, int nLength)

  64-bit floating point, in place signal times constant.

- NppStatus nppsMulC_64f (const Npp64f *pSrc, Npp64f nValue, Npp64f *pDst, int nLength)

  64-bit floating point signal times constant.

- NppStatus nppsMulC_64f64s_ISfs (Npp64f nValue, Npp64s *pDst, int nLength, int nScaleFactor)

  64-bit floating point signal times constant with in place conversion to 64-bit signed integer and with scaling and saturation of output result.

- NppStatus nppsMulC_64fc_I (Npp64fc nValue, Npp64fc *pSrcDst, int nLength)

  64-bit floating point complex number (64 bit real, 64 bit imaginary) in place signal times constant.

- NppStatus nppsMulC_64fc (const Npp64fc *pSrc, Npp64fc nValue, Npp64fc *pDst, int nLength)

  64-bit floating point complex number (64 bit real, 64 bit imaginary) signal times constant.

SubC

Subtracts a constant from each sample of a signal.

- NppStatus nppsSubC_8u_ISfs (Npp8u nValue, Npp8u *pSrcDst, int nLength, int nScaleFactor)

  8-bit unsigned char in place signal subtract constant, scale, then clamp to saturated value

- NppStatus nppsSubC_8u_Sfs (const Npp8u *pSrc, Npp8u nValue, Npp8u *pDst, int nLength, int nScaleFactor)

  8-bit unsigned char signal subtract constant, scale, then clamp to saturated value.

- NppStatus nppsSubC_16u_ISfs (Npp16u nValue, Npp16u *pSrcDst, int nLength, int nScaleFactor)

  16-bit unsigned short in place signal subtract constant, scale, then clamp to saturated value.

- NppStatus nppsSubC_16u_Sfs (const Npp16u *pSrc, Npp16u nValue, Npp16u *pDst, int nLength, int nScaleFactor)

  16-bit unsigned short signal subtract constant, scale, then clamp to saturated value.

- NppStatus nppsSubC_16s_ISfs (Npp16s nValue, Npp16s *pSrcDst, int nLength, int nScaleFactor)

    16-bit signed short in place signal subtract constant, scale, then clamp to saturated value.

- NppStatus nppsSubC_16s_Sfs (const Npp16s *pSrc, Npp16s nValue, Npp16s *pDst, int nLength, int nScaleFactor)

    16-bit signed short signal subtract constant, scale, then clamp to saturated value.

- NppStatus nppsSubC_16sc_ISfs (Npp16sc nValue, Npp16sc *pSrcDst, int nLength, int nScaleFactor)

    16-bit integer complex number (16 bit real, 16 bit imaginary) signal subtract constant, scale, then clamp to saturated value.

- NppStatus nppsSubC_16sc_Sfs (const Npp16sc *pSrc, Npp16sc nValue, Npp16sc *pDst, int nLength, int nScaleFactor)

    16-bit integer complex number (16 bit real, 16 bit imaginary) signal subtract constant, scale, then clamp to saturated value.

- NppStatus nppsSubC_32s_ISfs (Npp32s nValue, Npp32s *pSrcDst, int nLength, int nScaleFactor)

    32-bit signed integer in place signal subtract constant and scale.

- NppStatus nppsSubC_32s_Sfs (const Npp32s *pSrc, Npp32s nValue, Npp32s *pDst, int nLength, int nScaleFactor)

    32-bit signed integer signal subtract constant and scale.

- NppStatus nppsSubC_32sc_ISfs (Npp32sc nValue, Npp32sc *pSrcDst, int nLength, int nScaleFactor)

    32-bit integer complex number (32 bit real, 32 bit imaginary) in place signal subtract constant and scale.

- NppStatus nppsSubC_32sc_Sfs (const Npp32sc *pSrc, Npp32sc nValue, Npp32sc *pDst, int nLength, int nScaleFactor)

    32-bit integer complex number (32 bit real, 32 bit imaginary)signal subtract constant and scale.

- NppStatus nppsSubC_32f_I (Npp32f nValue, Npp32f *pSrcDst, int nLength)

    32-bit floating point in place signal subtract constant.

- NppStatus nppsSubC_32f (const Npp32f *pSrc, Npp32f nValue, Npp32f *pDst, int nLength)

    32-bit floating point signal subtract constant.

- NppStatus nppsSubC_32fc_I (Npp32fc nValue, Npp32fc *pSrcDst, int nLength)

    32-bit floating point complex number (32 bit real, 32 bit imaginary) in place signal subtract constant.

- NppStatus nppsSubC_32fc (const Npp32fc *pSrc, Npp32fc nValue, Npp32fc *pDst, int nLength)

    32-bit floating point complex number (32 bit real, 32 bit imaginary) signal subtract constant.

- NppStatus nppsSubC_64f_I (Npp64f nValue, Npp64f *pSrcDst, int nLength)

    64-bit floating point, in place signal subtract constant.

- NppStatus nppsSubC_64f (const Npp64f *pSrc, Npp64f nValue, Npp64f *pDst, int nLength)

    64-bit floating point signal subtract constant.

- NppStatus nppsSubC_64fc_I (Npp64fc nValue, Npp64fc *pSrcDst, int nLength)

64-bit floating point complex number (64 bit real, 64 bit imaginary) in place signal subtract constant.

- NppStatus nppsSubC_64fc (const Npp64fc ∗pSrc, Npp64fc nValue, Npp64fc ∗pDst, int nLength)

  64-bit floating point complex number (64 bit real, 64 bit imaginary) signal subtract constant.

SubCRev

Subtracts each sample of a signal from a constant.

- NppStatus nppsSubCRev_8u_ISfs (Npp8u nValue, Npp8u ∗pSrcDst, int nLength, int nScaleFactor)

  8-bit unsigned char in place signal subtract from constant, scale, then clamp to saturated value

- NppStatus nppsSubCRev_8u_Sfs (const Npp8u ∗pSrc, Npp8u nValue, Npp8u ∗pDst, int nLength, int nScaleFactor)

  8-bit unsigned char signal subtract from constant, scale, then clamp to saturated value.

- NppStatus nppsSubCRev_16u_ISfs (Npp16u nValue, Npp16u ∗pSrcDst, int nLength, int nScaleFactor)

  16-bit unsigned short in place signal subtract from constant, scale, then clamp to saturated value.

- NppStatus nppsSubCRev_16u_Sfs (const Npp16u ∗pSrc, Npp16u nValue, Npp16u ∗pDst, int nLength, int nScaleFactor)

  16-bit unsigned short signal subtract from constant, scale, then clamp to saturated value.

- NppStatus nppsSubCRev_16s_ISfs (Npp16s nValue, Npp16s ∗pSrcDst, int nLength, int nScaleFactor)

  16-bit signed short in place signal subtract from constant, scale, then clamp to saturated value.

- NppStatus nppsSubCRev_16s_Sfs (const Npp16s ∗pSrc, Npp16s nValue, Npp16s ∗pDst, int nLength, int nScaleFactor)

  16-bit signed short signal subtract from constant, scale, then clamp to saturated value.

- NppStatus nppsSubCRev_16sc_ISfs (Npp16sc nValue, Npp16sc ∗pSrcDst, int nLength, int nScaleFactor)

  16-bit integer complex number (16 bit real, 16 bit imaginary) signal subtract from constant, scale, then clamp to saturated value.

- NppStatus nppsSubCRev_16sc_Sfs (const Npp16sc ∗pSrc, Npp16sc nValue, Npp16sc ∗pDst, int nLength, int nScaleFactor)

  16-bit integer complex number (16 bit real, 16 bit imaginary) signal subtract from constant, scale, then clamp to saturated value.

- NppStatus nppsSubCRev_32s_ISfs (Npp32s nValue, Npp32s ∗pSrcDst, int nLength, int nScaleFactor)

  32-bit signed integer in place signal subtract from constant and scale.

- NppStatus nppsSubCRev_32s_Sfs (const Npp32s ∗pSrc, Npp32s nValue, Npp32s ∗pDst, int nLength, int nScaleFactor)

  32-bit signed integersignal subtract from constant and scale.

- NppStatus nppsSubCRev_32sc_ISfs (Npp32sc nValue, Npp32sc ∗pSrcDst, int nLength, int nScale-Factor)

  32-bit integer complex number (32 bit real, 32 bit imaginary) in place signal subtract from constant and scale.

- NppStatus nppsSubCRev_32sc_Sfs (const Npp32sc ∗pSrc, Npp32sc nValue, Npp32sc ∗pDst, int nLength, int nScaleFactor)

  32-bit integer complex number (32 bit real, 32 bit imaginary) signal subtract from constant and scale.

- NppStatus nppsSubCRev_32f_I (Npp32f nValue, Npp32f ∗pSrcDst, int nLength)

  32-bit floating point in place signal subtract from constant.

- NppStatus nppsSubCRev_32f (const Npp32f ∗pSrc, Npp32f nValue, Npp32f ∗pDst, int nLength)

  32-bit floating point signal subtract from constant.

- NppStatus nppsSubCRev_32fc_I (Npp32fc nValue, Npp32fc ∗pSrcDst, int nLength)

  32-bit floating point complex number (32 bit real, 32 bit imaginary) in place signal subtract from constant.

- NppStatus nppsSubCRev_32fc (const Npp32fc ∗pSrc, Npp32fc nValue, Npp32fc ∗pDst, int nLength)

  32-bit floating point complex number (32 bit real, 32 bit imaginary) signal subtract from constant.

- NppStatus nppsSubCRev_64f_I (Npp64f nValue, Npp64f ∗pSrcDst, int nLength)

  64-bit floating point, in place signal subtract from constant.

- NppStatus nppsSubCRev_64f (const Npp64f ∗pSrc, Npp64f nValue, Npp64f ∗pDst, int nLength)

  64-bit floating point signal subtract from constant.

- NppStatus nppsSubCRev_64fc_I (Npp64fc nValue, Npp64fc ∗pSrcDst, int nLength)

  64-bit floating point complex number (64 bit real, 64 bit imaginary) in place signal subtract from constant.

- NppStatus nppsSubCRev_64fc (const Npp64fc ∗pSrc, Npp64fc nValue, Npp64fc ∗pDst, int nLength)

  64-bit floating point complex number (64 bit real, 64 bit imaginary) signal subtract from constant.

DivC

Divides each sample of a signal by a constant.

- NppStatus nppsDivC_8u_ISfs (Npp8u nValue, Npp8u ∗pSrcDst, int nLength, int nScaleFactor)

  8-bit unsigned char in place signal divided by constant, scale, then clamp to saturated value

- NppStatus nppsDivC_8u_Sfs (const Npp8u ∗pSrc, Npp8u nValue, Npp8u ∗pDst, int nLength, int nScaleFactor)

  8-bit unsigned char signal divided by constant, scale, then clamp to saturated value.

- NppStatus nppsDivC_16u_ISfs (Npp16u nValue, Npp16u ∗pSrcDst, int nLength, int nScaleFactor)

  16-bit unsigned short in place signal divided by constant, scale, then clamp to saturated value.

- NppStatus nppsDivC_16u_Sfs (const Npp16u *pSrc, Npp16u nValue, Npp16u *pDst, int nLength, int nScaleFactor)

  16-bit unsigned short signal divided by constant, scale, then clamp to saturated value.

- NppStatus nppsDivC_16s_ISfs (Npp16s nValue, Npp16s *pSrcDst, int nLength, int nScaleFactor)

  16-bit signed short in place signal divided by constant, scale, then clamp to saturated value.

- NppStatus nppsDivC_16s_Sfs (const Npp16s *pSrc, Npp16s nValue, Npp16s *pDst, int nLength, int nScaleFactor)

  16-bit signed short signal divided by constant, scale, then clamp to saturated value.

- NppStatus nppsDivC_16sc_ISfs (Npp16sc nValue, Npp16sc *pSrcDst, int nLength, int nScaleFactor)

  16-bit integer complex number (16 bit real, 16 bit imaginary)signal divided by constant, scale, then clamp to saturated value.

- NppStatus nppsDivC_16sc_Sfs (const Npp16sc *pSrc, Npp16sc nValue, Npp16sc *pDst, int nLength, int nScaleFactor)

  16-bit integer complex number (16 bit real, 16 bit imaginary) signal divided by constant, scale, then clamp to saturated value.

- NppStatus nppsDivC_32s_ISfs (Npp32s nValue, Npp32s *pSrcDst, int nLength, int nScaleFactor)

  32-bit signed integer in place signal divided by constant and scale.

- NppStatus nppsDivC_32s_Sfs (const Npp32s *pSrc, Npp32s nValue, Npp32s *pDst, int nLength, int nScaleFactor)

  32-bit signed integer signal divided by constant and scale.

- NppStatus nppsDivC_32sc_ISfs (Npp32sc nValue, Npp32sc *pSrcDst, int nLength, int nScaleFactor)

  32-bit integer complex number (32 bit real, 32 bit imaginary) in place signal divided by constant and scale.

- NppStatus nppsDivC_32sc_Sfs (const Npp32sc *pSrc, Npp32sc nValue, Npp32sc *pDst, int nLength, int nScaleFactor)

  32-bit integer complex number (32 bit real, 32 bit imaginary) signal divided by constant and scale.

- NppStatus nppsDivC_32f_I (Npp32f nValue, Npp32f *pSrcDst, int nLength)

  32-bit floating point in place signal divided by constant.

- NppStatus nppsDivC_32f (const Npp32f *pSrc, Npp32f nValue, Npp32f *pDst, int nLength)

  32-bit floating point signal divided by constant.

- NppStatus nppsDivC_32fc_I (Npp32fc nValue, Npp32fc *pSrcDst, int nLength)

  32-bit floating point complex number (32 bit real, 32 bit imaginary) in place signal divided by constant.

- NppStatus nppsDivC_32fc (const Npp32fc *pSrc, Npp32fc nValue, Npp32fc *pDst, int nLength)

  32-bit floating point complex number (32 bit real, 32 bit imaginary) signal divided by constant.

- NppStatus nppsDivC_64f_I (Npp64f nValue, Npp64f *pSrcDst, int nLength)

  64-bit floating point in place signal divided by constant.

- NppStatus nppsDivC_64f (const Npp64f ∗pSrc, Npp64f nValue, Npp64f ∗pDst, int nLength)
  64-bit floating point signal divided by constant.

- NppStatus nppsDivC_64fc_I (Npp64fc nValue, Npp64fc ∗pSrcDst, int nLength)
  64-bit floating point complex number (64 bit real, 64 bit imaginary) in place signal divided by constant.

- NppStatus nppsDivC_64fc (const Npp64fc ∗pSrc, Npp64fc nValue, Npp64fc ∗pDst, int nLength)
  64-bit floating point complex number (64 bit real, 64 bit imaginary) signal divided by constant.

DivCRev

Divides a constant by each sample of a signal.

- NppStatus nppsDivCRev_8u_I (Npp8u nValue, Npp8u ∗pSrcDst, int nLength)
  8-bit unsigned char signal in place constant divided by signal, scale, then clamp to saturated value

- NppStatus nppsDivCRev_8u (const Npp8u ∗pSrc, Npp8u nValue, Npp8u ∗pDst, int nLength)
  8-bit unsigned char signal divided by constant, then clamp to saturated value.

- NppStatus nppsDivCRev_16u_I (Npp16u nValue, Npp16u ∗pSrcDst, int nLength)
  16-bit unsigned short in place constant divided by signal, then clamp to saturated value.

- NppStatus nppsDivCRev_16u (const Npp16u ∗pSrc, Npp16u nValue, Npp16u ∗pDst, int nLength)
  16-bit unsigned short signal divided by constant, then clamp to saturated value.

- NppStatus nppsDivCRev_16s_I (Npp16s nValue, Npp16s ∗pSrcDst, int nLength)
  16-bit signed short in place constant divided by signal, then clamp to saturated value.

- NppStatus nppsDivCRev_16s (const Npp16s ∗pSrc, Npp16s nValue, Npp16s ∗pDst, int nLength)
  16-bit signed short constant divided by signal, then clamp to saturated value.

- NppStatus nppsDivCRev_32s_I (Npp32s nValue, Npp32s ∗pSrcDst, int nLength)
  32-bit signed integer in place constant divided by signal.

- NppStatus nppsDivCRev_32s (const Npp32s ∗pSrc, Npp32s nValue, Npp32s ∗pDst, int nLength)
  32-bit signed integer constant divided by signal.

- NppStatus nppsDivCRev_32f_I (Npp32f nValue, Npp32f ∗pSrcDst, int nLength)
  32-bit floating point in place constant divided by signal.

- NppStatus nppsDivCRev_32f (const Npp32f ∗pSrc, Npp32f nValue, Npp32f ∗pDst, int nLength)
  32-bit floating point constant divided by signal.

- NppStatus nppsDivCRev_64f_I (Npp64f nValue, Npp64f ∗pSrcDst, int nLength)
  64-bit floating point in place constant divided by signal.

- NppStatus nppsDivCRev_64f (const Npp64f ∗pSrc, Npp64f nValue, Npp64f ∗pDst, int nLength)
  64-bit floating point constant divided by signal.

Add Signal

Sample by sample addition of two signals.

- NppStatus nppsAdd_16s (const Npp16s *pSrc1, const Npp16s *pSrc2, Npp16s *pDst, int nLength)

    16-bit signed short signal add signal, then clamp to saturated value.

- NppStatus nppsAdd_16u (const Npp16u *pSrc1, const Npp16u *pSrc2, Npp16u *pDst, int nLength)

    16-bit unsigned short signal add signal, then clamp to saturated value.

- NppStatus nppsAdd_32u (const Npp32u *pSrc1, const Npp32u *pSrc2, Npp32u *pDst, int nLength)

    32-bit unsigned int signal add signal, then clamp to saturated value.

- NppStatus nppsAdd_32f (const Npp32f *pSrc1, const Npp32f *pSrc2, Npp32f *pDst, int nLength)

    32-bit floating point signal add signal, then clamp to saturated value.

- NppStatus nppsAdd_64f (const Npp64f *pSrc1, const Npp64f *pSrc2, Npp64f *pDst, int nLength)

    64-bit floating point signal add signal, then clamp to saturated value.

- NppStatus nppsAdd_32fc (const Npp32fc *pSrc1, const Npp32fc *pSrc2, Npp32fc *pDst, int nLength)

    32-bit complex floating point signal add signal, then clamp to saturated value.

- NppStatus nppsAdd_64fc (const Npp64fc *pSrc1, const Npp64fc *pSrc2, Npp64fc *pDst, int nLength)

    64-bit complex floating point signal add signal, then clamp to saturated value.

- NppStatus nppsAdd_8u16u (const Npp8u *pSrc1, const Npp8u *pSrc2, Npp16u *pDst, int nLength)

    8-bit unsigned char signal add signal with 16-bit unsigned result, then clamp to saturated value.

- NppStatus nppsAdd_16s32f (const Npp16s *pSrc1, const Npp16s *pSrc2, Npp32f *pDst, int nLength)

    16-bit signed short signal add signal with 32-bit floating point result, then clamp to saturated value.

- NppStatus nppsAdd_8u_Sfs (const Npp8u *pSrc1, const Npp8u *pSrc2, Npp8u *pDst, int nLength, int nScaleFactor)

    8-bit unsigned char add signal, scale, then clamp to saturated value.

- NppStatus nppsAdd_16u_Sfs (const Npp16u *pSrc1, const Npp16u *pSrc2, Npp16u *pDst, int nLength, int nScaleFactor)

    16-bit unsigned short add signal, scale, then clamp to saturated value.

- NppStatus nppsAdd_16s_Sfs (const Npp16s *pSrc1, const Npp16s *pSrc2, Npp16s *pDst, int nLength, int nScaleFactor)

    16-bit signed short add signal, scale, then clamp to saturated value.

- NppStatus nppsAdd_32s_Sfs (const Npp32s ∗pSrc1, const Npp32s ∗pSrc2, Npp32s ∗pDst, int nLength, int nScaleFactor)

  32-bit signed integer add signal, scale, then clamp to saturated value.

- NppStatus nppsAdd_64s_Sfs (const Npp64s ∗pSrc1, const Npp64s ∗pSrc2, Npp64s ∗pDst, int nLength, int nScaleFactor)

  64-bit signed integer add signal, scale, then clamp to saturated value.

- NppStatus nppsAdd_16sc_Sfs (const Npp16sc ∗pSrc1, const Npp16sc ∗pSrc2, Npp16sc ∗pDst, int nLength, int nScaleFactor)

  16-bit signed complex short add signal, scale, then clamp to saturated value.

- NppStatus nppsAdd_32sc_Sfs (const Npp32sc ∗pSrc1, const Npp32sc ∗pSrc2, Npp32sc ∗pDst, int nLength, int nScaleFactor)

  32-bit signed complex integer add signal, scale, then clamp to saturated value.

- NppStatus nppsAdd_16s_I (const Npp16s ∗pSrc, Npp16s ∗pSrcDst, int nLength)

  16-bit signed short in place signal add signal, then clamp to saturated value.

- NppStatus nppsAdd_32f_I (const Npp32f ∗pSrc, Npp32f ∗pSrcDst, int nLength)

  32-bit floating point in place signal add signal, then clamp to saturated value.

- NppStatus nppsAdd_64f_I (const Npp64f ∗pSrc, Npp64f ∗pSrcDst, int nLength)

  64-bit floating point in place signal add signal, then clamp to saturated value.

- NppStatus nppsAdd_32fc_I (const Npp32fc ∗pSrc, Npp32fc ∗pSrcDst, int nLength)

  32-bit complex floating point in place signal add signal, then clamp to saturated value.

- NppStatus nppsAdd_64fc_I (const Npp64fc ∗pSrc, Npp64fc ∗pSrcDst, int nLength)

  64-bit complex floating point in place signal add signal, then clamp to saturated value.

- NppStatus nppsAdd_16s32s_I (const Npp16s ∗pSrc, Npp32s ∗pSrcDst, int nLength)

  16/32-bit signed short in place signal add signal with 32-bit signed integer results, then clamp to saturated value.

- NppStatus nppsAdd_8u_ISfs (const Npp8u ∗pSrc, Npp8u ∗pSrcDst, int nLength, int nScaleFactor)

  8-bit unsigned char in place signal add signal, with scaling, then clamp to saturated value.

- NppStatus nppsAdd_16u_ISfs (const Npp16u ∗pSrc, Npp16u ∗pSrcDst, int nLength, int nScaleFactor)

  16-bit unsigned short in place signal add signal, with scaling, then clamp to saturated value.

- NppStatus nppsAdd_16s_ISfs (const Npp16s ∗pSrc, Npp16s ∗pSrcDst, int nLength, int nScaleFactor)

  16-bit signed short in place signal add signal, with scaling, then clamp to saturated value.

- NppStatus nppsAdd_32s_ISfs (const Npp32s ∗pSrc, Npp32s ∗pSrcDst, int nLength, int nScaleFactor)

  32-bit signed integer in place signal add signal, with scaling, then clamp to saturated value.

- NppStatus nppsAdd_16sc_ISfs (const Npp16sc ∗pSrc, Npp16sc ∗pSrcDst, int nLength, int nScale-Factor)

    16-bit complex signed short in place signal add signal, with scaling, then clamp to saturated value.

- NppStatus nppsAdd_32sc_ISfs (const Npp32sc ∗pSrc, Npp32sc ∗pSrcDst, int nLength, int nScale-Factor)

    32-bit complex signed integer in place signal add signal, with scaling, then clamp to saturated value.

AddProduct Signal

Adds sample by sample product of two signals to the destination signal.

- NppStatus nppsAddProduct_32f (const Npp32f ∗pSrc1, const Npp32f ∗pSrc2, Npp32f ∗pDst, int nLength)

    32-bit floating point signal add product of source signal times destination signal to destination signal, then clamp to saturated value.

- NppStatus nppsAddProduct_64f (const Npp64f ∗pSrc1, const Npp64f ∗pSrc2, Npp64f ∗pDst, int nLength)

    64-bit floating point signal add product of source signal times destination signal to destination signal, then clamp to saturated value.

- NppStatus nppsAddProduct_32fc (const Npp32fc ∗pSrc1, const Npp32fc ∗pSrc2, Npp32fc ∗pDst, int nLength)

    32-bit complex floating point signal add product of source signal times destination signal to destination signal, then clamp to saturated value.

- NppStatus nppsAddProduct_64fc (const Npp64fc ∗pSrc1, const Npp64fc ∗pSrc2, Npp64fc ∗pDst, int nLength)

    64-bit complex floating point signal add product of source signal times destination signal to destination signal, then clamp to saturated value.

- NppStatus nppsAddProduct_16s_Sfs (const Npp16s ∗pSrc1, const Npp16s ∗pSrc2, Npp16s ∗pDst, int nLength, int nScaleFactor)

    16-bit signed short signal add product of source signal1 times source signal2 to destination signal, with scaling, then clamp to saturated value.

- NppStatus nppsAddProduct_32s_Sfs (const Npp32s ∗pSrc1, const Npp32s ∗pSrc2, Npp32s ∗pDst, int nLength, int nScaleFactor)

    32-bit signed short signal add product of source signal1 times source signal2 to destination signal, with scaling, then clamp to saturated value.

- NppStatus nppsAddProduct_16s32s_Sfs (const Npp16s ∗pSrc1, const Npp16s ∗pSrc2, Npp32s ∗pDst, int nLength, int nScaleFactor)

    16-bit signed short signal add product of source signal1 times source signal2 to 32-bit signed integer desti-nation signal, with scaling, then clamp to saturated value.

Mul Signal

Sample by sample multiplication the samples of two signals.

- NppStatus nppsMul_16s (const Npp16s *pSrc1, const Npp16s *pSrc2, Npp16s *pDst, int nLength)

  16-bit signed short signal times signal, then clamp to saturated value.

- NppStatus nppsMul_32f (const Npp32f *pSrc1, const Npp32f *pSrc2, Npp32f *pDst, int nLength)

  32-bit floating point signal times signal, then clamp to saturated value.

- NppStatus nppsMul_64f (const Npp64f *pSrc1, const Npp64f *pSrc2, Npp64f *pDst, int nLength)

  64-bit floating point signal times signal, then clamp to saturated value.

- NppStatus nppsMul_32fc (const Npp32fc *pSrc1, const Npp32fc *pSrc2, Npp32fc *pDst, int nLength)

  32-bit complex floating point signal times signal, then clamp to saturated value.

- NppStatus nppsMul_64fc (const Npp64fc *pSrc1, const Npp64fc *pSrc2, Npp64fc *pDst, int nLength)

  64-bit complex floating point signal times signal, then clamp to saturated value.

- NppStatus nppsMul_8u16u (const Npp8u *pSrc1, const Npp8u *pSrc2, Npp16u *pDst, int nLength)

  8-bit unsigned char signal times signal with 16-bit unsigned result, then clamp to saturated value.

- NppStatus nppsMul_16s32f (const Npp16s *pSrc1, const Npp16s *pSrc2, Npp32f *pDst, int nLength)

  16-bit signed short signal times signal with 32-bit floating point result, then clamp to saturated value.

- NppStatus nppsMul_32f32fc (const Npp32f *pSrc1, const Npp32fc *pSrc2, Npp32fc *pDst, int nLength)

  32-bit floating point signal times 32-bit complex floating point signal with complex 32-bit floating point result, then clamp to saturated value.

- NppStatus nppsMul_8u_Sfs (const Npp8u *pSrc1, const Npp8u *pSrc2, Npp8u *pDst, int nLength, int nScaleFactor)

  8-bit unsigned char signal times signal, scale, then clamp to saturated value.

- NppStatus nppsMul_16u_Sfs (const Npp16u *pSrc1, const Npp16u *pSrc2, Npp16u *pDst, int nLength, int nScaleFactor)

  16-bit unsigned short signal time signal, scale, then clamp to saturated value.

- NppStatus nppsMul_16s_Sfs (const Npp16s *pSrc1, const Npp16s *pSrc2, Npp16s *pDst, int nLength, int nScaleFactor)

  16-bit signed short signal times signal, scale, then clamp to saturated value.

- NppStatus nppsMul_32s_Sfs (const Npp32s *pSrc1, const Npp32s *pSrc2, Npp32s *pDst, int nLength, int nScaleFactor)

  32-bit signed integer signal times signal, scale, then clamp to saturated value.

- NppStatus nppsMul_16sc_Sfs (const Npp16sc ∗pSrc1, const Npp16sc ∗pSrc2, Npp16sc ∗pDst, int nLength, int nScaleFactor)

    16-bit signed complex short signal times signal, scale, then clamp to saturated value.

- NppStatus nppsMul_32sc_Sfs (const Npp32sc ∗pSrc1, const Npp32sc ∗pSrc2, Npp32sc ∗pDst, int nLength, int nScaleFactor)

    32-bit signed complex integer signal times signal, scale, then clamp to saturated value.

- NppStatus nppsMul_16u16s_Sfs (const Npp16u ∗pSrc1, const Npp16s ∗pSrc2, Npp16s ∗pDst, int nLength, int nScaleFactor)

    16-bit unsigned short signal times 16-bit signed short signal, scale, then clamp to 16-bit signed saturated value.

- NppStatus nppsMul_16s32s_Sfs (const Npp16s ∗pSrc1, const Npp16s ∗pSrc2, Npp32s ∗pDst, int nLength, int nScaleFactor)

    16-bit signed short signal times signal, scale, then clamp to 32-bit signed saturated value.

- NppStatus nppsMul_32s32sc_Sfs (const Npp32s ∗pSrc1, const Npp32sc ∗pSrc2, Npp32sc ∗pDst, int nLength, int nScaleFactor)

    32-bit signed integer signal times 32-bit complex signed integer signal, scale, then clamp to 32-bit complex integer saturated value.

- NppStatus nppsMul_Low_32s_Sfs (const Npp32s ∗pSrc1, const Npp32s ∗pSrc2, Npp32s ∗pDst, int nLength, int nScaleFactor)

    32-bit signed integer signal times signal, scale, then clamp to saturated value.

- NppStatus nppsMul_16s_I (const Npp16s ∗pSrc, Npp16s ∗pSrcDst, int nLength)

    16-bit signed short in place signal times signal, then clamp to saturated value.

- NppStatus nppsMul_32f_I (const Npp32f ∗pSrc, Npp32f ∗pSrcDst, int nLength)

    32-bit floating point in place signal times signal, then clamp to saturated value.

- NppStatus nppsMul_64f_I (const Npp64f ∗pSrc, Npp64f ∗pSrcDst, int nLength)

    64-bit floating point in place signal times signal, then clamp to saturated value.

- NppStatus nppsMul_32fc_I (const Npp32fc ∗pSrc, Npp32fc ∗pSrcDst, int nLength)

    32-bit complex floating point in place signal times signal, then clamp to saturated value.

- NppStatus nppsMul_64fc_I (const Npp64fc ∗pSrc, Npp64fc ∗pSrcDst, int nLength)

    64-bit complex floating point in place signal times signal, then clamp to saturated value.

- NppStatus nppsMul_32f32fc_I (const Npp32f ∗pSrc, Npp32fc ∗pSrcDst, int nLength)

    32-bit complex floating point in place signal times 32-bit floating point signal, then clamp to 32-bit complex floating point saturated value.

- NppStatus nppsMul_8u_ISfs (const Npp8u ∗pSrc, Npp8u ∗pSrcDst, int nLength, int nScaleFactor)

    8-bit unsigned char in place signal times signal, with scaling, then clamp to saturated value.

- NppStatus nppsMul_16u_ISfs (const Npp16u ∗pSrc, Npp16u ∗pSrcDst, int nLength, int nScaleFactor)

    16-bit unsigned short in place signal times signal, with scaling, then clamp to saturated value.

- NppStatus nppsMul_16s_ISfs (const Npp16s *pSrc, Npp16s *pSrcDst, int nLength, int nScaleFactor)

    16-bit signed short in place signal times signal, with scaling, then clamp to saturated value.

- NppStatus nppsMul_32s_ISfs (const Npp32s *pSrc, Npp32s *pSrcDst, int nLength, int nScaleFactor)

    32-bit signed integer in place signal times signal, with scaling, then clamp to saturated value.

- NppStatus nppsMul_16sc_ISfs (const Npp16sc *pSrc, Npp16sc *pSrcDst, int nLength, int nScaleFactor)

    16-bit complex signed short in place signal times signal, with scaling, then clamp to saturated value.

- NppStatus nppsMul_32sc_ISfs (const Npp32sc *pSrc, Npp32sc *pSrcDst, int nLength, int nScaleFactor)

    32-bit complex signed integer in place signal times signal, with scaling, then clamp to saturated value.

- NppStatus nppsMul_32s32sc_ISfs (const Npp32s *pSrc, Npp32sc *pSrcDst, int nLength, int nScaleFactor)

    32-bit complex signed integer in place signal times 32-bit signed integer signal, with scaling, then clamp to saturated value.

Sub Signal

Sample by sample subtraction of the samples of two signals.

- NppStatus nppsSub_16s (const Npp16s *pSrc1, const Npp16s *pSrc2, Npp16s *pDst, int nLength)
    16-bit signed short signal subtract signal, then clamp to saturated value.

- NppStatus nppsSub_32f (const Npp32f *pSrc1, const Npp32f *pSrc2, Npp32f *pDst, int nLength)
    32-bit floating point signal subtract signal, then clamp to saturated value.

- NppStatus nppsSub_64f (const Npp64f *pSrc1, const Npp64f *pSrc2, Npp64f *pDst, int nLength)
    64-bit floating point signal subtract signal, then clamp to saturated value.

- NppStatus nppsSub_32fc (const Npp32fc *pSrc1, const Npp32fc *pSrc2, Npp32fc *pDst, int nLength)
    32-bit complex floating point signal subtract signal, then clamp to saturated value.

- NppStatus nppsSub_64fc (const Npp64fc *pSrc1, const Npp64fc *pSrc2, Npp64fc *pDst, int nLength)
    64-bit complex floating point signal subtract signal, then clamp to saturated value.

- NppStatus nppsSub_16s32f (const Npp16s *pSrc1, const Npp16s *pSrc2, Npp32f *pDst, int nLength)
    16-bit signed short signal subtract 16-bit signed short signal, then clamp and convert to 32-bit floating point saturated value.

- NppStatus nppsSub_8u_Sfs (const Npp8u *pSrc1, const Npp8u *pSrc2, Npp8u *pDst, int nLength, int nScaleFactor)

8-bit unsigned char signal subtract signal, scale, then clamp to saturated value.

- NppStatus nppsSub_16u_Sfs (const Npp16u *pSrc1, const Npp16u *pSrc2, Npp16u *pDst, int nLength, int nScaleFactor)

  16-bit unsigned short signal subtract signal, scale, then clamp to saturated value.

- NppStatus nppsSub_16s_Sfs (const Npp16s *pSrc1, const Npp16s *pSrc2, Npp16s *pDst, int nLength, int nScaleFactor)

  16-bit signed short signal subtract signal, scale, then clamp to saturated value.

- NppStatus nppsSub_32s_Sfs (const Npp32s *pSrc1, const Npp32s *pSrc2, Npp32s *pDst, int nLength, int nScaleFactor)

  32-bit signed integer signal subtract signal, scale, then clamp to saturated value.

- NppStatus nppsSub_16sc_Sfs (const Npp16sc *pSrc1, const Npp16sc *pSrc2, Npp16sc *pDst, int nLength, int nScaleFactor)

  16-bit signed complex short signal subtract signal, scale, then clamp to saturated value.

- NppStatus nppsSub_32sc_Sfs (const Npp32sc *pSrc1, const Npp32sc *pSrc2, Npp32sc *pDst, int nLength, int nScaleFactor)

  32-bit signed complex integer signal subtract signal, scale, then clamp to saturated value.

- NppStatus nppsSub_16s_I (const Npp16s *pSrc, Npp16s *pSrcDst, int nLength)

  16-bit signed short in place signal subtract signal, then clamp to saturated value.

- NppStatus nppsSub_32f_I (const Npp32f *pSrc, Npp32f *pSrcDst, int nLength)

  32-bit floating point in place signal subtract signal, then clamp to saturated value.

- NppStatus nppsSub_64f_I (const Npp64f *pSrc, Npp64f *pSrcDst, int nLength)

  64-bit floating point in place signal subtract signal, then clamp to saturated value.

- NppStatus nppsSub_32fc_I (const Npp32fc *pSrc, Npp32fc *pSrcDst, int nLength)

  32-bit complex floating point in place signal subtract signal, then clamp to saturated value.

- NppStatus nppsSub_64fc_I (const Npp64fc *pSrc, Npp64fc *pSrcDst, int nLength)

  64-bit complex floating point in place signal subtract signal, then clamp to saturated value.

- NppStatus nppsSub_8u_ISfs (const Npp8u *pSrc, Npp8u *pSrcDst, int nLength, int nScaleFactor)

  8-bit unsigned char in place signal subtract signal, with scaling, then clamp to saturated value.

- NppStatus nppsSub_16u_ISfs (const Npp16u *pSrc, Npp16u *pSrcDst, int nLength, int nScaleFactor)

  16-bit unsigned short in place signal subtract signal, with scaling, then clamp to saturated value.

- NppStatus nppsSub_16s_ISfs (const Npp16s *pSrc, Npp16s *pSrcDst, int nLength, int nScaleFactor)

  16-bit signed short in place signal subtract signal, with scaling, then clamp to saturated value.

- NppStatus nppsSub_32s_ISfs (const Npp32s *pSrc, Npp32s *pSrcDst, int nLength, int nScaleFactor)

32-bit signed integer in place signal subtract signal, with scaling, then clamp to saturated value.

- NppStatus nppsSub_16sc_ISfs (const Npp16sc ∗pSrc, Npp16sc ∗pSrcDst, int nLength, int nScale-Factor)

    16-bit complex signed short in place signal subtract signal, with scaling, then clamp to saturated value.

- NppStatus nppsSub_32sc_ISfs (const Npp32sc ∗pSrc, Npp32sc ∗pSrcDst, int nLength, int nScale-Factor)

    32-bit complex signed integer in place signal subtract signal, with scaling, then clamp to saturated value.

Div Signal

Sample by sample division of the samples of two signals.

- NppStatus nppsDiv_8u_Sfs (const Npp8u ∗pSrc1, const Npp8u ∗pSrc2, Npp8u ∗pDst, int nLength, int nScaleFactor)

    8-bit unsigned char signal divide signal, scale, then clamp to saturated value.

- NppStatus nppsDiv_16u_Sfs (const Npp16u ∗pSrc1, const Npp16u ∗pSrc2, Npp16u ∗pDst, int nLength, int nScaleFactor)

    16-bit unsigned short signal divide signal, scale, then clamp to saturated value.

- NppStatus nppsDiv_16s_Sfs (const Npp16s ∗pSrc1, const Npp16s ∗pSrc2, Npp16s ∗pDst, int nLength, int nScaleFactor)

    16-bit signed short signal divide signal, scale, then clamp to saturated value.

- NppStatus nppsDiv_32s_Sfs (const Npp32s ∗pSrc1, const Npp32s ∗pSrc2, Npp32s ∗pDst, int nLength, int nScaleFactor)

    32-bit signed integer signal divide signal, scale, then clamp to saturated value.

- NppStatus nppsDiv_16sc_Sfs (const Npp16sc ∗pSrc1, const Npp16sc ∗pSrc2, Npp16sc ∗pDst, int nLength, int nScaleFactor)

    16-bit signed complex short signal divide signal, scale, then clamp to saturated value.

- NppStatus nppsDiv_32s16s_Sfs (const Npp16s ∗pSrc1, const Npp32s ∗pSrc2, Npp16s ∗pDst, int nLength, int nScaleFactor)

    32-bit signed integer signal divided by 16-bit signed short signal, scale, then clamp to 16-bit signed short saturated value.

- NppStatus nppsDiv_32f (const Npp32f ∗pSrc1, const Npp32f ∗pSrc2, Npp32f ∗pDst, int nLength)

    32-bit floating point signal divide signal, then clamp to saturated value.

- NppStatus nppsDiv_64f (const Npp64f ∗pSrc1, const Npp64f ∗pSrc2, Npp64f ∗pDst, int nLength)

    64-bit floating point signal divide signal, then clamp to saturated value.

- NppStatus nppsDiv_32fc (const Npp32fc ∗pSrc1, const Npp32fc ∗pSrc2, Npp32fc ∗pDst, int nLength)

    32-bit complex floating point signal divide signal, then clamp to saturated value.

- NppStatus nppsDiv_64fc (const Npp64fc *pSrc1, const Npp64fc *pSrc2, Npp64fc *pDst, int nLength)

    64-bit complex floating point signal divide signal, then clamp to saturated value.

- NppStatus nppsDiv_8u_ISfs (const Npp8u *pSrc, Npp8u *pSrcDst, int nLength, int nScaleFactor)

    8-bit unsigned char in place signal divide signal, with scaling, then clamp to saturated value.

- NppStatus nppsDiv_16u_ISfs (const Npp16u *pSrc, Npp16u *pSrcDst, int nLength, int nScaleFactor)

    16-bit unsigned short in place signal divide signal, with scaling, then clamp to saturated value.

- NppStatus nppsDiv_16s_ISfs (const Npp16s *pSrc, Npp16s *pSrcDst, int nLength, int nScaleFactor)

    16-bit signed short in place signal divide signal, with scaling, then clamp to saturated value.

- NppStatus nppsDiv_16sc_ISfs (const Npp16sc *pSrc, Npp16sc *pSrcDst, int nLength, int nScaleFactor)

    16-bit complex signed short in place signal divide signal, with scaling, then clamp to saturated value.

- NppStatus nppsDiv_32s_ISfs (const Npp32s *pSrc, Npp32s *pSrcDst, int nLength, int nScaleFactor)

    32-bit signed integer in place signal divide signal, with scaling, then clamp to saturated value.

- NppStatus nppsDiv_32f_I (const Npp32f *pSrc, Npp32f *pSrcDst, int nLength)

    32-bit floating point in place signal divide signal, then clamp to saturated value.

- NppStatus nppsDiv_64f_I (const Npp64f *pSrc, Npp64f *pSrcDst, int nLength)

    64-bit floating point in place signal divide signal, then clamp to saturated value.

- NppStatus nppsDiv_32fc_I (const Npp32fc *pSrc, Npp32fc *pSrcDst, int nLength)

    32-bit complex floating point in place signal divide signal, then clamp to saturated value.

- NppStatus nppsDiv_64fc_I (const Npp64fc *pSrc, Npp64fc *pSrcDst, int nLength)

    64-bit complex floating point in place signal divide signal, then clamp to saturated value.

Div_Round Signal

Sample by sample division of the samples of two signals with rounding.

- NppStatus nppsDiv_Round_8u_Sfs (const Npp8u *pSrc1, const Npp8u *pSrc2, Npp8u *pDst, int nLength, NppRoundMode nRndMode, int nScaleFactor)

    8-bit unsigned char signal divide signal, scale, then clamp to saturated value.

- NppStatus nppsDiv_Round_16u_Sfs (const Npp16u *pSrc1, const Npp16u *pSrc2, Npp16u *pDst, int nLength, NppRoundMode nRndMode, int nScaleFactor)

    16-bit unsigned short signal divide signal, scale, round, then clamp to saturated value.

- NppStatus nppsDiv_Round_16s_Sfs (const Npp16s *pSrc1, const Npp16s *pSrc2, Npp16s *pDst, int nLength, NppRoundMode nRndMode, int nScaleFactor)

16-bit signed short signal divide signal, scale, round, then clamp to saturated value.

- NppStatus nppsDiv_Round_8u_ISfs (const Npp8u *pSrc, Npp8u *pSrcDst, int nLength, NppRound-Mode nRndMode, int nScaleFactor)

  8-bit unsigned char in place signal divide signal, with scaling, rounding then clamp to saturated value.

- NppStatus nppsDiv_Round_16u_ISfs (const Npp16u *pSrc, Npp16u *pSrcDst, int nLength, NppRoundMode nRndMode, int nScaleFactor)

  16-bit unsigned short in place signal divide signal, with scaling, rounding then clamp to saturated value.

- NppStatus nppsDiv_Round_16s_ISfs (const Npp16s *pSrc, Npp16s *pSrcDst, int nLength, NppRoundMode nRndMode, int nScaleFactor)

  16-bit signed short in place signal divide signal, with scaling, rounding then clamp to saturated value.

Absolute Value Signal

Absolute value of each sample of a signal.

- NppStatus nppsAbs_16s (const Npp16s *pSrc, Npp16s *pDst, int nLength)
  16-bit signed short signal absolute value.

- NppStatus nppsAbs_32s (const Npp32s *pSrc, Npp32s *pDst, int nLength)
  32-bit signed integer signal absolute value.

- NppStatus nppsAbs_32f (const Npp32f *pSrc, Npp32f *pDst, int nLength)
  32-bit floating point signal absolute value.

- NppStatus nppsAbs_64f (const Npp64f *pSrc, Npp64f *pDst, int nLength)
  64-bit floating point signal absolute value.

- NppStatus nppsAbs_16s_I (Npp16s *pSrcDst, int nLength)
  16-bit signed short signal absolute value.

- NppStatus nppsAbs_32s_I (Npp32s *pSrcDst, int nLength)
  32-bit signed integer signal absolute value.

- NppStatus nppsAbs_32f_I (Npp32f *pSrcDst, int nLength)
  32-bit floating point signal absolute value.

- NppStatus nppsAbs_64f_I (Npp64f *pSrcDst, int nLength)
  64-bit floating point signal absolute value.

Square Signal

Squares each sample of a signal.

- NppStatus nppsSqr_32f (const Npp32f *pSrc, Npp32f *pDst, int nLength)

32-bit floating point signal squared.

- NppStatus nppsSqr_64f (const Npp64f *pSrc, Npp64f *pDst, int nLength)

  64-bit floating point signal squared.

- NppStatus nppsSqr_32fc (const Npp32fc *pSrc, Npp32fc *pDst, int nLength)

  32-bit complex floating point signal squared.

- NppStatus nppsSqr_64fc (const Npp64fc *pSrc, Npp64fc *pDst, int nLength)

  64-bit complex floating point signal squared.

- NppStatus nppsSqr_32f_I (Npp32f *pSrcDst, int nLength)

  32-bit floating point signal squared.

- NppStatus nppsSqr_64f_I (Npp64f *pSrcDst, int nLength)

  64-bit floating point signal squared.

- NppStatus nppsSqr_32fc_I (Npp32fc *pSrcDst, int nLength)

  32-bit complex floating point signal squared.

- NppStatus nppsSqr_64fc_I (Npp64fc *pSrcDst, int nLength)

  64-bit complex floating point signal squared.

- NppStatus nppsSqr_8u_Sfs (const Npp8u *pSrc, Npp8u *pDst, int nLength, int nScaleFactor)

  8-bit unsigned char signal squared, scale, then clamp to saturated value.

- NppStatus nppsSqr_16u_Sfs (const Npp16u *pSrc, Npp16u *pDst, int nLength, int nScaleFactor)

  16-bit unsigned short signal squared, scale, then clamp to saturated value.

- NppStatus nppsSqr_16s_Sfs (const Npp16s *pSrc, Npp16s *pDst, int nLength, int nScaleFactor)

  16-bit signed short signal squared, scale, then clamp to saturated value.

- NppStatus nppsSqr_16sc_Sfs (const Npp16sc *pSrc, Npp16sc *pDst, int nLength, int nScaleFactor)

  16-bit complex signed short signal squared, scale, then clamp to saturated value.

- NppStatus nppsSqr_8u_ISfs (Npp8u *pSrcDst, int nLength, int nScaleFactor)

  8-bit unsigned char signal squared, scale, then clamp to saturated value.

- NppStatus nppsSqr_16u_ISfs (Npp16u *pSrcDst, int nLength, int nScaleFactor)

  16-bit unsigned short signal squared, scale, then clamp to saturated value.

- NppStatus nppsSqr_16s_ISfs (Npp16s *pSrcDst, int nLength, int nScaleFactor)

  16-bit signed short signal squared, scale, then clamp to saturated value.

- NppStatus nppsSqr_16sc_ISfs (Npp16sc *pSrcDst, int nLength, int nScaleFactor)

  16-bit complex signed short signal squared, scale, then clamp to saturated value.

Square Root Signal

Square root of each sample of a signal.

- NppStatus nppsSqrt_32f (const Npp32f *pSrc, Npp32f *pDst, int nLength)
  32-bit floating point signal square root.

- NppStatus nppsSqrt_64f (const Npp64f *pSrc, Npp64f *pDst, int nLength)
  64-bit floating point signal square root.

- NppStatus nppsSqrt_32fc (const Npp32fc *pSrc, Npp32fc *pDst, int nLength)
  32-bit complex floating point signal square root.

- NppStatus nppsSqrt_64fc (const Npp64fc *pSrc, Npp64fc *pDst, int nLength)
  64-bit complex floating point signal square root.

- NppStatus nppsSqrt_32f_I (Npp32f *pSrcDst, int nLength)
  32-bit floating point signal square root.

- NppStatus nppsSqrt_64f_I (Npp64f *pSrcDst, int nLength)
  64-bit floating point signal square root.

- NppStatus nppsSqrt_32fc_I (Npp32fc *pSrcDst, int nLength)
  32-bit complex floating point signal square root.

- NppStatus nppsSqrt_64fc_I (Npp64fc *pSrcDst, int nLength)
  64-bit complex floating point signal square root.

- NppStatus nppsSqrt_8u_Sfs (const Npp8u *pSrc, Npp8u *pDst, int nLength, int nScaleFactor)
  8-bit unsigned char signal square root, scale, then clamp to saturated value.

- NppStatus nppsSqrt_16u_Sfs (const Npp16u *pSrc, Npp16u *pDst, int nLength, int nScaleFactor)
  16-bit unsigned short signal square root, scale, then clamp to saturated value.

- NppStatus nppsSqrt_16s_Sfs (const Npp16s *pSrc, Npp16s *pDst, int nLength, int nScaleFactor)
  16-bit signed short signal square root, scale, then clamp to saturated value.

- NppStatus nppsSqrt_16sc_Sfs (const Npp16sc *pSrc, Npp16sc *pDst, int nLength, int nScaleFactor)
  16-bit complex signed short signal square root, scale, then clamp to saturated value.

- NppStatus nppsSqrt_64s_Sfs (const Npp64s *pSrc, Npp64s *pDst, int nLength, int nScaleFactor)
  64-bit signed integer signal square root, scale, then clamp to saturated value.

- NppStatus nppsSqrt_32s16s_Sfs (const Npp32s *pSrc, Npp16s *pDst, int nLength, int nScaleFactor)
  32-bit signed integer signal square root, scale, then clamp to 16-bit signed integer saturated value.

- NppStatus nppsSqrt_64s16s_Sfs (const Npp64s *pSrc, Npp16s *pDst, int nLength, int nScaleFactor)

64-bit signed integer signal square root, scale, then clamp to 16-bit signed integer saturated value.

- NppStatus nppsSqrt_8u_ISfs (Npp8u *pSrcDst, int nLength, int nScaleFactor)
  8-bit unsigned char signal square root, scale, then clamp to saturated value.

- NppStatus nppsSqrt_16u_ISfs (Npp16u *pSrcDst, int nLength, int nScaleFactor)
  16-bit unsigned short signal square root, scale, then clamp to saturated value.

- NppStatus nppsSqrt_16s_ISfs (Npp16s *pSrcDst, int nLength, int nScaleFactor)
  16-bit signed short signal square root, scale, then clamp to saturated value.

- NppStatus nppsSqrt_16sc_ISfs (Npp16sc *pSrcDst, int nLength, int nScaleFactor)
  16-bit complex signed short signal square root, scale, then clamp to saturated value.

- NppStatus nppsSqrt_64s_ISfs (Npp64s *pSrcDst, int nLength, int nScaleFactor)
  64-bit signed integer signal square root, scale, then clamp to saturated value.

Cube Root Signal

Cube root of each sample of a signal.

- NppStatus nppsCubrt_32f (const Npp32f *pSrc, Npp32f *pDst, int nLength)
  32-bit floating point signal cube root.

- NppStatus nppsCubrt_32s16s_Sfs (const Npp32s *pSrc, Npp16s *pDst, int nLength, int nScaleFactor)
  32-bit signed integer signal cube root, scale, then clamp to 16-bit signed integer saturated value.

Exponent Signal

E raised to the power of each sample of a signal.

- NppStatus nppsExp_32f (const Npp32f *pSrc, Npp32f *pDst, int nLength)
  32-bit floating point signal exponent.

- NppStatus nppsExp_64f (const Npp64f *pSrc, Npp64f *pDst, int nLength)
  64-bit floating point signal exponent.

- NppStatus nppsExp_32f64f (const Npp32f *pSrc, Npp64f *pDst, int nLength)
  32-bit floating point signal exponent with 64-bit floating point result.

- NppStatus nppsExp_32f_I (Npp32f *pSrcDst, int nLength)
  32-bit floating point signal exponent.

- NppStatus nppsExp_64f_I (Npp64f *pSrcDst, int nLength)
  64-bit floating point signal exponent.

- NppStatus nppsExp_16s_Sfs (const Npp16s ∗pSrc, Npp16s ∗pDst, int nLength, int nScaleFactor)

    16-bit signed short signal exponent, scale, then clamp to saturated value.

- NppStatus nppsExp_32s_Sfs (const Npp32s ∗pSrc, Npp32s ∗pDst, int nLength, int nScaleFactor)

    32-bit signed integer signal exponent, scale, then clamp to saturated value.

- NppStatus nppsExp_64s_Sfs (const Npp64s ∗pSrc, Npp64s ∗pDst, int nLength, int nScaleFactor)

    64-bit signed integer signal exponent, scale, then clamp to saturated value.

- NppStatus nppsExp_16s_ISfs (Npp16s ∗pSrcDst, int nLength, int nScaleFactor)

    16-bit signed short signal exponent, scale, then clamp to saturated value.

- NppStatus nppsExp_32s_ISfs (Npp32s ∗pSrcDst, int nLength, int nScaleFactor)

    32-bit signed integer signal exponent, scale, then clamp to saturated value.

- NppStatus nppsExp_64s_ISfs (Npp64s ∗pSrcDst, int nLength, int nScaleFactor)

    64-bit signed integer signal exponent, scale, then clamp to saturated value.

Natural Logarithm Signal

Natural logarithm of each sample of a signal.

- NppStatus nppsLn_32f (const Npp32f ∗pSrc, Npp32f ∗pDst, int nLength)

    32-bit floating point signal natural logarithm.

- NppStatus nppsLn_64f (const Npp64f ∗pSrc, Npp64f ∗pDst, int nLength)

    64-bit floating point signal natural logarithm.

- NppStatus nppsLn_64f32f (const Npp64f ∗pSrc, Npp32f ∗pDst, int nLength)

    64-bit floating point signal natural logarithm with 32-bit floating point result.

- NppStatus nppsLn_32f_I (Npp32f ∗pSrcDst, int nLength)

    32-bit floating point signal natural logarithm.

- NppStatus nppsLn_64f_I (Npp64f ∗pSrcDst, int nLength)

    64-bit floating point signal natural logarithm.

- NppStatus nppsLn_16s_Sfs (const Npp16s ∗pSrc, Npp16s ∗pDst, int nLength, int nScaleFactor)

    16-bit signed short signal natural logarithm, scale, then clamp to saturated value.

- NppStatus nppsLn_32s_Sfs (const Npp32s ∗pSrc, Npp32s ∗pDst, int nLength, int nScaleFactor)

    32-bit signed integer signal natural logarithm, scale, then clamp to saturated value.

- NppStatus nppsLn_32s16s_Sfs (const Npp32s ∗pSrc, Npp16s ∗pDst, int nLength, int nScaleFactor)

    32-bit signed integer signal natural logarithm, scale, then clamp to 16-bit signed short saturated value.

- NppStatus nppsLn_16s_ISfs (Npp16s ∗pSrcDst, int nLength, int nScaleFactor)

16-bit signed short signal natural logarithm, scale, then clamp to saturated value.

- NppStatus nppsLn_32s_ISfs (Npp32s ∗pSrcDst, int nLength, int nScaleFactor)
  32-bit signed integer signal natural logarithm, scale, then clamp to saturated value.

Ten Times Base Ten Logarithm Signal

Ten times the decimal logarithm of each sample of a signal.

- NppStatus npps10Log10_32s_Sfs (const Npp32s ∗pSrc, Npp32s ∗pDst, int nLength, int nScaleFactor)
  32-bit signed integer signal 10 times base 10 logarithm, scale, then clamp to saturated value.

- NppStatus npps10Log10_32s_ISfs (Npp32s ∗pSrcDst, int nLength, int nScaleFactor)
  32-bit signed integer signal 10 times base 10 logarithm, scale, then clamp to saturated value.

Inverse Tangent Signal

Inverse tangent of each sample of a signal.

- NppStatus nppsArctan_32f (const Npp32f ∗pSrc, Npp32f ∗pDst, int nLength)
  32-bit floating point signal inverse tangent.

- NppStatus nppsArctan_64f (const Npp64f ∗pSrc, Npp64f ∗pDst, int nLength)
  64-bit floating point signal inverse tangent.

- NppStatus nppsArctan_32f_I (Npp32f ∗pSrcDst, int nLength)
  32-bit floating point signal inverse tangent.

- NppStatus nppsArctan_64f_I (Npp64f ∗pSrcDst, int nLength)
  64-bit floating point signal inverse tangent.

Normalize Signal

Normalize each sample of a real or complex signal using offset and division operations.

- NppStatus nppsNormalize_32f (const Npp32f ∗pSrc, Npp32f ∗pDst, int nLength, Npp32f vSub, Npp32f vDiv)
  32-bit floating point signal normalize.

- NppStatus nppsNormalize_32fc (const Npp32fc ∗pSrc, Npp32fc ∗pDst, int nLength, Npp32fc vSub, Npp32f vDiv)
  32-bit complex floating point signal normalize.

- NppStatus nppsNormalize_64f (const Npp64f ∗pSrc, Npp64f ∗pDst, int nLength, Npp64f vSub, Npp64f vDiv)

      64-bit floating point signal normalize.

- NppStatus nppsNormalize_64fc (const Npp64fc ∗pSrc, Npp64fc ∗pDst, int nLength, Npp64fc vSub, Npp64f vDiv)

      64-bit complex floating point signal normalize.

- NppStatus nppsNormalize_16s_Sfs (const Npp16s ∗pSrc, Npp16s ∗pDst, int nLength, Npp16s vSub, int vDiv, int nScaleFactor)

      16-bit signed short signal normalize, scale, then clamp to saturated value.

- NppStatus nppsNormalize_16sc_Sfs (const Npp16sc ∗pSrc, Npp16sc ∗pDst, int nLength, Npp16sc vSub, int vDiv, int nScaleFactor)

      16-bit complex signed short signal normalize, scale, then clamp to saturated value.

Cauchy, CauchyD, and CauchyDD2 Signal

Determine Cauchy robust error function and its first and second derivatives for each sample of a signal.

- NppStatus nppsCauchy_32f_I (Npp32f ∗pSrcDst, int nLength, Npp32f nParam)

      32-bit floating point signal Cauchy error calculation.

- NppStatus nppsCauchyD_32f_I (Npp32f ∗pSrcDst, int nLength, Npp32f nParam)

      32-bit floating point signal Cauchy first derivative.

- NppStatus nppsCauchyDD2_32f_I (Npp32f ∗pSrcDst, Npp32f ∗pD2FVal, int nLength, Npp32f nParam)

      32-bit floating point signal Cauchy first and second derivatives.

AndC

Bitwise AND of a constant and each sample of a signal.

- NppStatus nppsAndC_8u (const Npp8u ∗pSrc, Npp8u nValue, Npp8u ∗pDst, int nLength)

      8-bit unsigned char signal and with constant.

- NppStatus nppsAndC_16u (const Npp16u ∗pSrc, Npp16u nValue, Npp16u ∗pDst, int nLength)

      16-bit unsigned short signal and with constant.

- NppStatus nppsAndC_32u (const Npp32u ∗pSrc, Npp32u nValue, Npp32u ∗pDst, int nLength)

      32-bit unsigned integer signal and with constant.

- NppStatus nppsAndC_8u_I (Npp8u nValue, Npp8u ∗pSrcDst, int nLength)

      8-bit unsigned char in place signal and with constant.

- NppStatus nppsAndC_16u_I (Npp16u nValue, Npp16u ∗pSrcDst, int nLength)

      16-bit unsigned short in place signal and with constant.

- NppStatus nppsAndC_32u_I (Npp32u nValue, Npp32u ∗pSrcDst, int nLength)

    32-bit unsigned signed integer in place signal and with constant.

And

Sample by sample bitwise AND of samples from two signals.

- NppStatus nppsAnd_8u (const Npp8u ∗pSrc1, const Npp8u ∗pSrc2, Npp8u ∗pDst, int nLength)

    8-bit unsigned char signal and with signal.

- NppStatus nppsAnd_16u (const Npp16u ∗pSrc1, const Npp16u ∗pSrc2, Npp16u ∗pDst, int nLength)

    16-bit unsigned short signal and with signal.

- NppStatus nppsAnd_32u (const Npp32u ∗pSrc1, const Npp32u ∗pSrc2, Npp32u ∗pDst, int nLength)

    32-bit unsigned integer signal and with signal.

- NppStatus nppsAnd_8u_I (const Npp8u ∗pSrc, Npp8u ∗pSrcDst, int nLength)

    8-bit unsigned char in place signal and with signal.

- NppStatus nppsAnd_16u_I (const Npp16u ∗pSrc, Npp16u ∗pSrcDst, int nLength)

    16-bit unsigned short in place signal and with signal.

- NppStatus nppsAnd_32u_I (const Npp32u ∗pSrc, Npp32u ∗pSrcDst, int nLength)

    32-bit unsigned integer in place signal and with signal.

OrC

Bitwise OR of a constant and each sample of a signal.

- NppStatus nppsOrC_8u (const Npp8u ∗pSrc, Npp8u nValue, Npp8u ∗pDst, int nLength)

    8-bit unsigned char signal or with constant.

- NppStatus nppsOrC_16u (const Npp16u ∗pSrc, Npp16u nValue, Npp16u ∗pDst, int nLength)

    16-bit unsigned short signal or with constant.

- NppStatus nppsOrC_32u (const Npp32u ∗pSrc, Npp32u nValue, Npp32u ∗pDst, int nLength)

    32-bit unsigned integer signal or with constant.

- NppStatus nppsOrC_8u_I (Npp8u nValue, Npp8u ∗pSrcDst, int nLength)

    8-bit unsigned char in place signal or with constant.

- NppStatus nppsOrC_16u_I (Npp16u nValue, Npp16u ∗pSrcDst, int nLength)

    16-bit unsigned short in place signal or with constant.

- NppStatus nppsOrC_32u_I (Npp32u nValue, Npp32u ∗pSrcDst, int nLength)

    32-bit unsigned signed integer in place signal or with constant.

Or

Sample by sample bitwise OR of the samples from two signals.

- NppStatus nppsOr_8u (const Npp8u *pSrc1, const Npp8u *pSrc2, Npp8u *pDst, int nLength)

  8-bit unsigned char signal or with signal.

- NppStatus nppsOr_16u (const Npp16u *pSrc1, const Npp16u *pSrc2, Npp16u *pDst, int nLength)

  16-bit unsigned short signal or with signal.

- NppStatus nppsOr_32u (const Npp32u *pSrc1, const Npp32u *pSrc2, Npp32u *pDst, int nLength)

  32-bit unsigned integer signal or with signal.

- NppStatus nppsOr_8u_I (const Npp8u *pSrc, Npp8u *pSrcDst, int nLength)

  8-bit unsigned char in place signal or with signal.

- NppStatus nppsOr_16u_I (const Npp16u *pSrc, Npp16u *pSrcDst, int nLength)

  16-bit unsigned short in place signal or with signal.

- NppStatus nppsOr_32u_I (const Npp32u *pSrc, Npp32u *pSrcDst, int nLength)

  32-bit unsigned integer in place signal or with signal.

XorC

Bitwise XOR of a constant and each sample of a signal.

- NppStatus nppsXorC_8u (const Npp8u *pSrc, Npp8u nValue, Npp8u *pDst, int nLength)

  8-bit unsigned char signal exclusive or with constant.

- NppStatus nppsXorC_16u (const Npp16u *pSrc, Npp16u nValue, Npp16u *pDst, int nLength)

  16-bit unsigned short signal exclusive or with constant.

- NppStatus nppsXorC_32u (const Npp32u *pSrc, Npp32u nValue, Npp32u *pDst, int nLength)

  32-bit unsigned integer signal exclusive or with constant.

- NppStatus nppsXorC_8u_I (Npp8u nValue, Npp8u *pSrcDst, int nLength)

  8-bit unsigned char in place signal exclusive or with constant.

- NppStatus nppsXorC_16u_I (Npp16u nValue, Npp16u *pSrcDst, int nLength)

  16-bit unsigned short in place signal exclusive or with constant.

- NppStatus nppsXorC_32u_I (Npp32u nValue, Npp32u *pSrcDst, int nLength)

  32-bit unsigned signed integer in place signal exclusive or with constant.

Xor

Sample by sample bitwise XOR of the samples from two signals.

- NppStatus nppsXor_8u (const Npp8u ∗pSrc1, const Npp8u ∗pSrc2, Npp8u ∗pDst, int nLength)

    8-bit unsigned char signal exclusive or with signal.

- NppStatus nppsXor_16u (const Npp16u ∗pSrc1, const Npp16u ∗pSrc2, Npp16u ∗pDst, int nLength)

    16-bit unsigned short signal exclusive or with signal.

- NppStatus nppsXor_32u (const Npp32u ∗pSrc1, const Npp32u ∗pSrc2, Npp32u ∗pDst, int nLength)

    32-bit unsigned integer signal exclusive or with signal.

- NppStatus nppsXor_8u_I (const Npp8u ∗pSrc, Npp8u ∗pSrcDst, int nLength)

    8-bit unsigned char in place signal exclusive or with signal.

- NppStatus nppsXor_16u_I (const Npp16u ∗pSrc, Npp16u ∗pSrcDst, int nLength)

    16-bit unsigned short in place signal exclusive or with signal.

- NppStatus nppsXor_32u_I (const Npp32u ∗pSrc, Npp32u ∗pSrcDst, int nLength)

    32-bit unsigned integer in place signal exclusive or with signal.

Not

Bitwise NOT of each sample of a signal.

- NppStatus nppsNot_8u (const Npp8u ∗pSrc, Npp8u ∗pDst, int nLength)

    8-bit unsigned char not signal.

- NppStatus nppsNot_16u (const Npp16u ∗pSrc, Npp16u ∗pDst, int nLength)

    16-bit unsigned short not signal.

- NppStatus nppsNot_32u (const Npp32u ∗pSrc, Npp32u ∗pDst, int nLength)

    32-bit unsigned integer not signal.

- NppStatus nppsNot_8u_I (Npp8u ∗pSrcDst, int nLength)

    8-bit unsigned char in place not signal.

- NppStatus nppsNot_16u_I (Npp16u ∗pSrcDst, int nLength)

    16-bit unsigned short in place not signal.

- NppStatus nppsNot_32u_I (Npp32u ∗pSrcDst, int nLength)

    32-bit unsigned signed integer in place not signal.

LShiftC

Left shifts the bits of each sample of a signal by a constant amount.

- NppStatus nppsLShiftC_8u (const Npp8u *pSrc, int nValue, Npp8u *pDst, int nLength)
    8-bit unsigned char signal left shift with constant.

- NppStatus nppsLShiftC_16u (const Npp16u *pSrc, int nValue, Npp16u *pDst, int nLength)
    16-bit unsigned short signal left shift with constant.

- NppStatus nppsLShiftC_16s (const Npp16s *pSrc, int nValue, Npp16s *pDst, int nLength)
    16-bit signed short signal left shift with constant.

- NppStatus nppsLShiftC_32u (const Npp32u *pSrc, int nValue, Npp32u *pDst, int nLength)
    32-bit unsigned integer signal left shift with constant.

- NppStatus nppsLShiftC_32s (const Npp32s *pSrc, int nValue, Npp32s *pDst, int nLength)
    32-bit signed integer signal left shift with constant.

- NppStatus nppsLShiftC_8u_I (int nValue, Npp8u *pSrcDst, int nLength)
    8-bit unsigned char in place signal left shift with constant.

- NppStatus nppsLShiftC_16u_I (int nValue, Npp16u *pSrcDst, int nLength)
    16-bit unsigned short in place signal left shift with constant.

- NppStatus nppsLShiftC_16s_I (int nValue, Npp16s *pSrcDst, int nLength)
    16-bit signed short in place signal left shift with constant.

- NppStatus nppsLShiftC_32u_I (int nValue, Npp32u *pSrcDst, int nLength)
    32-bit unsigned signed integer in place signal left shift with constant.

- NppStatus nppsLShiftC_32s_I (int nValue, Npp32s *pSrcDst, int nLength)
    32-bit signed signed integer in place signal left shift with constant.

RShiftC

Right shifts the bits of each sample of a signal by a constant amount.

- NppStatus nppsRShiftC_8u (const Npp8u *pSrc, int nValue, Npp8u *pDst, int nLength)
    8-bit unsigned char signal right shift with constant.

- NppStatus nppsRShiftC_16u (const Npp16u *pSrc, int nValue, Npp16u *pDst, int nLength)
    16-bit unsigned short signal right shift with constant.

- NppStatus nppsRShiftC_16s (const Npp16s *pSrc, int nValue, Npp16s *pDst, int nLength)
    16-bit signed short signal right shift with constant.

- NppStatus nppsRShiftC_32u (const Npp32u *pSrc, int nValue, Npp32u *pDst, int nLength)

32-bit unsigned integer signal right shift with constant.

- NppStatus nppsRShiftC_32s (const Npp32s *pSrc, int nValue, Npp32s *pDst, int nLength)
  32-bit signed integer signal right shift with constant.

- NppStatus nppsRShiftC_8u_I (int nValue, Npp8u *pSrcDst, int nLength)
  8-bit unsigned char in place signal right shift with constant.

- NppStatus nppsRShiftC_16u_I (int nValue, Npp16u *pSrcDst, int nLength)
  16-bit unsigned short in place signal right shift with constant.

- NppStatus nppsRShiftC_16s_I (int nValue, Npp16s *pSrcDst, int nLength)
  16-bit signed short in place signal right shift with constant.

- NppStatus nppsRShiftC_32u_I (int nValue, Npp32u *pSrcDst, int nLength)
  32-bit unsigned signed integer in place signal right shift with constant.

- NppStatus nppsRShiftC_32s_I (int nValue, Npp32s *pSrcDst, int nLength)
  32-bit signed signed integer in place signal right shift with constant.

Statistical Functions

Functions that provide global signal statistics like: average, standard deviation, minimum, etc.

- NppStatus nppsSumGetBufferSize_32f (int nLength, int *hpBufferSize)
  Device scratch buffer size (in bytes) for 32f Sum.

- NppStatus nppsMaxGetBufferSize_32f (int nLength, int *hpBufferSize)
  Device scratch buffer size (in bytes) for 32f Max.

- NppStatus nppsMinGetBufferSize_32f (int nLength, int *hpBufferSize)
  Device scratch buffer size (in bytes) for 32f Min.

- NppStatus nppsSumGetBufferSize_16s32s_Sfs (int nLength, int *hpBufferSize)
  Device scratch buffer size (in bytes) for 16s32s_Sfs.

- NppStatus nppsMaxGetBufferSize_16s (int nLength, int *hpBufferSize)
  Device scratch buffer size (in bytes) for 16s Max.

- NppStatus nppsMinGetBufferSize_16s (int nLength, int *hpBufferSize)
  Device scratch buffer size (in bytes) for 16s Min.

- NppStatus nppsSumGetBufferSize_64fc (int nLength, int *hpBufferSize)
  Device scratch buffer size (in bytes) for 64fc Sum.

- NppStatus nppsSumGetBufferSize_16s_Sfs (int nLength, int *hpBufferSize)
  Device scratch buffer size (in bytes) for 16s_Sfs Sum.

- NppStatus nppsSumGetBufferSize_16sc_Sfs (int nLength, int *hpBufferSize)

Device scratch buffer size (in bytes) for 16sc_Sfs Sum.

- NppStatus nppsSumGetBufferSize_16sc32sc_Sfs (int nLength, int ∗hpBufferSize)

  Device scratch buffer size (in bytes) for 16sc32sc_Sfs Sum.

- NppStatus nppsSumGetBufferSize_64f (int nLength, int ∗hpBufferSize)

  Device scratch buffer size (in bytes) for 64f Sum.

- NppStatus nppsMaxGetBufferSize_64f (int nLength, int ∗hpBufferSize)

  Device scratch buffer size (in bytes) for 64f Max.

- NppStatus nppsMinGetBufferSize_64f (int nLength, int ∗hpBufferSize)

  Device scratch buffer size (in bytes) for 64f Min.

- NppStatus nppsSumGetBufferSize_32s_Sfs (int nLength, int ∗hpBufferSize)

  Device scratch buffer size (in bytes) for 32s_Sfs Sum.

- NppStatus nppsMaxGetBufferSize_32s (int nLength, int ∗hpBufferSize)

  Device scratch buffer size (in bytes) for 32s Max.

- NppStatus nppsMinGetBufferSize_32s (int nLength, int ∗hpBufferSize)

  Device scratch buffer size (in bytes) for 32s Min.

- NppStatus nppsSumGetBufferSize_32fc (int nLength, int ∗hpBufferSize)

  Device scratch buffer size (in bytes) for 32fc Sum.

- NppStatus nppsSum_32f (const Npp32f ∗pSrc, int nLength, Npp32f ∗pSum, NppHintAlgorithm eHint, Npp8u ∗pDeviceBuffer)

  32-bit float vector sum method

- NppStatus nppsSum_32fc (const Npp32fc ∗pSrc, int nLength, Npp32fc ∗pSum, NppHintAlgorithm eHint, Npp8u ∗pDeviceBuffer)

  32-bit float complex vector sum method

- NppStatus nppsSum_64f (const Npp64f ∗pSrc, int nLength, Npp64f ∗pSum, Npp8u ∗pDeviceBuffer)

  64-bit double vector sum method

- NppStatus nppsSum_64fc (const Npp64fc ∗pSrc, int nLength, Npp64fc ∗pSum, Npp8u ∗pDeviceBuffer)

  64-bit double complex vector sum method

- NppStatus nppsSum_16s_Sfs (const Npp16s ∗pSrc, int nLength, Npp16s ∗pSum, int nScaleFactor, Npp8u ∗pDeviceBuffer)

  16-bit short vector sum with integer scaling method

- NppStatus nppsSum_32s_Sfs (const Npp32s ∗pSrc, int nLength, Npp32s ∗pSum, int nScaleFactor, Npp8u ∗pDeviceBuffer)

  32-bit integer vector sum with integer scaling method

- NppStatus nppsSum_16sc_Sfs (const Npp16sc *pSrc, int nLength, Npp16sc *pSum, int nScaleFactor, Npp8u *pDeviceBuffer)

    16-bit short complex vector sum with integer scaling method

- NppStatus nppsSum_16sc32sc_Sfs (const Npp16sc *pSrc, int nLength, Npp32sc *pSum, int nScaleFactor, Npp8u *pDeviceBuffer)

    16-bit short complex vector sum (32bit int complex) with integer scaling method

- NppStatus nppsSum_16s32s_Sfs (const Npp16s *pSrc, int nLength, Npp32s *pSum, int nScaleFactor, Npp8u *pDeviceBuffer)

    16-bit integer vector sum (32bit) with integer scaling method

- NppStatus nppsMax_16s (const Npp16s *pSrc, int nLength, Npp16s *pMax, Npp8u *pDeviceBuffer)

    16-bit integer vector max method

- NppStatus nppsMax_32s (const Npp32s *pSrc, int nLength, Npp32s *pMax, Npp8u *pDeviceBuffer)

    32-bit integer vector max method

- NppStatus nppsMax_32f (const Npp32f *pSrc, int nLength, Npp32f *pMax, Npp8u *pDeviceBuffer)

    32-bit float vector max method

- NppStatus nppsMax_64f (const Npp64f *pSrc, int nLength, Npp64f *pMax, Npp8u *pDeviceBuffer)

    64-bit float vector max method

- NppStatus nppsMin_16s (const Npp16s *pSrc, int nLength, Npp16s *pMin, Npp8u *pDeviceBuffer)

    16-bit integer vector min method

- NppStatus nppsMin_32s (const Npp32s *pSrc, int nLength, Npp32s *pMin, Npp8u *pDeviceBuffer)

    32-bit integer vector min method

- NppStatus nppsMin_32f (const Npp32f *pSrc, int nLength, Npp32f *pMin, Npp8u *pDeviceBuffer)

    32-bit integer vector min method

- NppStatus nppsMin_64f (const Npp64f *pSrc, int nLength, Npp64f *pMin, Npp8u *pDeviceBuffer)

    64-bit integer vector min method

- NppStatus nppsMinMaxGetBufferSize_8u (int nLength, int *hpBufferSize)

    Device-buffer size (in bytes) for nppsMinMax_8u.

- NppStatus nppsMinMaxGetBufferSize_16s (int nLength, int *hpBufferSize)

    Device-buffer size (in bytes) for nppsMinMax_16s.

- NppStatus nppsMinMaxGetBufferSize_16u (int nLength, int *hpBufferSize)

Device-buffer size (in bytes) for nppsMinMax_16u.

- NppStatus nppsMinMaxGetBufferSize_32s (int nLength, int *hpBufferSize)
  Device-buffer size (in bytes) for nppsMinMax_32s.

- NppStatus nppsMinMaxGetBufferSize_32u (int nLength, int *hpBufferSize)
  Device-buffer size (in bytes) for nppsMinMax_32u.

- NppStatus nppsMinMaxGetBufferSize_32f (int nLength, int *hpBufferSize)
  Device-buffer size (in bytes) for nppsMinMax_32f.

- NppStatus nppsMinMaxGetBufferSize_64f (int nLength, int *hpBufferSize)
  Device-buffer size (in bytes) for nppsMinMax_64f.

- NppStatus nppsMinMax_8u (const Npp8u *pSrc, int nLength, Npp8u *pMin, Npp8u *pMax, Npp8u *pDeviceBuffer)
  8-bit char vector min and max method

- NppStatus nppsMinMax_16s (const Npp16s *pSrc, int nLength, Npp16s *pMin, Npp16s *pMax, Npp8u *pDeviceBuffer)
  16-bit signed short vector min and max method

- NppStatus nppsMinMax_16u (const Npp16u *pSrc, int nLength, Npp16u *pMin, Npp16u *pMax, Npp8u *pDeviceBuffer)
  16-bit unsigned short vector min and max method

- NppStatus nppsMinMax_32u (const Npp32u *pSrc, int nLength, Npp32u *pMin, Npp32u *pMax, Npp8u *pDeviceBuffer)
  32-bit unsigned int vector min and max method

- NppStatus nppsMinMax_32s (const Npp32s *pSrc, int nLength, Npp32s *pMin, Npp32s *pMax, Npp8u *pDeviceBuffer)
  32-bit signed int vector min and max method

- NppStatus nppsMinMax_32f (const Npp32f *pSrc, int nLength, Npp32f *pMin, Npp32f *pMax, Npp8u *pDeviceBuffer)
  32-bit float vector min and max method

- NppStatus nppsMinMax_64f (const Npp64f *pSrc, int nLength, Npp64f *pMin, Npp64f *pMax, Npp8u *pDeviceBuffer)
  64-bit double vector min and max method

Filtering Functions

Functions that provide functionality of generating output signal based on the input signal like signal integral, etc.

- NppStatus nppsIntegralGetBufferSize_32s (int nLength, int *hpBufferSize)
- NppStatus nppsIntegral_32s (const Npp32s *pSrc, Npp32s *pDst, int nLength, Npp8u *pDeviceBuffer)

7.17.1 Function Documentation

7.17.1.1 NppStatus npps10Log10_32s_ISfs (Npp32s ∗ *pSrcDst*, int *nLength*, int *nScaleFactor*)

32-bit signed integer signal 10 times base 10 logarithm, scale, then clamp to saturated value.

Parameters:

pSrcDst In-Place Signal Pointer.

nLength Signal Length.

nScaleFactor Integer Result Scaling.

Returns:

Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.2 NppStatus npps10Log10_32s_Sfs (const Npp32s ∗ *pSrc*, Npp32s ∗ *pDst*, int *nLength*, int *nScaleFactor*)

32-bit signed integer signal 10 times base 10 logarithm, scale, then clamp to saturated value.

Parameters:

pSrc Source Signal Pointer.

pDst Destination Signal Pointer.

nLength Signal Length.

nScaleFactor Integer Result Scaling.

Returns:

Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.3 NppStatus nppsAbs_16s (const Npp16s ∗ *pSrc*, Npp16s ∗ *pDst*, int *nLength*)

16-bit signed short signal absolute value.

Parameters:

pSrc Source Signal Pointer.

pDst Destination Signal Pointer.

nLength Signal Length.

Returns:

Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.4 NppStatus nppsAbs_16s_I (Npp16s ∗ *pSrcDst*, int *nLength*)

16-bit signed short signal absolute value.

Parameters:

    pSrcDst In-Place Signal Pointer.
    nLength Signal Length.

Returns:

    Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.5 NppStatus nppsAbs_32f (const Npp32f ∗ *pSrc*, Npp32f ∗ *pDst*, int *nLength*)

32-bit floating point signal absolute value.

Parameters:

    pSrc Source Signal Pointer.
    pDst Destination Signal Pointer.
    nLength Signal Length.

Returns:

    Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.6 NppStatus nppsAbs_32f_I (Npp32f ∗ *pSrcDst*, int *nLength*)

32-bit floating point signal absolute value.

Parameters:

    pSrcDst In-Place Signal Pointer.
    nLength Signal Length.

Returns:

    Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.7 NppStatus nppsAbs_32s (const Npp32s ∗ *pSrc*, Npp32s ∗ *pDst*, int *nLength*)

32-bit signed integer signal absolute value.

Parameters:

    pSrc Source Signal Pointer.
    pDst Destination Signal Pointer.
    nLength Signal Length.

Returns:

    Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.8 NppStatus nppsAbs_32s_I (Npp32s ∗ *pSrcDst*, int *nLength*)

32-bit signed integer signal absolute value.

Parameters:

> *pSrcDst* In-Place Signal Pointer.
> *nLength* Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.9 NppStatus nppsAbs_64f (const Npp64f ∗ *pSrc*, Npp64f ∗ *pDst*, int *nLength*)

64-bit floating point signal absolute value.

Parameters:

> *pSrc* Source Signal Pointer.
> *pDst* Destination Signal Pointer.
> *nLength* Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.10 NppStatus nppsAbs_64f_I (Npp64f ∗ *pSrcDst*, int *nLength*)

64-bit floating point signal absolute value.

Parameters:

> *pSrcDst* In-Place Signal Pointer.
> *nLength* Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.11 NppStatus nppsAdd_16s (const Npp16s ∗ *pSrc1*, const Npp16s ∗ *pSrc2*, Npp16s ∗ *pDst*, int *nLength*)

16-bit signed short signal add signal, then clamp to saturated value.

Parameters:

> *pSrc1* Source Signal Pointer.
> *pSrc2* Source Signal Pointer. signal2 elements to be added to signal1 elements
> *pDst* Destination Signal Pointer.
> *nLength* Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.12 NppStatus nppsAdd_16s32f (const Npp16s ∗ *pSrc1*, const Npp16s ∗ *pSrc2*, Npp32f ∗ *pDst*, int *nLength*)

16-bit signed short signal add signal with 32-bit floating point result, then clamp to saturated value.

Parameters:

> *pSrc1* Source Signal Pointer.
>
> *pSrc2* Source Signal Pointer. signal2 elements to be added to signal1 elements
>
> *pDst* Destination Signal Pointer.
>
> *nLength* Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.13 NppStatus nppsAdd_16s32s_I (const Npp16s ∗ *pSrc*, Npp32s ∗ *pSrcDst*, int *nLength*)

16/32-bit signed short in place signal add signal with 32-bit signed integer results, then clamp to saturated value.

Parameters:

> *pSrc* Source Signal Pointer.
>
> *pSrcDst* In-Place Signal Pointer. signal2 elements to be added to signal1 elements
>
> *nLength* Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.14 NppStatus nppsAdd_16s_I (const Npp16s ∗ *pSrc*, Npp16s ∗ *pSrcDst*, int *nLength*)

16-bit signed short in place signal add signal, then clamp to saturated value.

Parameters:

> *pSrc* Source Signal Pointer.
>
> *pSrcDst* In-Place Signal Pointer. signal2 elements to be added to signal1 elements
>
> *nLength* Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.15 NppStatus nppsAdd_16s_ISfs (const Npp16s ∗ *pSrc*, Npp16s ∗ *pSrcDst*, int *nLength*, int *nScaleFactor*)

16-bit signed short in place signal add signal, with scaling, then clamp to saturated value.

Parameters:

pSrc Source Signal Pointer.

pSrcDst In-Place Signal Pointer. signal2 elements to be added to signal1 elements

nLength Signal Length.

nScaleFactor Integer Result Scaling.

Returns:

Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.16 NppStatus nppsAdd_16s_Sfs (const Npp16s ∗ *pSrc1*, const Npp16s ∗ *pSrc2*, Npp16s ∗ *pDst*, int *nLength*, int *nScaleFactor*)

16-bit signed short add signal, scale, then clamp to saturated value.

Parameters:

pSrc1 Source Signal Pointer.

pSrc2 Source Signal Pointer, signal2 elements to be added to signal1 elements.

pDst Destination Signal Pointer.

nLength Signal Length.

nScaleFactor Integer Result Scaling.

Returns:

Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.17 NppStatus nppsAdd_16sc_ISfs (const Npp16sc ∗ *pSrc*, Npp16sc ∗ *pSrcDst*, int *nLength*, int *nScaleFactor*)

16-bit complex signed short in place signal add signal, with scaling, then clamp to saturated value.

Parameters:

pSrc Source Signal Pointer.

pSrcDst In-Place Signal Pointer. signal2 elements to be added to signal1 elements

nLength Signal Length.

nScaleFactor Integer Result Scaling.

Returns:

Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.18 NppStatus nppsAdd_16sc_Sfs (const Npp16sc ∗ *pSrc1*, const Npp16sc ∗ *pSrc2*, Npp16sc ∗ *pDst*, int *nLength*, int *nScaleFactor*)

16-bit signed complex short add signal, scale, then clamp to saturated value.

Parameters:

> *pSrc1* Source Signal Pointer.
>
> *pSrc2* Source Signal Pointer, signal2 elements to be added to signal1 elements.
>
> *pDst* Destination Signal Pointer.
>
> *nLength* Signal Length.
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.19 NppStatus nppsAdd_16u (const Npp16u ∗ *pSrc1*, const Npp16u ∗ *pSrc2*, Npp16u ∗ *pDst*, int *nLength*)

16-bit unsigned short signal add signal, then clamp to saturated value.

Parameters:

> *pSrc1* Source Signal Pointer.
>
> *pSrc2* Source Signal Pointer. signal2 elements to be added to signal1 elements
>
> *pDst* Destination Signal Pointer.
>
> *nLength* Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.20 NppStatus nppsAdd_16u_ISfs (const Npp16u ∗ *pSrc*, Npp16u ∗ *pSrcDst*, int *nLength*, int *nScaleFactor*)

16-bit unsigned short in place signal add signal, with scaling, then clamp to saturated value.

Parameters:

> *pSrc* Source Signal Pointer.
>
> *pSrcDst* In-Place Signal Pointer. signal2 elements to be added to signal1 elements
>
> *nLength* Signal Length.
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.21 NppStatus nppsAdd_16u_Sfs (const Npp16u ∗ *pSrc1*, const Npp16u ∗ *pSrc2*, Npp16u ∗ *pDst*, int *nLength*, int *nScaleFactor*)

16-bit unsigned short add signal, scale, then clamp to saturated value.

Parameters:

> *pSrc1* Source Signal Pointer.
>
> *pSrc2* Source Signal Pointer, signal2 elements to be added to signal1 elements.
>
> *pDst* Destination Signal Pointer.
>
> *nLength* Signal Length.
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.22 NppStatus nppsAdd_32f (const Npp32f ∗ *pSrc1*, const Npp32f ∗ *pSrc2*, Npp32f ∗ *pDst*, int *nLength*)

32-bit floating point signal add signal, then clamp to saturated value.

Parameters:

> *pSrc1* Source Signal Pointer.
>
> *pSrc2* Source Signal Pointer. signal2 elements to be added to signal1 elements
>
> *pDst* Destination Signal Pointer.
>
> *nLength* Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.23 NppStatus nppsAdd_32f_I (const Npp32f ∗ *pSrc*, Npp32f ∗ *pSrcDst*, int *nLength*)

32-bit floating point in place signal add signal, then clamp to saturated value.

Parameters:

> *pSrc* Source Signal Pointer.
>
> *pSrcDst* In-Place Signal Pointer. signal2 elements to be added to signal1 elements
>
> *nLength* Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.24   NppStatus nppsAdd_32fc (const Npp32fc ∗ *pSrc1*, const Npp32fc ∗ *pSrc2*, Npp32fc ∗ *pDst*, int *nLength*)

32-bit complex floating point signal add signal, then clamp to saturated value.

Parameters:

    pSrc1 Source Signal Pointer.

    pSrc2 Source Signal Pointer. signal2 elements to be added to signal1 elements

    pDst Destination Signal Pointer.

    nLength Signal Length.

Returns:

    Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.25   NppStatus nppsAdd_32fc_I (const Npp32fc ∗ *pSrc*, Npp32fc ∗ *pSrcDst*, int *nLength*)

32-bit complex floating point in place signal add signal, then clamp to saturated value.

Parameters:

    pSrc Source Signal Pointer.

    pSrcDst In-Place Signal Pointer. signal2 elements to be added to signal1 elements

    nLength Signal Length.

Returns:

    Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.26   NppStatus nppsAdd_32s_ISfs (const Npp32s ∗ *pSrc*, Npp32s ∗ *pSrcDst*, int *nLength*, int *nScaleFactor*)

32-bit signed integer in place signal add signal, with scaling, then clamp to saturated value.

Parameters:

    pSrc Source Signal Pointer.

    pSrcDst In-Place Signal Pointer. signal2 elements to be added to signal1 elements

    nLength Signal Length.

    nScaleFactor Integer Result Scaling.

Returns:

    Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.27 NppStatus nppsAdd_32s_Sfs (const Npp32s ∗ *pSrc1*, const Npp32s ∗ *pSrc2*, Npp32s ∗ *pDst*, int *nLength*, int *nScaleFactor*)

32-bit signed integer add signal, scale, then clamp to saturated value.

Parameters:

> *pSrc1* Source Signal Pointer.
>
> *pSrc2* Source Signal Pointer, signal2 elements to be added to signal1 elements.
>
> *pDst* Destination Signal Pointer.
>
> *nLength* Signal Length.
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.28 NppStatus nppsAdd_32sc_ISfs (const Npp32sc ∗ *pSrc*, Npp32sc ∗ *pSrcDst*, int *nLength*, int *nScaleFactor*)

32-bit complex signed integer in place signal add signal, with scaling, then clamp to saturated value.

Parameters:

> *pSrc* Source Signal Pointer.
>
> *pSrcDst* In-Place Signal Pointer. signal2 elements to be added to signal1 elements
>
> *nLength* Signal Length.
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.29 NppStatus nppsAdd_32sc_Sfs (const Npp32sc ∗ *pSrc1*, const Npp32sc ∗ *pSrc2*, Npp32sc ∗ *pDst*, int *nLength*, int *nScaleFactor*)

32-bit signed complex integer add signal, scale, then clamp to saturated value.

Parameters:

> *pSrc1* Source Signal Pointer.
>
> *pSrc2* Source Signal Pointer, signal2 elements to be added to signal1 elements.
>
> *pDst* Destination Signal Pointer.
>
> *nLength* Signal Length.
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.30 NppStatus nppsAdd_32u (const Npp32u ∗ *pSrc1*, const Npp32u ∗ *pSrc2*, Npp32u ∗ *pDst*, int *nLength*)

32-bit unsigned int signal add signal, then clamp to saturated value.

Parameters:

> *pSrc1* Source Signal Pointer.
>
> *pSrc2* Source Signal Pointer. signal2 elements to be added to signal1 elements
>
> *pDst* Destination Signal Pointer.
>
> *nLength* Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.31 NppStatus nppsAdd_64f (const Npp64f ∗ *pSrc1*, const Npp64f ∗ *pSrc2*, Npp64f ∗ *pDst*, int *nLength*)

64-bit floating point signal add signal, then clamp to saturated value.

Parameters:

> *pSrc1* Source Signal Pointer.
>
> *pSrc2* Source Signal Pointer. signal2 elements to be added to signal1 elements
>
> *pDst* Destination Signal Pointer.
>
> *nLength* Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.32 NppStatus nppsAdd_64f_I (const Npp64f ∗ *pSrc*, Npp64f ∗ *pSrcDst*, int *nLength*)

64-bit floating point in place signal add signal, then clamp to saturated value.

Parameters:

> *pSrc* Source Signal Pointer.
>
> *pSrcDst* In-Place Signal Pointer. signal2 elements to be added to signal1 elements
>
> *nLength* Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.33 NppStatus nppsAdd_64fc (const Npp64fc ∗ *pSrc1*, const Npp64fc ∗ *pSrc2*, Npp64fc ∗ *pDst*, int *nLength*)

64-bit complex floating point signal add signal, then clamp to saturated value.

Parameters:

> *pSrc1* Source Signal Pointer.

> *pSrc2* Source Signal Pointer. signal2 elements to be added to signal1 elements

> *pDst* Destination Signal Pointer.

> *nLength* Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.34 NppStatus nppsAdd_64fc_I (const Npp64fc ∗ *pSrc*, Npp64fc ∗ *pSrcDst*, int *nLength*)

64-bit complex floating point in place signal add signal, then clamp to saturated value.

Parameters:

> *pSrc* Source Signal Pointer.

> *pSrcDst* In-Place Signal Pointer. signal2 elements to be added to signal1 elements

> *nLength* Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.35 NppStatus nppsAdd_64s_Sfs (const Npp64s ∗ *pSrc1*, const Npp64s ∗ *pSrc2*, Npp64s ∗ *pDst*, int *nLength*, int *nScaleFactor*)

64-bit signed integer add signal, scale, then clamp to saturated value.

Parameters:

> *pSrc1* Source Signal Pointer.

> *pSrc2* Source Signal Pointer, signal2 elements to be added to signal1 elements.

> *pDst* Destination Signal Pointer.

> *nLength* Signal Length.

> *nScaleFactor* Integer Result Scaling.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.36 NppStatus nppsAdd_8u16u (const Npp8u ∗ *pSrc1*, const Npp8u ∗ *pSrc2*, Npp16u ∗ *pDst*, int *nLength*)

8-bit unsigned char signal add signal with 16-bit unsigned result, then clamp to saturated value.

Parameters:

pSrc1 Source Signal Pointer.

pSrc2 Source Signal Pointer. signal2 elements to be added to signal1 elements

pDst Destination Signal Pointer.

nLength Signal Length.

Returns:

Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.37 NppStatus nppsAdd_8u_ISfs (const Npp8u ∗ *pSrc*, Npp8u ∗ *pSrcDst*, int *nLength*, int *nScaleFactor*)

8-bit unsigned char in place signal add signal, with scaling, then clamp to saturated value.

Parameters:

pSrc Source Signal Pointer.

pSrcDst In-Place Signal Pointer. signal2 elements to be added to signal1 elements

nLength Signal Length.

nScaleFactor Integer Result Scaling.

Returns:

Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.38 NppStatus nppsAdd_8u_Sfs (const Npp8u ∗ *pSrc1*, const Npp8u ∗ *pSrc2*, Npp8u ∗ *pDst*, int *nLength*, int *nScaleFactor*)

8-bit unsigned char add signal, scale, then clamp to saturated value.

Parameters:

pSrc1 Source Signal Pointer.

pSrc2 Source Signal Pointer, signal2 elements to be added to signal1 elements.

pDst Destination Signal Pointer.

nLength Signal Length.

nScaleFactor Integer Result Scaling.

Returns:

Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.39 NppStatus nppsAddC_16s_ISfs (Npp16s *nValue*, Npp16s ∗ *pSrcDst*, int *nLength*, int *nScaleFactor*)

16-bit signed short in place signal add constant, scale, then clamp to saturated value.

Parameters:

> *pSrcDst* In-Place Signal Pointer.
>
> *nValue* Constant value to be added to each vector element
>
> *nLength* Signal Length.
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.40 NppStatus nppsAddC_16s_Sfs (const Npp16s ∗ *pSrc*, Npp16s *nValue*, Npp16s ∗ *pDst*, int *nLength*, int *nScaleFactor*)

16-bit signed short signal add constant, scale, then clamp to saturated value.

Parameters:

> *pSrc* Source Signal Pointer.
>
> *nValue* Constant value to be added to each vector element
>
> *pDst* Destination Signal Pointer.
>
> *nLength* Signal Length.
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.41 NppStatus nppsAddC_16sc_ISfs (Npp16sc *nValue*, Npp16sc ∗ *pSrcDst*, int *nLength*, int *nScaleFactor*)

16-bit integer complex number (16 bit real, 16 bit imaginary)signal add constant, scale, then clamp to saturated value.

Parameters:

> *pSrcDst* In-Place Signal Pointer.
>
> *nValue* Constant value to be added to each vector element
>
> *nLength* Signal Length.
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.42 NppStatus nppsAddC_16sc_Sfs (const Npp16sc ∗ *pSrc*, Npp16sc *nValue*, Npp16sc ∗ *pDst*, int *nLength*, int *nScaleFactor*)

16-bit integer complex number (16 bit real, 16 bit imaginary) signal add constant, scale, then clamp to saturated value.

Parameters:

> *pSrc* Source Signal Pointer.
>
> *nValue* Constant value to be added to each vector element
>
> *pDst* Destination Signal Pointer.
>
> *nLength* Signal Length.
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.43 NppStatus nppsAddC_16u_ISfs (Npp16u *nValue*, Npp16u ∗ *pSrcDst*, int *nLength*, int *nScaleFactor*)

16-bit unsigned short in place signal add constant, scale, then clamp to saturated value.

Parameters:

> *pSrcDst* In-Place Signal Pointer.
>
> *nValue* Constant value to be added to each vector element
>
> *nLength* Signal Length.
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.44 NppStatus nppsAddC_16u_Sfs (const Npp16u ∗ *pSrc*, Npp16u *nValue*, Npp16u ∗ *pDst*, int *nLength*, int *nScaleFactor*)

16-bit unsigned short vector add constant, scale, then clamp to saturated value.

Parameters:

> *pSrc* Source Signal Pointer.
>
> *nValue* Constant value to be added to each vector element
>
> *pDst* Destination Signal Pointer.
>
> *nLength* Signal Length.
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.45 NppStatus nppsAddC_32f (const Npp32f ∗ *pSrc*, Npp32f *nValue*, Npp32f ∗ *pDst*, int *nLength*)

32-bit floating point signal add constant.

Parameters:

> *pSrc* Source Signal Pointer.
>
> *nValue* Constant value to be added to each vector element
>
> *pDst* Destination Signal Pointer.
>
> *nLength* Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.46 NppStatus nppsAddC_32f_I (Npp32f *nValue*, Npp32f ∗ *pSrcDst*, int *nLength*)

32-bit floating point in place signal add constant.

Parameters:

> *pSrcDst* In-Place Signal Pointer.
>
> *nValue* Constant value to be added to each vector element
>
> *nLength* Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.47 NppStatus nppsAddC_32fc (const Npp32fc ∗ *pSrc*, Npp32fc *nValue*, Npp32fc ∗ *pDst*, int *nLength*)

32-bit floating point complex number (32 bit real, 32 bit imaginary) signal add constant.

Parameters:

> *pSrc* Source Signal Pointer.
>
> *nValue* Constant value to be added to each vector element
>
> *pDst* Destination Signal Pointer.
>
> *nLength* Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.48 NppStatus nppsAddC_32fc_I (Npp32fc *nValue*, Npp32fc ∗ *pSrcDst*, int *nLength*)

32-bit floating point complex number (32 bit real, 32 bit imaginary) in place signal add constant.

Parameters:

> *pSrcDst* In-Place Signal Pointer.
>
> *nValue* Constant value to be added to each vector element
>
> *nLength* Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.49 NppStatus nppsAddC_32s_ISfs (Npp32s *nValue*, Npp32s ∗ *pSrcDst*, int *nLength*, int *nScaleFactor*)

32-bit signed integer in place signal add constant and scale.

Parameters:

> *pSrcDst* In-Place Signal Pointer.
>
> *nValue* Constant value to be added to each vector element
>
> *nLength* Signal Length.
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.50 NppStatus nppsAddC_32s_Sfs (const Npp32s ∗ *pSrc*, Npp32s *nValue*, Npp32s ∗ *pDst*, int *nLength*, int *nScaleFactor*)

32-bit signed integersignal add constant and scale.

Parameters:

> *pSrc* Source Signal Pointer.
>
> *nValue* Constant value to be added to each vector element
>
> *pDst* Destination Signal Pointer.
>
> *nLength* Signal Length.
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.51 NppStatus nppsAddC_32sc_ISfs (Npp32sc *nValue*, Npp32sc ∗ *pSrcDst*, int *nLength*, int *nScaleFactor*)

32-bit integer complex number (32 bit real, 32 bit imaginary) in place signal add constant and scale.

Parameters:

pSrcDst In-Place Signal Pointer.

nValue Constant value to be added to each vector element

nLength Signal Length.

nScaleFactor Integer Result Scaling.

Returns:

Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.52 NppStatus nppsAddC_32sc_Sfs (const Npp32sc ∗ *pSrc*, Npp32sc *nValue*, Npp32sc ∗ *pDst*, int *nLength*, int *nScaleFactor*)

32-bit integer complex number (32 bit real, 32 bit imaginary) signal add constant and scale.

Parameters:

pSrc Source Signal Pointer.

nValue Constant value to be added to each vector element

pDst Destination Signal Pointer.

nLength Signal Length.

nScaleFactor Integer Result Scaling.

Returns:

Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.53 NppStatus nppsAddC_64f (const Npp64f ∗ *pSrc*, Npp64f *nValue*, Npp64f ∗ *pDst*, int *nLength*)

64-bit floating pointsignal add constant.

Parameters:

pSrc Source Signal Pointer.

nValue Constant value to be added to each vector element

pDst Destination Signal Pointer.

nLength Signal Length.

Returns:

Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.54 NppStatus nppsAddC_64f_I (Npp64f *nValue*, Npp64f ∗ *pSrcDst*, int *nLength*)

64-bit floating point, in place signal add constant.

Parameters:

    pSrcDst In-Place Signal Pointer.

    nValue Constant value to be added to each vector element

    nLength Length of the vectors, number of items.

Returns:

    Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.55 NppStatus nppsAddC_64fc (const Npp64fc ∗ *pSrc*, Npp64fc *nValue*, Npp64fc ∗ *pDst*, int *nLength*)

64-bit floating point complex number (64 bit real, 64 bit imaginary) signal add constant.

Parameters:

    pSrc Source Signal Pointer.

    nValue Constant value to be added to each vector element

    pDst Destination Signal Pointer.

    nLength Signal Length.

Returns:

    Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.56 NppStatus nppsAddC_64fc_I (Npp64fc *nValue*, Npp64fc ∗ *pSrcDst*, int *nLength*)

64-bit floating point complex number (64 bit real, 64 bit imaginary) in place signal add constant.

Parameters:

    pSrcDst In-Place Signal Pointer.

    nValue Constant value to be added to each vector element

    nLength Signal Length.

Returns:

    Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.57 NppStatus nppsAddC_8u_ISfs (Npp8u *nValue*, Npp8u ∗ *pSrcDst*, int *nLength*, int *nScaleFactor*)

8-bit unsigned char in place signal add constant, scale, then clamp to saturated value

Parameters:

pSrcDst In-Place Signal Pointer.

nValue Constant value to be added to each vector element

nLength Signal Length.

nScaleFactor Integer Result Scaling.

Returns:

Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.58   NppStatus nppsAddC_8u_Sfs (const Npp8u ∗ *pSrc*, Npp8u *nValue*, Npp8u ∗ *pDst*, int *nLength*, int *nScaleFactor*)

8-bit unsigned charvector add constant, scale, then clamp to saturated value.

Parameters:

pSrc Source Signal Pointer.

nValue Constant value to be added to each vector element

pDst Destination Signal Pointer.

nLength Signal Length.

nScaleFactor Integer Result Scaling.

Returns:

Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.59   NppStatus nppsAddProduct_16s32s_Sfs (const Npp16s ∗ *pSrc1*, const Npp16s ∗ *pSrc2*, Npp32s ∗ *pDst*, int *nLength*, int *nScaleFactor*)

16-bit signed short signal add product of source signal1 times source signal2 to 32-bit signed integer destination signal, with scaling, then clamp to saturated value.

Parameters:

pSrc1 Source Signal Pointer.

pSrc2 Source Signal Pointer.

pDst Destination Signal Pointer. product of source1 and source2 signal elements to be added to destination elements

nLength Signal Length.

nScaleFactor Integer Result Scaling.

Returns:

Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.60 NppStatus nppsAddProduct_16s_Sfs (const Npp16s ∗ *pSrc1*, const Npp16s ∗ *pSrc2*, Npp16s ∗ *pDst*, int *nLength*, int *nScaleFactor*)

16-bit signed short signal add product of source signal1 times source signal2 to destination signal, with scaling, then clamp to saturated value.

Parameters:

> *pSrc1* Source Signal Pointer.
>
> *pSrc2* Source Signal Pointer.
>
> *pDst* Destination Signal Pointer. product of source1 and source2 signal elements to be added to destination elements
>
> *nLength* Signal Length.
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.61 NppStatus nppsAddProduct_32f (const Npp32f ∗ *pSrc1*, const Npp32f ∗ *pSrc2*, Npp32f ∗ *pDst*, int *nLength*)

32-bit floating point signal add product of source signal times destination signal to destination signal, then clamp to saturated value.

Parameters:

> *pSrc1* Source Signal Pointer.
>
> *pSrc2* Source Signal Pointer.
>
> *pDst* Destination Signal Pointer. product of source1 and source2 signal elements to be added to destination elements
>
> *nLength* Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.62 NppStatus nppsAddProduct_32fc (const Npp32fc ∗ *pSrc1*, const Npp32fc ∗ *pSrc2*, Npp32fc ∗ *pDst*, int *nLength*)

32-bit complex floating point signal add product of source signal times destination signal to destination signal, then clamp to saturated value.

Parameters:

> *pSrc1* Source Signal Pointer.
>
> *pSrc2* Source Signal Pointer.
>
> *pDst* Destination Signal Pointer. product of source1 and source2 signal elements to be added to destination elements
>
> *nLength* Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.63 NppStatus nppsAddProduct_32s_Sfs (const Npp32s ∗ *pSrc1*, const Npp32s ∗ *pSrc2*, Npp32s ∗ *pDst*, int *nLength*, int *nScaleFactor*)

32-bit signed short signal add product of source signal1 times source signal2 to destination signal, with scaling, then clamp to saturated value.

Parameters:

  pSrc1 Source Signal Pointer.

  pSrc2 Source Signal Pointer.

  pDst Destination Signal Pointer. product of source1 and source2 signal elements to be added to destination elements

  nLength Signal Length.

  nScaleFactor Integer Result Scaling.

Returns:

  Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.64 NppStatus nppsAddProduct_64f (const Npp64f ∗ *pSrc1*, const Npp64f ∗ *pSrc2*, Npp64f ∗ *pDst*, int *nLength*)

64-bit floating point signal add product of source signal times destination signal to destination signal, then clamp to saturated value.

Parameters:

  pSrc1 Source Signal Pointer.

  pSrc2 Source Signal Pointer.

  pDst Destination Signal Pointer. product of source1 and source2 signal elements to be added to destination elements

  nLength Signal Length.

Returns:

  Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.65 NppStatus nppsAddProduct_64fc (const Npp64fc ∗ *pSrc1*, const Npp64fc ∗ *pSrc2*, Npp64fc ∗ *pDst*, int *nLength*)

64-bit complex floating point signal add product of source signal times destination signal to destination signal, then clamp to saturated value.

Parameters:

  pSrc1 Source Signal Pointer.

  pSrc2 Source Signal Pointer.

  pDst Destination Signal Pointer. product of source1 and source2 signal elements to be added to destination elements

  nLength Signal Length.

Returns:

  Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.66 NppStatus nppsAddProductC_16s_ISfs (Npp16s *nValue*, Npp16s ∗ *pSrcDst*, int *nLength*, int *nScaleFactor*)

16-bit signed short in place signal add product of signal times constant to destination signal, scale, then clamp to saturated value.

Parameters:

    pSrcDst In-Place Signal Pointer.

    nValue Constant value to be multiplied by each vector element

    nLength Signal Length.

    nScaleFactor Integer Result Scaling.

Returns:

    Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.67 NppStatus nppsAddProductC_16s_Sfs (const Npp16s ∗ *pSrc*, Npp16s *nValue*, Npp16s ∗ *pDst*, int *nLength*, int *nScaleFactor*)

16-bit signed short signal add product of signal times constant to destination signal, scale, then clamp to saturated value.

Parameters:

    pSrc Source Signal Pointer.

    nValue Constant value to be multiplied by each vector element

    pDst Destination Signal Pointer.

    nLength Signal Length.

    nScaleFactor Integer Result Scaling.

Returns:

    Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.68 NppStatus nppsAddProductC_16sc_ISfs (Npp16sc *nValue*, Npp16sc ∗ *pSrcDst*, int *nLength*, int *nScaleFactor*)

16-bit integer complex number (16 bit real, 16 bit imaginary)signal add product of signal times constant to destination signal, scale, then clamp to saturated value.

Parameters:

    pSrcDst In-Place Signal Pointer.

    nValue Constant value to be multiplied by each vector element

    nLength Signal Length.

    nScaleFactor Integer Result Scaling.

Returns:

    Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.69 NppStatus nppsAddProductC_16sc_Sfs (const Npp16sc * *pSrc*, Npp16sc *nValue*, Npp16sc * *pDst*, int *nLength*, int *nScaleFactor*)

16-bit integer complex number (16 bit real, 16 bit imaginary)signal add product of signal times constant to destination signal, scale, then clamp to saturated value.

Parameters:

    pSrc Source Signal Pointer.

    nValue Constant value to be multiplied by each vector element

    pDst Destination Signal Pointer.

    nLength Signal Length.

    nScaleFactor Integer Result Scaling.

Returns:

    Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.70 NppStatus nppsAddProductC_16u_ISfs (Npp16u *nValue*, Npp16u * *pSrcDst*, int *nLength*, int *nScaleFactor*)

16-bit unsigned short in place signal add product of signal times constant to destination signal, scale, then clamp to saturated value.

Parameters:

    pSrcDst In-Place Signal Pointer.

    nValue Constant value to be multiplied by each vector element

    nLength Signal Length.

    nScaleFactor Integer Result Scaling.

Returns:

    Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.71 NppStatus nppsAddProductC_16u_Sfs (const Npp16u * *pSrc*, Npp16u *nValue*, Npp16u * *pDst*, int *nLength*, int *nScaleFactor*)

16-bit unsigned short add product of signal times constant to destination signal, scale, then clamp to saturated value.

Parameters:

    pSrc Source Signal Pointer.

    nValue Constant value to be multiplied by each vector element

    pDst Destination Signal Pointer.

    nLength Signal Length.

    nScaleFactor Integer Result Scaling.

Returns:

    Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.72   NppStatus nppsAddProductC_32f (const Npp32f ∗ *pSrc*, Npp32f *nValue*, Npp32f ∗ *pDst*, int *nLength*)

32-bit floating point signal add product of signal times constant to destination signal.

Parameters:

>   *pSrc* Source Signal Pointer.
>
>   *nValue* Constant value to be multiplied by each vector element
>
>   *pDst* Destination Signal Pointer.
>
>   *nLength* Signal Length.

Returns:

>   Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.73   NppStatus nppsAddProductC_32f_I (Npp32f *nValue*, Npp32f ∗ *pSrcDst*, int *nLength*)

32-bit floating point in place signal add product of signal times constant to destination signal.

Parameters:

>   *pSrcDst* In-Place Signal Pointer.
>
>   *nValue* Constant value to be multiplied by each vector element
>
>   *nLength* Signal Length.

Returns:

>   Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.74   NppStatus nppsAddProductC_32fc (const Npp32fc ∗ *pSrc*, Npp32fc *nValue*, Npp32fc ∗ *pDst*, int *nLength*)

32-bit floating point complex number (32 bit real, 32 bit imaginary)signal add product of signal times constant to destination signal.

Parameters:

>   *pSrc* Source Signal Pointer.
>
>   *nValue* Constant value to be multiplied by each vector element
>
>   *pDst* Destination Signal Pointer.
>
>   *nLength* Signal Length.

Returns:

>   Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.75 NppStatus nppsAddProductC_32fc_I (Npp32fc *nValue*, Npp32fc ∗ *pSrcDst*, int *nLength*)

32-bit floating point complex number (32 bit real, 32 bit imaginary) in place signal add product of signal times constant to destination signal.

Parameters:

> *pSrcDst* In-Place Signal Pointer.
>
> *nValue* Constant value to be multiplied by each vector element
>
> *nLength* Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.76 NppStatus nppsAddProductC_32s_ISfs (Npp32s *nValue*, Npp32s ∗ *pSrcDst*, int *nLength*, int *nScaleFactor*)

32-bit signed integer in place signal add product of signal times constant to destination signal and scale.

Parameters:

> *pSrcDst* In-Place Signal Pointer.
>
> *nValue* Constant value to be multiplied by each vector element
>
> *nLength* Signal Length.
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.77 NppStatus nppsAddProductC_32s_Sfs (const Npp32s ∗ *pSrc*, Npp32s *nValue*, Npp32s ∗ *pDst*, int *nLength*, int *nScaleFactor*)

32-bit signed integer signal add product of signal times constant to destination signal and scale.

Parameters:

> *pSrc* Source Signal Pointer.
>
> *nValue* Constant value to be multiplied by each vector element
>
> *pDst* Destination Signal Pointer.
>
> *nLength* Signal Length.
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.78   NppStatus nppsAddProductC_32sc_ISfs (Npp32sc *nValue*, Npp32sc ∗ *pSrcDst*, int *nLength*, int *nScaleFactor*)

32-bit integer complex number (32 bit real, 32 bit imaginary) in place signal add product of signal times constant to destination signal and scale.

Parameters:

    pSrcDst In-Place Signal Pointer.

    nValue Constant value to be multiplied by each vector element

    nLength Signal Length.

    nScaleFactor Integer Result Scaling.

Returns:

    Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.79   NppStatus nppsAddProductC_32sc_Sfs (const Npp32sc ∗ *pSrc*, Npp32sc *nValue*, Npp32sc ∗ *pDst*, int *nLength*, int *nScaleFactor*)

32-bit integer complex number (32 bit real, 32 bit imaginary)signal add product of signal times constant to destination signal and scale.

Parameters:

    pSrc Source Signal Pointer.

    nValue Constant value to be multiplied by each vector element

    pDst Destination Signal Pointer.

    nLength Signal Length.

    nScaleFactor Integer Result Scaling.

Returns:

    Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.80   NppStatus nppsAddProductC_64f (const Npp64f ∗ *pSrc*, Npp64f *nValue*, Npp64f ∗ *pDst*, int *nLength*)

64-bit floating point signal add product of signal times constant to destination signal.

Parameters:

    pSrc Source Signal Pointer.

    nValue Constant value to be multiplied by each vector element

    pDst Destination Signal Pointer.

    nLength Signal Length.

Returns:

    Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.81 NppStatus nppsAddProductC_64f_I (Npp64f *nValue*, Npp64f *∗ pSrcDst*, int *nLength*)

64-bit floating point, in place signal add product of signal times constant to destination signal.

Parameters:

>   *pSrcDst* In-Place Signal Pointer.
>
>   *nValue* Constant value to be multiplied by each vector element
>
>   *nLength* Length of the vectors, number of items.

Returns:

>   Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.82 NppStatus nppsAddProductC_64fc (const Npp64fc *∗ pSrc*, Npp64fc *nValue*, Npp64fc ∗ *pDst*, int *nLength*)

64-bit floating point complex number (64 bit real, 64 bit imaginary)signal add product of signal times constant to destination signal.

Parameters:

>   *pSrc* Source Signal Pointer.
>
>   *nValue* Constant value to be multiplied by each vector element
>
>   *pDst* Destination Signal Pointer.
>
>   *nLength* Signal Length.

Returns:

>   Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.83 NppStatus nppsAddProductC_64fc_I (Npp64fc *nValue*, Npp64fc *∗ pSrcDst*, int *nLength*)

64-bit floating point complex number (64 bit real, 64 bit imaginary) in place signal add product of signal times constant to destination signal.

Parameters:

>   *pSrcDst* In-Place Signal Pointer.
>
>   *nValue* Constant value to be multiplied by each vector element
>
>   *nLength* Signal Length.

Returns:

>   Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.84   NppStatus nppsAddProductC_8u_ISfs (Npp8u *nValue*, Npp8u ∗ *pSrcDst*, int *nLength*, int *nScaleFactor*)

8-bit unsigned char in place signal add product of signal times constant to destination signal, scale, then clamp to saturated value

Parameters:

> *pSrcDst* In-Place Signal Pointer.
>
> *nValue* Constant value to be multiplied by each vector element
>
> *nLength* Signal Length.
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.85   NppStatus nppsAddProductC_8u_Sfs (const Npp8u ∗ *pSrc*, Npp8u *nValue*, Npp8u ∗ *pDst*, int *nLength*, int *nScaleFactor*)

8-bit unsigned char add product of signal times constant to destination signal, scale, then clamp to saturated value.

Parameters:

> *pSrc* Source Signal Pointer.
>
> *nValue* Constant value to be multiplied by each vector element
>
> *pDst* Destination Signal Pointer.
>
> *nLength* Signal Length.
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.86   NppStatus nppsAnd_16u (const Npp16u ∗ *pSrc1*, const Npp16u ∗ *pSrc2*, Npp16u ∗ *pDst*, int *nLength*)

16-bit unsigned short signal and with signal.

Parameters:

> *pSrc1* Source Signal Pointer.
>
> *pSrc2* Source Signal Pointer. signal2 elements to be anded with signal1 elements
>
> *pDst* Destination Signal Pointer.
>
> *nLength* Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.87   NppStatus nppsAnd_16u_I (const Npp16u ∗ *pSrc*, Npp16u ∗ *pSrcDst*, int *nLength*)

16-bit unsigned short in place signal and with signal.

Parameters:

> *pSrc* Source Signal Pointer.
>
> *pSrcDst* In-Place Signal Pointer. signal2 elements to be anded with signal1 elements
>
> *nLength* Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.88   NppStatus nppsAnd_32u (const Npp32u ∗ *pSrc1*, const Npp32u ∗ *pSrc2*, Npp32u ∗ *pDst*, int *nLength*)

32-bit unsigned integer signal and with signal.

Parameters:

> *pSrc1* Source Signal Pointer.
>
> *pSrc2* Source Signal Pointer. signal2 elements to be anded with signal1 elements
>
> *pDst* Destination Signal Pointer.
>
> *nLength* Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.89   NppStatus nppsAnd_32u_I (const Npp32u ∗ *pSrc*, Npp32u ∗ *pSrcDst*, int *nLength*)

32-bit unsigned integer in place signal and with signal.

Parameters:

> *pSrc* Source Signal Pointer.
>
> *pSrcDst* In-Place Signal Pointer. signal2 elements to be anded with signal1 elements
>
> *nLength* Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.90   NppStatus nppsAnd_8u (const Npp8u ∗ *pSrc1*, const Npp8u ∗ *pSrc2*, Npp8u ∗ *pDst*, int *nLength*)

8-bit unsigned char signal and with signal.

Parameters:

> *pSrc1* Source Signal Pointer.
> *pSrc2* Source Signal Pointer. signal2 elements to be anded with signal1 elements
> *pDst* Destination Signal Pointer.
> *nLength* Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.91 NppStatus nppsAnd_8u_I (const Npp8u ∗ *pSrc*, Npp8u ∗ *pSrcDst*, int *nLength*)

8-bit unsigned char in place signal and with signal.

Parameters:

> *pSrc* Source Signal Pointer.
> *pSrcDst* In-Place Signal Pointer. signal2 elements to be anded with signal1 elements
> *nLength* Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.92 NppStatus nppsAndC_16u (const Npp16u ∗ *pSrc*, Npp16u *nValue*, Npp16u ∗ *pDst*, int *nLength*)

16-bit unsigned short signal and with constant.

Parameters:

> *pSrc* Source Signal Pointer.
> *nValue* Constant value to be anded with each vector element
> *pDst* Destination Signal Pointer.
> *nLength* Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.93 NppStatus nppsAndC_16u_I (Npp16u *nValue*, Npp16u ∗ *pSrcDst*, int *nLength*)

16-bit unsigned short in place signal and with constant.

Parameters:

> *pSrcDst* In-Place Signal Pointer.
> *nValue* Constant value to be anded with each vector element
> *nLength* Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.94   NppStatus nppsAndC_32u (const Npp32u ∗ *pSrc*, Npp32u *nValue*, Npp32u ∗ *pDst*, int *nLength*)

32-bit unsigned integer signal and with constant.

Parameters:

    pSrc Source Signal Pointer.

    nValue Constant value to be anded with each vector element

    pDst Destination Signal Pointer.

    nLength Signal Length.

Returns:

    Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.95   NppStatus nppsAndC_32u_I (Npp32u *nValue*, Npp32u ∗ *pSrcDst*, int *nLength*)

32-bit unsigned signed integer in place signal and with constant.

Parameters:

    pSrcDst In-Place Signal Pointer.

    nValue Constant value to be anded with each vector element

    nLength Signal Length.

Returns:

    Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.96   NppStatus nppsAndC_8u (const Npp8u ∗ *pSrc*, Npp8u *nValue*, Npp8u ∗ *pDst*, int *nLength*)

8-bit unsigned char signal and with constant.

Parameters:

    pSrc Source Signal Pointer.

    nValue Constant value to be anded with each vector element

    pDst Destination Signal Pointer.

    nLength Signal Length.

Returns:

    Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.97   NppStatus nppsAndC_8u_I (Npp8u *nValue*, Npp8u ∗ *pSrcDst*, int *nLength*)

8-bit unsigned char in place signal and with constant.

Parameters:

> **pSrcDst** In-Place Signal Pointer.
> **nValue** Constant value to be anded with each vector element
> **nLength** Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.98   NppStatus nppsArctan_32f (const Npp32f ∗ *pSrc*, Npp32f ∗ *pDst*, int *nLength*)

32-bit floating point signal inverse tangent.

Parameters:

> **pSrc** Source Signal Pointer.
> **pDst** Destination Signal Pointer.
> **nLength** Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.99   NppStatus nppsArctan_32f_I (Npp32f ∗ *pSrcDst*, int *nLength*)

32-bit floating point signal inverse tangent.

Parameters:

> **pSrcDst** In-Place Signal Pointer.
> **nLength** Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.100   NppStatus nppsArctan_64f (const Npp64f ∗ *pSrc*, Npp64f ∗ *pDst*, int *nLength*)

64-bit floating point signal inverse tangent.

Parameters:

> **pSrc** Source Signal Pointer.
> **pDst** Destination Signal Pointer.
> **nLength** Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.101 NppStatus nppsArctan_64f_I (Npp64f ∗ *pSrcDst*, int *nLength*)

64-bit floating point signal inverse tangent.

Parameters:

pSrcDst In-Place Signal Pointer.

nLength Signal Length.

Returns:

Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.102 NppStatus nppsCauchy_32f_I (Npp32f ∗ *pSrcDst*, int *nLength*, Npp32f *nParam*)

32-bit floating point signal Cauchy error calculation.

Parameters:

pSrcDst In-Place Signal Pointer.

nLength Signal Length.

nParam constant used in Cauchy formula

Returns:

Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.103 NppStatus nppsCauchyD_32f_I (Npp32f ∗ *pSrcDst*, int *nLength*, Npp32f *nParam*)

32-bit floating point signal Cauchy first derivative.

Parameters:

pSrcDst In-Place Signal Pointer.

nLength Signal Length.

nParam constant used in Cauchy formula

Returns:

Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.104 NppStatus nppsCauchyDD2_32f_I (Npp32f ∗ *pSrcDst*, Npp32f ∗ *pD2FVal*, int *nLength*, Npp32f *nParam*)

32-bit floating point signal Cauchy first and second derivatives.

Parameters:

pSrcDst In-Place Signal Pointer.

pD2FVal Source Signal Pointer. This signal contains the second derivative of the source signal.

nLength Signal Length.

nParam constant used in Cauchy formula

Returns:

Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.105   NppStatus nppsCopy_16s (const Npp16s ∗ *pSrc*, Npp16s ∗ *pDst*, int *len*)

16-bit signed short, vector copy method.

Parameters:

pSrc Source Signal Pointer.

pDst Destination Signal Pointer.

len Signal Length.

Returns:

Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.106   NppStatus nppsCopy_16sc (const Npp16sc ∗ *pSrc*, Npp16sc ∗ *pDst*, int *len*)

16-bit complex short, vector copy method.

Parameters:

pSrc Source Signal Pointer.

pDst Destination Signal Pointer.

len Signal Length.

Returns:

Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.107   NppStatus nppsCopy_32f (const Npp32f ∗ *pSrc*, Npp32f ∗ *pDst*, int *len*)

32-bit float, vector copy method.

Parameters:

pSrc Source Signal Pointer.

pDst Destination Signal Pointer.

len Signal Length.

Returns:

Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.108 NppStatus nppsCopy_32fc (const Npp32fc ∗ *pSrc*, **Npp32fc** ∗ *pDst*, **int** *len***)**

32-bit complex float, vector copy method.

Parameters:

    pSrc Source Signal Pointer.

    pDst Destination Signal Pointer.

    len Signal Length.

Returns:

    Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.109 NppStatus nppsCopy_32s (const Npp32s ∗ *pSrc*, **Npp32s** ∗ *pDst*, **int** *nLength***)**

32-bit signed integer, vector copy method.

Parameters:

    pSrc Source Signal Pointer.

    pDst Destination Signal Pointer.

    nLength Signal Length.

Returns:

    Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.110 NppStatus nppsCopy_32sc (const Npp32sc ∗ *pSrc*, **Npp32sc** ∗ *pDst*, **int** *len***)**

32-bit complex signed integer, vector copy method.

Parameters:

    pSrc Source Signal Pointer.

    pDst Destination Signal Pointer.

    len Signal Length.

Returns:

    Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.111 NppStatus nppsCopy_64fc (const Npp64fc ∗ *pSrc*, **Npp64fc** ∗ *pDst*, **int** *len***)**

64-bit complex double, vector copy method.

Parameters:

    pSrc Source Signal Pointer.

    pDst Destination Signal Pointer.

len Signal Length.

Returns:

Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.112 NppStatus nppsCopy_64s (const Npp64s * *pSrc*, Npp64s * *pDst*, int *len*)

64-bit signed integer, vector copy method.

Parameters:

pSrc Source Signal Pointer.

pDst Destination Signal Pointer.

len Signal Length.

Returns:

Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.113 NppStatus nppsCopy_64sc (const Npp64sc * *pSrc*, Npp64sc * *pDst*, int *len*)

64-bit complex signed integer, vector copy method.

Parameters:

pSrc Source Signal Pointer.

pDst Destination Signal Pointer.

len Signal Length.

Returns:

Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.114 NppStatus nppsCopy_8u (const Npp8u * *pSrc*, Npp8u * *pDst*, int *len*)

8-bit unsigned char, vector copy method

Parameters:

pSrc Source Signal Pointer.

pDst Destination Signal Pointer.

len Signal Length.

Returns:

Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.115   NppStatus nppsCubrt_32f (const Npp32f ∗ *pSrc*, Npp32f ∗ *pDst*, int *nLength*)

32-bit floating point signal cube root.

Parameters:

>   *pSrc* Source Signal Pointer.
>
>   *pDst* Destination Signal Pointer.
>
>   *nLength* Signal Length.

Returns:

>   Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.116   NppStatus nppsCubrt_32s16s_Sfs (const Npp32s ∗ *pSrc*, Npp16s ∗ *pDst*, int *nLength*, int *nScaleFactor*)

32-bit signed integer signal cube root, scale, then clamp to 16-bit signed integer saturated value.

Parameters:

>   *pSrc* Source Signal Pointer.
>
>   *pDst* Destination Signal Pointer.
>
>   *nLength* Signal Length.
>
>   *nScaleFactor* Integer Result Scaling.

Returns:

>   Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.117   NppStatus nppsDiv_16s_ISfs (const Npp16s ∗ *pSrc*, Npp16s ∗ *pSrcDst*, int *nLength*, int *nScaleFactor*)

16-bit signed short in place signal divide signal, with scaling, then clamp to saturated value.

Parameters:

>   *pSrc* Source Signal Pointer.
>
>   *pSrcDst* In-Place Signal Pointer. signal1 divisor elements to be divided into signal2 dividend elements
>
>   *nLength* Signal Length.
>
>   *nScaleFactor* Integer Result Scaling.

Returns:

>   Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.118 NppStatus nppsDiv_16s_Sfs (const Npp16s ∗ *pSrc1*, const Npp16s ∗ *pSrc2*, Npp16s ∗ *pDst*, int *nLength*, int *nScaleFactor*)

16-bit signed short signal divide signal, scale, then clamp to saturated value.

Parameters:

pSrc1 Source Signal Pointer.

pSrc2 Source Signal Pointer, signal1 divisor elements to be divided into signal2 dividend elements.

pDst Destination Signal Pointer.

nLength Signal Length.

nScaleFactor Integer Result Scaling.

Returns:

Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.119 NppStatus nppsDiv_16sc_ISfs (const Npp16sc ∗ *pSrc*, Npp16sc ∗ *pSrcDst*, int *nLength*, int *nScaleFactor*)

16-bit complex signed short in place signal divide signal, with scaling, then clamp to saturated value.

Parameters:

pSrc Source Signal Pointer.

pSrcDst In-Place Signal Pointer. signal1 divisor elements to be divided into signal2 dividend elements

nLength Signal Length.

nScaleFactor Integer Result Scaling.

Returns:

Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.120 NppStatus nppsDiv_16sc_Sfs (const Npp16sc ∗ *pSrc1*, const Npp16sc ∗ *pSrc2*, Npp16sc ∗ *pDst*, int *nLength*, int *nScaleFactor*)

16-bit signed complex short signal divide signal, scale, then clamp to saturated value.

Parameters:

pSrc1 Source Signal Pointer.

pSrc2 Source Signal Pointer, signal1 divisor elements to be divided into signal2 dividend elements.

pDst Destination Signal Pointer.

nLength Signal Length.

nScaleFactor Integer Result Scaling.

Returns:

Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.121 NppStatus nppsDiv_16u_ISfs (const Npp16u ∗ *pSrc*, Npp16u ∗ *pSrcDst*, int *nLength*, int *nScaleFactor*)

16-bit unsigned short in place signal divide signal, with scaling, then clamp to saturated value.

Parameters:

> *pSrc* Source Signal Pointer.
>
> *pSrcDst* In-Place Signal Pointer. signal1 divisor elements to be divided into signal2 dividend elements
>
> *nLength* Signal Length.
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.122 NppStatus nppsDiv_16u_Sfs (const Npp16u ∗ *pSrc1*, const Npp16u ∗ *pSrc2*, Npp16u ∗ *pDst*, int *nLength*, int *nScaleFactor*)

16-bit unsigned short signal divide signal, scale, then clamp to saturated value.

Parameters:

> *pSrc1* Source Signal Pointer.
>
> *pSrc2* Source Signal Pointer, signal1 divisor elements to be divided into signal2 dividend elements.
>
> *pDst* Destination Signal Pointer.
>
> *nLength* Signal Length.
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.123 NppStatus nppsDiv_32f (const Npp32f ∗ *pSrc1*, const Npp32f ∗ *pSrc2*, Npp32f ∗ *pDst*, int *nLength*)

32-bit floating point signal divide signal, then clamp to saturated value.

Parameters:

> *pSrc1* Source Signal Pointer.
>
> *pSrc2* Source Signal Pointer, signal1 divisor elements to be divided into signal2 dividend elements.
>
> *pDst* Destination Signal Pointer.
>
> *nLength* Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.124 NppStatus nppsDiv_32f_I (const Npp32f ∗ *pSrc*, Npp32f ∗ *pSrcDst*, int *nLength*)

32-bit floating point in place signal divide signal, then clamp to saturated value.

Parameters:

> *pSrc* Source Signal Pointer.
>
> *pSrcDst* In-Place Signal Pointer. signal1 divisor elements to be divided into signal2 dividend elements
>
> *nLength* Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.125 NppStatus nppsDiv_32fc (const Npp32fc ∗ *pSrc1*, const Npp32fc ∗ *pSrc2*, Npp32fc ∗ *pDst*, int *nLength*)

32-bit complex floating point signal divide signal, then clamp to saturated value.

Parameters:

> *pSrc1* Source Signal Pointer.
>
> *pSrc2* Source Signal Pointer, signal1 divisor elements to be divided into signal2 dividend elements.
>
> *pDst* Destination Signal Pointer.
>
> *nLength* Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.126 NppStatus nppsDiv_32fc_I (const Npp32fc ∗ *pSrc*, Npp32fc ∗ *pSrcDst*, int *nLength*)

32-bit complex floating point in place signal divide signal, then clamp to saturated value.

Parameters:

> *pSrc* Source Signal Pointer.
>
> *pSrcDst* In-Place Signal Pointer. signal1 divisor elements to be divided into signal2 dividend elements
>
> *nLength* Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.127 NppStatus nppsDiv_32s16s_Sfs (const Npp16s ∗ *pSrc1*, const Npp32s ∗ *pSrc2*, Npp16s ∗ *pDst*, int *nLength*, int *nScaleFactor*)

32-bit signed integer signal divided by 16-bit signed short signal, scale, then clamp to 16-bit signed short saturated value.

Parameters:

> ***pSrc1*** Source Signal Pointer.
>
> ***pSrc2*** Source Signal Pointer, signal1 divisor elements to be divided into signal2 dividend elements.
>
> ***pDst*** Destination Signal Pointer.
>
> ***nLength*** Signal Length.
>
> ***nScaleFactor*** Integer Result Scaling.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.128 NppStatus nppsDiv_32s_ISfs (const Npp32s * *pSrc*, Npp32s * *pSrcDst*, int *nLength*, int *nScaleFactor*)

32-bit signed integer in place signal divide signal, with scaling, then clamp to saturated value.

Parameters:

> ***pSrc*** Source Signal Pointer.
>
> ***pSrcDst*** In-Place Signal Pointer. signal1 divisor elements to be divided into signal2 dividend elements
>
> ***nLength*** Signal Length.
>
> ***nScaleFactor*** Integer Result Scaling.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.129 NppStatus nppsDiv_32s_Sfs (const Npp32s * *pSrc1*, const Npp32s * *pSrc2*, Npp32s * *pDst*, int *nLength*, int *nScaleFactor*)

32-bit signed integer signal divide signal, scale, then clamp to saturated value.

Parameters:

> ***pSrc1*** Source Signal Pointer.
>
> ***pSrc2*** Source Signal Pointer, signal1 divisor elements to be divided into signal2 dividend elements.
>
> ***pDst*** Destination Signal Pointer.
>
> ***nLength*** Signal Length.
>
> ***nScaleFactor*** Integer Result Scaling.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.130 NppStatus nppsDiv_64f (const Npp64f ∗ *pSrc1*, const Npp64f ∗ *pSrc2*, Npp64f ∗ *pDst*, int *nLength*)

64-bit floating point signal divide signal, then clamp to saturated value.

Parameters:

> *pSrc1* Source Signal Pointer.
>
> *pSrc2* Source Signal Pointer, signal1 divisor elements to be divided into signal2 dividend elements.
>
> *pDst* Destination Signal Pointer.
>
> *nLength* Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.131 NppStatus nppsDiv_64f_I (const Npp64f ∗ *pSrc*, Npp64f ∗ *pSrcDst*, int *nLength*)

64-bit floating point in place signal divide signal, then clamp to saturated value.

Parameters:

> *pSrc* Source Signal Pointer.
>
> *pSrcDst* In-Place Signal Pointer. signal1 divisor elements to be divided into signal2 dividend elements
>
> *nLength* Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.132 NppStatus nppsDiv_64fc (const Npp64fc ∗ *pSrc1*, const Npp64fc ∗ *pSrc2*, Npp64fc ∗ *pDst*, int *nLength*)

64-bit complex floating point signal divide signal, then clamp to saturated value.

Parameters:

> *pSrc1* Source Signal Pointer.
>
> *pSrc2* Source Signal Pointer, signal1 divisor elements to be divided into signal2 dividend elements.
>
> *pDst* Destination Signal Pointer.
>
> *nLength* Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.133 NppStatus nppsDiv_64fc_I (const Npp64fc ∗ *pSrc*, Npp64fc ∗ *pSrcDst*, int *nLength*)

64-bit complex floating point in place signal divide signal, then clamp to saturated value.

Parameters:

>   *pSrc* Source Signal Pointer.

>   *pSrcDst* In-Place Signal Pointer. signal1 divisor elements to be divided into signal2 dividend elements

>   *nLength* Signal Length.

Returns:

>   Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.134 NppStatus nppsDiv_8u_ISfs (const Npp8u ∗ *pSrc*, Npp8u ∗ *pSrcDst*, int *nLength*, int *nScaleFactor*)

8-bit unsigned char in place signal divide signal, with scaling, then clamp to saturated value.

Parameters:

>   *pSrc* Source Signal Pointer.

>   *pSrcDst* In-Place Signal Pointer. signal1 divisor elements to be divided into signal2 dividend elements

>   *nLength* Signal Length.

>   *nScaleFactor* Integer Result Scaling.

Returns:

>   Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.135 NppStatus nppsDiv_8u_Sfs (const Npp8u ∗ *pSrc1*, const Npp8u ∗ *pSrc2*, Npp8u ∗ *pDst*, int *nLength*, int *nScaleFactor*)

8-bit unsigned char signal divide signal, scale, then clamp to saturated value.

Parameters:

>   *pSrc1* Source Signal Pointer.

>   *pSrc2* Source Signal Pointer, signal1 divisor elements to be divided into signal2 dividend elements.

>   *pDst* Destination Signal Pointer.

>   *nLength* Signal Length.

>   *nScaleFactor* Integer Result Scaling.

Returns:

>   Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.136 NppStatus nppsDiv_Round_16s_ISfs (const Npp16s * *pSrc*, Npp16s * *pSrcDst*, int *nLength*, NppRoundMode *nRndMode*, int *nScaleFactor*)

16-bit signed short in place signal divide signal, with scaling, rounding then clamp to saturated value.

Parameters:

pSrc Source Signal Pointer.

pSrcDst In-Place Signal Pointer. signal1 divisor elements to be divided into signal2 dividend elements

nLength Signal Length.

nRndMode various rounding modes.

nScaleFactor Integer Result Scaling.

Returns:

Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.137 NppStatus nppsDiv_Round_16s_Sfs (const Npp16s * *pSrc1*, const Npp16s * *pSrc2*, Npp16s * *pDst*, int *nLength*, NppRoundMode *nRndMode*, int *nScaleFactor*)

16-bit signed short signal divide signal, scale, round, then clamp to saturated value.

Parameters:

pSrc1 Source Signal Pointer.

pSrc2 Source Signal Pointer, signal1 divisor elements to be divided into signal2 dividend elements.

pDst Destination Signal Pointer.

nLength Signal Length.

nRndMode various rounding modes.

nScaleFactor Integer Result Scaling.

Returns:

Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.138 NppStatus nppsDiv_Round_16u_ISfs (const Npp16u * *pSrc*, Npp16u * *pSrcDst*, int *nLength*, NppRoundMode *nRndMode*, int *nScaleFactor*)

16-bit unsigned short in place signal divide signal, with scaling, rounding then clamp to saturated value.

Parameters:

pSrc Source Signal Pointer.

pSrcDst In-Place Signal Pointer. signal1 divisor elements to be divided into signal2 dividend elements

nLength Signal Length.

nRndMode various rounding modes.

nScaleFactor Integer Result Scaling.

Returns:

Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.139   NppStatus nppsDiv_Round_16u_Sfs (const Npp16u ∗ *pSrc1*, const Npp16u ∗ *pSrc2*, Npp16u ∗ *pDst*, int *nLength*, NppRoundMode *nRndMode*, int *nScaleFactor*)

16-bit unsigned short signal divide signal, scale, round, then clamp to saturated value.

Parameters:

　　pSrc1 Source Signal Pointer.

　　pSrc2 Source Signal Pointer, signal1 divisor elements to be divided into signal2 dividend elements.

　　pDst Destination Signal Pointer.

　　nLength Signal Length.

　　nRndMode various rounding modes.

　　nScaleFactor Integer Result Scaling.

Returns:

　　Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.140   NppStatus nppsDiv_Round_8u_ISfs (const Npp8u ∗ *pSrc*, Npp8u ∗ *pSrcDst*, int *nLength*, NppRoundMode *nRndMode*, int *nScaleFactor*)

8-bit unsigned char in place signal divide signal, with scaling, rounding then clamp to saturated value.

Parameters:

　　pSrc Source Signal Pointer.

　　pSrcDst In-Place Signal Pointer. signal1 divisor elements to be divided into signal2 dividend elements

　　nLength Signal Length.

　　nRndMode various rounding modes.

　　nScaleFactor Integer Result Scaling.

Returns:

　　Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.141   NppStatus nppsDiv_Round_8u_Sfs (const Npp8u ∗ *pSrc1*, const Npp8u ∗ *pSrc2*, Npp8u ∗ *pDst*, int *nLength*, NppRoundMode *nRndMode*, int *nScaleFactor*)

8-bit unsigned char signal divide signal, scale, then clamp to saturated value.

Parameters:

　　pSrc1 Source Signal Pointer.

　　pSrc2 Source Signal Pointer, signal1 divisor elements to be divided into signal2 dividend elements.

　　pDst Destination Signal Pointer.

　　nLength Signal Length.

　　nRndMode various rounding modes.

　　nScaleFactor Integer Result Scaling.

Returns:

　　Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.142 NppStatus nppsDivC_16s_ISfs (Npp16s *nValue*, Npp16s ∗ *pSrcDst*, int *nLength*, int *nScaleFactor*)

16-bit signed short in place signal divided by constant, scale, then clamp to saturated value.

Parameters:

> *pSrcDst* In-Place Signal Pointer.
>
> *nValue* Constant value to be divided into each vector element
>
> *nLength* Signal Length.
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.143 NppStatus nppsDivC_16s_Sfs (const Npp16s ∗ *pSrc*, Npp16s *nValue*, Npp16s ∗ *pDst*, int *nLength*, int *nScaleFactor*)

16-bit signed short signal divided by constant, scale, then clamp to saturated value.

Parameters:

> *pSrc* Source Signal Pointer.
>
> *nValue* Constant value to be divided into each vector element
>
> *pDst* Destination Signal Pointer.
>
> *nLength* Signal Length.
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.144 NppStatus nppsDivC_16sc_ISfs (Npp16sc *nValue*, Npp16sc ∗ *pSrcDst*, int *nLength*, int *nScaleFactor*)

16-bit integer complex number (16 bit real, 16 bit imaginary)signal divided by constant, scale, then clamp to saturated value.

Parameters:

> *pSrcDst* In-Place Signal Pointer.
>
> *nValue* Constant value to be divided into each vector element
>
> *nLength* Signal Length.
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.145   NppStatus nppsDivC_16sc_Sfs (const Npp16sc ∗ *pSrc*, Npp16sc *nValue*, Npp16sc ∗ *pDst*, int *nLength*, int *nScaleFactor*)

16-bit integer complex number (16 bit real, 16 bit imaginary) signal divided by constant, scale, then clamp to saturated value.

Parameters:

   pSrc Source Signal Pointer.

   nValue Constant value to be divided into each vector element

   pDst Destination Signal Pointer.

   nLength Signal Length.

   nScaleFactor Integer Result Scaling.

Returns:

   Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.146   NppStatus nppsDivC_16u_ISfs (Npp16u *nValue*, Npp16u ∗ *pSrcDst*, int *nLength*, int *nScaleFactor*)

16-bit unsigned short in place signal divided by constant, scale, then clamp to saturated value.

Parameters:

   pSrcDst In-Place Signal Pointer.

   nValue Constant value to be divided into each vector element

   nLength Signal Length.

   nScaleFactor Integer Result Scaling.

Returns:

   Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.147   NppStatus nppsDivC_16u_Sfs (const Npp16u ∗ *pSrc*, Npp16u *nValue*, Npp16u ∗ *pDst*, int *nLength*, int *nScaleFactor*)

16-bit unsigned short signal divided by constant, scale, then clamp to saturated value.

Parameters:

   pSrc Source Signal Pointer.

   nValue Constant value to be divided into each vector element

   pDst Destination Signal Pointer.

   nLength Signal Length.

   nScaleFactor Integer Result Scaling.

Returns:

   Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.148 NppStatus nppsDivC_32f (const Npp32f ∗ *pSrc*, Npp32f *nValue*, Npp32f ∗ *pDst*, int *nLength*)

32-bit floating point signal divided by constant.

Parameters:

> *pSrc* Source Signal Pointer.
>
> *nValue* Constant value to be divided into each vector element
>
> *pDst* Destination Signal Pointer.
>
> *nLength* Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.149 NppStatus nppsDivC_32f_I (Npp32f *nValue*, Npp32f ∗ *pSrcDst*, int *nLength*)

32-bit floating point in place signal divided by constant.

Parameters:

> *pSrcDst* In-Place Signal Pointer.
>
> *nValue* Constant value to be divided into each vector element
>
> *nLength* Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.150 NppStatus nppsDivC_32fc (const Npp32fc ∗ *pSrc*, Npp32fc *nValue*, Npp32fc ∗ *pDst*, int *nLength*)

32-bit floating point complex number (32 bit real, 32 bit imaginary) signal divided by constant.

Parameters:

> *pSrc* Source Signal Pointer.
>
> *nValue* Constant value to be divided into each vector element
>
> *pDst* Destination Signal Pointer.
>
> *nLength* Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.151   NppStatus nppsDivC_32fc_I (Npp32fc *nValue*, Npp32fc ∗ *pSrcDst*, int *nLength*)

32-bit floating point complex number (32 bit real, 32 bit imaginary) in place signal divided by constant.

Parameters:

>   *pSrcDst* In-Place Signal Pointer.
>
>   *nValue* Constant value to be divided into each vector element
>
>   *nLength* Signal Length.

Returns:

>   Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.152   NppStatus nppsDivC_32s_ISfs (Npp32s *nValue*, Npp32s ∗ *pSrcDst*, int *nLength*, int *nScaleFactor*)

32-bit signed integer in place signal divided by constant and scale.

Parameters:

>   *pSrcDst* In-Place Signal Pointer.
>
>   *nValue* Constant value to be divided into each vector element
>
>   *nLength* Signal Length.
>
>   *nScaleFactor* Integer Result Scaling.

Returns:

>   Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.153   NppStatus nppsDivC_32s_Sfs (const Npp32s ∗ *pSrc*, Npp32s *nValue*, Npp32s ∗ *pDst*, int *nLength*, int *nScaleFactor*)

32-bit signed integer signal divided by constant and scale.

Parameters:

>   *pSrc* Source Signal Pointer.
>
>   *nValue* Constant value to be divided into each vector element
>
>   *pDst* Destination Signal Pointer.
>
>   *nLength* Signal Length.
>
>   *nScaleFactor* Integer Result Scaling.

Returns:

>   Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.154 NppStatus nppsDivC_32sc_ISfs (Npp32sc *nValue*, Npp32sc ∗ *pSrcDst*, int *nLength*, int *nScaleFactor*)

32-bit integer complex number (32 bit real, 32 bit imaginary) in place signal divided by constant and scale.

Parameters:

pSrcDst In-Place Signal Pointer.

nValue Constant value to be divided into each vector element

nLength Signal Length.

nScaleFactor Integer Result Scaling.

Returns:

Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.155 NppStatus nppsDivC_32sc_Sfs (const Npp32sc ∗ *pSrc*, Npp32sc *nValue*, Npp32sc ∗ *pDst*, int *nLength*, int *nScaleFactor*)

32-bit integer complex number (32 bit real, 32 bit imaginary) signal divided by constant and scale.

Parameters:

pSrc Source Signal Pointer.

nValue Constant value to be divided into each vector element

pDst Destination Signal Pointer.

nLength Signal Length.

nScaleFactor Integer Result Scaling.

Returns:

Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.156 NppStatus nppsDivC_64f (const Npp64f ∗ *pSrc*, Npp64f *nValue*, Npp64f ∗ *pDst*, int *nLength*)

64-bit floating point signal divided by constant.

Parameters:

pSrc Source Signal Pointer.

nValue Constant value to be divided into each vector element

pDst Destination Signal Pointer.

nLength Signal Length.

Returns:

Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.157 NppStatus nppsDivC_64f_I (Npp64f *nValue*, Npp64f * *pSrcDst*, int *nLength*)

64-bit floating point in place signal divided by constant.

Parameters:

    pSrcDst In-Place Signal Pointer.

    nValue Constant value to be divided into each vector element

    nLength Length of the vectors, number of items.

Returns:

    Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.158 NppStatus nppsDivC_64fc (const Npp64fc * *pSrc*, Npp64fc *nValue*, Npp64fc * *pDst*, int *nLength*)

64-bit floating point complex number (64 bit real, 64 bit imaginary) signal divided by constant.

Parameters:

    pSrc Source Signal Pointer.

    nValue Constant value to be divided into each vector element

    pDst Destination Signal Pointer.

    nLength Signal Length.

Returns:

    Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.159 NppStatus nppsDivC_64fc_I (Npp64fc *nValue*, Npp64fc * *pSrcDst*, int *nLength*)

64-bit floating point complex number (64 bit real, 64 bit imaginary) in place signal divided by constant.

Parameters:

    pSrcDst In-Place Signal Pointer.

    nValue Constant value to be divided into each vector element

    nLength Signal Length.

Returns:

    Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.160 NppStatus nppsDivC_8u_ISfs (Npp8u *nValue*, Npp8u * *pSrcDst*, int *nLength*, int *nScaleFactor*)

8-bit unsigned char in place signal divided by constant, scale, then clamp to saturated value

Parameters:

    pSrcDst In-Place Signal Pointer.

    nValue Constant value to be divided into each vector element

    nLength Signal Length.

    nScaleFactor Integer Result Scaling.

Returns:

    Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.161 NppStatus nppsDivC_8u_Sfs (const Npp8u ∗ *pSrc*, Npp8u *nValue*, Npp8u ∗ *pDst*, int *nLength*, int *nScaleFactor*)

8-bit unsigned char signal divided by constant, scale, then clamp to saturated value.

Parameters:

    pSrc Source Signal Pointer.

    nValue Constant value to be divided into each vector element

    pDst Destination Signal Pointer.

    nLength Signal Length.

    nScaleFactor Integer Result Scaling.

Returns:

    Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.162 NppStatus nppsDivCRev_16s (const Npp16s ∗ *pSrc*, Npp16s *nValue*, Npp16s ∗ *pDst*, int *nLength*)

16-bit signed short constant divided by signal, then clamp to saturated value.

Parameters:

    pSrc Source Signal Pointer.

    nValue Constant value to be divided by each vector element

    pDst Destination Signal Pointer.

    nLength Signal Length.

Returns:

    Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.163 NppStatus nppsDivCRev_16s_I (Npp16s *nValue*, Npp16s ∗ *pSrcDst*, int *nLength*)

16-bit signed short in place constant divided by signal, then clamp to saturated value.

Parameters:

> *pSrcDst* In-Place Signal Pointer.
>
> *nValue* Constant value to be divided by each vector element
>
> *nLength* Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.164 NppStatus nppsDivCRev_16u (const Npp16u ∗ *pSrc*, Npp16u *nValue*, Npp16u ∗ *pDst*, int *nLength*)

16-bit unsigned short signal divided by constant, then clamp to saturated value.

Parameters:

> *pSrc* Source Signal Pointer.
>
> *nValue* Constant value to be divided by each vector element
>
> *pDst* Destination Signal Pointer.
>
> *nLength* Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.165 NppStatus nppsDivCRev_16u_I (Npp16u *nValue*, Npp16u ∗ *pSrcDst*, int *nLength*)

16-bit unsigned short in place constant divided by signal, then clamp to saturated value.

Parameters:

> *pSrcDst* In-Place Signal Pointer.
>
> *nValue* Constant value to be divided by each vector element
>
> *nLength* Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.166 NppStatus nppsDivCRev_32f (const Npp32f ∗ *pSrc*, Npp32f *nValue*, Npp32f ∗ *pDst*, int *nLength*)

32-bit floating point constant divided by signal.

Parameters:

> ***pSrc*** Source Signal Pointer.
>
> ***nValue*** Constant value to be divided by each vector element
>
> ***pDst*** Destination Signal Pointer.
>
> ***nLength*** Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.167 NppStatus nppsDivCRev_32f_I (Npp32f *nValue*, Npp32f ∗ *pSrcDst*, int *nLength*)

32-bit floating point in place constant divided by signal.

Parameters:

> ***pSrcDst*** In-Place Signal Pointer.
>
> ***nValue*** Constant value to be divided by each vector element
>
> ***nLength*** Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.168 NppStatus nppsDivCRev_32s (const Npp32s ∗ *pSrc*, Npp32s *nValue*, Npp32s ∗ *pDst*, int *nLength*)

32-bit signed integer constant divided by signal.

Parameters:

> ***pSrc*** Source Signal Pointer.
>
> ***nValue*** Constant value to be divided by each vector element
>
> ***pDst*** Destination Signal Pointer.
>
> ***nLength*** Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.169 NppStatus nppsDivCRev_32s_I (Npp32s *nValue*, Npp32s ∗ *pSrcDst*, int *nLength*)

32-bit signed integer in place constant divided by signal.

Parameters:

> ***pSrcDst*** In-Place Signal Pointer.
>
> ***nValue*** Constant value to be divided by each vector element
>
> ***nLength*** Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.170 NppStatus nppsDivCRev_64f (const Npp64f ∗ *pSrc*, Npp64f *nValue*, Npp64f ∗ *pDst*, int *nLength*)

64-bit floating point constant divided by signal.

Parameters:

> *pSrc* Source Signal Pointer.
>
> *nValue* Constant value to be divided by each vector element
>
> *pDst* Destination Signal Pointer.
>
> *nLength* Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.171 NppStatus nppsDivCRev_64f_I (Npp64f *nValue*, Npp64f ∗ *pSrcDst*, int *nLength*)

64-bit floating point in place constant divided by signal.

Parameters:

> *pSrcDst* In-Place Signal Pointer.
>
> *nValue* Constant value to be divided by each vector element
>
> *nLength* Length of the vectors, number of items.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.172 NppStatus nppsDivCRev_8u (const Npp8u ∗ *pSrc*, Npp8u *nValue*, Npp8u ∗ *pDst*, int *nLength*)

8-bit unsigned char signal divided by constant, then clamp to saturated value.

Parameters:

> *pSrc* Source Signal Pointer.
>
> *nValue* Constant value to be divided by each vector element
>
> *pDst* Destination Signal Pointer.
>
> *nLength* Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.173 NppStatus nppsDivCRev_8u_I (Npp8u *nValue*, Npp8u ∗ *pSrcDst*, int *nLength*)

8-bit unsigned char signal in place constant divided by signal, scale, then clamp to saturated value

Parameters:

> *pSrcDst* In-Place Signal Pointer.
>
> *nValue* Constant value to be divided by each vector element
>
> *nLength* Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.174 NppStatus nppsExp_16s_ISfs (Npp16s ∗ *pSrcDst*, int *nLength*, int *nScaleFactor*)

16-bit signed short signal exponent, scale, then clamp to saturated value.

Parameters:

> *pSrcDst* In-Place Signal Pointer.
>
> *nLength* Signal Length.
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.175 NppStatus nppsExp_16s_Sfs (const Npp16s ∗ *pSrc*, Npp16s ∗ *pDst*, int *nLength*, int *nScaleFactor*)

16-bit signed short signal exponent, scale, then clamp to saturated value.

Parameters:

> *pSrc* Source Signal Pointer.
>
> *pDst* Destination Signal Pointer.
>
> *nLength* Signal Length.
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.176 NppStatus nppsExp_32f (const Npp32f ∗ *pSrc*, Npp32f ∗ *pDst*, int *nLength*)

32-bit floating point signal exponent.

Parameters:

> *pSrc* Source Signal Pointer.

pDst Destination Signal Pointer.

nLength Signal Length.

Returns:

Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.177 NppStatus nppsExp_32f64f (const Npp32f ∗ *pSrc*, Npp64f ∗ *pDst*, int *nLength*)

32-bit floating point signal exponent with 64-bit floating point result.

Parameters:

pSrc Source Signal Pointer.

pDst Destination Signal Pointer.

nLength Signal Length.

Returns:

Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.178 NppStatus nppsExp_32f_I (Npp32f ∗ *pSrcDst*, int *nLength*)

32-bit floating point signal exponent.

Parameters:

pSrcDst In-Place Signal Pointer.

nLength Signal Length.

Returns:

Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.179 NppStatus nppsExp_32s_ISfs (Npp32s ∗ *pSrcDst*, int *nLength*, int *nScaleFactor*)

32-bit signed integer signal exponent, scale, then clamp to saturated value.

Parameters:

pSrcDst In-Place Signal Pointer.

nLength Signal Length.

nScaleFactor Integer Result Scaling.

Returns:

Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.180 NppStatus nppsExp_32s_Sfs (const Npp32s ∗ *pSrc*, Npp32s ∗ *pDst*, int *nLength*, int *nScaleFactor*)

32-bit signed integer signal exponent, scale, then clamp to saturated value.

Parameters:

> *pSrc* Source Signal Pointer.
>
> *pDst* Destination Signal Pointer.
>
> *nLength* Signal Length.
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.181 NppStatus nppsExp_64f (const Npp64f ∗ *pSrc*, Npp64f ∗ *pDst*, int *nLength*)

64-bit floating point signal exponent.

Parameters:

> *pSrc* Source Signal Pointer.
>
> *pDst* Destination Signal Pointer.
>
> *nLength* Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.182 NppStatus nppsExp_64f_I (Npp64f ∗ *pSrcDst*, int *nLength*)

64-bit floating point signal exponent.

Parameters:

> *pSrcDst* In-Place Signal Pointer.
>
> *nLength* Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.183 NppStatus nppsExp_64s_ISfs (Npp64s ∗ *pSrcDst*, int *nLength*, int *nScaleFactor*)

64-bit signed integer signal exponent, scale, then clamp to saturated value.

Parameters:

> *pSrcDst* In-Place Signal Pointer.

nLength   Signal Length.

nScaleFactor   Integer Result Scaling.

Returns:

Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.184   NppStatus nppsExp_64s_Sfs (const Npp64s ∗ *pSrc*, Npp64s ∗ *pDst*, int *nLength*, int *nScaleFactor*)

64-bit signed integer signal exponent, scale, then clamp to saturated value.

Parameters:

pSrc   Source Signal Pointer.

pDst   Destination Signal Pointer.

nLength   Signal Length.

nScaleFactor   Integer Result Scaling.

Returns:

Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.185   void nppsFree (void ∗ *pValues*)

Free method for any 2D allocated memory.

This method should be used to free memory allocated with any of the nppiMalloc_<modifier> methods.

Parameters:

pValues   A pointer to memory allocated using nppiMalloc_<modifier>.

7.17.1.186   NppStatus nppsIntegral_32s (const Npp32s ∗ *pSrc*, Npp32s ∗ *pDst*, int *nLength*, Npp8u ∗ *pDeviceBuffer*)

7.17.1.187   NppStatus nppsIntegralGetBufferSize_32s (int *nLength*, int ∗ *hpBufferSize*)

7.17.1.188   NppStatus nppsLn_16s_ISfs (Npp16s ∗ *pSrcDst*, int *nLength*, int *nScaleFactor*)

16-bit signed short signal natural logarithm, scale, then clamp to saturated value.

Parameters:

pSrcDst   In-Place Signal Pointer.

nLength   Signal Length.

nScaleFactor   Integer Result Scaling.

Returns:

Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.189 NppStatus nppsLn_16s_Sfs (const Npp16s ∗ *pSrc*, Npp16s ∗ *pDst*, int *nLength*, int *nScaleFactor*)

16-bit signed short signal natural logarithm, scale, then clamp to saturated value.

Parameters:

    pSrc Source Signal Pointer.

    pDst Destination Signal Pointer.

    nLength Signal Length.

    nScaleFactor Integer Result Scaling.

Returns:

    Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.190 NppStatus nppsLn_32f (const Npp32f ∗ *pSrc*, Npp32f ∗ *pDst*, int *nLength*)

32-bit floating point signal natural logarithm.

Parameters:

    pSrc Source Signal Pointer.

    pDst Destination Signal Pointer.

    nLength Signal Length.

Returns:

    Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.191 NppStatus nppsLn_32f_I (Npp32f ∗ *pSrcDst*, int *nLength*)

32-bit floating point signal natural logarithm.

Parameters:

    pSrcDst In-Place Signal Pointer.

    nLength Signal Length.

Returns:

    Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.192 NppStatus nppsLn_32s16s_Sfs (const Npp32s ∗ *pSrc*, Npp16s ∗ *pDst*, int *nLength*, int *nScaleFactor*)

32-bit signed integer signal natural logarithm, scale, then clamp to 16-bit signed short saturated value.

Parameters:

    pSrc Source Signal Pointer.

---

pDst Destination Signal Pointer.

nLength Signal Length.

nScaleFactor Integer Result Scaling.

Returns:

Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.193 NppStatus nppsLn_32s_ISfs (Npp32s ∗ *pSrcDst*, int *nLength*, int *nScaleFactor*)

32-bit signed integer signal natural logarithm, scale, then clamp to saturated value.

Parameters:

pSrcDst In-Place Signal Pointer.

nLength Signal Length.

nScaleFactor Integer Result Scaling.

Returns:

Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.194 NppStatus nppsLn_32s_Sfs (const Npp32s ∗ *pSrc*, Npp32s ∗ *pDst*, int *nLength*, int *nScaleFactor*)

32-bit signed integer signal natural logarithm, scale, then clamp to saturated value.

Parameters:

pSrc Source Signal Pointer.

pDst Destination Signal Pointer.

nLength Signal Length.

nScaleFactor Integer Result Scaling.

Returns:

Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.195 NppStatus nppsLn_64f (const Npp64f ∗ *pSrc*, Npp64f ∗ *pDst*, int *nLength*)

64-bit floating point signal natural logarithm.

Parameters:

pSrc Source Signal Pointer.

pDst Destination Signal Pointer.

nLength Signal Length.

Returns:

Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.196 NppStatus nppsLn_64f32f (const Npp64f ∗ *pSrc***, Npp32f** ∗ *pDst***, int** *nLength***)**

64-bit floating point signal natural logarithm with 32-bit floating point result.

Parameters:

pSrc Source Signal Pointer.

pDst Destination Signal Pointer.

nLength Signal Length.

Returns:

Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.197 NppStatus nppsLn_64f_I (Npp64f ∗ *pSrcDst***, int** *nLength***)**

64-bit floating point signal natural logarithm.

Parameters:

pSrcDst In-Place Signal Pointer.

nLength Signal Length.

Returns:

Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.198 NppStatus nppsLShiftC_16s (const Npp16s ∗ *pSrc***, int** *nValue***, Npp16s** ∗ *pDst***, int** *nLength***)**

16-bit signed short signal left shift with constant.

Parameters:

pSrc Source Signal Pointer.

nValue Constant value to be used to left shift each vector element

pDst Destination Signal Pointer.

nLength Signal Length.

Returns:

Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.199 NppStatus nppsLShiftC_16s_I (int *nValue***, Npp16s** ∗ *pSrcDst***, int** *nLength***)**

16-bit signed short in place signal left shift with constant.

Parameters:

pSrcDst In-Place Signal Pointer.

nValue Constant value to be used to left shift each vector element

nLength Signal Length.

Returns:

Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.200 NppStatus nppsLShiftC_16u (const Npp16u ∗ *pSrc*, int *nValue*, Npp16u ∗ *pDst*, int *nLength*)

16-bit unsigned short signal left shift with constant.

Parameters:

pSrc Source Signal Pointer.

nValue Constant value to be used to left shift each vector element

pDst Destination Signal Pointer.

nLength Signal Length.

Returns:

Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.201 NppStatus nppsLShiftC_16u_I (int *nValue*, Npp16u ∗ *pSrcDst*, int *nLength*)

16-bit unsigned short in place signal left shift with constant.

Parameters:

pSrcDst In-Place Signal Pointer.

nValue Constant value to be used to left shift each vector element

nLength Signal Length.

Returns:

Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.202 NppStatus nppsLShiftC_32s (const Npp32s ∗ *pSrc*, int *nValue*, Npp32s ∗ *pDst*, int *nLength*)

32-bit signed integer signal left shift with constant.

Parameters:

pSrc Source Signal Pointer.

nValue Constant value to be used to left shift each vector element

pDst Destination Signal Pointer.

nLength Signal Length.

Returns:

Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.203 NppStatus nppsLShiftC_32s_I (int *nValue*, Npp32s ∗ *pSrcDst*, int *nLength*)

32-bit signed signed integer in place signal left shift with constant.

Parameters:

> *pSrcDst* In-Place Signal Pointer.
>
> *nValue* Constant value to be used to left shift each vector element
>
> *nLength* Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.204 NppStatus nppsLShiftC_32u (const Npp32u ∗ *pSrc*, int *nValue*, Npp32u ∗ *pDst*, int *nLength*)

32-bit unsigned integer signal left shift with constant.

Parameters:

> *pSrc* Source Signal Pointer.
>
> *nValue* Constant value to be used to left shift each vector element
>
> *pDst* Destination Signal Pointer.
>
> *nLength* Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.205 NppStatus nppsLShiftC_32u_I (int *nValue*, Npp32u ∗ *pSrcDst*, int *nLength*)

32-bit unsigned signed integer in place signal left shift with constant.

Parameters:

> *pSrcDst* In-Place Signal Pointer.
>
> *nValue* Constant value to be used to left shift each vector element
>
> *nLength* Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.206 NppStatus nppsLShiftC_8u (const Npp8u ∗ *pSrc*, int *nValue*, Npp8u ∗ *pDst*, int *nLength*)

8-bit unsigned char signal left shift with constant.

Parameters:

> *pSrc* Source Signal Pointer.
>
> *nValue* Constant value to be used to left shift each vector element
>
> *pDst* Destination Signal Pointer.
>
> *nLength* Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.207 NppStatus nppsLShiftC_8u_I (int *nValue*, Npp8u ∗ *pSrcDst*, int *nLength*)

8-bit unsigned char in place signal left shift with constant.

Parameters:

> *pSrcDst* In-Place Signal Pointer.
>
> *nValue* Constant value to be used to left shift each vector element
>
> *nLength* Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.208 Npp16s∗ nppsMalloc_16s (int *nSize*)

16-bit signal allocator.

Parameters:

> *nSize* Number of shorts in the new signal.

Returns:

> A pointer to the new signal. 0 (NULL-pointer) indicates that an error occurred during allocation.

7.17.1.209 Npp16sc∗ nppsMalloc_16sc (int *nSize*)

16-bit complex-value signal allocator.

Parameters:

> *nSize* Number of 16-bit complex numbers in the new signal.

Returns:

> A pointer to the new signal. 0 (NULL-pointer) indicates that an error occurred during allocation.

7.17.1.210 Npp16u∗ nppsMalloc_16u (int *nSize*)

16-bit unsigned signal allocator.

Parameters:

nSize Number of unsigned shorts in the new signal.

Returns:

A pointer to the new signal. 0 (NULL-pointer) indicates that an error occurred during allocation.

7.17.1.211 Npp32f∗ nppsMalloc_32f (int *nSize*)

32-bit float signal allocator.

Parameters:

nSize Number of floats in the new signal.

Returns:

A pointer to the new signal. 0 (NULL-pointer) indicates that an error occurred during allocation.

7.17.1.212 Npp32fc∗ nppsMalloc_32fc (int *nSize*)

32-bit complex float signal allocator.

Parameters:

nSize Number of complex float values in the new signal.

Returns:

A pointer to the new signal. 0 (NULL-pointer) indicates that an error occurred during allocation.

7.17.1.213 Npp32s∗ nppsMalloc_32s (int *nSize*)

32-bit integer signal allocator.

Parameters:

nSize Number of ints in the new signal.

Returns:

A pointer to the new signal. 0 (NULL-pointer) indicates that an error occurred during allocation.

7.17.1.214 Npp32sc∗ nppsMalloc_32sc (int *nSize*)

32-bit complex integer signal allocator.

Parameters:

 nSize Number of complex integner values in the new signal.

Returns:

 A pointer to the new signal. 0 (NULL-pointer) indicates that an error occurred during allocation.

7.17.1.215 Npp32u∗ nppsMalloc_32u (int *nSize*)

32-bit unsigned signal allocator.

Parameters:

 nSize Number of unsigned ints in the new signal.

Returns:

 A pointer to the new signal. 0 (NULL-pointer) indicates that an error occurred during allocation.

7.17.1.216 Npp64f∗ nppsMalloc_64f (int *nSize*)

64-bit float (double) signal allocator.

Parameters:

 nSize Number of doubles in the new signal.

Returns:

 A pointer to the new signal. 0 (NULL-pointer) indicates that an error occurred during allocation.

7.17.1.217 Npp64fc∗ nppsMalloc_64fc (int *nSize*)

64-bit complex complex signal allocator.

Parameters:

 nSize Number of complex double valuess in the new signal.

Returns:

 A pointer to the new signal. 0 (NULL-pointer) indicates that an error occurred during allocation.

7.17.1.218 Npp64s∗ nppsMalloc_64s (int *nSize*)

64-bit long integer signal allocator.

Parameters:

> *nSize* Number of long ints in the new signal.

Returns:

> A pointer to the new signal. 0 (NULL-pointer) indicates that an error occurred during allocation.

7.17.1.219 Npp64sc∗ nppsMalloc_64sc (int *nSize*)

64-bit complex long integer signal allocator.

Parameters:

> *nSize* Number of complex long int values in the new signal.

Returns:

> A pointer to the new signal. 0 (NULL-pointer) indicates that an error occurred during allocation.

7.17.1.220 Npp8u∗ nppsMalloc_8u (int *nSize*)

8-bit unsigned signal allocator.

Parameters:

> *nSize* Number of unsigned chars in the new signal.

Returns:

> A pointer to the new signal. 0 (NULL-pointer) indicates that an error occurred during allocation.

7.17.1.221 NppStatus nppsMax_16s (const Npp16s ∗ *pSrc*, int *nLength*, Npp16s ∗ *pMax*, Npp8u ∗ *pDeviceBuffer*)

16-bit integer vector max method

Parameters:

> *pSrc* Source Signal Pointer.
> *nLength* Signal Length.
> *pMax* Pointer to the output result.
> *pDeviceBuffer* Pointer to the required device memory allocation.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.222 NppStatus nppsMax_32f (const Npp32f ∗ *pSrc*, int *nLength*, Npp32f ∗ *pMax*, Npp8u ∗ *pDeviceBuffer*)

32-bit float vector max method

Parameters:

> *pSrc* Source Signal Pointer.
>
> *nLength* Signal Length.
>
> *pMax* Pointer to the output result.
>
> *pDeviceBuffer* Pointer to the required device memory allocation.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.223 NppStatus nppsMax_32s (const Npp32s ∗ *pSrc*, int *nLength*, Npp32s ∗ *pMax*, Npp8u ∗ *pDeviceBuffer*)

32-bit integer vector max method

Parameters:

> *pSrc* Source Signal Pointer.
>
> *nLength* Signal Length.
>
> *pMax* Pointer to the output result.
>
> *pDeviceBuffer* Pointer to the required device memory allocation.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.224 NppStatus nppsMax_64f (const Npp64f ∗ *pSrc*, int *nLength*, Npp64f ∗ *pMax*, Npp8u ∗ *pDeviceBuffer*)

64-bit float vector max method

Parameters:

> *pSrc* Source Signal Pointer.
>
> *nLength* Signal Length.
>
> *pMax* Pointer to the output result.
>
> *pDeviceBuffer* Pointer to the required device memory allocation.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.225 NppStatus nppsMaxGetBufferSize_16s (int *nLength*, int ∗ *hpBufferSize*)

Device scratch buffer size (in bytes) for 16s Max.

This primitive provides the correct buffer size for nppsMax_16s.

Parameters:

nLength Signal Length.

hpBufferSize Required buffer size. Important: hpBufferSize is a *host pointer*. Scratch Buffer and Host Pointer.

Returns:

NPP_SUCCESS

7.17.1.226 NppStatus nppsMaxGetBufferSize_32f (int *nLength*, int ∗ *hpBufferSize*)

Device scratch buffer size (in bytes) for 32f Max.

This primitive provides the correct buffer size for nppsMax_32f.

Parameters:

nLength Signal Length.

hpBufferSize Required buffer size. Important: hpBufferSize is a *host pointer*. Scratch Buffer and Host Pointer.

Returns:

NPP_SUCCESS

7.17.1.227 NppStatus nppsMaxGetBufferSize_32s (int *nLength*, int ∗ *hpBufferSize*)

Device scratch buffer size (in bytes) for 32s Max.

This primitive provides the correct buffer size for nppsMax_32s.

Parameters:

nLength Signal Length.

hpBufferSize Required buffer size. Important: hpBufferSize is a *host pointer*. Scratch Buffer and Host Pointer.

Returns:

NPP_SUCCESS

7.17.1.228 NppStatus nppsMaxGetBufferSize_64f (int *nLength*, int ∗ *hpBufferSize*)

Device scratch buffer size (in bytes) for 64f Max.

This primitive provides the correct buffer size for nppsMax_64f.

Parameters:

    nLength Signal Length.

    hpBufferSize Required buffer size. Important: hpBufferSize is a *host pointer.* Scratch Buffer and Host Pointer.

Returns:

    NPP_SUCCESS

7.17.1.229 NppStatus nppsMin_16s (const Npp16s ∗ *pSrc*, int *nLength*, Npp16s ∗ *pMin*, Npp8u ∗ *pDeviceBuffer*)

16-bit integer vector min method

Parameters:

    pSrc Source Signal Pointer.

    nLength Signal Length.

    pMin Pointer to the output result.

    pDeviceBuffer Pointer to the required device memory allocation.

Returns:

    Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.230 NppStatus nppsMin_32f (const Npp32f ∗ *pSrc*, int *nLength*, Npp32f ∗ *pMin*, Npp8u ∗ *pDeviceBuffer*)

32-bit integer vector min method

Parameters:

    pSrc Source Signal Pointer.

    nLength Signal Length.

    pMin Pointer to the output result.

    pDeviceBuffer Pointer to the required device memory allocation.

Returns:

    Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.231 NppStatus nppsMin_32s (const Npp32s ∗ *pSrc*, int *nLength*, Npp32s ∗ *pMin*, Npp8u ∗ *pDeviceBuffer*)

32-bit integer vector min method

Parameters:

    pSrc Source Signal Pointer.

nLength Signal Length.

pMin Pointer to the output result.

pDeviceBuffer Pointer to the required device memory allocation.

Returns:

Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.232 NppStatus nppsMin_64f (const Npp64f * *pSrc*, int *nLength*, Npp64f * *pMin*, Npp8u * *pDeviceBuffer*)

64-bit integer vector min method

Parameters:

pSrc Source Signal Pointer.

nLength Signal Length.

pMin Pointer to the output result.

pDeviceBuffer Pointer to the required device memory allocation.

Returns:

Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.233 NppStatus nppsMinGetBufferSize_16s (int *nLength*, int * *hpBufferSize*)

Device scratch buffer size (in bytes) for 16s Min.

This primitive provides the correct buffer size for nppsMin_16s.

Parameters:

nLength Signal Length.

hpBufferSize Required buffer size. Important: hpBufferSize is a *host pointer*. Scratch Buffer and Host Pointer.

Returns:

NPP_SUCCESS

7.17.1.234 NppStatus nppsMinGetBufferSize_32f (int *nLength*, int * *hpBufferSize*)

Device scratch buffer size (in bytes) for 32f Min.

This primitive provides the correct buffer size for nppsMin_32f.

Parameters:

nLength Signal Length.

hpBufferSize Required buffer size. Important: hpBufferSize is a *host pointer*. Scratch Buffer and Host Pointer.

Returns:

NPP_SUCCESS

7.17.1.235 NppStatus nppsMinGetBufferSize_32s (int *nLength*, int ∗ *hpBufferSize*)

Device scratch buffer size (in bytes) for 32s Min.

This primitive provides the correct buffer size for nppsMin_32s.

Parameters:

> *nLength* Signal Length.
>
> *hpBufferSize* Required buffer size. Important: hpBufferSize is a *host pointer.* Scratch Buffer and Host Pointer.

Returns:

> NPP_SUCCESS

7.17.1.236 NppStatus nppsMinGetBufferSize_64f (int *nLength*, int ∗ *hpBufferSize*)

Device scratch buffer size (in bytes) for 64f Min.

This primitive provides the correct buffer size for nppsMin_64f.

Parameters:

> *nLength* Signal Length.
>
> *hpBufferSize* Required buffer size. Important: hpBufferSize is a *host pointer.* Scratch Buffer and Host Pointer.

Returns:

> NPP_SUCCESS

7.17.1.237 NppStatus nppsMinMax_16s (const Npp16s ∗ *pSrc*, int *nLength*, Npp16s ∗ *pMin*, Npp16s ∗ *pMax*, Npp8u ∗ *pDeviceBuffer*)

16-bit signed short vector min and max method

Parameters:

> *pSrc* Source Signal Pointer.
>
> *nLength* Signal Length.
>
> *pMin* Pointer to the min output result.
>
> *pMax* Pointer to the max output result.
>
> *pDeviceBuffer* Pointer to the required device memory allocation.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.238 NppStatus nppsMinMax_16u (const Npp16u ∗ *pSrc*, int *nLength*, Npp16u ∗ *pMin*, Npp16u ∗ *pMax*, Npp8u ∗ *pDeviceBuffer*)

16-bit unsigned short vector min and max method

Parameters:

> *pSrc* Source Signal Pointer.
>
> *nLength* Signal Length.
>
> *pMin* Pointer to the min output result.
>
> *pMax* Pointer to the max output result.
>
> *pDeviceBuffer* Pointer to the required device memory allocation.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.239 NppStatus nppsMinMax_32f (const Npp32f ∗ *pSrc*, int *nLength*, Npp32f ∗ *pMin*, Npp32f ∗ *pMax*, Npp8u ∗ *pDeviceBuffer*)

32-bit float vector min and max method

Parameters:

> *pSrc* Source Signal Pointer.
>
> *nLength* Signal Length.
>
> *pMin* Pointer to the min output result.
>
> *pMax* Pointer to the max output result.
>
> *pDeviceBuffer* Pointer to the required device memory allocation.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.240 NppStatus nppsMinMax_32s (const Npp32s ∗ *pSrc*, int *nLength*, Npp32s ∗ *pMin*, Npp32s ∗ *pMax*, Npp8u ∗ *pDeviceBuffer*)

32-bit signed int vector min and max method

Parameters:

> *pSrc* Source Signal Pointer.
>
> *nLength* Signal Length.
>
> *pMin* Pointer to the min output result.
>
> *pMax* Pointer to the max output result.
>
> *pDeviceBuffer* Pointer to the required device memory allocation.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.241 NppStatus nppsMinMax_32u (const Npp32u ∗ *pSrc*, int *nLength*, Npp32u ∗ *pMin*, Npp32u ∗ *pMax*, Npp8u ∗ *pDeviceBuffer*)

32-bit unsigned int vector min and max method

Parameters:

>*pSrc* Source Signal Pointer.
>
>*nLength* Signal Length.
>
>*pMin* Pointer to the min output result.
>
>*pMax* Pointer to the max output result.
>
>*pDeviceBuffer* Pointer to the required device memory allocation.

Returns:

>Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.242 NppStatus nppsMinMax_64f (const Npp64f ∗ *pSrc*, int *nLength*, Npp64f ∗ *pMin*, Npp64f ∗ *pMax*, Npp8u ∗ *pDeviceBuffer*)

64-bit double vector min and max method

Parameters:

>*pSrc* Source Signal Pointer.
>
>*nLength* Signal Length.
>
>*pMin* Pointer to the min output result.
>
>*pMax* Pointer to the max output result.
>
>*pDeviceBuffer* Pointer to the required device memory allocation.

Returns:

>Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.243 NppStatus nppsMinMax_8u (const Npp8u ∗ *pSrc*, int *nLength*, Npp8u ∗ *pMin*, Npp8u ∗ *pMax*, Npp8u ∗ *pDeviceBuffer*)

8-bit char vector min and max method

Parameters:

>*pSrc* Source Signal Pointer.
>
>*nLength* Signal Length.
>
>*pMin* Pointer to the min output result.
>
>*pMax* Pointer to the max output result.
>
>*pDeviceBuffer* Pointer to the required device memory allocation.

Returns:

>Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.244 NppStatus nppsMinMaxGetBufferSize_16s (int *nLength*, int ∗ *hpBufferSize*)

Device-buffer size (in bytes) for nppsMinMax_16s.

Parameters:

>*nLength* Signal Length.
>
>*hpBufferSize* Required buffer size. Important: hpBufferSize is a *host pointer*.

Returns:

>NPP_SUCCESS

7.17.1.245 NppStatus nppsMinMaxGetBufferSize_16u (int *nLength*, int ∗ *hpBufferSize*)

Device-buffer size (in bytes) for nppsMinMax_16u.

Parameters:

>*nLength* Signal Length.
>
>*hpBufferSize* Required buffer size. Important: hpBufferSize is a *host pointer*.

Returns:

>NPP_SUCCESS

7.17.1.246 NppStatus nppsMinMaxGetBufferSize_32f (int *nLength*, int ∗ *hpBufferSize*)

Device-buffer size (in bytes) for nppsMinMax_32f.

Parameters:

>*nLength* Signal Length.
>
>*hpBufferSize* Required buffer size. Important: hpBufferSize is a *host pointer*.

Returns:

>NPP_SUCCESS

7.17.1.247 NppStatus nppsMinMaxGetBufferSize_32s (int *nLength*, int ∗ *hpBufferSize*)

Device-buffer size (in bytes) for nppsMinMax_32s.

Parameters:

>*nLength* Signal Length.
>
>*hpBufferSize* Required buffer size. Important: hpBufferSize is a *host pointer*.

Returns:

>NPP_SUCCESS

7.17.1.248 NppStatus nppsMinMaxGetBufferSize_32u (int *nLength*, int ∗ *hpBufferSize*)

Device-buffer size (in bytes) for nppsMinMax_32u.

Parameters:

> *nLength* Signal Length.
> *hpBufferSize* Required buffer size. Important: hpBufferSize is a *host pointer*.

Returns:

> NPP_SUCCESS

7.17.1.249 NppStatus nppsMinMaxGetBufferSize_64f (int *nLength*, int ∗ *hpBufferSize*)

Device-buffer size (in bytes) for nppsMinMax_64f.

Parameters:

> *nLength* Signal Length.
> *hpBufferSize* Required buffer size. Important: hpBufferSize is a *host pointer*.

Returns:

> NPP_SUCCESS

7.17.1.250 NppStatus nppsMinMaxGetBufferSize_8u (int *nLength*, int ∗ *hpBufferSize*)

Device-buffer size (in bytes) for nppsMinMax_8u.

Parameters:

> *nLength* Signal Length.
> *hpBufferSize* Required buffer size. Important: hpBufferSize is a *host pointer*.

Returns:

> NPP_SUCCESS

7.17.1.251 NppStatus nppsMul_16s (const Npp16s ∗ *pSrc1*, const Npp16s ∗ *pSrc2*, Npp16s ∗ *pDst*, int *nLength*)

16-bit signed short signal times signal, then clamp to saturated value.

Parameters:

> *pSrc1* Source Signal Pointer.
> *pSrc2* Source Signal Pointer. signal2 elements to be multiplied by signal1 elements
> *pDst* Destination Signal Pointer.
> *nLength* Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.252   NppStatus nppsMul_16s32f (const Npp16s ∗ *pSrc1*, const Npp16s ∗ *pSrc2*, Npp32f ∗ *pDst*, int *nLength*)

16-bit signed short signal times signal with 32-bit floating point result, then clamp to saturated value.

Parameters:

> *pSrc1* Source Signal Pointer.
>
> *pSrc2* Source Signal Pointer. signal2 elements to be multiplied by signal1 elements
>
> *pDst* Destination Signal Pointer.
>
> *nLength* Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.253   NppStatus nppsMul_16s32s_Sfs (const Npp16s ∗ *pSrc1*, const Npp16s ∗ *pSrc2*, Npp32s ∗ *pDst*, int *nLength*, int *nScaleFactor*)

16-bit signed short signal times signal, scale, then clamp to 32-bit signed saturated value.

Parameters:

> *pSrc1* Source Signal Pointer.
>
> *pSrc2* Source Signal Pointer, signal2 elements to be multiplied by signal1 elements.
>
> *pDst* Destination Signal Pointer.
>
> *nLength* Signal Length.
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.254   NppStatus nppsMul_16s_I (const Npp16s ∗ *pSrc*, Npp16s ∗ *pSrcDst*, int *nLength*)

16-bit signed short in place signal times signal, then clamp to saturated value.

Parameters:

> *pSrc* Source Signal Pointer.
>
> *pSrcDst* In-Place Signal Pointer. signal2 elements to be multiplied by signal1 elements
>
> *nLength* Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.255 NppStatus nppsMul_16s_ISfs (const Npp16s ∗ *pSrc*, Npp16s ∗ *pSrcDst*, int *nLength*, int *nScaleFactor*)

16-bit signed short in place signal times signal, with scaling, then clamp to saturated value.

Parameters:

    pSrc Source Signal Pointer.

    pSrcDst In-Place Signal Pointer. signal2 elements to be multiplied by signal1 elements

    nLength Signal Length.

    nScaleFactor Integer Result Scaling.

Returns:

    Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.256 NppStatus nppsMul_16s_Sfs (const Npp16s ∗ *pSrc1*, const Npp16s ∗ *pSrc2*, Npp16s ∗ *pDst*, int *nLength*, int *nScaleFactor*)

16-bit signed short signal times signal, scale, then clamp to saturated value.

Parameters:

    pSrc1 Source Signal Pointer.

    pSrc2 Source Signal Pointer, signal2 elements to be multiplied by signal1 elements.

    pDst Destination Signal Pointer.

    nLength Signal Length.

    nScaleFactor Integer Result Scaling.

Returns:

    Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.257 NppStatus nppsMul_16sc_ISfs (const Npp16sc ∗ *pSrc*, Npp16sc ∗ *pSrcDst*, int *nLength*, int *nScaleFactor*)

16-bit complex signed short in place signal times signal, with scaling, then clamp to saturated value.

Parameters:

    pSrc Source Signal Pointer.

    pSrcDst In-Place Signal Pointer. signal2 elements to be multiplied by signal1 elements

    nLength Signal Length.

    nScaleFactor Integer Result Scaling.

Returns:

    Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.258 NppStatus nppsMul_16sc_Sfs (const Npp16sc ∗ *pSrc1*, const Npp16sc ∗ *pSrc2*, Npp16sc ∗ *pDst*, int *nLength*, int *nScaleFactor*)

16-bit signed complex short signal times signal, scale, then clamp to saturated value.

Parameters:

> *pSrc1* Source Signal Pointer.
>
> *pSrc2* Source Signal Pointer, signal2 elements to be multiplied by signal1 elements.
>
> *pDst* Destination Signal Pointer.
>
> *nLength* Signal Length.
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.259 NppStatus nppsMul_16u16s_Sfs (const Npp16u ∗ *pSrc1*, const Npp16s ∗ *pSrc2*, Npp16s ∗ *pDst*, int *nLength*, int *nScaleFactor*)

16-bit unsigned short signal times 16-bit signed short signal, scale, then clamp to 16-bit signed saturated value.

Parameters:

> *pSrc1* Source Signal Pointer.
>
> *pSrc2* Source Signal Pointer, signal2 elements to be multiplied by signal1 elements.
>
> *pDst* Destination Signal Pointer.
>
> *nLength* Signal Length.
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.260 NppStatus nppsMul_16u_ISfs (const Npp16u ∗ *pSrc*, Npp16u ∗ *pSrcDst*, int *nLength*, int *nScaleFactor*)

16-bit unsigned short in place signal times signal, with scaling, then clamp to saturated value.

Parameters:

> *pSrc* Source Signal Pointer.
>
> *pSrcDst* In-Place Signal Pointer. signal2 elements to be multiplied by signal1 elements
>
> *nLength* Signal Length.
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.261 NppStatus nppsMul_16u_Sfs (const Npp16u ∗ *pSrc1*, const Npp16u ∗ *pSrc2*, Npp16u ∗ *pDst*, int *nLength*, int *nScaleFactor*)

16-bit unsigned short signal time signal, scale, then clamp to saturated value.

Parameters:

> *pSrc1* Source Signal Pointer.
>
> *pSrc2* Source Signal Pointer, signal2 elements to be multiplied by signal1 elements.
>
> *pDst* Destination Signal Pointer.
>
> *nLength* Signal Length.
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.262 NppStatus nppsMul_32f (const Npp32f ∗ *pSrc1*, const Npp32f ∗ *pSrc2*, Npp32f ∗ *pDst*, int *nLength*)

32-bit floating point signal times signal, then clamp to saturated value.

Parameters:

> *pSrc1* Source Signal Pointer.
>
> *pSrc2* Source Signal Pointer. signal2 elements to be multiplied by signal1 elements
>
> *pDst* Destination Signal Pointer.
>
> *nLength* Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.263 NppStatus nppsMul_32f32fc (const Npp32f ∗ *pSrc1*, const Npp32fc ∗ *pSrc2*, Npp32fc ∗ *pDst*, int *nLength*)

32-bit floating point signal times 32-bit complex floating point signal with complex 32-bit floating point result, then clamp to saturated value.

Parameters:

> *pSrc1* Source Signal Pointer.
>
> *pSrc2* Source Signal Pointer. signal2 elements to be multiplied by signal1 elements
>
> *pDst* Destination Signal Pointer.
>
> *nLength* Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.264 NppStatus nppsMul_32f32fc_I (const Npp32f *pSrc*, Npp32fc *pSrcDst*, int *nLength*)

32-bit complex floating point in place signal times 32-bit floating point signal, then clamp to 32-bit complex floating point saturated value.

Parameters:

    pSrc Source Signal Pointer.

    pSrcDst In-Place Signal Pointer. signal2 elements to be multiplied by signal1 elements

    nLength Signal Length.

Returns:

    Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.265 NppStatus nppsMul_32f_I (const Npp32f *pSrc*, Npp32f *pSrcDst*, int *nLength*)

32-bit floating point in place signal times signal, then clamp to saturated value.

Parameters:

    pSrc Source Signal Pointer.

    pSrcDst In-Place Signal Pointer. signal2 elements to be multiplied by signal1 elements

    nLength Signal Length.

Returns:

    Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.266 NppStatus nppsMul_32fc (const Npp32fc *pSrc1*, const Npp32fc *pSrc2*, Npp32fc *pDst*, int *nLength*)

32-bit complex floating point signal times signal, then clamp to saturated value.

Parameters:

    pSrc1 Source Signal Pointer.

    pSrc2 Source Signal Pointer. signal2 elements to be multiplied by signal1 elements

    pDst Destination Signal Pointer.

    nLength Signal Length.

Returns:

    Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.267   NppStatus nppsMul_32fc_I (const Npp32fc ∗ *pSrc*, Npp32fc ∗ *pSrcDst*, int *nLength*)

32-bit complex floating point in place signal times signal, then clamp to saturated value.

Parameters:

    pSrc Source Signal Pointer.

    pSrcDst In-Place Signal Pointer. signal2 elements to be multiplied by signal1 elements

    nLength   Signal Length.

Returns:

    Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.268   NppStatus nppsMul_32s32sc_ISfs (const Npp32s ∗ *pSrc*, Npp32sc ∗ *pSrcDst*, int *nLength*, int *nScaleFactor*)

32-bit complex signed integer in place signal times 32-bit signed integer signal, with scaling, then clamp to saturated value.

Parameters:

    pSrc Source Signal Pointer.

    pSrcDst In-Place Signal Pointer. signal2 elements to be multiplied by signal1 elements

    nLength   Signal Length.

    nScaleFactor   Integer Result Scaling.

Returns:

    Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.269   NppStatus nppsMul_32s32sc_Sfs (const Npp32s ∗ *pSrc1*, const Npp32sc ∗ *pSrc2*, Npp32sc ∗ *pDst*, int *nLength*, int *nScaleFactor*)

32-bit signed integer signal times 32-bit complex signed integer signal, scale, then clamp to 32-bit complex integer saturated value.

Parameters:

    pSrc1 Source Signal Pointer.

    pSrc2 Source Signal Pointer, signal2 elements to be multiplied by signal1 elements.

    pDst Destination Signal Pointer.

    nLength   Signal Length.

    nScaleFactor   Integer Result Scaling.

Returns:

    Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.270 NppStatus nppsMul_32s_ISfs (const Npp32s ∗ *pSrc*, Npp32s ∗ *pSrcDst*, int *nLength*, int *nScaleFactor*)

32-bit signed integer in place signal times signal, with scaling, then clamp to saturated value.

Parameters:

pSrc Source Signal Pointer.

pSrcDst In-Place Signal Pointer. signal2 elements to be multiplied by signal1 elements

nLength Signal Length.

nScaleFactor Integer Result Scaling.

Returns:

Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.271 NppStatus nppsMul_32s_Sfs (const Npp32s ∗ *pSrc1*, const Npp32s ∗ *pSrc2*, Npp32s ∗ *pDst*, int *nLength*, int *nScaleFactor*)

32-bit signed integer signal times signal, scale, then clamp to saturated value.

Parameters:

pSrc1 Source Signal Pointer.

pSrc2 Source Signal Pointer, signal2 elements to be multiplied by signal1 elements.

pDst Destination Signal Pointer.

nLength Signal Length.

nScaleFactor Integer Result Scaling.

Returns:

Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.272 NppStatus nppsMul_32sc_ISfs (const Npp32sc ∗ *pSrc*, Npp32sc ∗ *pSrcDst*, int *nLength*, int *nScaleFactor*)

32-bit complex signed integer in place signal times signal, with scaling, then clamp to saturated value.

Parameters:

pSrc Source Signal Pointer.

pSrcDst In-Place Signal Pointer. signal2 elements to be multiplied by signal1 elements

nLength Signal Length.

nScaleFactor Integer Result Scaling.

Returns:

Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.273 NppStatus nppsMul_32sc_Sfs (const Npp32sc * _pSrc1_, const Npp32sc * _pSrc2_, Npp32sc * _pDst_, int _nLength_, int _nScaleFactor_)

32-bit signed complex integer signal times signal, scale, then clamp to saturated value.

Parameters:

    pSrc1 Source Signal Pointer.

    pSrc2 Source Signal Pointer, signal2 elements to be multiplied by signal1 elements.

    pDst Destination Signal Pointer.

    nLength Signal Length.

    nScaleFactor Integer Result Scaling.

Returns:

    Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.274 NppStatus nppsMul_64f (const Npp64f * _pSrc1_, const Npp64f * _pSrc2_, Npp64f * _pDst_, int _nLength_)

64-bit floating point signal times signal, then clamp to saturated value.

Parameters:

    pSrc1 Source Signal Pointer.

    pSrc2 Source Signal Pointer. signal2 elements to be multiplied by signal1 elements

    pDst Destination Signal Pointer.

    nLength Signal Length.

Returns:

    Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.275 NppStatus nppsMul_64f_I (const Npp64f * _pSrc_, Npp64f * _pSrcDst_, int _nLength_)

64-bit floating point in place signal times signal, then clamp to saturated value.

Parameters:

    pSrc Source Signal Pointer.

    pSrcDst In-Place Signal Pointer. signal2 elements to be multiplied by signal1 elements

    nLength Signal Length.

Returns:

    Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.276 NppStatus nppsMul_64fc (const Npp64fc ∗ *pSrc1*, const Npp64fc ∗ *pSrc2*, Npp64fc ∗ *pDst*, int *nLength*)

64-bit complex floating point signal times signal, then clamp to saturated value.

Parameters:

> ***pSrc1*** Source Signal Pointer.
>
> ***pSrc2*** Source Signal Pointer. signal2 elements to be multiplied by signal1 elements
>
> ***pDst*** Destination Signal Pointer.
>
> ***nLength*** Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.277 NppStatus nppsMul_64fc_I (const Npp64fc ∗ *pSrc*, Npp64fc ∗ *pSrcDst*, int *nLength*)

64-bit complex floating point in place signal times signal, then clamp to saturated value.

Parameters:

> ***pSrc*** Source Signal Pointer.
>
> ***pSrcDst*** In-Place Signal Pointer. signal2 elements to be multiplied by signal1 elements
>
> ***nLength*** Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.278 NppStatus nppsMul_8u16u (const Npp8u ∗ *pSrc1*, const Npp8u ∗ *pSrc2*, Npp16u ∗ *pDst*, int *nLength*)

8-bit unsigned char signal times signal with 16-bit unsigned result, then clamp to saturated value.

Parameters:

> ***pSrc1*** Source Signal Pointer.
>
> ***pSrc2*** Source Signal Pointer. signal2 elements to be multiplied by signal1 elements
>
> ***pDst*** Destination Signal Pointer.
>
> ***nLength*** Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.279 NppStatus nppsMul_8u_ISfs (const Npp8u ∗ *pSrc*, Npp8u ∗ *pSrcDst*, int *nLength*, int *nScaleFactor*)

8-bit unsigned char in place signal times signal, with scaling, then clamp to saturated value.

Parameters:

> *pSrc* Source Signal Pointer.
>
> *pSrcDst* In-Place Signal Pointer. signal2 elements to be multiplied by signal1 elements
>
> *nLength* Signal Length.
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.280 NppStatus nppsMul_8u_Sfs (const Npp8u ∗ *pSrc1*, const Npp8u ∗ *pSrc2*, Npp8u ∗ *pDst*, int *nLength*, int *nScaleFactor*)

8-bit unsigned char signal times signal, scale, then clamp to saturated value.

Parameters:

> *pSrc1* Source Signal Pointer.
>
> *pSrc2* Source Signal Pointer, signal2 elements to be multiplied by signal1 elements.
>
> *pDst* Destination Signal Pointer.
>
> *nLength* Signal Length.
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.281 NppStatus nppsMul_Low_32s_Sfs (const Npp32s ∗ *pSrc1*, const Npp32s ∗ *pSrc2*, Npp32s ∗ *pDst*, int *nLength*, int *nScaleFactor*)

32-bit signed integer signal times signal, scale, then clamp to saturated value.

Parameters:

> *pSrc1* Source Signal Pointer.
>
> *pSrc2* Source Signal Pointer, signal2 elements to be multiplied by signal1 elements.
>
> *pDst* Destination Signal Pointer.
>
> *nLength* Signal Length.
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.282 NppStatus nppsMulC_16s_ISfs (Npp16s *nValue*, Npp16s * *pSrcDst*, int *nLength*, int *nScaleFactor*)

16-bit signed short in place signal times constant, scale, then clamp to saturated value.

Parameters:

    pSrcDst In-Place Signal Pointer.

    nValue Constant value to be multiplied by each vector element

    nLength Signal Length.

    nScaleFactor Integer Result Scaling.

Returns:

    Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.283 NppStatus nppsMulC_16s_Sfs (const Npp16s * *pSrc*, Npp16s *nValue*, Npp16s * *pDst*, int *nLength*, int *nScaleFactor*)

16-bit signed short signal times constant, scale, then clamp to saturated value.

Parameters:

    pSrc Source Signal Pointer.

    nValue Constant value to be multiplied by each vector element

    pDst Destination Signal Pointer.

    nLength Signal Length.

    nScaleFactor Integer Result Scaling.

Returns:

    Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.284 NppStatus nppsMulC_16sc_ISfs (Npp16sc *nValue*, Npp16sc * *pSrcDst*, int *nLength*, int *nScaleFactor*)

16-bit integer complex number (16 bit real, 16 bit imaginary)signal times constant, scale, then clamp to saturated value.

Parameters:

    pSrcDst In-Place Signal Pointer.

    nValue Constant value to be multiplied by each vector element

    nLength Signal Length.

    nScaleFactor Integer Result Scaling.

Returns:

    Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.285   NppStatus nppsMulC_16sc_Sfs (const Npp16sc ∗ *pSrc*, Npp16sc *nValue*, Npp16sc ∗ *pDst*, int *nLength*, int *nScaleFactor*)

16-bit integer complex number (16 bit real, 16 bit imaginary)signal times constant, scale, then clamp to saturated value.

Parameters:

> *pSrc* Source Signal Pointer.
>
> *nValue* Constant value to be multiplied by each vector element
>
> *pDst* Destination Signal Pointer.
>
> *nLength* Signal Length.
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.286   NppStatus nppsMulC_16u_ISfs (Npp16u *nValue*, Npp16u ∗ *pSrcDst*, int *nLength*, int *nScaleFactor*)

16-bit unsigned short in place signal times constant, scale, then clamp to saturated value.

Parameters:

> *pSrcDst* In-Place Signal Pointer.
>
> *nValue* Constant value to be multiplied by each vector element
>
> *nLength* Signal Length.
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.287   NppStatus nppsMulC_16u_Sfs (const Npp16u ∗ *pSrc*, Npp16u *nValue*, Npp16u ∗ *pDst*, int *nLength*, int *nScaleFactor*)

16-bit unsigned short signal times constant, scale, then clamp to saturated value.

Parameters:

> *pSrc* Source Signal Pointer.
>
> *nValue* Constant value to be multiplied by each vector element
>
> *pDst* Destination Signal Pointer.
>
> *nLength* Signal Length.
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.288 NppStatus nppsMulC_32f (const Npp32f ∗ *pSrc*, Npp32f *nValue*, Npp32f ∗ *pDst*, int *nLength*)

32-bit floating point signal times constant.

Parameters:

    pSrc Source Signal Pointer.

    nValue Constant value to be multiplied by each vector element

    pDst Destination Signal Pointer.

    nLength Signal Length.

Returns:

    Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.289 NppStatus nppsMulC_32f16s_Sfs (const Npp32f ∗ *pSrc*, Npp32f *nValue*, Npp16s ∗ *pDst*, int *nLength*, int *nScaleFactor*)

32-bit floating point signal times constant with output converted to 16-bit signed integer with scaling and saturation of output result.

Parameters:

    pSrc Source Signal Pointer.

    nValue Constant value to be multiplied by each vector element

    pDst Destination Signal Pointer.

    nScaleFactor Integer Result Scaling.

    nLength Signal Length.

Returns:

    Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.290 NppStatus nppsMulC_32f_I (Npp32f *nValue*, Npp32f ∗ *pSrcDst*, int *nLength*)

32-bit floating point in place signal times constant.

Parameters:

    pSrcDst In-Place Signal Pointer.

    nValue Constant value to be multiplied by each vector element

    nLength Signal Length.

Returns:

    Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.291 NppStatus nppsMulC_32fc (const Npp32fc ∗ *pSrc*, Npp32fc *nValue*, Npp32fc ∗ *pDst*, int *nLength*)

32-bit floating point complex number (32 bit real, 32 bit imaginary) signal times constant.

Parameters:

>   *pSrc* Source Signal Pointer.
>
>   *nValue* Constant value to be multiplied by each vector element
>
>   *pDst* Destination Signal Pointer.
>
>   *nLength* Signal Length.

Returns:

>   Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.292 NppStatus nppsMulC_32fc_I (Npp32fc *nValue*, Npp32fc ∗ *pSrcDst*, int *nLength*)

32-bit floating point complex number (32 bit real, 32 bit imaginary) in place signal times constant.

Parameters:

>   *pSrcDst* In-Place Signal Pointer.
>
>   *nValue* Constant value to be multiplied by each vector element
>
>   *nLength* Signal Length.

Returns:

>   Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.293 NppStatus nppsMulC_32s_ISfs (Npp32s *nValue*, Npp32s ∗ *pSrcDst*, int *nLength*, int *nScaleFactor*)

32-bit signed integer in place signal times constant and scale.

Parameters:

>   *pSrcDst* In-Place Signal Pointer.
>
>   *nValue* Constant value to be multiplied by each vector element
>
>   *nLength* Signal Length.
>
>   *nScaleFactor* Integer Result Scaling.

Returns:

>   Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.294 NppStatus nppsMulC_32s_Sfs (const Npp32s ∗ *pSrc*, Npp32s *nValue*, Npp32s ∗ *pDst*, int *nLength*, int *nScaleFactor*)

32-bit signed integer signal times constant and scale.

Parameters:

pSrc Source Signal Pointer.

nValue Constant value to be multiplied by each vector element

pDst Destination Signal Pointer.

nLength Signal Length.

nScaleFactor Integer Result Scaling.

Returns:

Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.295 NppStatus nppsMulC_32sc_ISfs (Npp32sc *nValue*, Npp32sc ∗ *pSrcDst*, int *nLength*, int *nScaleFactor*)

32-bit integer complex number (32 bit real, 32 bit imaginary) in place signal times constant and scale.

Parameters:

pSrcDst In-Place Signal Pointer.

nValue Constant value to be multiplied by each vector element

nLength Signal Length.

nScaleFactor Integer Result Scaling.

Returns:

Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.296 NppStatus nppsMulC_32sc_Sfs (const Npp32sc ∗ *pSrc*, Npp32sc *nValue*, Npp32sc ∗ *pDst*, int *nLength*, int *nScaleFactor*)

32-bit integer complex number (32 bit real, 32 bit imaginary) signal times constant and scale.

Parameters:

pSrc Source Signal Pointer.

nValue Constant value to be multiplied by each vector element

pDst Destination Signal Pointer.

nLength Signal Length.

nScaleFactor Integer Result Scaling.

Returns:

Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.297 NppStatus nppsMulC_64f (const Npp64f ∗ *pSrc*, Npp64f *nValue*, Npp64f ∗ *pDst*, int *nLength*)

64-bit floating point signal times constant.

Parameters:

> *pSrc* Source Signal Pointer.
>
> *nValue* Constant value to be multiplied by each vector element
>
> *pDst* Destination Signal Pointer.
>
> *nLength* Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.298 NppStatus nppsMulC_64f64s_ISfs (Npp64f *nValue*, Npp64s ∗ *pDst*, int *nLength*, int *nScaleFactor*)

64-bit floating point signal times constant with in place conversion to 64-bit signed integer and with scaling and saturation of output result.

Parameters:

> *nValue* Constant value to be multiplied by each vector element
>
> *pDst* Destination Signal Pointer.
>
> *nLength* Signal Length.
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.299 NppStatus nppsMulC_64f_I (Npp64f *nValue*, Npp64f ∗ *pSrcDst*, int *nLength*)

64-bit floating point, in place signal times constant.

Parameters:

> *pSrcDst* In-Place Signal Pointer.
>
> *nValue* Constant value to be multiplied by each vector element
>
> *nLength* Length of the vectors, number of items.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.300 NppStatus nppsMulC_64fc (const Npp64fc ∗ *pSrc*, Npp64fc *nValue*, Npp64fc ∗ *pDst*, int *nLength*)

64-bit floating point complex number (64 bit real, 64 bit imaginary) signal times constant.

Parameters:

>   *pSrc* Source Signal Pointer.
>
>   *nValue* Constant value to be multiplied by each vector element
>
>   *pDst* Destination Signal Pointer.
>
>   *nLength* Signal Length.

Returns:

>   Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.301 NppStatus nppsMulC_64fc_I (Npp64fc *nValue*, Npp64fc ∗ *pSrcDst*, int *nLength*)

64-bit floating point complex number (64 bit real, 64 bit imaginary) in place signal times constant.

Parameters:

>   *pSrcDst* In-Place Signal Pointer.
>
>   *nValue* Constant value to be multiplied by each vector element
>
>   *nLength* Signal Length.

Returns:

>   Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.302 NppStatus nppsMulC_8u_ISfs (Npp8u *nValue*, Npp8u ∗ *pSrcDst*, int *nLength*, int *nScaleFactor*)

8-bit unsigned char in place signal times constant, scale, then clamp to saturated value

Parameters:

>   *pSrcDst* In-Place Signal Pointer.
>
>   *nValue* Constant value to be multiplied by each vector element
>
>   *nLength* Signal Length.
>
>   *nScaleFactor* Integer Result Scaling.

Returns:

>   Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.303 NppStatus nppsMulC_8u_Sfs (const Npp8u * *pSrc*, Npp8u *nValue*, Npp8u * *pDst*, int *nLength*, int *nScaleFactor*)

8-bit unsigned char signal times constant, scale, then clamp to saturated value.

Parameters:

> *pSrc* Source Signal Pointer.
>
> *nValue* Constant value to be multiplied by each vector element
>
> *pDst* Destination Signal Pointer.
>
> *nLength* Signal Length.
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.304 NppStatus nppsMulC_Low_32f16s (const Npp32f * *pSrc*, Npp32f *nValue*, Npp16s * *pDst*, int *nLength*)

32-bit floating point signal times constant with output converted to 16-bit signed integer.

Parameters:

> *pSrc* Source Signal Pointer.
>
> *nValue* Constant value to be multiplied by each vector element
>
> *pDst* Destination Signal Pointer.
>
> *nLength* Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.305 NppStatus nppsNormalize_16s_Sfs (const Npp16s * *pSrc*, Npp16s * *pDst*, int *nLength*, Npp16s *vSub*, int *vDiv*, int *nScaleFactor*)

16-bit signed short signal normalize, scale, then clamp to saturated value.

Parameters:

> *pSrc* Source Signal Pointer.
>
> *pDst* Destination Signal Pointer.
>
> *nLength* Signal Length.
>
> *vSub* value subtracted from each signal element before division
>
> *vDiv* divisor of post-subtracted signal element dividend
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.306 NppStatus nppsNormalize_16sc_Sfs (const Npp16sc * pSrc, Npp16sc * pDst, int nLength, Npp16sc vSub, int vDiv, int nScaleFactor)

16-bit complex signed short signal normalize, scale, then clamp to saturated value.

Parameters:

>**pSrc** Source Signal Pointer.
>
>**pDst** Destination Signal Pointer.
>
>**nLength** Signal Length.
>
>**vSub** value subtracted from each signal element before division
>
>**vDiv** divisor of post-subtracted signal element dividend
>
>**nScaleFactor** Integer Result Scaling.

Returns:

>Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.307 NppStatus nppsNormalize_32f (const Npp32f * pSrc, Npp32f * pDst, int nLength, Npp32f vSub, Npp32f vDiv)

32-bit floating point signal normalize.

Parameters:

>**pSrc** Source Signal Pointer.
>
>**pDst** Destination Signal Pointer.
>
>**nLength** Signal Length.
>
>**vSub** value subtracted from each signal element before division
>
>**vDiv** divisor of post-subtracted signal element dividend

Returns:

>Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.308 NppStatus nppsNormalize_32fc (const Npp32fc * pSrc, Npp32fc * pDst, int nLength, Npp32fc vSub, Npp32f vDiv)

32-bit complex floating point signal normalize.

Parameters:

>**pSrc** Source Signal Pointer.
>
>**pDst** Destination Signal Pointer.
>
>**nLength** Signal Length.
>
>**vSub** value subtracted from each signal element before division
>
>**vDiv** divisor of post-subtracted signal element dividend

Returns:

>Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.309 NppStatus nppsNormalize_64f (const Npp64f ∗ *pSrc*, Npp64f ∗ *pDst*, int *nLength*, Npp64f *vSub*, Npp64f *vDiv*)

64-bit floating point signal normalize.

Parameters:

> *pSrc* Source Signal Pointer.
>
> *pDst* Destination Signal Pointer.
>
> *nLength* Signal Length.
>
> *vSub* value subtracted from each signal element before division
>
> *vDiv* divisor of post-subtracted signal element dividend

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.310 NppStatus nppsNormalize_64fc (const Npp64fc ∗ *pSrc*, Npp64fc ∗ *pDst*, int *nLength*, Npp64fc *vSub*, Npp64f *vDiv*)

64-bit complex floating point signal normalize.

Parameters:

> *pSrc* Source Signal Pointer.
>
> *pDst* Destination Signal Pointer.
>
> *nLength* Signal Length.
>
> *vSub* value subtracted from each signal element before division
>
> *vDiv* divisor of post-subtracted signal element dividend

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.311 NppStatus nppsNot_16u (const Npp16u ∗ *pSrc*, Npp16u ∗ *pDst*, int *nLength*)

16-bit unsigned short not signal.

Parameters:

> *pSrc* Source Signal Pointer.
>
> *pDst* Destination Signal Pointer.
>
> *nLength* Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.312 NppStatus nppsNot_16u_I (Npp16u ∗ *pSrcDst*, int *nLength*)

16-bit unsigned short in place not signal.

Parameters:

>   *pSrcDst* In-Place Signal Pointer.
>   *nLength* Signal Length.

Returns:

>   Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.313 NppStatus nppsNot_32u (const Npp32u ∗ *pSrc*, Npp32u ∗ *pDst*, int *nLength*)

32-bit unsigned integer not signal.

Parameters:

>   *pSrc* Source Signal Pointer.
>   *pDst* Destination Signal Pointer.
>   *nLength* Signal Length.

Returns:

>   Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.314 NppStatus nppsNot_32u_I (Npp32u ∗ *pSrcDst*, int *nLength*)

32-bit unsigned signed integer in place not signal.

Parameters:

>   *pSrcDst* In-Place Signal Pointer.
>   *nLength* Signal Length.

Returns:

>   Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.315 NppStatus nppsNot_8u (const Npp8u ∗ *pSrc*, Npp8u ∗ *pDst*, int *nLength*)

8-bit unsigned char not signal.

Parameters:

>   *pSrc* Source Signal Pointer.
>   *pDst* Destination Signal Pointer.
>   *nLength* Signal Length.

Returns:

>   Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.316 NppStatus nppsNot_8u_I (Npp8u ∗ *pSrcDst*, int *nLength*)

8-bit unsigned char in place not signal.

Parameters:

> ***pSrcDst*** In-Place Signal Pointer.
>
> ***nLength*** Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.317 NppStatus nppsOr_16u (const Npp16u ∗ *pSrc1*, const Npp16u ∗ *pSrc2*, Npp16u ∗ *pDst*, int *nLength*)

16-bit unsigned short signal or with signal.

Parameters:

> ***pSrc1*** Source Signal Pointer.
>
> ***pSrc2*** Source Signal Pointer. signal2 elements to be ored with signal1 elements
>
> ***pDst*** Destination Signal Pointer.
>
> ***nLength*** Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.318 NppStatus nppsOr_16u_I (const Npp16u ∗ *pSrc*, Npp16u ∗ *pSrcDst*, int *nLength*)

16-bit unsigned short in place signal or with signal.

Parameters:

> ***pSrc*** Source Signal Pointer.
>
> ***pSrcDst*** In-Place Signal Pointer. signal2 elements to be ored with signal1 elements
>
> ***nLength*** Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.319 NppStatus nppsOr_32u (const Npp32u ∗ *pSrc1*, const Npp32u ∗ *pSrc2*, Npp32u ∗ *pDst*, int *nLength*)

32-bit unsigned integer signal or with signal.

Parameters:

> ***pSrc1*** Source Signal Pointer.

pSrc2 Source Signal Pointer. signal2 elements to be ored with signal1 elements

pDst Destination Signal Pointer.

nLength Signal Length.

Returns:

Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.320 NppStatus nppsOr_32u_I (const Npp32u ∗ *pSrc*, Npp32u ∗ *pSrcDst*, int *nLength*)

32-bit unsigned integer in place signal or with signal.

Parameters:

pSrc Source Signal Pointer.

pSrcDst In-Place Signal Pointer. signal2 elements to be ored with signal1 elements

nLength Signal Length.

Returns:

Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.321 NppStatus nppsOr_8u (const Npp8u ∗ *pSrc1*, const Npp8u ∗ *pSrc2*, Npp8u ∗ *pDst*, int *nLength*)

8-bit unsigned char signal or with signal.

Parameters:

pSrc1 Source Signal Pointer.

pSrc2 Source Signal Pointer. signal2 elements to be ored with signal1 elements

pDst Destination Signal Pointer.

nLength Signal Length.

Returns:

Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.322 NppStatus nppsOr_8u_I (const Npp8u ∗ *pSrc*, Npp8u ∗ *pSrcDst*, int *nLength*)

8-bit unsigned char in place signal or with signal.

Parameters:

pSrc Source Signal Pointer.

pSrcDst In-Place Signal Pointer. signal2 elements to be ored with signal1 elements

nLength Signal Length.

Returns:

Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.323 NppStatus nppsOrC_16u (const Npp16u ∗ *pSrc*, Npp16u *nValue*, Npp16u ∗ *pDst*, int *nLength*)

16-bit unsigned short signal or with constant.

Parameters:

> *pSrc* Source Signal Pointer.
>
> *nValue* Constant value to be ored with each vector element
>
> *pDst* Destination Signal Pointer.
>
> *nLength* Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.324 NppStatus nppsOrC_16u_I (Npp16u *nValue*, Npp16u ∗ *pSrcDst*, int *nLength*)

16-bit unsigned short in place signal or with constant.

Parameters:

> *pSrcDst* In-Place Signal Pointer.
>
> *nValue* Constant value to be ored with each vector element
>
> *nLength* Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.325 NppStatus nppsOrC_32u (const Npp32u ∗ *pSrc*, Npp32u *nValue*, Npp32u ∗ *pDst*, int *nLength*)

32-bit unsigned integer signal or with constant.

Parameters:

> *pSrc* Source Signal Pointer.
>
> *nValue* Constant value to be ored with each vector element
>
> *pDst* Destination Signal Pointer.
>
> *nLength* Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.326 NppStatus nppsOrC_32u_I (Npp32u *nValue*, Npp32u ∗ *pSrcDst*, int *nLength*)

32-bit unsigned signed integer in place signal or with constant.

Parameters:

    pSrcDst In-Place Signal Pointer.

    nValue Constant value to be ored with each vector element

    nLength Signal Length.

Returns:

    Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.327 NppStatus nppsOrC_8u (const Npp8u ∗ *pSrc*, Npp8u *nValue*, Npp8u ∗ *pDst*, int *nLength*)

8-bit unsigned char signal or with constant.

Parameters:

    pSrc Source Signal Pointer.

    nValue Constant value to be ored with each vector element

    pDst Destination Signal Pointer.

    nLength Signal Length.

Returns:

    Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.328 NppStatus nppsOrC_8u_I (Npp8u *nValue*, Npp8u ∗ *pSrcDst*, int *nLength*)

8-bit unsigned char in place signal or with constant.

Parameters:

    pSrcDst In-Place Signal Pointer.

    nValue Constant value to be ored with each vector element

    nLength Signal Length.

Returns:

    Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.329 NppStatus nppsRShiftC_16s (const Npp16s ∗ *pSrc*, int *nValue*, Npp16s ∗ *pDst*, int *nLength*)

16-bit signed short signal right shift with constant.

Parameters:

> *pSrc* Source Signal Pointer.
> *nValue* Constant value to be used to right shift each vector element
> *pDst* Destination Signal Pointer.
> *nLength* Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.330 NppStatus nppsRShiftC_16s_I (int *nValue*, Npp16s * *pSrcDst*, int *nLength*)

16-bit signed short in place signal right shift with constant.

Parameters:

> *pSrcDst* In-Place Signal Pointer.
> *nValue* Constant value to be used to right shift each vector element
> *nLength* Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.331 NppStatus nppsRShiftC_16u (const Npp16u * *pSrc*, int *nValue*, Npp16u * *pDst*, int *nLength*)

16-bit unsigned short signal right shift with constant.

Parameters:

> *pSrc* Source Signal Pointer.
> *nValue* Constant value to be used to right shift each vector element
> *pDst* Destination Signal Pointer.
> *nLength* Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.332 NppStatus nppsRShiftC_16u_I (int *nValue*, Npp16u * *pSrcDst*, int *nLength*)

16-bit unsigned short in place signal right shift with constant.

Parameters:

> *pSrcDst* In-Place Signal Pointer.
> *nValue* Constant value to be used to right shift each vector element
> *nLength* Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.333 NppStatus nppsRShiftC_32s (const Npp32s ∗ *pSrc*, int *nValue*, Npp32s ∗ *pDst*, int *nLength*)

32-bit signed integer signal right shift with constant.

Parameters:

> *pSrc* Source Signal Pointer.
>
> *nValue* Constant value to be used to right shift each vector element
>
> *pDst* Destination Signal Pointer.
>
> *nLength* Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.334 NppStatus nppsRShiftC_32s_I (int *nValue*, Npp32s ∗ *pSrcDst*, int *nLength*)

32-bit signed signed integer in place signal right shift with constant.

Parameters:

> *pSrcDst* In-Place Signal Pointer.
>
> *nValue* Constant value to be used to right shift each vector element
>
> *nLength* Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.335 NppStatus nppsRShiftC_32u (const Npp32u ∗ *pSrc*, int *nValue*, Npp32u ∗ *pDst*, int *nLength*)

32-bit unsigned integer signal right shift with constant.

Parameters:

> *pSrc* Source Signal Pointer.
>
> *nValue* Constant value to be used to right shift each vector element
>
> *pDst* Destination Signal Pointer.
>
> *nLength* Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.336   NppStatus nppsRShiftC_32u_I (int *nValue*, Npp32u ∗ *pSrcDst*, int *nLength*)

32-bit unsigned signed integer in place signal right shift with constant.

Parameters:

pSrcDst In-Place Signal Pointer.

nValue Constant value to be used to right shift each vector element

nLength Signal Length.

Returns:

Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.337   NppStatus nppsRShiftC_8u (const Npp8u ∗ *pSrc*, int *nValue*, Npp8u ∗ *pDst*, int *nLength*)

8-bit unsigned char signal right shift with constant.

Parameters:

pSrc Source Signal Pointer.

nValue Constant value to be used to right shift each vector element

pDst Destination Signal Pointer.

nLength Signal Length.

Returns:

Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.338   NppStatus nppsRShiftC_8u_I (int *nValue*, Npp8u ∗ *pSrcDst*, int *nLength*)

8-bit unsigned char in place signal right shift with constant.

Parameters:

pSrcDst In-Place Signal Pointer.

nValue Constant value to be used to right shift each vector element

nLength Signal Length.

Returns:

Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.339   NppStatus nppsSet_16s (Npp16s *nValue*, Npp16s ∗ *pDst*, int *nLength*)

16-bit integer, vector set method.

Parameters:

nValue Value used to initialize the vector pDst.

pDst Destination Signal Pointer.

nLength Signal Length.

Returns:

Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.340 NppStatus nppsSet_16sc (Npp16sc *nValue*, Npp16sc ∗ *pDst*, int *nLength*)

16-bit integer complex, vector set method.

Parameters:

nValue Value used to initialize the vector pDst.

pDst Destination Signal Pointer.

nLength Signal Length.

Returns:

Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.341 NppStatus nppsSet_32f (Npp32f *nValue*, Npp32f ∗ *pDst*, int *nLength*)

32-bit float, vector set method.

Parameters:

nValue Value used to initialize the vector pDst.

pDst Destination Signal Pointer.

nLength Signal Length.

Returns:

Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.342 NppStatus nppsSet_32fc (Npp32fc *nValue*, Npp32fc ∗ *pDst*, int *nLength*)

32-bit float complex, vector set method.

Parameters:

nValue Value used to initialize the vector pDst.

pDst Destination Signal Pointer.

nLength Signal Length.

Returns:

Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.343 NppStatus nppsSet_32s (Npp32s *nValue*, Npp32s ∗ *pDst*, int *nLength*)

32-bit integer, vector set method.

Parameters:

> *nValue* Value used to initialize the vector pDst.
>
> *pDst* Destination Signal Pointer.
>
> *nLength* Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.344 NppStatus nppsSet_32sc (Npp32sc *nValue*, Npp32sc ∗ *pDst*, int *nLength*)

32-bit integer complex, vector set method.

Parameters:

> *nValue* Value used to initialize the vector pDst.
>
> *pDst* Destination Signal Pointer.
>
> *nLength* Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.345 NppStatus nppsSet_64f (Npp64f *nValue*, Npp64f ∗ *pDst*, int *nLength*)

64-bit double, vector set method.

Parameters:

> *nValue* Value used to initialize the vector pDst.
>
> *pDst* Destination Signal Pointer.
>
> *nLength* Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.346 NppStatus nppsSet_64fc (Npp64fc *nValue*, Npp64fc ∗ *pDst*, int *nLength*)

64-bit double complex, vector set method.

Parameters:

> *nValue* Value used to initialize the vector pDst.
>
> *pDst* Destination Signal Pointer.

nLength Signal Length.

Returns:

Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.347 NppStatus nppsSet_64s (Npp64s *nValue*, Npp64s ∗ *pDst*, int *nLength*)

64-bit long long integer, vector set method.

Parameters:

nValue Value used to initialize the vector pDst.

pDst Destination Signal Pointer.

nLength Signal Length.

Returns:

Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.348 NppStatus nppsSet_64sc (Npp64sc *nValue*, Npp64sc ∗ *pDst*, int *nLength*)

64-bit long long integer complex, vector set method.

Parameters:

nValue Value used to initialize the vector pDst.

pDst Destination Signal Pointer.

nLength Signal Length.

Returns:

Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.349 NppStatus nppsSet_8u (Npp8u *nValue*, Npp8u ∗ *pDst*, int *nLength*)

8-bit unsigned char, vector set method.

Parameters:

nValue Value used to initialize the vector pDst.

pDst Destination Signal Pointer.

nLength Signal Length.

Returns:

Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.350 NppStatus nppsSqr_16s_ISfs (Npp16s ∗ *pSrcDst*, int *nLength*, int *nScaleFactor*)

16-bit signed short signal squared, scale, then clamp to saturated value.

Parameters:

> ***pSrcDst*** In-Place Signal Pointer.
>
> ***nLength*** Signal Length.
>
> ***nScaleFactor*** Integer Result Scaling.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.351 NppStatus nppsSqr_16s_Sfs (const Npp16s ∗ *pSrc*, Npp16s ∗ *pDst*, int *nLength*, int *nScaleFactor*)

16-bit signed short signal squared, scale, then clamp to saturated value.

Parameters:

> ***pSrc*** Source Signal Pointer.
>
> ***pDst*** Destination Signal Pointer.
>
> ***nLength*** Signal Length.
>
> ***nScaleFactor*** Integer Result Scaling.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.352 NppStatus nppsSqr_16sc_ISfs (Npp16sc ∗ *pSrcDst*, int *nLength*, int *nScaleFactor*)

16-bit complex signed short signal squared, scale, then clamp to saturated value.

Parameters:

> ***pSrcDst*** In-Place Signal Pointer.
>
> ***nLength*** Signal Length.
>
> ***nScaleFactor*** Integer Result Scaling.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.353 NppStatus nppsSqr_16sc_Sfs (const Npp16sc ∗ *pSrc*, Npp16sc ∗ *pDst*, int *nLength*, int *nScaleFactor*)

16-bit complex signed short signal squared, scale, then clamp to saturated value.

Parameters:

pSrc Source Signal Pointer.

pDst Destination Signal Pointer.

nLength Signal Length.

nScaleFactor Integer Result Scaling.

Returns:

Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.354 NppStatus nppsSqr_16u_ISfs (Npp16u ∗ *pSrcDst*, int *nLength*, int *nScaleFactor*)

16-bit unsigned short signal squared, scale, then clamp to saturated value.

Parameters:

pSrcDst In-Place Signal Pointer.

nLength Signal Length.

nScaleFactor Integer Result Scaling.

Returns:

Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.355 NppStatus nppsSqr_16u_Sfs (const Npp16u ∗ *pSrc*, Npp16u ∗ *pDst*, int *nLength*, int *nScaleFactor*)

16-bit unsigned short signal squared, scale, then clamp to saturated value.

Parameters:

pSrc Source Signal Pointer.

pDst Destination Signal Pointer.

nLength Signal Length.

nScaleFactor Integer Result Scaling.

Returns:

Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.356 NppStatus nppsSqr_32f (const Npp32f ∗ *pSrc*, Npp32f ∗ *pDst*, int *nLength*)

32-bit floating point signal squared.

Parameters:

pSrc Source Signal Pointer.

pDst Destination Signal Pointer.

nLength Signal Length.

Returns:

Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.357   NppStatus nppsSqr_32f_I (Npp32f ∗ *pSrcDst*, int *nLength*)

32-bit floating point signal squared.

Parameters:

   pSrcDst In-Place Signal Pointer.
   nLength Signal Length.

Returns:

   Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.358   NppStatus nppsSqr_32fc (const Npp32fc ∗ *pSrc*, Npp32fc ∗ *pDst*, int *nLength*)

32-bit complex floating point signal squared.

Parameters:

   pSrc Source Signal Pointer.
   pDst Destination Signal Pointer.
   nLength Signal Length.

Returns:

   Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.359   NppStatus nppsSqr_32fc_I (Npp32fc ∗ *pSrcDst*, int *nLength*)

32-bit complex floating point signal squared.

Parameters:

   pSrcDst In-Place Signal Pointer.
   nLength Signal Length.

Returns:

   Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.360   NppStatus nppsSqr_64f (const Npp64f ∗ *pSrc*, Npp64f ∗ *pDst*, int *nLength*)

64-bit floating point signal squared.

Parameters:

   pSrc Source Signal Pointer.
   pDst Destination Signal Pointer.
   nLength Signal Length.

Returns:

   Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.361 NppStatus nppsSqr_64f_I (Npp64f ∗ *pSrcDst*, int *nLength*)

64-bit floating point signal squared.

Parameters:

>*pSrcDst* In-Place Signal Pointer.
>*nLength* Signal Length.

Returns:

>Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.362 NppStatus nppsSqr_64fc (const Npp64fc ∗ *pSrc*, Npp64fc ∗ *pDst*, int *nLength*)

64-bit complex floating point signal squared.

Parameters:

>*pSrc* Source Signal Pointer.
>*pDst* Destination Signal Pointer.
>*nLength* Signal Length.

Returns:

>Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.363 NppStatus nppsSqr_64fc_I (Npp64fc ∗ *pSrcDst*, int *nLength*)

64-bit complex floating point signal squared.

Parameters:

>*pSrcDst* In-Place Signal Pointer.
>*nLength* Signal Length.

Returns:

>Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.364 NppStatus nppsSqr_8u_ISfs (Npp8u ∗ *pSrcDst*, int *nLength*, int *nScaleFactor*)

8-bit unsigned char signal squared, scale, then clamp to saturated value.

Parameters:

>*pSrcDst* In-Place Signal Pointer.
>*nLength* Signal Length.
>*nScaleFactor* Integer Result Scaling.

Returns:

>Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.365 NppStatus nppsSqr_8u_Sfs (const Npp8u ∗ *pSrc*, Npp8u ∗ *pDst*, int *nLength*, int *nScaleFactor*)

8-bit unsigned char signal squared, scale, then clamp to saturated value.

Parameters:

    pSrc Source Signal Pointer.

    pDst Destination Signal Pointer.

    nLength Signal Length.

    nScaleFactor Integer Result Scaling.

Returns:

    Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.366 NppStatus nppsSqrt_16s_ISfs (Npp16s ∗ *pSrcDst*, int *nLength*, int *nScaleFactor*)

16-bit signed short signal square root, scale, then clamp to saturated value.

Parameters:

    pSrcDst In-Place Signal Pointer.

    nLength Signal Length.

    nScaleFactor Integer Result Scaling.

Returns:

    Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.367 NppStatus nppsSqrt_16s_Sfs (const Npp16s ∗ *pSrc*, Npp16s ∗ *pDst*, int *nLength*, int *nScaleFactor*)

16-bit signed short signal square root, scale, then clamp to saturated value.

Parameters:

    pSrc Source Signal Pointer.

    pDst Destination Signal Pointer.

    nLength Signal Length.

    nScaleFactor Integer Result Scaling.

Returns:

    Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.368 NppStatus nppsSqrt_16sc_ISfs (Npp16sc * *pSrcDst*, int *nLength*, int *nScaleFactor*)

16-bit complex signed short signal square root, scale, then clamp to saturated value.

Parameters:

> *pSrcDst* In-Place Signal Pointer.
>
> *nLength* Signal Length.
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.369 NppStatus nppsSqrt_16sc_Sfs (const Npp16sc * *pSrc*, Npp16sc * *pDst*, int *nLength*, int *nScaleFactor*)

16-bit complex signed short signal square root, scale, then clamp to saturated value.

Parameters:

> *pSrc* Source Signal Pointer.
>
> *pDst* Destination Signal Pointer.
>
> *nLength* Signal Length.
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.370 NppStatus nppsSqrt_16u_ISfs (Npp16u * *pSrcDst*, int *nLength*, int *nScaleFactor*)

16-bit unsigned short signal square root, scale, then clamp to saturated value.

Parameters:

> *pSrcDst* In-Place Signal Pointer.
>
> *nLength* Signal Length.
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.371 NppStatus nppsSqrt_16u_Sfs (const Npp16u * *pSrc*, Npp16u * *pDst*, int *nLength*, int *nScaleFactor*)

16-bit unsigned short signal square root, scale, then clamp to saturated value.

Parameters:

> ***pSrc*** Source Signal Pointer.
>
> ***pDst*** Destination Signal Pointer.
>
> ***nLength*** Signal Length.
>
> ***nScaleFactor*** Integer Result Scaling.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.372 NppStatus nppsSqrt_32f (const Npp32f ∗ *pSrc*, Npp32f ∗ *pDst*, int *nLength*)

32-bit floating point signal square root.

Parameters:

> ***pSrc*** Source Signal Pointer.
>
> ***pDst*** Destination Signal Pointer.
>
> ***nLength*** Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.373 NppStatus nppsSqrt_32f_I (Npp32f ∗ *pSrcDst*, int *nLength*)

32-bit floating point signal square root.

Parameters:

> ***pSrcDst*** In-Place Signal Pointer.
>
> ***nLength*** Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.374 NppStatus nppsSqrt_32fc (const Npp32fc ∗ *pSrc*, Npp32fc ∗ *pDst*, int *nLength*)

32-bit complex floating point signal square root.

Parameters:

> ***pSrc*** Source Signal Pointer.
>
> ***pDst*** Destination Signal Pointer.
>
> ***nLength*** Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.375 NppStatus nppsSqrt_32fc_I (Npp32fc * *pSrcDst*, int *nLength*)

32-bit complex floating point signal square root.

Parameters:

> *pSrcDst* In-Place Signal Pointer.
> *nLength* Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.376 NppStatus nppsSqrt_32s16s_Sfs (const Npp32s * *pSrc*, Npp16s * *pDst*, int *nLength*, int *nScaleFactor*)

32-bit signed integer signal square root, scale, then clamp to 16-bit signed integer saturated value.

Parameters:

> *pSrc* Source Signal Pointer.
> *pDst* Destination Signal Pointer.
> *nLength* Signal Length.
> *nScaleFactor* Integer Result Scaling.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.377 NppStatus nppsSqrt_64f (const Npp64f * *pSrc*, Npp64f * *pDst*, int *nLength*)

64-bit floating point signal square root.

Parameters:

> *pSrc* Source Signal Pointer.
> *pDst* Destination Signal Pointer.
> *nLength* Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.378 NppStatus nppsSqrt_64f_I (Npp64f * *pSrcDst*, int *nLength*)

64-bit floating point signal square root.

Parameters:

> *pSrcDst* In-Place Signal Pointer.
> *nLength* Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.379 NppStatus nppsSqrt_64fc (const Npp64fc ∗ *pSrc*, Npp64fc ∗ *pDst*, int *nLength*)

64-bit complex floating point signal square root.

Parameters:

    pSrc Source Signal Pointer.

    pDst Destination Signal Pointer.

    nLength Signal Length.

Returns:

    Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.380 NppStatus nppsSqrt_64fc_I (Npp64fc ∗ *pSrcDst*, int *nLength*)

64-bit complex floating point signal square root.

Parameters:

    pSrcDst In-Place Signal Pointer.

    nLength Signal Length.

Returns:

    Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.381 NppStatus nppsSqrt_64s16s_Sfs (const Npp64s ∗ *pSrc*, Npp16s ∗ *pDst*, int *nLength*, int *nScaleFactor*)

64-bit signed integer signal square root, scale, then clamp to 16-bit signed integer saturated value.

Parameters:

    pSrc Source Signal Pointer.

    pDst Destination Signal Pointer.

    nLength Signal Length.

    nScaleFactor Integer Result Scaling.

Returns:

    Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.382 NppStatus nppsSqrt_64s_ISfs (Npp64s ∗ *pSrcDst*, int *nLength*, int *nScaleFactor*)

64-bit signed integer signal square root, scale, then clamp to saturated value.

Parameters:

    pSrcDst In-Place Signal Pointer.

nLength Signal Length.

nScaleFactor Integer Result Scaling.

Returns:

Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.383   NppStatus nppsSqrt_64s_Sfs (const Npp64s ∗ *pSrc*, Npp64s ∗ *pDst*, int *nLength*, int *nScaleFactor*)

64-bit signed integer signal square root, scale, then clamp to saturated value.

Parameters:

pSrc Source Signal Pointer.

pDst Destination Signal Pointer.

nLength Signal Length.

nScaleFactor Integer Result Scaling.

Returns:

Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.384   NppStatus nppsSqrt_8u_ISfs (Npp8u ∗ *pSrcDst*, int *nLength*, int *nScaleFactor*)

8-bit unsigned char signal square root, scale, then clamp to saturated value.

Parameters:

pSrcDst In-Place Signal Pointer.

nLength Signal Length.

nScaleFactor Integer Result Scaling.

Returns:

Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.385   NppStatus nppsSqrt_8u_Sfs (const Npp8u ∗ *pSrc*, Npp8u ∗ *pDst*, int *nLength*, int *nScaleFactor*)

8-bit unsigned char signal square root, scale, then clamp to saturated value.

Parameters:

pSrc Source Signal Pointer.

pDst Destination Signal Pointer.

nLength Signal Length.

nScaleFactor Integer Result Scaling.

Returns:

Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.386 NppStatus nppsSub_16s (const Npp16s ∗ *pSrc1*, const Npp16s ∗ *pSrc2*, Npp16s ∗ *pDst*, int *nLength*)

16-bit signed short signal subtract signal, then clamp to saturated value.

Parameters:

> *pSrc1* Source Signal Pointer.
>
> *pSrc2* Source Signal Pointer. signal1 elements to be subtracted from signal2 elements
>
> *pDst* Destination Signal Pointer.
>
> *nLength* Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.387 NppStatus nppsSub_16s32f (const Npp16s ∗ *pSrc1*, const Npp16s ∗ *pSrc2*, Npp32f ∗ *pDst*, int *nLength*)

16-bit signed short signal subtract 16-bit signed short signal, then clamp and convert to 32-bit floating point saturated value.

Parameters:

> *pSrc1* Source Signal Pointer.
>
> *pSrc2* Source Signal Pointer. signal1 elements to be subtracted from signal2 elements
>
> *pDst* Destination Signal Pointer.
>
> *nLength* Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.388 NppStatus nppsSub_16s_I (const Npp16s ∗ *pSrc*, Npp16s ∗ *pSrcDst*, int *nLength*)

16-bit signed short in place signal subtract signal, then clamp to saturated value.

Parameters:

> *pSrc* Source Signal Pointer.
>
> *pSrcDst* In-Place Signal Pointer. signal1 elements to be subtracted from signal2 elements
>
> *nLength* Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.389 NppStatus nppsSub_16s_ISfs (const Npp16s ∗ *pSrc*, Npp16s ∗ *pSrcDst*, int *nLength*, int *nScaleFactor*)

16-bit signed short in place signal subtract signal, with scaling, then clamp to saturated value.

Parameters:

> *pSrc* Source Signal Pointer.
>
> *pSrcDst* In-Place Signal Pointer. signal1 elements to be subtracted from signal2 elements
>
> *nLength* Signal Length.
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.390 NppStatus nppsSub_16s_Sfs (const Npp16s ∗ *pSrc1*, const Npp16s ∗ *pSrc2*, Npp16s ∗ *pDst*, int *nLength*, int *nScaleFactor*)

16-bit signed short signal subtract signal, scale, then clamp to saturated value.

Parameters:

> *pSrc1* Source Signal Pointer.
>
> *pSrc2* Source Signal Pointer, signal1 elements to be subtracted from signal2 elements.
>
> *pDst* Destination Signal Pointer.
>
> *nLength* Signal Length.
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.391 NppStatus nppsSub_16sc_ISfs (const Npp16sc ∗ *pSrc*, Npp16sc ∗ *pSrcDst*, int *nLength*, int *nScaleFactor*)

16-bit complex signed short in place signal subtract signal, with scaling, then clamp to saturated value.

Parameters:

> *pSrc* Source Signal Pointer.
>
> *pSrcDst* In-Place Signal Pointer. signal1 elements to be subtracted from signal2 elements
>
> *nLength* Signal Length.
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.392 NppStatus nppsSub_16sc_Sfs (const Npp16sc * *pSrc1*, const Npp16sc * *pSrc2*, Npp16sc * *pDst*, int *nLength*, int *nScaleFactor*)

16-bit signed complex short signal subtract signal, scale, then clamp to saturated value.

Parameters:

> *pSrc1* Source Signal Pointer.
>
> *pSrc2* Source Signal Pointer, signal1 elements to be subtracted from signal2 elements.
>
> *pDst* Destination Signal Pointer.
>
> *nLength* Signal Length.
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.393 NppStatus nppsSub_16u_ISfs (const Npp16u * *pSrc*, Npp16u * *pSrcDst*, int *nLength*, int *nScaleFactor*)

16-bit unsigned short in place signal subtract signal, with scaling, then clamp to saturated value.

Parameters:

> *pSrc* Source Signal Pointer.
>
> *pSrcDst* In-Place Signal Pointer. signal1 elements to be subtracted from signal2 elements
>
> *nLength* Signal Length.
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.394 NppStatus nppsSub_16u_Sfs (const Npp16u * *pSrc1*, const Npp16u * *pSrc2*, Npp16u * *pDst*, int *nLength*, int *nScaleFactor*)

16-bit unsigned short signal subtract signal, scale, then clamp to saturated value.

Parameters:

> *pSrc1* Source Signal Pointer.
>
> *pSrc2* Source Signal Pointer, signal1 elements to be subtracted from signal2 elements.
>
> *pDst* Destination Signal Pointer.
>
> *nLength* Signal Length.
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.395 NppStatus nppsSub_32f (const Npp32f ∗ *pSrc1*, const Npp32f ∗ *pSrc2*, Npp32f ∗ *pDst*, int *nLength*)

32-bit floating point signal subtract signal, then clamp to saturated value.

Parameters:

> *pSrc1* Source Signal Pointer.
>
> *pSrc2* Source Signal Pointer. signal1 elements to be subtracted from signal2 elements
>
> *pDst* Destination Signal Pointer.
>
> *nLength* Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.396 NppStatus nppsSub_32f_I (const Npp32f ∗ *pSrc*, Npp32f ∗ *pSrcDst*, int *nLength*)

32-bit floating point in place signal subtract signal, then clamp to saturated value.

Parameters:

> *pSrc* Source Signal Pointer.
>
> *pSrcDst* In-Place Signal Pointer. signal1 elements to be subtracted from signal2 elements
>
> *nLength* Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.397 NppStatus nppsSub_32fc (const Npp32fc ∗ *pSrc1*, const Npp32fc ∗ *pSrc2*, Npp32fc ∗ *pDst*, int *nLength*)

32-bit complex floating point signal subtract signal, then clamp to saturated value.

Parameters:

> *pSrc1* Source Signal Pointer.
>
> *pSrc2* Source Signal Pointer. signal1 elements to be subtracted from signal2 elements
>
> *pDst* Destination Signal Pointer.
>
> *nLength* Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.398 NppStatus nppsSub_32fc_I (const Npp32fc * *pSrc*, Npp32fc * *pSrcDst*, int *nLength*)

32-bit complex floating point in place signal subtract signal, then clamp to saturated value.

Parameters:

> *pSrc* Source Signal Pointer.
>
> *pSrcDst* In-Place Signal Pointer. signal1 elements to be subtracted from signal2 elements
>
> *nLength* Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.399 NppStatus nppsSub_32s_ISfs (const Npp32s * *pSrc*, Npp32s * *pSrcDst*, int *nLength*, int *nScaleFactor*)

32-bit signed integer in place signal subtract signal, with scaling, then clamp to saturated value.

Parameters:

> *pSrc* Source Signal Pointer.
>
> *pSrcDst* In-Place Signal Pointer. signal1 elements to be subtracted from signal2 elements
>
> *nLength* Signal Length.
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.400 NppStatus nppsSub_32s_Sfs (const Npp32s * *pSrc1*, const Npp32s * *pSrc2*, Npp32s * *pDst*, int *nLength*, int *nScaleFactor*)

32-bit signed integer signal subtract signal, scale, then clamp to saturated value.

Parameters:

> *pSrc1* Source Signal Pointer.
>
> *pSrc2* Source Signal Pointer, signal1 elements to be subtracted from signal2 elements.
>
> *pDst* Destination Signal Pointer.
>
> *nLength* Signal Length.
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.401 NppStatus nppsSub_32sc_ISfs (const Npp32sc ∗ *pSrc*, Npp32sc ∗ *pSrcDst*, int *nLength*, int *nScaleFactor*)

32-bit complex signed integer in place signal subtract signal, with scaling, then clamp to saturated value.

Parameters:

> *pSrc* Source Signal Pointer.
>
> *pSrcDst* In-Place Signal Pointer. signal1 elements to be subtracted from signal2 elements
>
> *nLength* Signal Length.
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.402 NppStatus nppsSub_32sc_Sfs (const Npp32sc ∗ *pSrc1*, const Npp32sc ∗ *pSrc2*, Npp32sc ∗ *pDst*, int *nLength*, int *nScaleFactor*)

32-bit signed complex integer signal subtract signal, scale, then clamp to saturated value.

Parameters:

> *pSrc1* Source Signal Pointer.
>
> *pSrc2* Source Signal Pointer, signal1 elements to be subtracted from signal2 elements.
>
> *pDst* Destination Signal Pointer.
>
> *nLength* Signal Length.
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.403 NppStatus nppsSub_64f (const Npp64f ∗ *pSrc1*, const Npp64f ∗ *pSrc2*, Npp64f ∗ *pDst*, int *nLength*)

64-bit floating point signal subtract signal, then clamp to saturated value.

Parameters:

> *pSrc1* Source Signal Pointer.
>
> *pSrc2* Source Signal Pointer. signal1 elements to be subtracted from signal2 elements
>
> *pDst* Destination Signal Pointer.
>
> *nLength* Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.404 NppStatus nppsSub_64f_I (const Npp64f ∗ *pSrc*, Npp64f ∗ *pSrcDst*, int *nLength*)

64-bit floating point in place signal subtract signal, then clamp to saturated value.

Parameters:

> *pSrc* Source Signal Pointer.
>
> *pSrcDst* In-Place Signal Pointer. signal1 elements to be subtracted from signal2 elements
>
> *nLength* Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.405 NppStatus nppsSub_64fc (const Npp64fc ∗ *pSrc1*, const Npp64fc ∗ *pSrc2*, Npp64fc ∗ *pDst*, int *nLength*)

64-bit complex floating point signal subtract signal, then clamp to saturated value.

Parameters:

> *pSrc1* Source Signal Pointer.
>
> *pSrc2* Source Signal Pointer. signal1 elements to be subtracted from signal2 elements
>
> *pDst* Destination Signal Pointer.
>
> *nLength* Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.406 NppStatus nppsSub_64fc_I (const Npp64fc ∗ *pSrc*, Npp64fc ∗ *pSrcDst*, int *nLength*)

64-bit complex floating point in place signal subtract signal, then clamp to saturated value.

Parameters:

> *pSrc* Source Signal Pointer.
>
> *pSrcDst* In-Place Signal Pointer. signal1 elements to be subtracted from signal2 elements
>
> *nLength* Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.407 NppStatus nppsSub_8u_ISfs (const Npp8u ∗ *pSrc*, Npp8u ∗ *pSrcDst*, int *nLength*, int *nScaleFactor*)

8-bit unsigned char in place signal subtract signal, with scaling, then clamp to saturated value.

Parameters:

> **pSrc** Source Signal Pointer.
>
> **pSrcDst** In-Place Signal Pointer. signal1 elements to be subtracted from signal2 elements
>
> **nLength** Signal Length.
>
> **nScaleFactor** Integer Result Scaling.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.408   NppStatus nppsSub_8u_Sfs (const Npp8u ∗ pSrc1, const Npp8u ∗ pSrc2, Npp8u ∗ pDst, int nLength, int nScaleFactor)

8-bit unsigned char signal subtract signal, scale, then clamp to saturated value.

Parameters:

> **pSrc1** Source Signal Pointer.
>
> **pSrc2** Source Signal Pointer, signal1 elements to be subtracted from signal2 elements.
>
> **pDst** Destination Signal Pointer.
>
> **nLength** Signal Length.
>
> **nScaleFactor** Integer Result Scaling.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.409   NppStatus nppsSubC_16s_ISfs (Npp16s nValue, Npp16s ∗ pSrcDst, int nLength, int nScaleFactor)

16-bit signed short in place signal subtract constant, scale, then clamp to saturated value.

Parameters:

> **pSrcDst** In-Place Signal Pointer.
>
> **nValue** Constant value to be subtracted from each vector element
>
> **nLength** Signal Length.
>
> **nScaleFactor** Integer Result Scaling.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.410 NppStatus nppsSubC_16s_Sfs (const Npp16s ∗ *pSrc*, Npp16s *nValue*, Npp16s ∗ *pDst*, int *nLength*, int *nScaleFactor*)

16-bit signed short signal subtract constant, scale, then clamp to saturated value.

Parameters:

pSrc Source Signal Pointer.

nValue Constant value to be subtracted from each vector element

pDst Destination Signal Pointer.

nLength Signal Length.

nScaleFactor Integer Result Scaling.

Returns:

Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.411 NppStatus nppsSubC_16sc_ISfs (Npp16sc *nValue*, Npp16sc ∗ *pSrcDst*, int *nLength*, int *nScaleFactor*)

16-bit integer complex number (16 bit real, 16 bit imaginary) signal subtract constant, scale, then clamp to saturated value.

Parameters:

pSrcDst In-Place Signal Pointer.

nValue Constant value to be subtracted from each vector element

nLength Signal Length.

nScaleFactor Integer Result Scaling.

Returns:

Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.412 NppStatus nppsSubC_16sc_Sfs (const Npp16sc ∗ *pSrc*, Npp16sc *nValue*, Npp16sc ∗ *pDst*, int *nLength*, int *nScaleFactor*)

16-bit integer complex number (16 bit real, 16 bit imaginary) signal subtract constant, scale, then clamp to saturated value.

Parameters:

pSrc Source Signal Pointer.

nValue Constant value to be subtracted from each vector element

pDst Destination Signal Pointer.

nLength Signal Length.

nScaleFactor Integer Result Scaling.

Returns:

Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.413 NppStatus nppsSubC_16u_ISfs (Npp16u *nValue*, Npp16u ∗ *pSrcDst*, int *nLength*, int *nScaleFactor*)

16-bit unsigned short in place signal subtract constant, scale, then clamp to saturated value.

Parameters:

pSrcDst In-Place Signal Pointer.

nValue Constant value to be subtracted from each vector element

nLength Signal Length.

nScaleFactor Integer Result Scaling.

Returns:

Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.414 NppStatus nppsSubC_16u_Sfs (const Npp16u ∗ *pSrc*, Npp16u *nValue*, Npp16u ∗ *pDst*, int *nLength*, int *nScaleFactor*)

16-bit unsigned short signal subtract constant, scale, then clamp to saturated value.

Parameters:

pSrc Source Signal Pointer.

nValue Constant value to be subtracted from each vector element

pDst Destination Signal Pointer.

nLength Signal Length.

nScaleFactor Integer Result Scaling.

Returns:

Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.415 NppStatus nppsSubC_32f (const Npp32f ∗ *pSrc*, Npp32f *nValue*, Npp32f ∗ *pDst*, int *nLength*)

32-bit floating point signal subtract constant.

Parameters:

pSrc Source Signal Pointer.

nValue Constant value to be subtracted from each vector element

pDst Destination Signal Pointer.

nLength Signal Length.

Returns:

Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.416 NppStatus nppsSubC_32f_I (Npp32f *nValue*, Npp32f ∗ *pSrcDst*, int *nLength*)

32-bit floating point in place signal subtract constant.

Parameters:

    pSrcDst In-Place Signal Pointer.

    nValue Constant value to be subtracted from each vector element

    nLength Signal Length.

Returns:

    Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.417 NppStatus nppsSubC_32fc (const Npp32fc ∗ *pSrc*, Npp32fc *nValue*, Npp32fc ∗ *pDst*, int *nLength*)

32-bit floating point complex number (32 bit real, 32 bit imaginary) signal subtract constant.

Parameters:

    pSrc Source Signal Pointer.

    nValue Constant value to be subtracted from each vector element

    pDst Destination Signal Pointer.

    nLength Signal Length.

Returns:

    Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.418 NppStatus nppsSubC_32fc_I (Npp32fc *nValue*, Npp32fc ∗ *pSrcDst*, int *nLength*)

32-bit floating point complex number (32 bit real, 32 bit imaginary) in place signal subtract constant.

Parameters:

    pSrcDst In-Place Signal Pointer.

    nValue Constant value to be subtracted from each vector element

    nLength Signal Length.

Returns:

    Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.419 NppStatus nppsSubC_32s_ISfs (Npp32s *nValue*, Npp32s ∗ *pSrcDst*, int *nLength*, int *nScaleFactor*)

32-bit signed integer in place signal subtract constant and scale.

Parameters:

> *pSrcDst* In-Place Signal Pointer.
>
> *nValue* Constant value to be subtracted from each vector element
>
> *nLength* Signal Length.
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.420 NppStatus nppsSubC_32s_Sfs (const Npp32s * *pSrc*, Npp32s *nValue*, Npp32s * *pDst*, int *nLength*, int *nScaleFactor*)

32-bit signed integer signal subtract constant and scale.

Parameters:

> *pSrc* Source Signal Pointer.
>
> *nValue* Constant value to be subtracted from each vector element
>
> *pDst* Destination Signal Pointer.
>
> *nLength* Signal Length.
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.421 NppStatus nppsSubC_32sc_ISfs (Npp32sc *nValue*, Npp32sc * *pSrcDst*, int *nLength*, int *nScaleFactor*)

32-bit integer complex number (32 bit real, 32 bit imaginary) in place signal subtract constant and scale.

Parameters:

> *pSrcDst* In-Place Signal Pointer.
>
> *nValue* Constant value to be subtracted from each vector element
>
> *nLength* Signal Length.
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.422 NppStatus nppsSubC_32sc_Sfs (const Npp32sc ∗ *pSrc*, Npp32sc *nValue*, Npp32sc ∗ *pDst*, int *nLength*, int *nScaleFactor*)

32-bit integer complex number (32 bit real, 32 bit imaginary)signal subtract constant and scale.

Parameters:

> *pSrc* Source Signal Pointer.
>
> *nValue* Constant value to be subtracted from each vector element
>
> *pDst* Destination Signal Pointer.
>
> *nLength* Signal Length.
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.423 NppStatus nppsSubC_64f (const Npp64f ∗ *pSrc*, Npp64f *nValue*, Npp64f ∗ *pDst*, int *nLength*)

64-bit floating point signal subtract constant.

Parameters:

> *pSrc* Source Signal Pointer.
>
> *nValue* Constant value to be subtracted from each vector element
>
> *pDst* Destination Signal Pointer.
>
> *nLength* Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.424 NppStatus nppsSubC_64f_I (Npp64f *nValue*, Npp64f ∗ *pSrcDst*, int *nLength*)

64-bit floating point, in place signal subtract constant.

Parameters:

> *pSrcDst* In-Place Signal Pointer.
>
> *nValue* Constant value to be subtracted from each vector element
>
> *nLength* Length of the vectors, number of items.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.425 NppStatus nppsSubC_64fc (const Npp64fc ∗ *pSrc*, Npp64fc *nValue*, Npp64fc ∗ *pDst*, int *nLength*)

64-bit floating point complex number (64 bit real, 64 bit imaginary) signal subtract constant.

Parameters:

> *pSrc* Source Signal Pointer.
>
> *nValue* Constant value to be subtracted from each vector element
>
> *pDst* Destination Signal Pointer.
>
> *nLength* Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.426 NppStatus nppsSubC_64fc_I (Npp64fc *nValue*, Npp64fc ∗ *pSrcDst*, int *nLength*)

64-bit floating point complex number (64 bit real, 64 bit imaginary) in place signal subtract constant.

Parameters:

> *pSrcDst* In-Place Signal Pointer.
>
> *nValue* Constant value to be subtracted from each vector element
>
> *nLength* Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.427 NppStatus nppsSubC_8u_ISfs (Npp8u *nValue*, Npp8u ∗ *pSrcDst*, int *nLength*, int *nScaleFactor*)

8-bit unsigned char in place signal subtract constant, scale, then clamp to saturated value

Parameters:

> *pSrcDst* In-Place Signal Pointer.
>
> *nValue* Constant value to be subtracted from each vector element
>
> *nLength* Signal Length.
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.428 NppStatus nppsSubC_8u_Sfs (const Npp8u *pSrc*, Npp8u *nValue*, Npp8u *pDst*, int *nLength*, int *nScaleFactor*)

8-bit unsigned char signal subtract constant, scale, then clamp to saturated value.

Parameters:

    pSrc Source Signal Pointer.

    nValue Constant value to be subtracted from each vector element

    pDst Destination Signal Pointer.

    nLength Signal Length.

    nScaleFactor Integer Result Scaling.

Returns:

    Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.429 NppStatus nppsSubCRev_16s_ISfs (Npp16s *nValue*, Npp16s *pSrcDst*, int *nLength*, int *nScaleFactor*)

16-bit signed short in place signal subtract from constant, scale, then clamp to saturated value.

Parameters:

    pSrcDst In-Place Signal Pointer.

    nValue Constant value each vector element is to be subtracted from

    nLength Signal Length.

    nScaleFactor Integer Result Scaling.

Returns:

    Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.430 NppStatus nppsSubCRev_16s_Sfs (const Npp16s *pSrc*, Npp16s *nValue*, Npp16s *pDst*, int *nLength*, int *nScaleFactor*)

16-bit signed short signal subtract from constant, scale, then clamp to saturated value.

Parameters:

    pSrc Source Signal Pointer.

    nValue Constant value each vector element is to be subtracted from

    pDst Destination Signal Pointer.

    nLength Signal Length.

    nScaleFactor Integer Result Scaling.

Returns:

    Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.431 NppStatus nppsSubCRev_16sc_ISfs (Npp16sc *nValue*, Npp16sc *∗ pSrcDst*, int *nLength*, int *nScaleFactor*)

16-bit integer complex number (16 bit real, 16 bit imaginary) signal subtract from constant, scale, then clamp to saturated value.

Parameters:

> *pSrcDst* In-Place Signal Pointer.
>
> *nValue* Constant value each vector element is to be subtracted from
>
> *nLength* Signal Length.
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.432 NppStatus nppsSubCRev_16sc_Sfs (const Npp16sc *∗ pSrc*, Npp16sc *nValue*, Npp16sc *∗ pDst*, int *nLength*, int *nScaleFactor*)

16-bit integer complex number (16 bit real, 16 bit imaginary) signal subtract from constant, scale, then clamp to saturated value.

Parameters:

> *pSrc* Source Signal Pointer.
>
> *nValue* Constant value each vector element is to be subtracted from
>
> *pDst* Destination Signal Pointer.
>
> *nLength* Signal Length.
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.433 NppStatus nppsSubCRev_16u_ISfs (Npp16u *nValue*, Npp16u *∗ pSrcDst*, int *nLength*, int *nScaleFactor*)

16-bit unsigned short in place signal subtract from constant, scale, then clamp to saturated value.

Parameters:

> *pSrcDst* In-Place Signal Pointer.
>
> *nValue* Constant value each vector element is to be subtracted from
>
> *nLength* Signal Length.
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.434 NppStatus nppsSubCRev_16u_Sfs (const Npp16u ∗ *pSrc*, Npp16u *nValue*, Npp16u ∗ *pDst*, int *nLength*, int *nScaleFactor*)

16-bit unsigned short signal subtract from constant, scale, then clamp to saturated value.

Parameters:

    pSrc Source Signal Pointer.

    nValue Constant value each vector element is to be subtracted from

    pDst Destination Signal Pointer.

    nLength Signal Length.

    nScaleFactor Integer Result Scaling.

Returns:

    Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.435 NppStatus nppsSubCRev_32f (const Npp32f ∗ *pSrc*, Npp32f *nValue*, Npp32f ∗ *pDst*, int *nLength*)

32-bit floating point signal subtract from constant.

Parameters:

    pSrc Source Signal Pointer.

    nValue Constant value each vector element is to be subtracted from

    pDst Destination Signal Pointer.

    nLength Signal Length.

Returns:

    Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.436 NppStatus nppsSubCRev_32f_I (Npp32f *nValue*, Npp32f ∗ *pSrcDst*, int *nLength*)

32-bit floating point in place signal subtract from constant.

Parameters:

    pSrcDst In-Place Signal Pointer.

    nValue Constant value each vector element is to be subtracted from

    nLength Signal Length.

Returns:

    Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.437 NppStatus nppsSubCRev_32fc (const Npp32fc ∗ *pSrc*, Npp32fc *nValue*, Npp32fc ∗ *pDst*, int *nLength*)

32-bit floating point complex number (32 bit real, 32 bit imaginary) signal subtract from constant.

Parameters:

> *pSrc* Source Signal Pointer.
>
> *nValue* Constant value each vector element is to be subtracted from
>
> *pDst* Destination Signal Pointer.
>
> *nLength* Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.438 NppStatus nppsSubCRev_32fc_I (Npp32fc *nValue*, Npp32fc ∗ *pSrcDst*, int *nLength*)

32-bit floating point complex number (32 bit real, 32 bit imaginary) in place signal subtract from constant.

Parameters:

> *pSrcDst* In-Place Signal Pointer.
>
> *nValue* Constant value each vector element is to be subtracted from
>
> *nLength* Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.439 NppStatus nppsSubCRev_32s_ISfs (Npp32s *nValue*, Npp32s ∗ *pSrcDst*, int *nLength*, int *nScaleFactor*)

32-bit signed integer in place signal subtract from constant and scale.

Parameters:

> *pSrcDst* In-Place Signal Pointer.
>
> *nValue* Constant value each vector element is to be subtracted from
>
> *nLength* Signal Length.
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.440   NppStatus nppsSubCRev_32s_Sfs (const Npp32s ∗ pSrc, Npp32s nValue, Npp32s ∗ pDst, int nLength, int nScaleFactor)

32-bit signed integersignal subtract from constant and scale.

Parameters:

> **pSrc** Source Signal Pointer.
>
> **nValue** Constant value each vector element is to be subtracted from
>
> **pDst** Destination Signal Pointer.
>
> **nLength** Signal Length.
>
> **nScaleFactor** Integer Result Scaling.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.441   NppStatus nppsSubCRev_32sc_ISfs (Npp32sc nValue, Npp32sc ∗ pSrcDst, int nLength, int nScaleFactor)

32-bit integer complex number (32 bit real, 32 bit imaginary) in place signal subtract from constant and scale.

Parameters:

> **pSrcDst** In-Place Signal Pointer.
>
> **nValue** Constant value each vector element is to be subtracted from
>
> **nLength** Signal Length.
>
> **nScaleFactor** Integer Result Scaling.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.442   NppStatus nppsSubCRev_32sc_Sfs (const Npp32sc ∗ pSrc, Npp32sc nValue, Npp32sc ∗ pDst, int nLength, int nScaleFactor)

32-bit integer complex number (32 bit real, 32 bit imaginary) signal subtract from constant and scale.

Parameters:

> **pSrc** Source Signal Pointer.
>
> **nValue** Constant value each vector element is to be subtracted from
>
> **pDst** Destination Signal Pointer.
>
> **nLength** Signal Length.
>
> **nScaleFactor** Integer Result Scaling.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.443 NppStatus nppsSubCRev_64f (const Npp64f ∗ *pSrc*, Npp64f *nValue*, Npp64f ∗ *pDst*, int *nLength*)

64-bit floating point signal subtract from constant.

Parameters:

>   *pSrc* Source Signal Pointer.
>
>   *nValue* Constant value each vector element is to be subtracted from
>
>   *pDst* Destination Signal Pointer.
>
>   *nLength* Signal Length.

Returns:

>   Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.444 NppStatus nppsSubCRev_64f_I (Npp64f *nValue*, Npp64f ∗ *pSrcDst*, int *nLength*)

64-bit floating point, in place signal subtract from constant.

Parameters:

>   *pSrcDst* In-Place Signal Pointer.
>
>   *nValue* Constant value each vector element is to be subtracted from
>
>   *nLength* Length of the vectors, number of items.

Returns:

>   Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.445 NppStatus nppsSubCRev_64fc (const Npp64fc ∗ *pSrc*, Npp64fc *nValue*, Npp64fc ∗ *pDst*, int *nLength*)

64-bit floating point complex number (64 bit real, 64 bit imaginary) signal subtract from constant.

Parameters:

>   *pSrc* Source Signal Pointer.
>
>   *nValue* Constant value each vector element is to be subtracted from
>
>   *pDst* Destination Signal Pointer.
>
>   *nLength* Signal Length.

Returns:

>   Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.446 NppStatus nppsSubCRev_64fc_I (Npp64fc *nValue*, Npp64fc ∗ *pSrcDst*, int *nLength*)

64-bit floating point complex number (64 bit real, 64 bit imaginary) in place signal subtract from constant.

Parameters:

> *pSrcDst* In-Place Signal Pointer.
>
> *nValue* Constant value each vector element is to be subtracted from
>
> *nLength* Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.447 NppStatus nppsSubCRev_8u_ISfs (Npp8u *nValue*, Npp8u ∗ *pSrcDst*, int *nLength*, int *nScaleFactor*)

8-bit unsigned char in place signal subtract from constant, scale, then clamp to saturated value

Parameters:

> *pSrcDst* In-Place Signal Pointer.
>
> *nValue* Constant value each vector element is to be subtracted from
>
> *nLength* Signal Length.
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.448 NppStatus nppsSubCRev_8u_Sfs (const Npp8u ∗ *pSrc*, Npp8u *nValue*, Npp8u ∗ *pDst*, int *nLength*, int *nScaleFactor*)

8-bit unsigned char signal subtract from constant, scale, then clamp to saturated value.

Parameters:

> *pSrc* Source Signal Pointer.
>
> *nValue* Constant value each vector element is to be subtracted from
>
> *pDst* Destination Signal Pointer.
>
> *nLength* Signal Length.
>
> *nScaleFactor* Integer Result Scaling.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.449 NppStatus nppsSum_16s32s_Sfs (const Npp16s ∗ *pSrc*, int *nLength*, Npp32s ∗ *pSum*, int *nScaleFactor*, Npp8u ∗ *pDeviceBuffer*)

16-bit integer vector sum (32bit) with integer scaling method

Parameters:

> *pSrc* Source Signal Pointer.
>
> *nLength* Signal Length.
>
> *pSum* Pointer to the output result.
>
> *pDeviceBuffer* Pointer to the required device memory allocation.
>
> *nScaleFactor* Integer-result scale factor.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.450 NppStatus nppsSum_16s_Sfs (const Npp16s ∗ *pSrc*, int *nLength*, Npp16s ∗ *pSum*, int *nScaleFactor*, Npp8u ∗ *pDeviceBuffer*)

16-bit short vector sum with integer scaling method

Parameters:

> *pSrc* Source Signal Pointer.
>
> *nLength* Signal Length.
>
> *pSum* Pointer to the output result.
>
> *pDeviceBuffer* Pointer to the required device memory allocation.
>
> *nScaleFactor* Integer-result scale factor.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.451 NppStatus nppsSum_16sc32sc_Sfs (const Npp16sc ∗ *pSrc*, int *nLength*, Npp32sc ∗ *pSum*, int *nScaleFactor*, Npp8u ∗ *pDeviceBuffer*)

16-bit short complex vector sum (32bit int complex) with integer scaling method

Parameters:

> *pSrc* Source Signal Pointer.
>
> *nLength* Signal Length.
>
> *pSum* Pointer to the output result.
>
> *pDeviceBuffer* Pointer to the required device memory allocation.
>
> *nScaleFactor* Integer-result scale factor.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.452 NppStatus nppsSum_16sc_Sfs (const Npp16sc ∗ *pSrc*, int *nLength*, Npp16sc ∗ *pSum*, int *nScaleFactor*, Npp8u ∗ *pDeviceBuffer*)

16-bit short complex vector sum with integer scaling method

Parameters:

> *pSrc* Source Signal Pointer.
>
> *nLength* Signal Length.
>
> *pSum* Pointer to the output result.
>
> *pDeviceBuffer* Pointer to the required device memory allocation.
>
> *nScaleFactor* Integer-result scale factor.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.453 NppStatus nppsSum_32f (const Npp32f ∗ *pSrc*, int *nLength*, Npp32f ∗ *pSum*, NppHintAlgorithm *eHint*, Npp8u ∗ *pDeviceBuffer*)

32-bit float vector sum method

Parameters:

> *pSrc* Source Signal Pointer.
>
> *nLength* Signal Length.
>
> *pSum* Pointer to the output result.
>
> *eHint* Suggests using specific code.
>
> *pDeviceBuffer* Pointer to the required device memory allocation.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.454 NppStatus nppsSum_32fc (const Npp32fc ∗ *pSrc*, int *nLength*, Npp32fc ∗ *pSum*, NppHintAlgorithm *eHint*, Npp8u ∗ *pDeviceBuffer*)

32-bit float complex vector sum method

Parameters:

> *pSrc* Source Signal Pointer.
>
> *nLength* Signal Length.
>
> *pSum* Pointer to the output result.
>
> *eHint* Suggests using specific code.
>
> *pDeviceBuffer* Pointer to the required device memory allocation.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.455 NppStatus nppsSum_32s_Sfs (const Npp32s ∗ *pSrc*, int *nLength*, Npp32s ∗ *pSum*, int *nScaleFactor*, Npp8u ∗ *pDeviceBuffer*)

32-bit integer vector sum with integer scaling method

Parameters:

> *pSrc* Source Signal Pointer.
>
> *nLength* Signal Length.
>
> *pSum* Pointer to the output result.
>
> *pDeviceBuffer* Pointer to the required device memory allocation.
>
> *nScaleFactor* Integer-result scale factor.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.456 NppStatus nppsSum_64f (const Npp64f ∗ *pSrc*, int *nLength*, Npp64f ∗ *pSum*, Npp8u ∗ *pDeviceBuffer*)

64-bit double vector sum method

Parameters:

> *pSrc* Source Signal Pointer.
>
> *nLength* Signal Length.
>
> *pSum* Pointer to the output result.
>
> *pDeviceBuffer* Pointer to the required device memory allocation.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.457 NppStatus nppsSum_64fc (const Npp64fc ∗ *pSrc*, int *nLength*, Npp64fc ∗ *pSum*, Npp8u ∗ *pDeviceBuffer*)

64-bit double complex vector sum method

Parameters:

> *pSrc* Source Signal Pointer.
>
> *nLength* Signal Length.
>
> *pSum* Pointer to the output result.
>
> *pDeviceBuffer* Pointer to the required device memory allocation.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.458   NppStatus nppsSumGetBufferSize_16s32s_Sfs (int *nLength*, int ∗ *hpBufferSize*)

Device scratch buffer size (in bytes) for 16s32s_Sfs.

This primitive provides the correct buffer size for nppsSum_16s32s_Sfs.

Parameters:

> *nLength* Signal Length.
>
> *hpBufferSize* Required buffer size. Important: hpBufferSize is a *host pointer*. Scratch Buffer and Host Pointer.

Returns:

> NPP_SUCCESS

7.17.1.459   NppStatus nppsSumGetBufferSize_16s_Sfs (int *nLength*, int ∗ *hpBufferSize*)

Device scratch buffer size (in bytes) for 16s_Sfs Sum.

This primitive provides the correct buffer size for nppsSum_16s_Sfs.

Parameters:

> *nLength* Signal Length.
>
> *hpBufferSize* Required buffer size. Important: hpBufferSize is a *host pointer*. Scratch Buffer and Host Pointer.

Returns:

> NPP_SUCCESS

7.17.1.460   NppStatus nppsSumGetBufferSize_16sc32sc_Sfs (int *nLength*, int ∗ *hpBufferSize*)

Device scratch buffer size (in bytes) for 16sc32sc_Sfs Sum.

This primitive provides the correct buffer size for nppsSum_16sc32sc_Sfs.

Parameters:

> *nLength* Signal Length.
>
> *hpBufferSize* Required buffer size. Important: hpBufferSize is a *host pointer*. Scratch Buffer and Host Pointer.

Returns:

> NPP_SUCCESS

7.17.1.461   NppStatus nppsSumGetBufferSize_16sc_Sfs (int *nLength*, int ∗ *hpBufferSize*)

Device scratch buffer size (in bytes) for 16sc_Sfs Sum.

This primitive provides the correct buffer size for nppsSum_16sc_Sfs.

Parameters:

> ***nLength*** Signal Length.
>
> ***hpBufferSize*** Required buffer size. Important: hpBufferSize is a *host pointer*. Scratch Buffer and Host Pointer.

Returns:

> NPP_SUCCESS

7.17.1.462 NppStatus nppsSumGetBufferSize_32f (int *nLength*, int * *hpBufferSize*)

Device scratch buffer size (in bytes) for 32f Sum.

This primitive provides the correct buffer size for nppsSum_32f.

Parameters:

> ***nLength*** Signal Length.
>
> ***hpBufferSize*** Required buffer size. Important: hpBufferSize is a *host pointer*. Scratch Buffer and Host Pointer.

Returns:

> NPP_SUCCESS

7.17.1.463 NppStatus nppsSumGetBufferSize_32fc (int *nLength*, int * *hpBufferSize*)

Device scratch buffer size (in bytes) for 32fc Sum.

This primitive provides the correct buffer size for nppsSum_32fc.

Parameters:

> ***nLength*** Signal Length.
>
> ***hpBufferSize*** Required buffer size. Important: hpBufferSize is a *host pointer*. Scratch Buffer and Host Pointer.

Returns:

> NPP_SUCCESS

7.17.1.464 NppStatus nppsSumGetBufferSize_32s_Sfs (int *nLength*, int * *hpBufferSize*)

Device scratch buffer size (in bytes) for 32s_Sfs Sum.

This primitive provides the correct buffer size for nppsSum_32s_Sfs.

Parameters:

> ***nLength*** Signal Length.
>
> ***hpBufferSize*** Required buffer size. Important: hpBufferSize is a *host pointer*. Scratch Buffer and Host Pointer.

Returns:

> NPP_SUCCESS

7.17.1.465   NppStatus nppsSumGetBufferSize_64f (int *nLength*, int ∗ *hpBufferSize*)

Device scratch buffer size (in bytes) for 64f Sum.

This primitive provides the correct buffer size for nppsSum_64f.

Parameters:

> ***nLength*** Signal Length.
>
> ***hpBufferSize*** Required buffer size. Important: hpBufferSize is a *host pointer*. Scratch Buffer and Host Pointer.

Returns:

> NPP_SUCCESS

7.17.1.466   NppStatus nppsSumGetBufferSize_64fc (int *nLength*, int ∗ *hpBufferSize*)

Device scratch buffer size (in bytes) for 64fc Sum.

This primitive provides the correct buffer size for nppsSum_64fc.

Parameters:

> ***nLength*** Signal Length.
>
> ***hpBufferSize*** Required buffer size. Important: hpBufferSize is a *host pointer*. Scratch Buffer and Host Pointer.

Returns:

> NPP_SUCCESS

7.17.1.467   NppStatus nppsXor_16u (const Npp16u ∗ *pSrc1*, const Npp16u ∗ *pSrc2*, Npp16u ∗ *pDst*, int *nLength*)

16-bit unsigned short signal exclusive or with signal.

Parameters:

> ***pSrc1*** Source Signal Pointer.
>
> ***pSrc2*** Source Signal Pointer. signal2 elements to be exclusive ored with signal1 elements
>
> ***pDst*** Destination Signal Pointer.
>
> ***nLength*** Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.468 NppStatus nppsXor_16u_I (const Npp16u ∗ *pSrc*, Npp16u ∗ *pSrcDst*, int *nLength*)

16-bit unsigned short in place signal exclusive or with signal.

Parameters:

> *pSrc* Source Signal Pointer.
>
> *pSrcDst* In-Place Signal Pointer. signal2 elements to be exclusive ored with signal1 elements
>
> *nLength* Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.469 NppStatus nppsXor_32u (const Npp32u ∗ *pSrc1*, const Npp32u ∗ *pSrc2*, Npp32u ∗ *pDst*, int *nLength*)

32-bit unsigned integer signal exclusive or with signal.

Parameters:

> *pSrc1* Source Signal Pointer.
>
> *pSrc2* Source Signal Pointer. signal2 elements to be exclusive ored with signal1 elements
>
> *pDst* Destination Signal Pointer.
>
> *nLength* Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.470 NppStatus nppsXor_32u_I (const Npp32u ∗ *pSrc*, Npp32u ∗ *pSrcDst*, int *nLength*)

32-bit unsigned integer in place signal exclusive or with signal.

Parameters:

> *pSrc* Source Signal Pointer.
>
> *pSrcDst* In-Place Signal Pointer. signal2 elements to be exclusive ored with signal1 elements
>
> *nLength* Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.471 NppStatus nppsXor_8u (const Npp8u ∗ *pSrc1*, const Npp8u ∗ *pSrc2*, Npp8u ∗ *pDst*, int *nLength*)

8-bit unsigned char signal exclusive or with signal.

Parameters:

> *pSrc1* Source Signal Pointer.
>
> *pSrc2* Source Signal Pointer. signal2 elements to be exclusive ored with signal1 elements
>
> *pDst* Destination Signal Pointer.
>
> *nLength* Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.472 NppStatus nppsXor_8u_I (const Npp8u ∗ *pSrc*, Npp8u ∗ *pSrcDst*, int *nLength*)

8-bit unsigned char in place signal exclusive or with signal.

Parameters:

> *pSrc* Source Signal Pointer.
>
> *pSrcDst* In-Place Signal Pointer. signal2 elements to be exclusive ored with signal1 elements
>
> *nLength* Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.473 NppStatus nppsXorC_16u (const Npp16u ∗ *pSrc*, Npp16u *nValue*, Npp16u ∗ *pDst*, int *nLength*)

16-bit unsigned short signal exclusive or with constant.

Parameters:

> *pSrc* Source Signal Pointer.
>
> *nValue* Constant value to be exclusive ored with each vector element
>
> *pDst* Destination Signal Pointer.
>
> *nLength* Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.474 NppStatus nppsXorC_16u_I (Npp16u *nValue*, Npp16u ∗ *pSrcDst*, int *nLength*)

16-bit unsigned short in place signal exclusive or with constant.

Parameters:

> *pSrcDst* In-Place Signal Pointer.
>
> *nValue* Constant value to be exclusive ored with each vector element
>
> *nLength* Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.475 NppStatus nppsXorC_32u (const Npp32u ∗ *pSrc*, Npp32u *nValue*, Npp32u ∗ *pDst*, int *nLength*)

32-bit unsigned integer signal exclusive or with constant.

Parameters:

> ***pSrc*** Source Signal Pointer.
>
> ***nValue*** Constant value to be exclusive ored with each vector element
>
> ***pDst*** Destination Signal Pointer.
>
> ***nLength*** Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.476 NppStatus nppsXorC_32u_I (Npp32u *nValue*, Npp32u ∗ *pSrcDst*, int *nLength*)

32-bit unsigned signed integer in place signal exclusive or with constant.

Parameters:

> ***pSrcDst*** In-Place Signal Pointer.
>
> ***nValue*** Constant value to be exclusive ored with each vector element
>
> ***nLength*** Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.477 NppStatus nppsXorC_8u (const Npp8u ∗ *pSrc*, Npp8u *nValue*, Npp8u ∗ *pDst*, int *nLength*)

8-bit unsigned char signal exclusive or with constant.

Parameters:

> ***pSrc*** Source Signal Pointer.
>
> ***nValue*** Constant value to be exclusive ored with each vector element
>
> ***pDst*** Destination Signal Pointer.
>
> ***nLength*** Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.478 NppStatus nppsXorC_8u_I (Npp8u *nValue*, Npp8u ∗ *pSrcDst*, int *nLength*)

8-bit unsigned char in place signal exclusive or with constant.

Parameters:

    pSrcDst In-Place Signal Pointer.

    nValue Constant value to be exclusive ored with each vector element

    nLength Signal Length.

Returns:

    Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.479 NppStatus nppsZero_16s (Npp16s ∗ *pDst*, int *nLength*)

16-bit integer, vector zero method.

Parameters:

    pDst Destination Signal Pointer.

    nLength Signal Length.

Returns:

    Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.480 NppStatus nppsZero_16sc (Npp16sc ∗ *pDst*, int *nLength*)

16-bit integer complex, vector zero method.

Parameters:

    pDst Destination Signal Pointer.

    nLength Signal Length.

Returns:

    Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.481 NppStatus nppsZero_32f (Npp32f ∗ *pDst*, int *nLength*)

32-bit float, vector zero method.

Parameters:

    pDst Destination Signal Pointer.

    nLength Signal Length.

Returns:

    Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.482   NppStatus nppsZero_32fc (Npp32fc ∗ *pDst*, int *nLength*)

32-bit float complex, vector zero method.

Parameters:

> *pDst* Destination Signal Pointer.
> *nLength* Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.483   NppStatus nppsZero_32s (Npp32s ∗ *pDst*, int *nLength*)

32-bit integer, vector zero method.

Parameters:

> *pDst* Destination Signal Pointer.
> *nLength* Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.484   NppStatus nppsZero_32sc (Npp32sc ∗ *pDst*, int *nLength*)

32-bit integer complex, vector zero method.

Parameters:

> *pDst* Destination Signal Pointer.
> *nLength* Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.485   NppStatus nppsZero_64f (Npp64f ∗ *pDst*, int *nLength*)

64-bit double, vector zero method.

Parameters:

> *pDst* Destination Signal Pointer.
> *nLength* Signal Length.

Returns:

> Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.486 NppStatus nppsZero_64fc (Npp64fc ∗ *pDst*, int *nLength*)

64-bit double complex, vector zero method.

Parameters:

    pDst Destination Signal Pointer.

    nLength Signal Length.

Returns:

    Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.487 NppStatus nppsZero_64s (Npp64s ∗ *pDst*, int *nLength*)

64-bit long long integer, vector zero method.

Parameters:

    pDst Destination Signal Pointer.

    nLength Signal Length.

Returns:

    Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.488 NppStatus nppsZero_64sc (Npp64sc ∗ *pDst*, int *nLength*)

64-bit long long integer complex, vector zero method.

Parameters:

    pDst Destination Signal Pointer.

    nLength Signal Length.

Returns:

    Signal Data Related Error Codes, Length Related Error Codes.

7.17.1.489 NppStatus nppsZero_8u (Npp8u ∗ *pDst*, int *nLength*)

8-bit unsigned char, vector zero method.

Parameters:

    pDst Destination Signal Pointer.

    nLength Signal Length.

Returns:

    Signal Data Related Error Codes, Length Related Error Codes.

Chapter 8

Data Structure Documentation

8.1 Npp16sc Struct Reference

Complex Number This struct represents a short complex number.

```
#include <nppdefs.h>
```

Data Fields

- Npp16s re

    Real part.

- Npp16s im

    Imaginary part.

8.1.1 Detailed Description

Complex Number This struct represents a short complex number.

8.1.2 Field Documentation

8.1.2.1 Npp16s Npp16sc::im

Imaginary part.

8.1.2.2 Npp16s Npp16sc::re

Real part.

The documentation for this struct was generated from the following file:

- C:/Perforce/sw/rel/gpgpu/toolkit/r4.1/NPP/npp/include/nppdefs.h

8.2 Npp32fc Struct Reference

Complex Number This struct represents a single floating-point complex number.

```
#include <nppdefs.h>
```

Data Fields

- Npp32f re

    Real part.

- Npp32f im

    Imaginary part.

8.2.1 Detailed Description

Complex Number This struct represents a single floating-point complex number.

8.2.2 Field Documentation

8.2.2.1 Npp32f Npp32fc::im

Imaginary part.

8.2.2.2 Npp32f Npp32fc::re

Real part.

The documentation for this struct was generated from the following file:

- C:/Perforce/sw/rel/gpgpu/toolkit/r4.1/NPP/npp/include/nppdefs.h

8.3 Npp32sc Struct Reference

Complex Number This struct represents a signed int complex number.

```
#include <nppdefs.h>
```

Data Fields

- Npp32s **re**

    Real part.

- Npp32s **im**

    Imaginary part.

8.3.1 Detailed Description

Complex Number This struct represents a signed int complex number.

8.3.2 Field Documentation

8.3.2.1 Npp32s Npp32sc::im

Imaginary part.

8.3.2.2 Npp32s Npp32sc::re

Real part.

The documentation for this struct was generated from the following file:

- C:/Perforce/sw/rel/gpgpu/toolkit/r4.1/NPP/npp/include/nppdefs.h

8.4   Npp64fc Struct Reference

Complex Number This struct represents a double floating-point complex number.

```
#include <nppdefs.h>
```

Data Fields

- Npp64f re

    Real part.

- Npp64f im

    Imaginary part.

8.4.1   Detailed Description

Complex Number This struct represents a double floating-point complex number.

8.4.2   Field Documentation

8.4.2.1   Npp64f Npp64fc::im

Imaginary part.

8.4.2.2   Npp64f Npp64fc::re

Real part.

The documentation for this struct was generated from the following file:

- C:/Perforce/sw/rel/gpgpu/toolkit/r4.1/NPP/npp/include/nppdefs.h

8.5 Npp64sc Struct Reference

Complex Number This struct represents a long long complex number.

```
#include <nppdefs.h>
```

Data Fields

- Npp64s re

  Real part.

- Npp64s im

  Imaginary part.

8.5.1 Detailed Description

Complex Number This struct represents a long long complex number.

8.5.2 Field Documentation

8.5.2.1 Npp64s Npp64sc::im

Imaginary part.

8.5.2.2 Npp64s Npp64sc::re

Real part.

The documentation for this struct was generated from the following file:

- C:/Perforce/sw/rel/gpgpu/toolkit/r4.1/NPP/npp/include/nppdefs.h

8.6 NppiHaarBuffer Struct Reference

```
#include <nppdefs.h>
```

Data Fields

- int haarBufferSize

  size of the buffer

- Npp32s ∗ haarBuffer

  buffer

8.6.1 Field Documentation

8.6.1.1 Npp32s∗ NppiHaarBuffer::haarBuffer

buffer

8.6.1.2 int NppiHaarBuffer::haarBufferSize

size of the buffer

The documentation for this struct was generated from the following file:

- C:/Perforce/sw/rel/gpgpu/toolkit/r4.1/NPP/npp/include/nppdefs.h

8.7 NppiHaarClassifier_32f Struct Reference

```
#include <nppdefs.h>
```

Data Fields

- int numClassifiers
    number of classifiers

- Npp32s * classifiers
    packed classifier data 40 bytes each

- size_t classifierStep
- NppiSize classifierSize
- Npp32s * counterDevice

8.7.1 Field Documentation

8.7.1.1 Npp32s* NppiHaarClassifier_32f::classifiers

packed classifier data 40 bytes each

8.7.1.2 NppiSize NppiHaarClassifier_32f::classifierSize

8.7.1.3 size_t NppiHaarClassifier_32f::classifierStep

8.7.1.4 Npp32s* NppiHaarClassifier_32f::counterDevice

8.7.1.5 int NppiHaarClassifier_32f::numClassifiers

number of classifiers

The documentation for this struct was generated from the following file:

- C:/Perforce/sw/rel/gpgpu/toolkit/r4.1/NPP/npp/include/nppdefs.h

8.8 NppiPoint Struct Reference

2D Point

```
#include <nppdefs.h>
```

Data Fields

- int x

  x-coordinate.

- int y

  y-coordinate.

8.8.1 Detailed Description

2D Point

8.8.2 Field Documentation

8.8.2.1 int NppiPoint::x

x-coordinate.

8.8.2.2 int NppiPoint::y

y-coordinate.

The documentation for this struct was generated from the following file:

- C:/Perforce/sw/rel/gpgpu/toolkit/r4.1/NPP/npp/include/nppdefs.h

8.9 NppiRect Struct Reference

2D Rectangle This struct contains position and size information of a rectangle in two space.

```
#include <nppdefs.h>
```

Data Fields

- int x
    x-coordinate of upper left corner.

- int y
    y-coordinate of upper left corner.

- int width
    Rectangle width.

- int height
    Rectangle height.

8.9.1 Detailed Description

2D Rectangle This struct contains position and size information of a rectangle in two space.

The rectangle's position is usually signified by the coordinate of its upper-left corner.

8.9.2 Field Documentation

8.9.2.1 int NppiRect::height

Rectangle height.

8.9.2.2 int NppiRect::width

Rectangle width.

8.9.2.3 int NppiRect::x

x-coordinate of upper left corner.

8.9.2.4 int NppiRect::y

y-coordinate of upper left corner.

The documentation for this struct was generated from the following file:

- C:/Perforce/sw/rel/gpgpu/toolkit/r4.1/NPP/npp/include/nppdefs.h

8.10   NppiSize Struct Reference

2D Size This struct typically represents the size of a a rectangular region in two space.

```
#include <nppdefs.h>
```

Data Fields

- int width
    Rectangle width.

- int height
    Rectangle height.

8.10.1   Detailed Description

2D Size This struct typically represents the size of a a rectangular region in two space.

8.10.2   Field Documentation

8.10.2.1   int NppiSize::height

Rectangle height.

8.10.2.2   int NppiSize::width

Rectangle width.

The documentation for this struct was generated from the following file:

- C:/Perforce/sw/rel/gpgpu/toolkit/r4.1/NPP/npp/include/nppdefs.h

8.11 NppLibraryVersion Struct Reference

```
#include <nppdefs.h>
```

Data Fields

- int major

  Major version number.

- int minor

  Minor version number.

- int build

  Build number. This reflects the nightly build this release was made from.

8.11.1 Field Documentation

8.11.1.1 int NppLibraryVersion::build

Build number. This reflects the nightly build this release was made from.

8.11.1.2 int NppLibraryVersion::major

Major version number.

8.11.1.3 int NppLibraryVersion::minor

Minor version number.

The documentation for this struct was generated from the following file:

- C:/Perforce/sw/rel/gpgpu/toolkit/r4.1/NPP/npp/include/nppdefs.h