NVIDIA Performance Primitives (NPP)

Version 9.0

August 18, 2017

Contents

Chapter 1

NVIDIA Performance Primitives

Note: The static NPP libraries depend on a common thread abstraction layer library called cuLIBOS (lib-culibos.a) that is now distributed as part of the toolkit. Consequently, cuLIBOS must be provided to the linker when the static library is being linked against. To minimize library loading and CUDA runtime startup times it is recommended to use the static library(s) whenever possible. To improve loading and runtime performance when using dynamic libraries, NPP 9.0 has deprecated the full sized nppi library and replaced it with a full set of nppi sub-libraries. Linking to only the sub-libraries that contain functions that your application uses can significantly improve load time and runtime startup performance. Some nppi functions make calls to other nppi and/or npps functions internally so you may need to link to a few extra libraries depending on what function calls your application makes. The nppi sub-libraries are split into sections corresponding to the way that nppi header files are split. This list of sub-libraries is as follows:

```
nppial  arithmetic and logical operation functions in nppi_arithmetic_and_logical_operations.h
nppicc  color conversion and sampling functions in nppi_color_conversion.h
nppicom JPEG compression and decompression functions in nppi_compression_functions.h
nppidei data exchange and initialization functions in nppi_data_exchange_and_initialization.h
nppif   filtering and computer vision functions in nppi_filter_functions.h
nppig   geometry transformation functions found in nppi_geometry_transforms.h
nppim   morphological operation functions found in nppi_morphological_operations.h
nppist  statistics and linear transform in nppi_statistics_functions.h and nppi_linear_transforms.
nppisu  memory support functions in nppi_support_functions.h
nppitc  threshold and compare operation functions in nppi_threshold_and_compare_operations.h
```

For example, on Linux, to compile a small application foo using NPP against the dynamic library, the following command can be used:

```
nvcc foo.c  -lnppi  -o foo
```

Whereas to compile against the static NPP library, the following command has to be used:

```
nvcc foo.c  -lnppi_static -lculibos -o foo
```

It is also possible to use the native host C++ compiler. Depending on the host operating system, some additional libraries like pthread or dl might be needed on the linking line. The following command on Linux is suggested:

```
g++ foo.c  -lnppi_static -lculibos -lcudart_static -lpthread -ldl
-I <cuda-toolkit-path>/include -L <cuda-toolkit-path>/lib64 -o foo
```

NPP is a stateless API, as of NPP 6.5 the ONLY state that NPP remembers between function calls is the current stream ID, i.e. the stream ID that was set in the most recent nppSetStream call and a few bits

of device specific information about that stream. The default stream ID is 0. If an application intends to use NPP with multiple streams then it is the responsibility of the application to call nppSetStream whenever it wishes to change stream IDs. Several NPP functions may call other NPP functions internally to complete their functionality. For this reason it is recommended that cudaDeviceSynchronize (or at least cudaStreamSynchronize) be called before making an nppSetStream call to change to a new stream ID. This will insure that any internal function calls that have not yet occurred will be completed using the current stream ID before it changes to a new ID. Calling cudaDeviceSynchronize frequently call kill performance so minimizing the frequency of these calls is critical for good performance. It is not necessary to call cudaDeviceSynchronize for stream management while the same stream ID is used for multiple NPP calls. All NPP functions should be thread safe except for the following functions:

```
nppiDCTQuantFwd8x8LS_JPEG_8u16s_C1R

nppiDCTQuantInv8x8LS_JPEG_16s8u_C1R
```

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, 8, and 10 (64-bit and 32-bit)
- Microsoft Windows Vista (64-bit and 32-bit)
- Linux (Centos, Ubuntu, and several others) (64-bit and 32-bit)
- Mac OS X (64-bit)
- Android on Arm (32-bit and 64-bit)

1.4 Files

NPP is comprises the following files:

1.4.1 Header Files

- nppdefs.h
- nppcore.h
- nppi::h
- npps::h
- nppversion.h
- npp::h

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

```
/include/
```

directory.

1.4.2 Library Files

Starting with Version 5.5 NPP's functionality is now split up into 3 distinct library groups:

- A core library (NPPC) containing basic functionality from the npp.h header files as well as functionality shared by the other two libraries.

- The image processing library NPPI. Any functions from the nppi.h header file (or the various header files named "nppi_xxx.h" are bundled into the NPPI library.

- The signal processing library NPPS. Any function from the npps.h header file (or the various header files named "npps_xxx.h" are bundled into the NPPS library.

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

```
/lib/nppc.lib
```

```
/lib/nppial.lib
```

```
/lib/nppicc.lib
```

```
/lib/nppicom.lib
```

```
/lib/nppidei.lib
```

```
/lib/nppif.lib
```

```
/lib/nppig.lib
```

```
/lib/nppim.lib
```

```
/lib/nppist.lib
```

```
/lib/nppisu.lib
```

```
/lib/nppitc.lib
```

```
/lib/npps.lib
```

The matching DLLs are located in the CUDA Toolkit's binary directory. Example

```
/bin/nppial64_90_<build_no>.dll     // Dynamic image-processing library for 64-bit Windows.
```

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

```
/lib/libnppc.so.9.0.<build_no>   // NPP dynamic core library for Linux
 /lib/libnpps.9.0.dylib  // NPP dynamic signal processing 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 signal sum primitive and allocate and free the necessary scratch memory:

```
// pSrc, pSum, pDeviceBuffer are all device pointers.
Npp32f * pSrc;
Npp32f * pSum;
Npp8u * pDeviceBuffer;
int nLength = 1024;

// Allocate the device memroy.
cudaMalloc((void **)(&pSrc), sizeof(Npp32f) * nLength);
nppsSet_32f(1.0f, pSrc, nLength);
cudaMalloc((void **)(&pSum), sizeof(Npp32f) * 1);

// Compute the appropriate size of the scratch-memory buffer
int nBufferSize;
nppsSumGetBufferSize_32f(nLength, &nBufferSize);
// Allocate the scratch buffer
cudaMalloc((void **)(&pDeviceBuffer), nBufferSize);

// Call the primitive with the scratch buffer
```

```
nppsSum_32f(pSrc, nLength, pSum, pDeviceBuffer);
Npp32f nSumHost;
cudaMemcpy(&nSumHost, pSum, sizeof(Npp32f) * 1, cudaMemcpyDeviceToHost);
printf("sum = %f\n", nSumHost); // nSumHost = 1024.0f;

// Free the device memory
cudaFree(pSrc);
cudaFree(pDeviceBuffer);
cudaFree(pSum);
```

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 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 to 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 is 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

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

2.4 Rounding Modes

Many NPP functions require converting floating-point values to integers. The NppRoundMode enum lists NPP's supported rounding modes. Not all primitives in NPP that perform rounding as part of their functionality allow the user to specify the round-mode used. Instead they use NPP's default rounding mode, which is NPP_RND_FINANCIAL.

2.4.1 Rounding Mode Parameter

A subset of NPP functions performing rounding as part of their functionality do allow the user to specify which rounding mode is used through a parameter of the NppRoundMode type.

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-Planar-Image Pointer Array

The planar source image data is generally passed via an array of pointers named

```
pSrc[]
```

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

```
nppiPrimitive_8u_P3R(const Npp8u * const pSrc[3], ...)
```

Each pointer in the array points to a different image plane.

4.2.2.1.3   Source-Planar-Image Pointer

The multiple plane source image data is passed via a set of pointers named

```
pSrc1, pSrc2, ...
```

The planar source image pointer is generally defined as one of a set of constant pointers with each pointer pointing to a different input image plane.

4.2.2.1.4   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, ...
```

4.2.2.1.5   Source-Planar-Image Line Step Array

The source planar image line step array is an array where each element of the array contains the number of bytes between successive rows for a particular plane in the input image. The source planar image line step array parameter is

```
rSrcStep[]
```

4.2.2.1.6   Source-Planar-Image Line Step

The source planar image line step is the number of bytes between successive rows in a particular plane of the multiplane input image. The source planar image line step parameter is

```
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 generates multiple images as outputs the destination pointers are numbered like this:

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

4.2.2.2.2 Destination-Planar-Image Pointer Array

The planar destination image data pointers are generally passed via an array of pointers named

```
pDst[]
```

Each pointer in the array points to a different image plane.

4.2.2.2.3 Destination-Planar-Image Pointer

The destination planar image data is generally passed via a pointer to each plane of a multiplane output image named

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

4.2.2.2.4 Destination-Image Line Step

The destination image line step parameter is

```
nDstStep
```

or in the case of multiple destination images

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

4.2.2.2.5 Destination-Planar-Image Line Step Array

The destination planar image line step array is an array where each element of the array contains the number of bytes between successive rows for a particular plane in the output image. The destination planar image line step array parameter is

```
rDstStep[]
```

4.2.2.2.6 Destination-Planar-Image Line Step

The destination planar image line step is the number of bytes between successive rows for a particular plane in a multiplane output image. The destination planar image line step parameter is

```
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
```

4.2.2.5   Passing Channel-of-Interest Data

Some image processing primitives support Channel-of-Interest API.

4.2.2.5.1   Channel_of_Interest Number

The channel-of-interest data is generally an integer (either 1, 2, or 3):

```
nCOI
```

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. In most cases the ROI is passed as a single NppiSize struct, which provides the with and height of the ROI. This raises the 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-left corner (lowest memory address), the user simply offsets the image-data pointers to point to the first pixel of the ROI.

In practice this means that for an image (pSrc, nSrcStep) and the start-pixel of the ROI being at location (x, y), one would pass

pSrcOffset = pSrc + y $*$ nSrcStep + x $*$ 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. Some primitives also explicitly specify the selected channel number and pass it via an integer, e.g. nppiMean_StdDev_8u_-C3CR(...).

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 one:

```
nppiCopy_8u_C3CR(pSrc + 1, nSrcStep, pDst, nDstStep, oSizeROI);
```

4.5.2   Select-Channel Source-Image

Some primitives allow the user to select the channel-of-interest by specifying the channle number (nCOI). This approach is typically used in the image statistical functions. For example,

```
nppiMean_StdDev_8u_C3CR(pSrc, nSrcStep, oSizeROI, nCOI, pDeviceBuffer, pMean, pStdDev );
```

The channel-of-interest number can be either 1, 2, or 3.

4.5.3   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 one:

```
nppiCopy_8u_C3CR(pSrc, nSrcStep, pDst + 1, nDstStep, oSizeROI);
```

4.6 Source-Image Sampling

A large number of NPP image-processing functions consume at least one source image and produce an output image (e.g. nppiAddC_8u_C1RSfs() or nppiFilterBox_8u_C1R()). All NPP functions falling into this category also operate on ROIs (see Region-of-Interest (ROI)) which for these functions should be considered to describe the destination ROI. In other words the ROI describes a rectangular region in the destination image and all pixels inside of this region are being written by the function in question.

In order to use such functions successfully it is important to understand how the user defined destination ROI affects which pixels in the input image(s) are being read by the algorithms. To simplify the discussion of ROI propagation (i.e. given a destination ROI, what are the ROIs in in the source(s)), it makes sense to distinguish two major cases:

1. Point-Wise Operations: These are primitives like nppiAddC_8u_C1RSfs(). Each output pixel requires exaclty one input pixel to be read.

2. Neighborhood Operations: These are primitives like nppiFilterBox_8u_C1R(), which require a group of pixels from the source image(s) to be read in order to produce a single output.

4.6.1 Point-Wise Operations

As mentioned above, point-wise operations consume a single pixel from the input image (or a single pixel from each input image, if the operation in question has more than one input image) in order to produce a single output pixel.

4.6.2 Neighborhood Operations

In the case of neightborhood operations a number of input pixels (a "neighborhood" of pixels) is read in the input image (or images) in order to compute a single output pixel. All of the functions for image_-filtering_functions and image_morphological_operations are neigborhood operations.

Most of these functions have parameters that affect the size and relative location of the neighborhood: a mask-size structure and an achor-point structure. Both parameters are described in more detail in the next subsections.

4.6.2.1 Mask-Size Parameter

Many NPP neighborhood operations allow the user to specify the size of the neightborhood via a parameter usually named oMaskSize of type NppiSize. In those cases the neighborhood of pixels read from the source(s) is exactly the size of the mask. Assuming the mask is anchored at location (0, 0) (see Anchor-Point Parameter below) and has a size of (w, h), i.e.

```
assert(oMaskSize.w == w);
assert(oMaskSize.h == h);
assert(oAnchor.x == 0);
assert(oAnchor.y == 0);
```

a neighborhood operation would read the following source pixels in order to compute destiation pixel $D_{i,j}$:

$$
\begin{array}{cccc}
S_{i,j} & S_{i,j+1} & \cdots & S_{i,j+w-1} \\
S_{i+1,j} & S_{i+1,j+1} & \cdots & S_{i+1,j+w-1} \\
\vdots & \vdots & \ddots & \vdots \\
S_{i+h-1,j} & S_{i+h-1,j+1} & \cdots & S_{i+h-1,j+w-1}
\end{array}
$$

4.6.2.2 Anchor-Point Parameter

Many NPP primitives perforing neighborhood operations allow the user to specify the relative location of the neighborhood via a parameter usually named oAnchor of type NppiPoint. Using the anchor a developer can chose the position of the mask (see Mask-Size Parameter) relative to current pixel index.

Using the same example as in Mask-Size Parameter, but this time with an anchor position of (a, b):

```
assert(oMaskSize.w == w);
assert(oMaskSize.h == h);
assert(oAnchor.x == a);
assert(oAnchor.y == b);
```

the following pixels from the source image would be read:

$$
\begin{array}{cccc}
S_{i-a,j-b} & S_{i-a,j-b+1} & \cdots & S_{i-a,j-b+w-1} \\
S_{i-a+1,j-b} & S_{i-a+1,j-b+1} & \cdots & S_{i-a+1,j-b+w-1} \\
\vdots & \vdots & \ddots & \vdots \\
S_{i-a+h-1,j-b} & S_{i-a+h-1,j-b+1} & \cdots & S_{i-a+h-1,j-b+w-1}
\end{array}
$$

4.6.2.3 Sampling Beyond Image Boundaries

NPP primitives in general and NPP neighborhood operations in particular require that all pixel locations read and written are valid and within the boundaries of the respective images. Sampling outside of the defined image data regions results in undefined behavior and may lead to system instabilty.

This poses a problem in practice: when processing full-size images one cannot choose the destination ROI to be the same size as the source image. Because neigborhood operations read pixels from an enlarged source ROI, the destination ROI must be shrunk so that the expanded source ROI does not exceed the source image's size.

For cases where this "shrinking" of the destination image size is unacceptable, NPP provides a set of border-expanding Copy primitives. E.g. nppiCopyConstBorder_8u_C1R(), nppiCopyReplicateBorder_-8u_C1R() and nppiCopyWrapBorder_8u_C1R(). The user can use these primitives to "expand" the source image's size using one of the three expansion modes. The expanded image can then be safely passed to a neighborhood operation producing a full-size result.

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.

- int nppGetGpuDeviceProperties (int ∗pMaxThreadsPerSM, int ∗pMaxThreadsPerBlock, int ∗pNumberOfSMs)

    Get the maximum number of threads per SM, maximum threads per block, and number of SMs 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.

- unsigned int nppGetStreamNumSMs (void)

    Get the number of SMs on the device associated with the current NPP CUDA stream.

- unsigned int nppGetStreamMaxThreadsPerSM (void)

  Get the maximum number of threads per SM on the device associated with the current 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 int nppGetGpuDeviceProperties (int ∗ *pMaxThreadsPerSM*, int ∗ *pMaxThreadsPerBlock*, int ∗ *pNumberOfSMs*)

Get the maximum number of threads per SM, maximum threads per block, and number of SMs for the active GPU.

Returns:

cudaSuccess for success, -1 for failure

7.1.2.3 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.

7.1.2.4 int nppGetGpuNumSMs (void)

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

Returns:

Number of SMs of the default CUDA device.

7.1.2.5   const NppLibraryVersion∗ nppGetLibVersion (void)

Get the NPP library version.

Returns:

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

7.1.2.6   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.

7.1.2.7   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

7.1.2.8   cudaStream_t nppGetStream (void)

Get the NPP CUDA stream.

NPP enables concurrent device tasks via a global stream state variable. 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.

7.1.2.9   unsigned int nppGetStreamMaxThreadsPerSM (void)

Get the maximum number of threads per SM on the device associated with the current NPP CUDA stream.

NPP enables concurrent device tasks via a global stream state variable. 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. This call avoids a cudaGetDeviceProperties() call.

7.1.2.10   unsigned int nppGetStreamNumSMs (void)

Get the number of SMs on the device associated with the current 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. This call avoids a cudaGetDeviceProperties() call.

7.1.2.11   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 NppPointPolar

    2D Polar 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 NppiHOGConfig

    The NppiHOGConfig structure defines the configuration parameters for the HOG descriptor:.

- 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 (4294967295U)

    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 (-127 - 1)

  Minimum 8-bit signed integer.

- #define NPP_MAX_8S (127)

  Maximum 8-bit signed integer.

- #define NPP_MIN_16S (-32767 - 1)

  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)

  Maximum 64-bit signed integer.

- #define NPP_MIN_64S (-9223372036854775807LL - 1)

  Minimum 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.

- #define NPP_HOG_MAX_CELL_SIZE (16)

  max horizontal/vertical pixel size of cell.

- #define NPP_HOG_MAX_BLOCK_SIZE (64)

  max horizontal/vertical pixel size of block.

- #define NPP_HOG_MAX_BINS_PER_CELL (16)

  max number of histogram bins.

- #define NPP_HOG_MAX_CELLS_PER_DESCRIPTOR (256)

         max number of cells in a descriptor window.

- #define NPP_HOG_MAX_OVERLAPPING_BLOCKS_PER_DESCRIPTOR (256)

    max number of overlapping blocks in a descriptor window.

- #define NPP_HOG_MAX_DESCRIPTOR_LOCATIONS_PER_CALL (128)

    max number of descriptor window locations per function call.

Enumerations

- enum NppiInterpolationMode {
  NPPI_INTER_UNDEFINED = 0,
  NPPI_INTER_NN = 1,
  NPPI_INTER_LINEAR = 2,
  NPPI_INTER_CUBIC = 4,
  NPPI_INTER_CUBIC2P_BSPLINE,
  NPPI_INTER_CUBIC2P_CATMULLROM,
  NPPI_INTER_CUBIC2P_B05C03,
  NPPI_INTER_SUPER = 8,
  NPPI_INTER_LANCZOS = 16,
  NPPI_INTER_LANCZOS3_ADVANCED = 17,
  NPPI_SMOOTH_EDGE = (1 << 31) }

    Filtering methods.

- enum NppiBayerGridPosition {
  NPPI_BAYER_BGGR = 0,
  NPPI_BAYER_RGGB = 1,
  NPPI_BAYER_GBRG = 2,
  NPPI_BAYER_GRBG = 3 }

    Bayer Grid Position Registration.

- enum NppiMaskSize {
  NPP_MASK_SIZE_1_X_3,
  NPP_MASK_SIZE_1_X_5,
  NPP_MASK_SIZE_3_X_1 = 100,
  NPP_MASK_SIZE_5_X_1,
  NPP_MASK_SIZE_3_X_3 = 200,
  NPP_MASK_SIZE_5_X_5,
  NPP_MASK_SIZE_7_X_7 = 400,
  NPP_MASK_SIZE_9_X_9 = 500,
  NPP_MASK_SIZE_11_X_11 = 600,
  NPP_MASK_SIZE_13_X_13 = 700,
  NPP_MASK_SIZE_15_X_15 = 800 }

Fixed filter-kernel sizes.

- enum NppiDifferentialKernel {

  NPP_FILTER_SOBEL,

  NPP_FILTER_SCHARR }

    Differential Filter types.

- enum NppStatus {

  NPP_NOT_SUPPORTED_MODE_ERROR = -9999,

  NPP_INVALID_HOST_POINTER_ERROR = -1032,

  NPP_INVALID_DEVICE_POINTER_ERROR = -1031,

  NPP_LUT_PALETTE_BITSIZE_ERROR = -1030,

  NPP_ZC_MODE_NOT_SUPPORTED_ERROR = -1028,

  NPP_NOT_SUFFICIENT_COMPUTE_CAPABILITY = -1027,

  NPP_TEXTURE_BIND_ERROR = -1024,

  NPP_WRONG_INTERSECTION_ROI_ERROR = -1020,

  NPP_HAAR_CLASSIFIER_PIXEL_MATCH_ERROR = -1006,

  NPP_MEMFREE_ERROR = -1005,

  NPP_MEMSET_ERROR = -1004,

  NPP_MEMCPY_ERROR = -1003,

  NPP_ALIGNMENT_ERROR = -1002,

  NPP_CUDA_KERNEL_EXECUTION_ERROR = -1000,

  NPP_ROUND_MODE_NOT_SUPPORTED_ERROR = -213,

  NPP_QUALITY_INDEX_ERROR = -210,

  NPP_RESIZE_NO_OPERATION_ERROR = -201,

  NPP_OVERFLOW_ERROR = -109,

  NPP_NOT_EVEN_STEP_ERROR = -108,

  NPP_HISTOGRAM_NUMBER_OF_LEVELS_ERROR = -107,

  NPP_LUT_NUMBER_OF_LEVELS_ERROR = -106,

  NPP_CORRUPTED_DATA_ERROR = -61,

  NPP_CHANNEL_ORDER_ERROR = -60,

  NPP_ZERO_MASK_VALUE_ERROR = -59,

  NPP_QUADRANGLE_ERROR = -58,

  NPP_RECTANGLE_ERROR = -57,

  NPP_COEFFICIENT_ERROR = -56,

  NPP_NUMBER_OF_CHANNELS_ERROR = -53,

  NPP_COI_ERROR = -52,

  NPP_DIVISOR_ERROR = -51,

  NPP_CHANNEL_ERROR = -47,

  NPP_STRIDE_ERROR = -37,

  NPP_ANCHOR_ERROR = -34,

  NPP_MASK_SIZE_ERROR = -33,

NPP_RESIZE_FACTOR_ERROR = -23,

NPP_INTERPOLATION_ERROR = -22,

NPP_MIRROR_FLIP_ERROR = -21,

NPP_MOMENT_00_ZERO_ERROR = -20,

NPP_THRESHOLD_NEGATIVE_LEVEL_ERROR = -19,

NPP_THRESHOLD_ERROR = -18,

NPP_CONTEXT_MATCH_ERROR = -17,

NPP_FFT_FLAG_ERROR = -16,

NPP_FFT_ORDER_ERROR = -15,

NPP_STEP_ERROR = -14,

NPP_SCALE_RANGE_ERROR = -13,

NPP_DATA_TYPE_ERROR = -12,

NPP_OUT_OFF_RANGE_ERROR = -11,

NPP_DIVIDE_BY_ZERO_ERROR = -10,

NPP_MEMORY_ALLOCATION_ERR = -9,

NPP_NULL_POINTER_ERROR = -8,

NPP_RANGE_ERROR = -7,

NPP_SIZE_ERROR = -6,

NPP_BAD_ARGUMENT_ERROR = -5,

NPP_NO_MEMORY_ERROR = -4,

NPP_NOT_IMPLEMENTED_ERROR = -3,

NPP_ERROR = -2,

NPP_ERROR_RESERVED = -1,

NPP_NO_ERROR = 0,

NPP_SUCCESS = NPP_NO_ERROR,

NPP_NO_OPERATION_WARNING = 1,

NPP_DIVIDE_BY_ZERO_WARNING = 6,

NPP_AFFINE_QUAD_INCORRECT_WARNING = 28,

NPP_WRONG_INTERSECTION_ROI_WARNING = 29,

NPP_WRONG_INTERSECTION_QUAD_WARNING = 30,

NPP_DOUBLE_SIZE_WARNING = 35,

NPP_MISALIGNED_DST_ROI_WARNING = 10000 }

　　Error Status Codes.

- enum NppGpuComputeCapability {

NPP_CUDA_UNKNOWN_VERSION = -1,

NPP_CUDA_NOT_CAPABLE = 0,

NPP_CUDA_1_0 = 100,

NPP_CUDA_1_1 = 110,

NPP_CUDA_1_2 = 120,

NPP_CUDA_1_3 = 130,

      NPP_CUDA_2_0 = 200,

      NPP_CUDA_2_1 = 210,

      NPP_CUDA_3_0 = 300,

      NPP_CUDA_3_2 = 320,

      NPP_CUDA_3_5 = 350,

      NPP_CUDA_3_7 = 370,

      NPP_CUDA_5_0 = 500,

      NPP_CUDA_5_2 = 520,

      NPP_CUDA_5_3 = 530,

      NPP_CUDA_6_0 = 600,

      NPP_CUDA_6_1 = 610,

      NPP_CUDA_6_2 = 620,

      NPP_CUDA_6_3 = 630,

      NPP_CUDA_7_0 = 700 }

- 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_NEAR,

      NPP_ROUND_NEAREST_TIES_TO_EVEN = NPP_RND_NEAR,

      NPP_RND_FINANCIAL,

      NPP_ROUND_NEAREST_TIES_AWAY_FROM_ZERO = NPP_RND_FINANCIAL,

      NPP_RND_ZERO,

      NPP_ROUND_TOWARD_ZERO = NPP_RND_ZERO }

    Rounding Modes.

- enum NppiBorderType {

      NPP_BORDER_UNDEFINED = 0,

      NPP_BORDER_NONE = NPP_BORDER_UNDEFINED,

      NPP_BORDER_CONSTANT = 1,

      NPP_BORDER_REPLICATE = 2,

      NPP_BORDER_WRAP = 3,

      NPP_BORDER_MIRROR = 4 }

- enum NppHintAlgorithm {
  NPP_ALG_HINT_NONE,
  NPP_ALG_HINT_FAST,
  NPP_ALG_HINT_ACCURATE }
- 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 }
- enum NppsZCType {
  nppZCR,
  nppZCXor,
  nppZCC }
- enum NppiHuffmanTableType {
  nppiDCTable,
  nppiACTable }
- enum NppiNorm {
  nppiNormInf = 0,
  nppiNormL1 = 1,
  nppiNormL2 = 2 }

7.2.1 Define Documentation

7.2.1.1 #define NPP_HOG_MAX_BINS_PER_CELL (16)

max number of histogram bins.

7.2.1.2 #define NPP_HOG_MAX_BLOCK_SIZE (64)

max horizontal/vertical pixel size of block.

7.2.1.3 #define NPP_HOG_MAX_CELL_SIZE (16)

max horizontal/vertical pixel size of cell.

7.2.1.4 #define NPP_HOG_MAX_CELLS_PER_DESCRIPTOR (256)

max number of cells in a descriptor window.

7.2.1.5 #define NPP_HOG_MAX_DESCRIPTOR_LOCATIONS_PER_CALL (128)

max number of descriptor window locations per function call.

7.2.1.6 #define NPP_HOG_MAX_OVERLAPPING_BLOCKS_PER_DESCRIPTOR (256)

max number of overlapping blocks in a descriptor window.

7.2.1.7 #define NPP_MAX_16S (32767)

Maximum 16-bit signed integer.

7.2.1.8 #define NPP_MAX_16U (65535)

Maximum 16-bit unsigned integer.

7.2.1.9 #define NPP_MAX_32S (2147483647)

Maximum 32-bit signed integer.

7.2.1.10 #define NPP_MAX_32U (4294967295U)

Maximum 32-bit unsigned integer.

7.2.1.11 #define NPP_MAX_64S (9223372036854775807LL)

Maximum 64-bit signed integer.

7.2.1.12 #define NPP_MAX_64U (18446744073709551615ULL)

Maximum 64-bit unsigned integer.

7.2.1.13 #define NPP_MAX_8S (127)

Maximum 8-bit signed integer.

7.2.1.14 #define NPP_MAX_8U (255)

Maximum 8-bit unsigned integer.

7.2.1.15 #define NPP_MAXABS_32F (3.402823466e+38f)

Largest positive 32-bit floating point value.

7.2.1.16 #define NPP_MAXABS_64F (1.7976931348623158e+308)

Largest positive 64-bit floating point value.

7.2.1.17 #define NPP_MIN_16S (-32767 - 1)

Minimum 16-bit signed integer.

7.2.1.18 #define NPP_MIN_16U (0)

Minimum 16-bit unsigned integer.

7.2.1.19 #define NPP_MIN_32S (-2147483647 - 1)

Minimum 32-bit signed integer.

7.2.1.20 #define NPP_MIN_32U (0)

Minimum 32-bit unsigned integer.

7.2.1.21 #define NPP_MIN_64S (-9223372036854775807LL - 1)

Minimum 64-bit signed integer.

7.2.1.22 #define NPP_MIN_64U (0)

Minimum 64-bit unsigned integer.

7.2.1.23 #define NPP_MIN_8S (-127 - 1)

Minimum 8-bit signed integer.

7.2.1.24 #define NPP_MIN_8U (0)

Minimum 8-bit unsigned integer.

7.2.1.25 #define NPP_MINABS_32F (1.175494351e-38f)

Smallest positive 32-bit floating point value.

7.2.1.26 #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.
>
> *NPP_CUDA_1_0* Indicates that CUDA 1.0 capable device is machine's default device.
>
> *NPP_CUDA_1_1* Indicates that CUDA 1.1 capable device is machine's default device.
>
> *NPP_CUDA_1_2* Indicates that CUDA 1.2 capable device is machine's default device.
>
> *NPP_CUDA_1_3* Indicates that CUDA 1.3 capable device is machine's default device.
>
> *NPP_CUDA_2_0* Indicates that CUDA 2.0 capable device is machine's default device.
>
> *NPP_CUDA_2_1* Indicates that CUDA 2.1 capable device is machine's default device.
>
> *NPP_CUDA_3_0* Indicates that CUDA 3.0 capable device is machine's default device.
>
> *NPP_CUDA_3_2* Indicates that CUDA 3.2 capable device is machine's default device.
>
> *NPP_CUDA_3_5* Indicates that CUDA 3.5 capable device is machine's default device.
>
> *NPP_CUDA_3_7* Indicates that CUDA 3.7 capable device is machine's default device.
>
> *NPP_CUDA_5_0* Indicates that CUDA 5.0 capable device is machine's default device.
>
> *NPP_CUDA_5_2* Indicates that CUDA 5.2 capable device is machine's default device.
>
> *NPP_CUDA_5_3* Indicates that CUDA 5.3 capable device is machine's default device.
>
> *NPP_CUDA_6_0* Indicates that CUDA 6.0 capable device is machine's default device.
>
> *NPP_CUDA_6_1* Indicates that CUDA 6.1 capable device is machine's default device.
>
> *NPP_CUDA_6_2* Indicates that CUDA 6.2 capable device is machine's default device.
>
> *NPP_CUDA_6_3* Indicates that CUDA 6.3 capable device is machine's default device.
>
> *NPP_CUDA_7_0* Indicates that CUDA 7.0 or better is machine's default device.

7.2.2.3 enum NppHintAlgorithm

Enumerator:

NPP_ALG_HINT_NONE
NPP_ALG_HINT_FAST
NPP_ALG_HINT_ACCURATE

7.2.2.4 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

7.2.2.5 enum NppiAxis

Enumerator:

NPP_HORIZONTAL_AXIS
NPP_VERTICAL_AXIS
NPP_BOTH_AXIS

7.2.2.6 enum NppiBayerGridPosition

Bayer Grid Position Registration.

Enumerator:

NPPI_BAYER_BGGR   Default registration position.
NPPI_BAYER_RGGB
NPPI_BAYER_GBRG
NPPI_BAYER_GRBG

7.2.2.7   enum NppiBorderType

Enumerator:

NPP_BORDER_UNDEFINED
NPP_BORDER_NONE
NPP_BORDER_CONSTANT
NPP_BORDER_REPLICATE
NPP_BORDER_WRAP
NPP_BORDER_MIRROR

7.2.2.8   enum NppiDifferentialKernel

Differential Filter types.

Enumerator:

NPP_FILTER_SOBEL
NPP_FILTER_SCHARR

7.2.2.9   enum NppiHuffmanTableType

Enumerator:

nppiDCTable   DC Table.
nppiACTable   AC Table.

7.2.2.10   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_CUBIC2P_BSPLINE   Two-parameter cubic filter (B=1, C=0).
NPPI_INTER_CUBIC2P_CATMULLROM   Two-parameter cubic filter (B=0, C=1/2).
NPPI_INTER_CUBIC2P_B05C03   Two-parameter cubic filter (B=1/2, C=3/10).
NPPI_INTER_SUPER   Super sampling.
NPPI_INTER_LANCZOS   Lanczos filtering.
NPPI_INTER_LANCZOS3_ADVANCED   Generic Lanczos filtering with order 3.
NPPI_SMOOTH_EDGE   Smooth edge filtering.

7.2.2.11 enum NppiMaskSize

Fixed filter-kernel sizes.

Enumerator:

 NPP_MASK_SIZE_1_X_3

 NPP_MASK_SIZE_1_X_5

 NPP_MASK_SIZE_3_X_1

 NPP_MASK_SIZE_5_X_1

 NPP_MASK_SIZE_3_X_3

 NPP_MASK_SIZE_5_X_5

 NPP_MASK_SIZE_7_X_7

 NPP_MASK_SIZE_9_X_9

 NPP_MASK_SIZE_11_X_11

 NPP_MASK_SIZE_13_X_13

 NPP_MASK_SIZE_15_X_15

7.2.2.12 enum NppiNorm

Enumerator:

 nppiNormInf   maximum

 nppiNormL1   sum

 nppiNormL2   square root of sum of squares

7.2.2.13 enum NppRoundMode

Rounding Modes.

The enumerated rounding modes are used by a large number of NPP primitives to allow the user to specify the method by which fractional values are converted to integer values. Also see Rounding Modes.

For NPP release 5.5 new names for the three rounding modes are introduced that are based on the naming conventions for rounding modes set forth in the IEEE-754 floating-point standard. Developers are encouraged to use the new, longer names to be future proof as the legacy names will be deprecated in subsequent NPP releases.

Enumerator:

 NPP_RND_NEAR   Round to the nearest even integer.

  All fractional numbers are rounded to their nearest integer. The ambiguous cases (i.e. <integer>.5) are rounded to the closest even integer. E.g.

   • roundNear(0.5) = 0

   • roundNear(0.6) = 1

   • roundNear(1.5) = 2

   • roundNear(-1.5) = -2

 NPP_ROUND_NEAREST_TIES_TO_EVEN   Alias name for NPP_RND_NEAR.

NPP_RND_FINANCIAL Round according to financial rule.

All fractional numbers are rounded to their nearest integer. The ambiguous cases (i.e. <integer>.5) are rounded away from zero. E.g.

- roundFinancial(0.4) = 0
- roundFinancial(0.5) = 1
- roundFinancial(-1.5) = -2

NPP_ROUND_NEAREST_TIES_AWAY_FROM_ZERO Alias name for NPP_RND_- FINANCIAL.

NPP_RND_ZERO Round towards zero (truncation).

All fractional numbers of the form <integer>.<decimals> are truncated to <integer>.

- roundZero(1.5) = 1
- roundZero(1.9) = 1
- roundZero(-2.5) = -2

NPP_ROUND_TOWARD_ZERO Alias name for NPP_RND_ZERO.

7.2.2.14 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_INVALID_HOST_POINTER_ERROR

NPP_INVALID_DEVICE_POINTER_ERROR

NPP_LUT_PALETTE_BITSIZE_ERROR

NPP_ZC_MODE_NOT_SUPPORTED_ERROR ZeroCrossing mode not supported.

NPP_NOT_SUFFICIENT_COMPUTE_CAPABILITY

NPP_TEXTURE_BIND_ERROR

NPP_WRONG_INTERSECTION_ROI_ERROR

NPP_HAAR_CLASSIFIER_PIXEL_MATCH_ERROR

NPP_MEMFREE_ERROR

NPP_MEMSET_ERROR

NPP_MEMCPY_ERROR

NPP_ALIGNMENT_ERROR

NPP_CUDA_KERNEL_EXECUTION_ERROR

NPP_ROUND_MODE_NOT_SUPPORTED_ERROR Unsupported round mode.

NPP_QUALITY_INDEX_ERROR Image pixels are constant for quality index.

NPP_RESIZE_NO_OPERATION_ERROR One of the output image dimensions is less than 1 pixel.

NPP_OVERFLOW_ERROR Number overflows the upper or lower limit of the data type.

NPP_NOT_EVEN_STEP_ERROR Step value is not pixel multiple.

NPP_HISTOGRAM_NUMBER_OF_LEVELS_ERROR   Number of levels for histogram is less than 2.

NPP_LUT_NUMBER_OF_LEVELS_ERROR   Number of levels for LUT is less than 2.

NPP_CORRUPTED_DATA_ERROR   Processed data is corrupted.

NPP_CHANNEL_ORDER_ERROR   Wrong order of the destination channels.

NPP_ZERO_MASK_VALUE_ERROR   All values of the mask are zero.

NPP_QUADRANGLE_ERROR   The quadrangle is nonconvex or degenerates into triangle, line or point.

NPP_RECTANGLE_ERROR   Size of the rectangle region is less than or equal to 1.

NPP_COEFFICIENT_ERROR   Unallowable values of the transformation coefficients.

NPP_NUMBER_OF_CHANNELS_ERROR   Bad or unsupported number of channels.

NPP_COI_ERROR   Channel of interest is not 1, 2, or 3.

NPP_DIVISOR_ERROR   Divisor is equal to zero.

NPP_CHANNEL_ERROR   Illegal channel index.

NPP_STRIDE_ERROR   Stride is less than the row length.

NPP_ANCHOR_ERROR   Anchor point is outside mask.

NPP_MASK_SIZE_ERROR   Lower bound is larger than upper bound.

NPP_RESIZE_FACTOR_ERROR

NPP_INTERPOLATION_ERROR

NPP_MIRROR_FLIP_ERROR

NPP_MOMENT_00_ZERO_ERROR

NPP_THRESHOLD_NEGATIVE_LEVEL_ERROR

NPP_THRESHOLD_ERROR

NPP_CONTEXT_MATCH_ERROR

NPP_FFT_FLAG_ERROR

NPP_FFT_ORDER_ERROR

NPP_STEP_ERROR   Step is less or equal zero.

NPP_SCALE_RANGE_ERROR

NPP_DATA_TYPE_ERROR

NPP_OUT_OFF_RANGE_ERROR

NPP_DIVIDE_BY_ZERO_ERROR

NPP_MEMORY_ALLOCATION_ERR

NPP_NULL_POINTER_ERROR

NPP_RANGE_ERROR

NPP_SIZE_ERROR

NPP_BAD_ARGUMENT_ERROR

NPP_NO_MEMORY_ERROR

NPP_NOT_IMPLEMENTED_ERROR

NPP_ERROR

NPP_ERROR_RESERVED

NPP_NO_ERROR   Error free operation.

NPP_SUCCESS   Successful operation (same as NPP_NO_ERROR).

NPP_NO_OPERATION_WARNING   Indicates that no operation was performed.

NPP_DIVIDE_BY_ZERO_WARNING   Divisor is zero however does not terminate the execution.

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_WRONG_INTERSECTION_ROI_WARNING   The given ROI has no interestion with either the source or destination ROI.

Thus no operation was performed.

NPP_WRONG_INTERSECTION_QUAD_WARNING   The given quadrangle has no intersection with either the source or destination ROI.

Thus no operation was performed.

NPP_DOUBLE_SIZE_WARNING   Image size isn't multiple of two.

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

NPP_MISALIGNED_DST_ROI_WARNING   Speed reduction due to uncoalesced memory accesses warning.

7.2.2.15   enum NppsZCType

Enumerator:

nppZCR   sign change

nppZCXor   sign change XOR

nppZCC   sign change count_0

7.3   Basic NPP Data Types

Data Structures

- struct NPP_ALIGN_8

    Complex Number This struct represents an unsigned int complex number.

- struct NPP_ALIGN_16

    Complex Number This struct represents a long long 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

- typedef struct NPP_ALIGN_8 Npp32uc

    Complex Number This struct represents an unsigned int complex number.

- typedef struct NPP_ALIGN_8 Npp32sc

    Complex Number This struct represents a signed int complex number.

- typedef struct NPP_ALIGN_8 Npp32fc

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

- typedef struct NPP_ALIGN_16 Npp64sc

    Complex Number This struct represents a long long complex number.

- typedef struct NPP_ALIGN_16 Npp64fc

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

Functions

- struct __align__ (2)

    Complex Number This struct represents an unsigned char complex number.

- struct __align__ (4)

    Complex Number This struct represents an unsigned short complex number.

Variables

- Npp8uc
- Npp16uc
- Npp16sc

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 struct NPP_ALIGN_8 Npp32fc

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

7.3.1.5 typedef int Npp32s

32-bit signed integers

7.3.1.6   typedef struct NPP_ALIGN_8 Npp32sc

Complex Number This struct represents a signed int complex number.

7.3.1.7   typedef unsigned int Npp32u

32-bit unsigned integers

7.3.1.8   typedef struct NPP_ALIGN_8 Npp32uc

Complex Number This struct represents an unsigned int complex number.

7.3.1.9   typedef double Npp64f

64-bit floating-point numbers

7.3.1.10   typedef struct NPP_ALIGN_16 Npp64fc

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

7.3.1.11   typedef long long Npp64s

64-bit signed integers

7.3.1.12   typedef struct NPP_ALIGN_16 Npp64sc

Complex Number This struct represents a long long complex number.

7.3.1.13   typedef unsigned long long Npp64u

64-bit unsigned integers

7.3.1.14   typedef signed char Npp8s

8-bit signed chars

7.3.1.15   typedef unsigned char Npp8u

8-bit unsigned chars

7.3.2   Function Documentation

7.3.2.1   struct __align__ (4)   [read]

Complex Number This struct represents an unsigned short complex number.

Complex Number This struct represents a short complex number.

< Real part

< Imaginary part

< Real part

< Imaginary part

7.3.2.2   struct __align__ (2) `[read]`

Complex Number This struct represents an unsigned char complex number.

< Real part

< Imaginary part

7.3.3   Variable Documentation

7.3.3.1   Npp16sc

7.3.3.2   Npp16uc

7.3.3.3   Npp8uc

7.4 Arithmetic and Logical Operations

These functions can be found in the nppial library.

Modules

- Arithmetic Operations
- Logical Operations
- Alpha Composition

7.4.1 Detailed Description

These functions can be found in the nppial library.

Linking to only the sub-libraries that you use can significantly save link time, application load time, and CUDA runtime startup time when using dynamic libraries.

7.5 Arithmetic Operations

Modules

- AddC

  Adds a constant value to each pixel of an image.

- MulC

  Multiplies each pixel of an image by a constant value.

- MulCScale

  Multiplies each pixel of an image by a constant value then scales the result by the maximum value for the data bit width.

- SubC

  Subtracts a constant value from each pixel of an image.

- DivC

  Divides each pixel of an image by a constant value.

- AbsDiffC

  Determines absolute difference between each pixel of an image and a constant value.

- Add

  Pixel by pixel addition of two images.

- AddSquare

  Pixel by pixel addition of squared pixels from source image to floating point pixel values of destination image.

- AddProduct

  Pixel by pixel addition of product of pixels from two source images to floating point pixel values of destination image.

- AddWeighted

  Pixel by pixel addition of alpha weighted pixel values from a source image to floating point pixel values of destination image.

- Mul

  Pixel by pixel multiply of two images.

- MulScale

  Pixel by pixel multiplies each pixel of two images then scales the result by the maximum value for the data bit width.

- Sub

  Pixel by pixel subtraction of two images.

- Div

  Pixel by pixel division of two images.

- Div_Round

    Pixel by pixel division of two images using result rounding modes.

- Abs

    Absolute value of each pixel value in an image.

- AbsDiff

    Pixel by pixel absolute difference between two images.

- Sqr

    Square each pixel in an image.

- Sqrt

    Pixel by pixel square root of each pixel in an image.

- Ln

    Pixel by pixel natural logarithm of each pixel in an image.

- Exp

    Exponential value of each pixel in an image.

7.6 AddC

Adds a constant value to each pixel of an image.

Functions

- 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 aConstants[3], 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 aConstants[3], 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 aConstants[3], 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 aConstants[3], Npp8u ∗pSrcDst, int nSrcDst-Step, 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 aConstants[4], 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 aConstants[4], 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 aConstants[3], 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 aConstants[3], 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 aConstants[3], 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 aConstants[3], 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.

- NppStatus nppiAddC_16u_C4RSfs (const Npp16u ∗pSrc1, int nSrc1Step, const Npp16u aConstants[4], 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 aConstants[4], 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 aConstants[3], 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 aConstants[3], Npp16s ∗pSrcDst, int nSrcDst-Step, 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 aConstants[3], 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 aConstants[3], 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 aConstants[4], 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 aConstants[4], Npp16s ∗pSrcDst, int nSrcDst-Step, 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 aConstants[3], 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 aConstants[3], Npp16sc ∗pSrcDst, int nSrcD-stStep, 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 aConstants[3], 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 aConstants[3], 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.

- 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 aConstants[3], 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 aConstants[3], Npp32s ∗pSrcDst, int nSrcDst-Step, 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 aConstants[3], 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 aConstants[3], 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 aConstants[3], 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 aConstants[3], 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 aConstants[3], Npp32f ∗pDst, int nDstStep, NppiSize oSizeROI)

  Three 32-bit floating point channel image add constant.

- NppStatus nppiAddC_32f_C3IR (const Npp32f aConstants[3], 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 aConstants[3], Npp32f ∗pDst, int nDstStep, NppiSize oSizeROI)

  Four 32-bit floating point channel with unmodified alpha image add constant.

- NppStatus nppiAddC_32f_AC4IR (const Npp32f aConstants[3], 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 aConstants[4], Npp32f *pDst, int nDstStep, NppiSize oSizeROI)

    Four 32-bit floating point channel image add constant.

- NppStatus nppiAddC_32f_C4IR (const Npp32f aConstants[4], 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 aConstants[3], 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 aConstants[3], Npp32fc *pSrcDst, int nSrcDst-Step, 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 aConstants[3], 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 aConstants[3], 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 aConstants[4], 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 aConstants[4], Npp32fc *pSrcDst, int nSrcDst-Step, NppiSize oSizeROI)

    Four 32-bit complex floating point (32-bit floating point real, 32-bit floating point imaginary) channel in place image add constant.

7.6.1 Detailed Description

Adds a constant value to each pixel of an image.

7.6.2 Function Documentation

7.6.2.1 NppStatus nppiAddC_16s_AC4IRSfs (const Npp16s *aConstants*[3], 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:

> *aConstants* fixed size array 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

7.6.2.2 NppStatus nppiAddC_16s_AC4RSfs (const Npp16s ∗ *pSrc1*, int *nSrc1Step*, const Npp16s *aConstants*[3], 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.
>
> *aConstants* fixed size array 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

7.6.2.3 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

7.6.2.4 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

7.6.2.5 NppStatus nppiAddC_16s_C3IRSfs (const Npp16s *aConstants*[3], 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:

   aConstants fixed size array 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

7.6.2.6 NppStatus nppiAddC_16s_C3RSfs (const Npp16s ∗ *pSrc1*, int *nSrc1Step*, const Npp16s *aConstants*[3], 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.
>
> *aConstants* fixed size array 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

7.6.2.7 NppStatus nppiAddC_16s_C4IRSfs (const Npp16s *aConstants*[4], 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:

> *aConstants* fixed size array 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

7.6.2.8 NppStatus nppiAddC_16s_C4RSfs (const Npp16s ∗ *pSrc1*, int *nSrc1Step*, const Npp16s *aConstants*[4], 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.
>
> *aConstants* fixed size array 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

7.6.2.9 NppStatus nppiAddC_16sc_AC4IRSfs (const Npp16sc *aConstants*[3], 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:

aConstants fixed size array 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

7.6.2.10 NppStatus nppiAddC_16sc_AC4RSfs (const Npp16sc ∗ *pSrc1*, int *nSrc1Step*, const Npp16sc *aConstants*[3], 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.

aConstants fixed size array 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

7.6.2.11 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

7.6.2.12 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

7.6.2.13 NppStatus nppiAddC_16sc_C3IRSfs (const Npp16sc *aConstants*[3], 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:

> *aConstants* fixed size array 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

7.6.2.14 NppStatus nppiAddC_16sc_C3RSfs (const Npp16sc ∗ *pSrc1*, int *nSrc1Step*, const Npp16sc *aConstants*[3], 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.

aConstants fixed size array 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

7.6.2.15 NppStatus nppiAddC_16u_AC4IRSfs (const Npp16u *aConstants*[3], 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:

aConstants fixed size array 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

7.6.2.16 NppStatus nppiAddC_16u_AC4RSfs (const Npp16u ∗ *pSrc1*, int *nSrc1Step*, const Npp16u *aConstants*[3], 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.
>
> *aConstants* fixed size array 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

7.6.2.17 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

7.6.2.18 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

7.6.2.19 NppStatus nppiAddC_16u_C3IRSfs (const Npp16u *aConstants*[3], 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:

aConstants fixed size array 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

7.6.2.20 NppStatus nppiAddC_16u_C3RSfs (const Npp16u ∗ *pSrc1*, int *nSrc1Step*, const Npp16u *aConstants*[3], 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.

aConstants fixed size array 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

7.6.2.21 NppStatus nppiAddC_16u_C4IRSfs (const Npp16u *aConstants***[4], 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:

   aConstants fixed size array 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

7.6.2.22 NppStatus nppiAddC_16u_C4RSfs (const Npp16u ∗ *pSrc1***, int** *nSrc1Step***, const Npp16u**
   *aConstants***[4], 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.

   aConstants fixed size array 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

7.6.2.23 NppStatus nppiAddC_32f_AC4IR (const Npp32f *aConstants***[3], Npp32f** ∗ *pSrcDst***, int**
   *nSrcDstStep***, NppiSize** *oSizeROI***)**

Four 32-bit floating point channel with unmodified alpha in place image add constant.

Parameters:

   aConstants fixed size array 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

7.6.2.24 NppStatus nppiAddC_32f_AC4R (const Npp32f ∗ *pSrc1*, int *nSrc1Step*, const Npp32f *aConstants*[3], 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.

    aConstants fixed size array 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

7.6.2.25 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

7.6.2.26 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

7.6.2.27   NppStatus nppiAddC_32f_C3IR (const Npp32f *aConstants*[3], Npp32f ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Three 32-bit floating point channel in place image add constant.

Parameters:

    aConstants fixed size array 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

7.6.2.28   NppStatus nppiAddC_32f_C3R (const Npp32f ∗ *pSrc1*, int *nSrc1Step*, const Npp32f *aConstants*[3], 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.

    aConstants fixed size array 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

7.6.2.29   NppStatus nppiAddC_32f_C4IR (const Npp32f *aConstants*[4], Npp32f ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 32-bit floating point channel in place image add constant.

Parameters:

    aConstants fixed size array 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

7.6.2.30 NppStatus nppiAddC_32f_C4R (const Npp32f ∗ pSrc1, int nSrc1Step, const Npp32f aConstants[4], 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.
>
> *aConstants* fixed size array 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

7.6.2.31 NppStatus nppiAddC_32fc_AC4IR (const Npp32fc aConstants[3], 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:

> *aConstants* fixed size array 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

7.6.2.32 NppStatus nppiAddC_32fc_AC4R (const Npp32fc ∗ pSrc1, int nSrc1Step, const Npp32fc aConstants[3], 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.
>
> *aConstants* fixed size array 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

7.6.2.33 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

7.6.2.34 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

7.6.2.35 NppStatus nppiAddC_32fc_C3IR (const Npp32fc *aConstants*[3], 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:

> *aConstants* fixed size array 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

7.6.2.36 NppStatus nppiAddC_32fc_C3R (const Npp32fc ∗ pSrc1, int nSrc1Step, const Npp32fc aConstants[3], 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.

aConstants fixed size array 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

7.6.2.37 NppStatus nppiAddC_32fc_C4IR (const Npp32fc aConstants[4], 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:

aConstants fixed size array 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

7.6.2.38 NppStatus nppiAddC_32fc_C4R (const Npp32fc ∗ pSrc1, int nSrc1Step, const Npp32fc aConstants[4], 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.

aConstants fixed size array 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

7.6.2.39 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

7.6.2.40 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

7.6.2.41 NppStatus nppiAddC_32s_C3IRSfs (const Npp32s *aConstants*[3], 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:

aConstants fixed size array 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

7.6.2.42   NppStatus nppiAddC_32s_C3RSfs (const Npp32s ∗ *pSrc1*, int *nSrc1Step*, const Npp32s *aConstants*[3], 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.

aConstants fixed size array 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

7.6.2.43   NppStatus nppiAddC_32sc_AC4IRSfs (const Npp32sc *aConstants*[3], 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:

aConstants fixed size array 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

7.6.2.44 NppStatus nppiAddC_32sc_AC4RSfs (const Npp32sc ∗ *pSrc1*, int *nSrc1Step*, const Npp32sc *aConstants*[3], 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.

aConstants fixed size array 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

7.6.2.45 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

7.6.2.46 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

7.6.2.47 NppStatus nppiAddC_32sc_C3IRSfs (const Npp32sc *aConstants*[3], 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:

aConstants fixed size array 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

7.6.2.48 NppStatus nppiAddC_32sc_C3RSfs (const Npp32sc * *pSrc1*, int *nSrc1Step*, const Npp32sc *aConstants*[3], 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.

aConstants fixed size array 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

7.6.2.49 NppStatus nppiAddC_8u_AC4IRSfs (const Npp8u *aConstants*[3], 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:

> *aConstants* fixed size array 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

7.6.2.50 NppStatus nppiAddC_8u_AC4RSfs (const Npp8u ∗ *pSrc1*, int *nSrc1Step*, const Npp8u *aConstants*[3], 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.
>
> *aConstants* fixed size array 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

7.6.2.51 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

7.6.2.52 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

7.6.2.53 NppStatus nppiAddC_8u_C3IRSfs (const Npp8u *aConstants*[3], 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:

aConstants fixed size array 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

7.6.2.54 NppStatus nppiAddC_8u_C3RSfs (const Npp8u ∗ *pSrc1*, int *nSrc1Step*, const Npp8u *aConstants*[3], 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.
>
>   *aConstants* fixed size array 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

7.6.2.55 NppStatus nppiAddC_8u_C4IRSfs (const Npp8u *aConstants*[4], 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:

>   *aConstants* fixed size array 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

7.6.2.56 NppStatus nppiAddC_8u_C4RSfs (const Npp8u ∗ *pSrc1*, int *nSrc1Step*, const Npp8u *aConstants*[4], 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.
>
>   *aConstants* fixed size array 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 MulC

Multiplies each pixel of an image by a constant value.

Functions

- 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 aConstants[3], 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 aConstants[3], 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 aConstants[3], 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 aConstants[3], 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 aConstants[4], 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 aConstants[4], 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 aConstants[3], 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 aConstants[3], 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 aConstants[3], 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 aConstants[3], Npp16u *pSrcDst, int nSrcD-stStep, 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 aConstants[4], 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 aConstants[4], 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 aConstants[3], 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 aConstants[3], Npp16s *pSrcDst, int nSrcDst-Step, 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 aConstants[3], 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 aConstants[3], 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 aConstants[4], 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 aConstants[4], Npp16s ∗pSrcDst, int nSrcDst-Step, 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 nCon-stant, 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 aConstants[3], 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 con-stant, scale, then clamp to saturated value.

- NppStatus nppiMulC_16sc_C3IRSfs (const Npp16sc aConstants[3], Npp16sc ∗pSrcDst, int nSrcD-stStep, 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 aConstants[3], 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 aConstants[3], Npp16sc ∗pSrcDst, int nSr-cDstStep, 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 aConstants[3], 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 aConstants[3], Npp32s ∗pSrcDst, int nSrcDst-Step, 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 aConstants[3], 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 aConstants[3], Npp32sc ∗pSrcDst, int nSrcD-stStep, 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 aConstants[3], 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 aConstants[3], Npp32sc ∗pSrcDst, int nSr-cDstStep, 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 aConstants[3], Npp32f ∗pDst, int nDstStep, NppiSize oSizeROI)

  Three 32-bit floating point channel image multiply by constant.

- NppStatus nppiMulC_32f_C3IR (const Npp32f aConstants[3], 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 aConstants[3], 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 aConstants[3], 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 aConstants[4], Npp32f ∗pDst, int nDstStep, NppiSize oSizeROI)

    Four 32-bit floating point channel image multiply by constant.

- NppStatus nppiMulC_32f_C4IR (const Npp32f aConstants[4], 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 aConstants[3], 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 aConstants[3], Npp32fc ∗pSrcDst, int nSrcDst-Step, 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 aConstants[3], 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 aConstants[3], 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 aConstants[4], 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 aConstants[4], Npp32fc ∗pSrcDst, int nSrcDst-Step, 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.

7.7.1 Detailed Description

Multiplies each pixel of an image by a constant value.

7.7.2 Function Documentation

7.7.2.1 NppStatus nppiMulC_16s_AC4IRSfs (const Npp16s *aConstants*[3], 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:

    aConstants fixed size array 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

7.7.2.2 NppStatus nppiMulC_16s_AC4RSfs (const Npp16s ∗ *pSrc1*, int *nSrc1Step*, const Npp16s *aConstants*[3], 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.

    aConstants fixed size array 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

7.7.2.3 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

7.7.2.4 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

7.7.2.5 NppStatus nppiMulC_16s_C3IRSfs (const Npp16s *aConstants*[3], 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:

> *aConstants* fixed size array 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

7.7.2.6 NppStatus nppiMulC_16s_C3RSfs (const Npp16s ∗ _pSrc1_, int _nSrc1Step_, const Npp16s _aConstants_[3], 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.
>
> **_aConstants_** fixed size array 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

7.7.2.7 NppStatus nppiMulC_16s_C4IRSfs (const Npp16s _aConstants_[4], 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:

> **_aConstants_** fixed size array 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

7.7.2.8 NppStatus nppiMulC_16s_C4RSfs (const Npp16s ∗ _pSrc1_, int _nSrc1Step_, const Npp16s _aConstants_[4], 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.
>
> **_aConstants_** fixed size array 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

7.7.2.9   NppStatus nppiMulC_16sc_AC4IRSfs (const Npp16sc *aConstants*[3], 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:

aConstants fixed size array 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

7.7.2.10   NppStatus nppiMulC_16sc_AC4RSfs (const Npp16sc ∗ *pSrc1*, int *nSrc1Step*, const Npp16sc *aConstants*[3], 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.

aConstants fixed size array 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

7.7.2.11 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

7.7.2.12 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

7.7.2.13 NppStatus nppiMulC_16sc_C3IRSfs (const Npp16sc *aConstants*[3], 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:

   aConstants fixed size array 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

7.7.2.14 NppStatus nppiMulC_16sc_C3RSfs (const Npp16sc ∗ *pSrc1*, int *nSrc1Step*, const Npp16sc *aConstants*[3], 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.

aConstants fixed size array 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

7.7.2.15 NppStatus nppiMulC_16u_AC4IRSfs (const Npp16u *aConstants*[3], 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:

aConstants fixed size array 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

7.7.2.16 NppStatus nppiMulC_16u_AC4RSfs (const Npp16u ∗ *pSrc1***, int** *nSrc1Step***, const Npp16u** *aConstants***[3], 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.

   aConstants fixed size array 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

7.7.2.17 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

7.7.2.18 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

7.7.2.19 NppStatus nppiMulC_16u_C3IRSfs (const Npp16u *aConstants*[3], 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:

aConstants fixed size array 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

7.7.2.20 NppStatus nppiMulC_16u_C3RSfs (const Npp16u ∗ *pSrc1*, int *nSrc1Step*, const Npp16u *aConstants*[3], 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.

aConstants fixed size array 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

7.7.2.21 NppStatus nppiMulC_16u_C4IRSfs (const Npp16u *aConstants*[4], 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:

>   *aConstants* fixed size array 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

7.7.2.22 NppStatus nppiMulC_16u_C4RSfs (const Npp16u ∗ *pSrc1*, int *nSrc1Step*, const Npp16u *aConstants*[4], 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.
>   *aConstants* fixed size array 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

7.7.2.23 NppStatus nppiMulC_32f_AC4IR (const Npp32f *aConstants*[3], Npp32f ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 32-bit floating point channel with unmodified alpha in place image multiply by constant.

Parameters:

>   *aConstants* fixed size array 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

7.7.2.24 NppStatus nppiMulC_32f_AC4R (const Npp32f ∗ *pSrc1*, int *nSrc1Step*, const Npp32f *aConstants*[3], 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.

aConstants fixed size array 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

7.7.2.25 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

7.7.2.26 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

7.7.2.27 NppStatus nppiMulC_32f_C3IR (const Npp32f *aConstants*[3], Npp32f ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Three 32-bit floating point channel in place image multiply by constant.

Parameters:

>   ***aConstants*** fixed size array 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

7.7.2.28 NppStatus nppiMulC_32f_C3R (const Npp32f ∗ *pSrc1*, int *nSrc1Step*, const Npp32f *aConstants*[3], 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.

>   ***aConstants*** fixed size array 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

7.7.2.29 NppStatus nppiMulC_32f_C4IR (const Npp32f *aConstants*[4], Npp32f ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 32-bit floating point channel in place image multiply by constant.

Parameters:

>   ***aConstants*** fixed size array 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

7.7.2.30 NppStatus nppiMulC_32f_C4R (const Npp32f * *pSrc1*, int *nSrc1Step*, const Npp32f *aConstants*[4], 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.
>
>*aConstants* fixed size array 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

7.7.2.31 NppStatus nppiMulC_32fc_AC4IR (const Npp32fc *aConstants*[3], 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:

>*aConstants* fixed size array 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

7.7.2.32 NppStatus nppiMulC_32fc_AC4R (const Npp32fc * *pSrc1*, int *nSrc1Step*, const Npp32fc *aConstants*[3], 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.
>
>*aConstants* fixed size array 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

7.7.2.33 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

7.7.2.34 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

7.7.2.35 NppStatus nppiMulC_32fc_C3IR (const Npp32fc *aConstants*[3], 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:

> *aConstants* fixed size array 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

7.7.2.36 NppStatus nppiMulC_32fc_C3R (const Npp32fc ∗ *pSrc1*, int *nSrc1Step*, const Npp32fc *aConstants*[3], 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.

    aConstants fixed size array 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

7.7.2.37 NppStatus nppiMulC_32fc_C4IR (const Npp32fc *aConstants*[4], 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:

    aConstants fixed size array 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

7.7.2.38 NppStatus nppiMulC_32fc_C4R (const Npp32fc ∗ *pSrc1*, int *nSrc1Step*, const Npp32fc *aConstants*[4], 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.

    aConstants fixed size array 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

7.7.2.39 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

7.7.2.40 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

7.7.2.41 NppStatus nppiMulC_32s_C3IRSfs (const Npp32s *aConstants*[3], 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:

> *aConstants* fixed size array 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

7.7.2.42 NppStatus nppiMulC_32s_C3RSfs (const Npp32s * *pSrc1*, int *nSrc1Step*, const Npp32s *aConstants*[3], 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.
>
> *aConstants* fixed size array 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

7.7.2.43 NppStatus nppiMulC_32sc_AC4IRSfs (const Npp32sc *aConstants*[3], 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:

> *aConstants* fixed size array 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

7.7.2.44 NppStatus nppiMulC_32sc_AC4RSfs (const Npp32sc ∗ *pSrc1*, int *nSrc1Step*, const Npp32sc *aConstants*[3], 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.

aConstants fixed size array 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

7.7.2.45 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

7.7.2.46 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

7.7.2.47 NppStatus nppiMulC_32sc_C3IRSfs (const Npp32sc *aConstants*[3], 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:

aConstants fixed size array 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

7.7.2.48 NppStatus nppiMulC_32sc_C3RSfs (const Npp32sc ∗ *pSrc1*, int *nSrc1Step*, const Npp32sc *aConstants*[3], 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.

aConstants fixed size array 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

7.7.2.49 NppStatus nppiMulC_8u_AC4IRSfs (const Npp8u *aConstants*[3], 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:

aConstants fixed size array 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

7.7.2.50 NppStatus nppiMulC_8u_AC4RSfs (const Npp8u ∗ *pSrc1*, int *nSrc1Step*, const Npp8u *aConstants*[3], 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.

aConstants fixed size array 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

7.7.2.51 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

7.7.2.52   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

7.7.2.53   NppStatus nppiMulC_8u_C3IRSfs (const Npp8u *aConstants*[3], 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:

aConstants fixed size array 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

7.7.2.54   NppStatus nppiMulC_8u_C3RSfs (const Npp8u ∗ *pSrc1*, int *nSrc1Step*, const Npp8u *aConstants*[3], 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.
>
> *aConstants* fixed size array 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

7.7.2.55 NppStatus nppiMulC_8u_C4IRSfs (const Npp8u *aConstants*[4], 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:

> *aConstants* fixed size array 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

7.7.2.56 NppStatus nppiMulC_8u_C4RSfs (const Npp8u ∗ *pSrc1*, int *nSrc1Step*, const Npp8u *aConstants*[4], 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.
>
> *aConstants* fixed size array 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

7.8 MulCScale

Multiplies each pixel of an image by a constant value then scales the result by the maximum value for the data bit width.

Functions

- 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 aConstants[3], 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 aConstants[3], Npp8u *pSrcDst, int nSrcDst-Step, 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 aConstants[3], 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 aConstants[3], Npp8u *pSrcDst, int nSrcDst-Step, 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 aConstants[4], 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 aConstants[4], Npp8u *pSrcDst, int nSrcDst-Step, 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 nSrcDst-Step, 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 aConstants[3], 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 aConstants[3], Npp16u ∗pSrcDst, int nSrcD-stStep, 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 aConstants[3], 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 aConstants[3], 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.

- NppStatus nppiMulCScale_16u_C4R (const Npp16u ∗pSrc1, int nSrc1Step, const Npp16u aConstants[4], 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 aConstants[4], Npp16u ∗pSrcDst, int nSrcD-stStep, NppiSize oSizeROI)

    Four 16-bit unsigned short channel in place image multiply by constant and scale by max bit width value.

7.8.1 Detailed Description

Multiplies each pixel of an image by a constant value then scales the result by the maximum value for the data bit width.

7.8.2 Function Documentation

7.8.2.1 NppStatus nppiMulCScale_16u_AC4IR (const Npp16u *aConstants*[3], 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:

    aConstants fixed size array 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

7.8.2.2 NppStatus nppiMulCScale_16u_AC4R (const Npp16u ∗ *pSrc1*, int *nSrc1Step*, const Npp16u *aConstants*[3], 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.
>
>   *aConstants* fixed size array 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

7.8.2.3 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

7.8.2.4 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

7.8.2.5 **NppStatus nppiMulCScale_16u_C3IR (const Npp16u** *aConstants***[3], 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:

> *aConstants* fixed size array 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

7.8.2.6 **NppStatus nppiMulCScale_16u_C3R (const Npp16u** ∗ *pSrc1***, int** *nSrc1Step***, const Npp16u**
*aConstants***[3], 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.

> *aConstants* fixed size array 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

7.8.2.7 **NppStatus nppiMulCScale_16u_C4IR (const Npp16u** *aConstants***[4], 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:

> *aConstants* fixed size array 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

7.8.2.8 NppStatus nppiMulCScale_16u_C4R (const Npp16u ∗ *pSrc1*, int *nSrc1Step*, const Npp16u *aConstants*[4], 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.

aConstants fixed size array 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

7.8.2.9 NppStatus nppiMulCScale_8u_AC4IR (const Npp8u *aConstants*[3], 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:

aConstants fixed size array 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

7.8.2.10 NppStatus nppiMulCScale_8u_AC4R (const Npp8u ∗ *pSrc1*, int *nSrc1Step*, const Npp8u *aConstants*[3], 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.

aConstants fixed size array 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

7.8.2.11 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

7.8.2.12 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

7.8.2.13 NppStatus nppiMulCScale_8u_C3IR (const Npp8u *aConstants*[3], 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:

    aConstants fixed size array 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

7.8.2.14 NppStatus nppiMulCScale_8u_C3R (const Npp8u ∗ *pSrc1*, int *nSrc1Step*, const Npp8u *aConstants*[3], 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.
>
> *aConstants* fixed size array 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

7.8.2.15 NppStatus nppiMulCScale_8u_C4IR (const Npp8u *aConstants*[4], 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:

> *aConstants* fixed size array 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

7.8.2.16 NppStatus nppiMulCScale_8u_C4R (const Npp8u ∗ *pSrc1*, int *nSrc1Step*, const Npp8u *aConstants*[4], 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.
>
> *aConstants* fixed size array 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

7.9 SubC

Subtracts a constant value from each pixel of an image.

Functions

- 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 aConstants[3], 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 aConstants[3], 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 aConstants[3], 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 aConstants[3], 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 aConstants[4], 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 aConstants[4], 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 aConstants[3], 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 aConstants[3], 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 aConstants[3], 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 aConstants[3], 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 aConstants[4], 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 aConstants[4], 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 aConstants[3], 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 aConstants[3], Npp16s *pSrcDst, int nSrcDst-Step, 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 aConstants[3], 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 aConstants[3], Npp16s *pSrcDst, int nSrcDst-Step, 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 aConstants[4], 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 aConstants[4], Npp16s ∗pSrcDst, int nSrcDst-Step, 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 nSrcDst-Step, 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 aConstants[3], 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 aConstants[3], Npp16sc ∗pSrcDst, int nSrcD-stStep, 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 aConstants[3], 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 aConstants[3], Npp16sc ∗pSrcDst, int nSr-cDstStep, 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 aConstants[3], 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 aConstants[3], Npp32s ∗pSrcDst, int nSrcDst-Step, 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 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.

- NppStatus nppiSubC_32sc_C3RSfs (const Npp32sc *pSrc1, int nSrc1Step, const Npp32sc aConstants[3], 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 aConstants[3], 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.

- NppStatus nppiSubC_32sc_AC4RSfs (const Npp32sc *pSrc1, int nSrc1Step, const Npp32sc aConstants[3], 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 aConstants[3], 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.

- 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, NppiSize oSizeROI)

  One 32-bit floating point channel in place image subtract constant.

- NppStatus nppiSubC_32f_C3R (const Npp32f *pSrc1, int nSrc1Step, const Npp32f aConstants[3], Npp32f *pDst, int nDstStep, NppiSize oSizeROI)

  Three 32-bit floating point channel image subtract constant.

- NppStatus nppiSubC_32f_C3IR (const Npp32f aConstants[3], 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 aConstants[3], Npp32f *pDst, int nDstStep, NppiSize oSizeROI)

  Four 32-bit floating point channel with unmodified alpha image subtract constant.

- NppStatus nppiSubC_32f_AC4IR (const Npp32f aConstants[3], 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 aConstants[4], Npp32f *pDst, int nDstStep, NppiSize oSizeROI)

  Four 32-bit floating point channel image subtract constant.

- NppStatus nppiSubC_32f_C4IR (const Npp32f aConstants[4], 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 aConstants[3], 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 aConstants[3], Npp32fc *pSrcDst, int nSrcDst-Step, 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 aConstants[3], 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 aConstants[3], 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 aConstants[4], 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 aConstants[4], Npp32fc *pSrcDst, int nSrcDst-Step, NppiSize oSizeROI)

  Four 32-bit complex floating point (32-bit floating point real, 32-bit floating point imaginary) channel in place image subtract constant.

7.9.1 Detailed Description

Subtracts a constant value from each pixel of an image.

7.9.2 Function Documentation

7.9.2.1 NppStatus nppiSubC_16s_AC4IRSfs (const Npp16s *aConstants*[3], 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:

> *aConstants* fixed size array 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

7.9.2.2 NppStatus nppiSubC_16s_AC4RSfs (const Npp16s ∗ *pSrc1*, int *nSrc1Step*, const Npp16s *aConstants*[3], 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.
>
> *aConstants* fixed size array 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

7.9.2.3 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

7.9.2.4 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

7.9.2.5 NppStatus nppiSubC_16s_C3IRSfs (const Npp16s *aConstants*[3], 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:

>*aConstants* fixed size array 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

7.9.2.6 NppStatus nppiSubC_16s_C3RSfs (const Npp16s ∗ pSrc1, int nSrc1Step, const Npp16s aConstants[3], 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.

    aConstants fixed size array 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

7.9.2.7 NppStatus nppiSubC_16s_C4IRSfs (const Npp16s aConstants[4], 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:

    aConstants fixed size array 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

7.9.2.8 NppStatus nppiSubC_16s_C4RSfs (const Npp16s ∗ pSrc1, int nSrc1Step, const Npp16s aConstants[4], 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.

    aConstants fixed size array 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

7.9.2.9 NppStatus nppiSubC_16sc_AC4IRSfs (const Npp16sc *aConstants*[3], 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:

aConstants fixed size array 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

7.9.2.10 NppStatus nppiSubC_16sc_AC4RSfs (const Npp16sc ∗ *pSrc1*, int *nSrc1Step*, const Npp16sc *aConstants*[3], 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.

aConstants fixed size array 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

7.9.2.11 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

7.9.2.12 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

7.9.2.13 NppStatus nppiSubC_16sc_C3IRSfs (const Npp16sc *aConstants*[3], 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:

    aConstants fixed size array 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

7.9.2.14 NppStatus nppiSubC_16sc_C3RSfs (const Npp16sc * *pSrc1*, int *nSrc1Step*, const Npp16sc *aConstants*[3], 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.
>
> *aConstants* fixed size array 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

7.9.2.15 NppStatus nppiSubC_16u_AC4IRSfs (const Npp16u *aConstants*[3], 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:

> *aConstants* fixed size array 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

7.9.2.16 NppStatus nppiSubC_16u_AC4RSfs (const Npp16u ∗ *pSrc1*, int *nSrc1Step*, const Npp16u *aConstants*[3], 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.
>
> *aConstants* fixed size array 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

7.9.2.17 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

7.9.2.18 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

7.9.2.19 NppStatus nppiSubC_16u_C3IRSfs (const Npp16u *aConstants*[3], 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:

aConstants fixed size array 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

7.9.2.20 NppStatus nppiSubC_16u_C3RSfs (const Npp16u * *pSrc1*, int *nSrc1Step*, const Npp16u *aConstants*[3], 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.

aConstants fixed size array 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

7.9.2.21　NppStatus nppiSubC_16u_C4IRSfs (const Npp16u *aConstants*[4], 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:

>　*aConstants*　fixed size array 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

7.9.2.22　NppStatus nppiSubC_16u_C4RSfs (const Npp16u ∗ *pSrc1*, int *nSrc1Step*, const Npp16u *aConstants*[4], 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.
>
>　*aConstants*　fixed size array 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

7.9.2.23　NppStatus nppiSubC_32f_AC4IR (const Npp32f *aConstants*[3], Npp32f ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 32-bit floating point channel with unmodified alpha in place image subtract constant.

Parameters:

>　*aConstants*　fixed size array 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

7.9.2.24 NppStatus nppiSubC_32f_AC4R (const Npp32f ∗ *pSrc1*, int *nSrc1Step*, const Npp32f *aConstants*[3], 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.
>
> *aConstants* fixed size array 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

7.9.2.25 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

7.9.2.26 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

7.9.2.27 NppStatus nppiSubC_32f_C3IR (const Npp32f *aConstants*[3], Npp32f ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Three 32-bit floating point channel in place image subtract constant.

Parameters:

>   ***aConstants*** fixed size array 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

7.9.2.28 NppStatus nppiSubC_32f_C3R (const Npp32f ∗ *pSrc1*, int *nSrc1Step*, const Npp32f *aConstants*[3], 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.

>   ***aConstants*** fixed size array 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

7.9.2.29 NppStatus nppiSubC_32f_C4IR (const Npp32f *aConstants*[4], Npp32f ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 32-bit floating point channel in place image subtract constant.

Parameters:

>   ***aConstants*** fixed size array 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

7.9.2.30 NppStatus nppiSubC_32f_C4R (const Npp32f ∗ *pSrc1*, int *nSrc1Step*, const Npp32f *aConstants*[4], 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.
> *aConstants* fixed size array 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

7.9.2.31 NppStatus nppiSubC_32fc_AC4IR (const Npp32fc *aConstants*[3], 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:

> *aConstants* fixed size array 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

7.9.2.32 NppStatus nppiSubC_32fc_AC4R (const Npp32fc ∗ *pSrc1*, int *nSrc1Step*, const Npp32fc *aConstants*[3], 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.
> *aConstants* fixed size array 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

7.9.2.33 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

7.9.2.34 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

7.9.2.35 NppStatus nppiSubC_32fc_C3IR (const Npp32fc *aConstants*[3], 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:

> *aConstants* fixed size array 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

7.9.2.36 NppStatus nppiSubC_32fc_C3R (const Npp32fc ∗ *pSrc1*, int *nSrc1Step*, const Npp32fc *aConstants*[3], 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.
>
> *aConstants* fixed size array 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

7.9.2.37 NppStatus nppiSubC_32fc_C4IR (const Npp32fc *aConstants*[4], 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:

> *aConstants* fixed size array 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

7.9.2.38 NppStatus nppiSubC_32fc_C4R (const Npp32fc ∗ *pSrc1*, int *nSrc1Step*, const Npp32fc *aConstants*[4], 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.
>
> *aConstants* fixed size array 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

7.9.2.39 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

7.9.2.40 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

7.9.2.41 NppStatus nppiSubC_32s_C3IRSfs (const Npp32s *aConstants*[3], 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:

aConstants fixed size array 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

7.9.2.42 NppStatus nppiSubC_32s_C3RSfs (const Npp32s ∗ *pSrc1*, int *nSrc1Step*, const Npp32s *aConstants*[3], 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.

aConstants fixed size array 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

7.9.2.43 NppStatus nppiSubC_32sc_AC4IRSfs (const Npp32sc *aConstants*[3], 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:

aConstants fixed size array 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

7.9.2.44 NppStatus nppiSubC_32sc_AC4RSfs (const Npp32sc ∗ *pSrc1*, int *nSrc1Step*, const Npp32sc *aConstants*[3], 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.

aConstants fixed size array 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

7.9.2.45 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

7.9.2.46 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

7.9.2.47 NppStatus nppiSubC_32sc_C3IRSfs (const Npp32sc *aConstants*[3], 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:

aConstants fixed size array 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

7.9.2.48 NppStatus nppiSubC_32sc_C3RSfs (const Npp32sc ∗ *pSrc1*, int *nSrc1Step*, const Npp32sc *aConstants*[3], 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.

aConstants fixed size array 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

7.9.2.49 NppStatus nppiSubC_8u_AC4IRSfs (const Npp8u *aConstants*[3], 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:

> *aConstants* fixed size array 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

7.9.2.50 NppStatus nppiSubC_8u_AC4RSfs (const Npp8u ∗ *pSrc1*, int *nSrc1Step*, const Npp8u *aConstants*[3], 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.
>
> *aConstants* fixed size array 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

7.9.2.51 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

7.9.2.52 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

7.9.2.53 NppStatus nppiSubC_8u_C3IRSfs (const Npp8u *aConstants*[3], 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:

aConstants fixed size array 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

7.9.2.54 NppStatus nppiSubC_8u_C3RSfs (const Npp8u ∗ *pSrc1*, int *nSrc1Step*, const Npp8u *aConstants*[3], 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.
>
> ***aConstants*** fixed size array 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

7.9.2.55 NppStatus nppiSubC_8u_C4IRSfs (const Npp8u *aConstants*[4], 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:

> ***aConstants*** fixed size array 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

7.9.2.56 NppStatus nppiSubC_8u_C4RSfs (const Npp8u * *pSrc1*, int *nSrc1Step*, const Npp8u *aConstants*[4], 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.
>
> ***aConstants*** fixed size array 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

7.10 DivC

Divides each pixel of an image by a constant value.

Functions

- 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 aConstants[3], 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 aConstants[3], 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 aConstants[3], 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 aConstants[3], 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 aConstants[4], 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 aConstants[4], 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 aConstants[3], 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 aConstants[3], Npp16u *pSrcDst, int nSrcDst-Step, 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 aConstants[3], 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 aConstants[3], 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 aConstants[4], 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 aConstants[4], Npp16u *pSrcDst, int nSrcDst-Step, 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 aConstants[3], 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 aConstants[3], Npp16s *pSrcDst, int nSrcDst-Step, 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 aConstants[3], 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 aConstants[3], Npp16s *pSrcDst, int nSrcDst-Step, 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 aConstants[4], 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 aConstants[4], 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 aConstants[3], 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 aConstants[3], 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 aConstants[3], 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 aConstants[3], 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.

- 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 aConstants[3], 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 aConstants[3], 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 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.

- NppStatus nppiDivC_32sc_C3RSfs (const Npp32sc *pSrc1, int nSrc1Step, const Npp32sc aConstants[3], 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 aConstants[3], 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.

- NppStatus nppiDivC_32sc_AC4RSfs (const Npp32sc *pSrc1, int nSrc1Step, const Npp32sc aConstants[3], 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 aConstants[3], 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.

- 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 aConstants[3], Npp32f *pDst, int nDstStep, NppiSize oSizeROI)

  Three 32-bit floating point channel image divided by constant.

- NppStatus nppiDivC_32f_C3IR (const Npp32f aConstants[3], 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 aConstants[3], 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 aConstants[3], 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 aConstants[4], Npp32f ∗pDst, int nDstStep, NppiSize oSizeROI)

    Four 32-bit floating point channel image divided by constant.

- NppStatus nppiDivC_32f_C4IR (const Npp32f aConstants[4], 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 aConstants[3], 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 aConstants[3], Npp32fc ∗pSrcDst, int nSrcDst-Step, 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 aConstants[3], 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 aConstants[3], 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 aConstants[4], 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 aConstants[4], Npp32fc ∗pSrcDst, int nSrcDst-Step, 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.

7.10.1 Detailed Description

Divides each pixel of an image by a constant value.

7.10.2 Function Documentation

7.10.2.1 NppStatus nppiDivC_16s_AC4IRSfs (const Npp16s *aConstants*[3], 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:

    aConstants fixed size array 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

7.10.2.2 NppStatus nppiDivC_16s_AC4RSfs (const Npp16s *∗pSrc1*, int *nSrc1Step*, const Npp16s *aConstants*[3], 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.

    aConstants fixed size array 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

7.10.2.3 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

7.10.2.4 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

7.10.2.5 NppStatus nppiDivC_16s_C3IRSfs (const Npp16s *aConstants*[3], 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:

    aConstants fixed size array 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

7.10.2.6 NppStatus nppiDivC_16s_C3RSfs (const Npp16s ∗ pSrc1, int nSrc1Step, const Npp16s aConstants[3], 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.

aConstants fixed size array 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

7.10.2.7 NppStatus nppiDivC_16s_C4IRSfs (const Npp16s aConstants[4], 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:

aConstants fixed size array 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

7.10.2.8 NppStatus nppiDivC_16s_C4RSfs (const Npp16s ∗ pSrc1, int nSrc1Step, const Npp16s aConstants[4], 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.

aConstants fixed size array 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

7.10.2.9 NppStatus nppiDivC_16sc_AC4IRSfs (const Npp16sc *aConstants*[3], 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:

aConstants fixed size array 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

7.10.2.10 NppStatus nppiDivC_16sc_AC4RSfs (const Npp16sc ∗ *pSrc1*, int *nSrc1Step*, const Npp16sc *aConstants*[3], 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.

aConstants fixed size array 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

7.10.2.11   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

7.10.2.12   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

7.10.2.13   NppStatus nppiDivC_16sc_C3IRSfs (const Npp16sc *aConstants*[3], 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:

>   *aConstants* fixed size array 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

7.10.2.14 NppStatus nppiDivC_16sc_C3RSfs (const Npp16sc ∗ *pSrc1*, int *nSrc1Step*, const Npp16sc *aConstants*[3], 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.

aConstants fixed size array 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

7.10.2.15 NppStatus nppiDivC_16u_AC4IRSfs (const Npp16u *aConstants*[3], 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:

aConstants fixed size array 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

7.10.2.16 NppStatus nppiDivC_16u_AC4RSfs (const Npp16u ∗ *pSrc1*, int *nSrc1Step*, const Npp16u *aConstants*[3], 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.
>
>*aConstants* fixed size array 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

7.10.2.17 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

7.10.2.18 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

7.10.2.19 NppStatus nppiDivC_16u_C3IRSfs (const Npp16u *aConstants*[3], 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:

aConstants fixed size array 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

7.10.2.20 NppStatus nppiDivC_16u_C3RSfs (const Npp16u ∗ *pSrc1*, int *nSrc1Step*, const Npp16u *aConstants*[3], 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.

aConstants fixed size array 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

7.10.2.21   NppStatus nppiDivC_16u_C4IRSfs (const Npp16u *aConstants*[4], 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:

>   *aConstants* fixed size array 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

7.10.2.22   NppStatus nppiDivC_16u_C4RSfs (const Npp16u ∗ *pSrc1*, int *nSrc1Step*, const Npp16u *aConstants*[4], 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.
>
>   *aConstants* fixed size array 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

7.10.2.23   NppStatus nppiDivC_32f_AC4IR (const Npp32f *aConstants*[3], Npp32f ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 32-bit floating point channel with unmodified alpha in place image divided by constant.

Parameters:

>   *aConstants* fixed size array 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

7.10.2.24 NppStatus nppiDivC_32f_AC4R (const Npp32f ∗ *pSrc1*, int *nSrc1Step*, const Npp32f *aConstants*[3], 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.
>
> *aConstants* fixed size array 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

7.10.2.25 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

7.10.2.26 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

7.10.2.27 NppStatus nppiDivC_32f_C3IR (const Npp32f *aConstants*[3], Npp32f ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Three 32-bit floating point channel in place image divided by constant.

Parameters:

    aConstants fixed size array 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

7.10.2.28 NppStatus nppiDivC_32f_C3R (const Npp32f ∗ *pSrc1*, int *nSrc1Step*, const Npp32f *aConstants*[3], 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.

    aConstants fixed size array 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

7.10.2.29 NppStatus nppiDivC_32f_C4IR (const Npp32f *aConstants*[4], Npp32f ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 32-bit floating point channel in place image divided by constant.

Parameters:

    aConstants fixed size array 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

7.10.2.30   NppStatus nppiDivC_32f_C4R (const Npp32f ∗ *pSrc1*, int *nSrc1Step*, const Npp32f *aConstants*[4], 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.
>
> *aConstants* fixed size array 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

7.10.2.31   NppStatus nppiDivC_32fc_AC4IR (const Npp32fc *aConstants*[3], 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:

> *aConstants* fixed size array 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

7.10.2.32   NppStatus nppiDivC_32fc_AC4R (const Npp32fc ∗ *pSrc1*, int *nSrc1Step*, const Npp32fc *aConstants*[3], 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.
>
> *aConstants* fixed size array 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

7.10.2.33 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

7.10.2.34 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

7.10.2.35 NppStatus nppiDivC_32fc_C3IR (const Npp32fc *aConstants*[3], 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:

> *aConstants* fixed size array 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

7.10.2.36 NppStatus nppiDivC_32fc_C3R (const Npp32fc ∗ *pSrc1*, int *nSrc1Step*, const Npp32fc *aConstants*[3], 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.

    aConstants fixed size array 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

7.10.2.37 NppStatus nppiDivC_32fc_C4IR (const Npp32fc *aConstants*[4], 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:

    aConstants fixed size array 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

7.10.2.38 NppStatus nppiDivC_32fc_C4R (const Npp32fc ∗ *pSrc1*, int *nSrc1Step*, const Npp32fc *aConstants*[4], 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.

    aConstants fixed size array 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

7.10.2.39 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

7.10.2.40 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

7.10.2.41 NppStatus nppiDivC_32s_C3IRSfs (const Npp32s *aConstants*[3], 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:

> **aConstants** fixed size array 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

7.10.2.42   NppStatus nppiDivC_32s_C3RSfs (const Npp32s ∗ pSrc1, int nSrc1Step, const Npp32s aConstants[3], 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.
>
> **aConstants** fixed size array 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

7.10.2.43   NppStatus nppiDivC_32sc_AC4IRSfs (const Npp32sc aConstants[3], 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:

> **aConstants** fixed size array 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

7.10.2.44 NppStatus nppiDivC_32sc_AC4RSfs (const Npp32sc ∗ pSrc1, int nSrc1Step, const Npp32sc aConstants[3], 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.
>
> *aConstants* fixed size array 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

7.10.2.45 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

7.10.2.46 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

7.10.2.47 NppStatus nppiDivC_32sc_C3IRSfs (const Npp32sc *aConstants*[3], 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:

aConstants fixed size array 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

7.10.2.48 NppStatus nppiDivC_32sc_C3RSfs (const Npp32sc ∗ *pSrc1*, int *nSrc1Step*, const Npp32sc *aConstants*[3], 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.

aConstants fixed size array 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

7.10.2.49 NppStatus nppiDivC_8u_AC4IRSfs (const Npp8u *aConstants*[3], 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:

> *aConstants* fixed size array 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

7.10.2.50 NppStatus nppiDivC_8u_AC4RSfs (const Npp8u ∗ *pSrc1*, int *nSrc1Step*, const Npp8u *aConstants*[3], 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.
>
> *aConstants* fixed size array 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

7.10.2.51 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

7.10.2.52 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

7.10.2.53 NppStatus nppiDivC_8u_C3IRSfs (const Npp8u *aConstants*[3], 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:

aConstants fixed size array 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

7.10.2.54 NppStatus nppiDivC_8u_C3RSfs (const Npp8u ∗ *pSrc1*, int *nSrc1Step*, const Npp8u *aConstants*[3], 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.
>
> *aConstants* fixed size array 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

7.10.2.55 NppStatus nppiDivC_8u_C4IRSfs (const Npp8u *aConstants*[4], 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:

> *aConstants* fixed size array 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

7.10.2.56 NppStatus nppiDivC_8u_C4RSfs (const Npp8u ∗ *pSrc1*, int *nSrc1Step*, const Npp8u *aConstants*[4], 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.
>
> *aConstants* fixed size array 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

7.11 AbsDiffC

Determines absolute difference between each pixel of an image and a constant value.

Functions

- 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, Npp16u 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.

7.11.1 Detailed Description

Determines absolute difference between each pixel of an image and a constant value.

7.11.2 Function Documentation

7.11.2.1 NppStatus nppiAbsDiffC_16u_C1R (const Npp16u ∗ *pSrc1*, int *nSrc1Step*, Npp16u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, Npp16u *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

7.11.2.2 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

7.11.2.3 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

7.12 Add

Pixel by pixel addition of two images.

Functions

- 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 $2^{(-nScaleFactor)}$, 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 $2^{(-nScaleFactor)}$, 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 $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiAdd_8u_C3IRSfs (const Npp8u *pSrc, int nSrcStep, Npp8u *pSrcDst, int nSrcDst-Step, NppiSize oSizeROI, int nScaleFactor)

    Three 8-bit unsigned char channel in place image addition, scale by $2^{(-nScaleFactor)}$, 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 $2^{(-nScaleFactor)}$, 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 $2^{(-nScaleFactor)}$, 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 $2^{(-nScaleFactor)}$, 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 $2^{(-nScaleFactor)}$, 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 $2^{(-nScaleFactor)}$, then clamp to saturated value.

- 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.

- 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 $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiAdd_16u_C3IRSfs (const Npp16u *pSrc, int nSrcStep, Npp16u *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

  Three 16-bit unsigned short channel in place image addition, scale by $2^{(-nScaleFactor)}$, 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)

Three 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^(-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^(-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^(-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^(-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^(-nScaleFactor), then clamp to saturated value.

- [NppStatus nppiAdd_16sc_C3IRSfs](#) (const [Npp16sc](#) ∗pSrc, int nSrcStep, [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 addition, scale by 2^(-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^(-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^(-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 $2^{\wedge}(-nScaleFactor)$, then clamp to saturated value.

- NppStatus nppiAdd_32s_C3IRSfs (const Npp32s *pSrc, int nSrcStep, Npp32s *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

  Three 32-bit signed integer channel in place image addition, scale by $2^{\wedge}(-nScaleFactor)$, 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 $2^{\wedge}(-nScaleFactor)$, 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 $2^{\wedge}(-nScaleFactor)$, 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 $2^{\wedge}(-nScaleFactor)$, then clamp to saturated value.

- NppStatus nppiAdd_32sc_C3IRSfs (const Npp32sc *pSrc, int nSrcStep, Npp32sc *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

  Three 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.

- 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.

- 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.

- 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 nSrcDst-Step, 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)

  Three 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)

  Three 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 nSrcDstStep, 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 nSrcDstStep, NppiSize oSizeROI)

  Four 32-bit floating point complex number (32-bit real, 32-bit imaginary) channel in place image addition.

7.12.1 Detailed Description

Pixel by pixel addition of two images.

7.12.2 Function Documentation

7.12.2.1 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.

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

7.12.2.2 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.

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

7.12.2.3 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

7.12.2.4 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

7.12.2.5 NppStatus nppiAdd_16s_C3IRSfs (const Npp16s ∗ *pSrc*, int *nSrcStep*, Npp16s ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Three 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

7.12.2.6 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

7.12.2.7 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

7.12.2.8 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

7.12.2.9 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

7.12.2.10 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

7.12.2.11 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

Copyright ©2009–2017 NVIDIA Corporation

7.12.2.12 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

7.12.2.13 NppStatus nppiAdd_16sc_C3IRSfs (const Npp16sc ∗ *pSrc*, int *nSrcStep*, 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 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

7.12.2.14 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

7.12.2.15   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.

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

7.12.2.16   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.

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

7.12.2.17 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 $2^{\wedge}$(-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

7.12.2.18 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.

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

7.12.2.19 NppStatus nppiAdd_16u_C3IRSfs (const Npp16u ∗ *pSrc*, int *nSrcStep*, Npp16u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Three 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

7.12.2.20 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

7.12.2.21 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

7.12.2.22 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

7.12.2.23 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

7.12.2.24 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

7.12.2.25 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

7.12.2.26 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

7.12.2.27 NppStatus nppiAdd_32f_C3IR (const Npp32f ∗ *pSrc*, int *nSrcStep*, Npp32f ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Three 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

7.12.2.28 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

7.12.2.29   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

7.12.2.30   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

7.12.2.31   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

7.12.2.32 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

7.12.2.33 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

7.12.2.34 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

7.12.2.35 NppStatus nppiAdd_32fc_C3IR (const Npp32fc ∗ *pSrc*, int *nSrcStep*, Npp32fc ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Three 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

7.12.2.36 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

7.12.2.37 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

7.12.2.38 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

7.12.2.39 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.

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

7.12.2.40 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

7.12.2.41 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

7.12.2.42 NppStatus nppiAdd_32s_C3IRSfs (const Npp32s ∗ *pSrc*, int *nSrcStep*, Npp32s ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Three 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

7.12.2.43 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.

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

7.12.2.44 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.

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

7.12.2.45 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

7.12.2.46 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

7.12.2.47 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

7.12.2.48 NppStatus nppiAdd_32sc_C3IRSfs (const Npp32sc ∗ *pSrc*, int *nSrcStep*, Npp32sc ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Three 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

7.12.2.49 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

7.12.2.50 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 $2^{(-nScaleFactor)}$, 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

7.12.2.51 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 $2^{(-nScaleFactor)}$, 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

7.12.2.52   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

7.12.2.53   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

7.12.2.54 NppStatus nppiAdd_8u_C3IRSfs (const Npp8u ∗ *pSrc*, int *nSrcStep*, Npp8u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Three 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

7.12.2.55 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

7.12.2.56 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 $2^{\wedge}$(-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

7.12.2.57 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.

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

7.13 AddSquare

Pixel by pixel addition of squared pixels from source image to floating point pixel values of destination image.

Functions

- 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.

7.13.1 Detailed Description

Pixel by pixel addition of squared pixels from source image to floating point pixel values of destination image.

7.13.2 Function Documentation

7.13.2.1 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

7.13.2.2 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

7.13.2.3 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

7.13.2.4 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

7.13.2.5 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

7.13.2.6 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

7.14 AddProduct

Pixel by pixel addition of product of pixels from two source images to floating point pixel values of destination image.

Functions

- 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.

7.14.1 Detailed Description

Pixel by pixel addition of product of pixels from two source images to floating point pixel values of destination image.

7.14.2 Function Documentation

7.14.2.1 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

7.14.2.2 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

7.14.2.3 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

7.14.2.4 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

7.14.2.5 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

7.14.2.6 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

7.15 AddWeighted

Pixel by pixel addition of alpha weighted pixel values from a source image to floating point pixel values of destination image.

Functions

- 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.

7.15.1 Detailed Description

Pixel by pixel addition of alpha weighted pixel values from a source image to floating point pixel values of destination image.

7.15.2 Function Documentation

7.15.2.1 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).

Copyright ©2009–2017 NVIDIA Corporation

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

7.15.2.2 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

7.15.2.3 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

7.15.2.4 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

7.15.2.5 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

7.15.2.6 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

7.16 Mul

Pixel by pixel multiply of two images.

Functions

- 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 nSrcDst-Step, 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 nSrcDst-Step, NppiSize oSizeROI, int nScaleFactor)

  Three 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 nSrcD-stStep, 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 nSrcDst-Step, 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 $2^{(-nScaleFactor)}$, 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 $2^{(-nScaleFactor)}$, 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 $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiMul_16u_C3IRSfs (const Npp16u *pSrc, int nSrcStep, Npp16u *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

  Three 16-bit unsigned short channel in place image multiplication, scale by $2^{(-nScaleFactor)}$, 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 $2^{(-nScaleFactor)}$, 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 $2^{(-nScaleFactor)}$, 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 $2^{(-nScaleFactor)}$, 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 $2^{(-nScaleFactor)}$, 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 $2^{(-nScaleFactor)}$, 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 $2^{(-nScaleFactor)}$, 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 $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiMul_16s_C3IRSfs (const Npp16s *pSrc, int nSrcStep, Npp16s *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

Three 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 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.

- 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)

  Three 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 $2^{(-nScaleFactor)}$, 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 $2^{(-nScaleFactor)}$, 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 $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiMul_32s_C3IRSfs (const Npp32s ∗pSrc, int nSrcStep, Npp32s ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

    Three 32-bit signed integer channel in place image multiplication, scale by $2^{(-nScaleFactor)}$, 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 $2^{(-nScaleFactor)}$, 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 $2^{(-nScaleFactor)}$, 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 $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiMul_32sc_C3IRSfs (const Npp32sc ∗pSrc, int nSrcStep, Npp32sc ∗pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

    Three 32-bit signed integer complex number (32-bit real, 32-bit imaginary) channel in place image multiplication, scale by $2^{(-nScaleFactor)}$, 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 $2^{(-nScaleFactor)}$, 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)

  Three 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 nSrcD-stStep, NppiSize oSizeROI)

    Three 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 nSr-cDstStep, 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 nSrcD-stStep, NppiSize oSizeROI)

    Four 32-bit floating point complex number (32-bit real, 32-bit imaginary) channel in place image multiplication.

7.16.1 Detailed Description

Pixel by pixel multiply of two images.

7.16.2 Function Documentation

7.16.2.1 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

7.16.2.2 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.

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

7.16.2.3 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

7.16.2.4 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

7.16.2.5 NppStatus nppiMul_16s_C3IRSfs (const Npp16s ∗ *pSrc*, int *nSrcStep*, Npp16s ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Three 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

7.16.2.6 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

7.16.2.7 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 $2^{(-nScaleFactor)}$, 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

7.16.2.8 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 $2^{(-nScaleFactor)}$, 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

7.16.2.9 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 $2^{(-nScaleFactor)}$, 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

7.16.2.10 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

7.16.2.11 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

7.16.2.12   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

7.16.2.13   NppStatus nppiMul_16sc_C3IRSfs (const Npp16sc ∗ *pSrc*, int *nSrcStep*, 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 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

7.16.2.14   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

7.16.2.15 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

7.16.2.16 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

7.16.2.17   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.

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

7.16.2.18   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.

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

7.16.2.19 NppStatus nppiMul_16u_C3IRSfs (const Npp16u ∗ *pSrc*, int *nSrcStep*, Npp16u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Three 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

7.16.2.20 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 $2^{(-nScaleFactor)}$, 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

7.16.2.21 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 $2^{(-nScaleFactor)}$, 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

7.16.2.22 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

7.16.2.23 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

7.16.2.24 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

7.16.2.25 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

7.16.2.26 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

7.16.2.27 NppStatus nppiMul_32f_C3IR (const Npp32f ∗ *pSrc*, int *nSrcStep*, Npp32f ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Three 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

7.16.2.28 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

7.16.2.29 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

7.16.2.30 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

7.16.2.31 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

7.16.2.32 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

7.16.2.33 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

7.16.2.34 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

7.16.2.35 NppStatus nppiMul_32fc_C3IR (const Npp32fc * *pSrc*, int *nSrcStep*, Npp32fc * *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Three 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

7.16.2.36 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

7.16.2.37 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

7.16.2.38 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

7.16.2.39 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.

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

7.16.2.40 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

7.16.2.41 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 $2^{(-nScaleFactor)}$, 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

7.16.2.42 NppStatus nppiMul_32s_C3IRSfs (const Npp32s ∗ *pSrc*, int *nSrcStep*, Npp32s ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Three 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

7.16.2.43 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 $2^{(-nScaleFactor)}$, 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

7.16.2.44 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 $2^{(-nScaleFactor)}$, 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

7.16.2.45 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

7.16.2.46 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

7.16.2.47 **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 $2^{(-nScaleFactor)}$, 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

7.16.2.48 **NppStatus nppiMul_32sc_C3IRSfs (const Npp32sc ∗ _pSrc_, int _nSrcStep_, Npp32sc ∗ _pSrcDst_, int _nSrcDstStep_, NppiSize _oSizeROI_, int _nScaleFactor_)**

Three 32-bit signed integer complex number (32-bit real, 32-bit imaginary) 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

7.16.2.49 **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 $2^{(-nScaleFactor)}$, 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

7.16.2.50   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

7.16.2.51   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

7.16.2.52 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

7.16.2.53 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

7.16.2.54   NppStatus nppiMul_8u_C3IRSfs (const Npp8u ∗ *pSrc*, int *nSrcStep*, Npp8u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Three 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

7.16.2.55   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

7.16.2.56   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

7.16.2.57   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

7.17 MulScale

Pixel by pixel multiplies each pixel of two images then scales the result by the maximum value for the data bit width.

Functions

- 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 nSrcD-stStep, 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 nSrcD-stStep, NppiSize oSizeROI)

  Three 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 nSrcD-stStep, 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)

  Three 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.

7.17.1   Detailed Description

Pixel by pixel multiplies each pixel of two images then scales the result by the maximum value for the data bit width.

7.17.2   Function Documentation

7.17.2.1   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

7.17.2.2 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

7.17.2.3 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

7.17.2.4 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

7.17.2.5 NppStatus nppiMulScale_16u_C3IR (const Npp16u ∗ *pSrc*, int *nSrcStep*, Npp16u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Three 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

7.17.2.6 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

7.17.2.7 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

7.17.2.8 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

7.17.2.9 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

7.17.2.10 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

7.17.2.11 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

7.17.2.12 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

7.17.2.13 NppStatus nppiMulScale_8u_C3IR (const Npp8u ∗ *pSrc*, int *nSrcStep*, Npp8u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Three 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

7.17.2.14 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

7.17.2.15 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

7.17.2.16 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

7.18   Sub

Pixel by pixel subtraction of two images.

Functions

- 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.

- 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 $2^{(-nScaleFactor)}$, 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 $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiSub_8u_C3IRSfs (const Npp8u *pSrc, int nSrcStep, Npp8u *pSrcDst, int nSrcDst-Step, NppiSize oSizeROI, int nScaleFactor)

  Three 8-bit unsigned char channel in place image subtraction, scale by $2^{(-nScaleFactor)}$, 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 $2^{(-nScaleFactor)}$, 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 $2^{(-nScaleFactor)}$, 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 $2^{(-nScaleFactor)}$, 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 $2^{(-nScaleFactor)}$, 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 $2^{(-nScaleFactor)}$, 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)

  Three 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 nSr-cDstStep, 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 nSrcD-stStep, NppiSize oSizeROI, int nScaleFactor)

Three 16-bit signed short channel in place image subtraction, scale by $2^\wedge$(-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 $2^\wedge$(-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 $2^\wedge$(-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 $2^\wedge$(-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 $2^\wedge$(-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 $2^\wedge$(-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 $2^\wedge$(-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 $2^\wedge$(-nScaleFactor), then clamp to saturated value.

- NppStatus nppiSub_16sc_C3IRSfs (const Npp16sc ∗pSrc, int nSrcStep, 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 subtraction, scale by $2^\wedge$(-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 $2^\wedge$(-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 $2^\wedge$(-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)

  Three 32-bit signed integer channel in place image subtraction, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiSub_32s_C4RSfs (const Npp32s *pSrc1, int nSrc1Step, const Npp32s *pSrc2, int nSrc2Step, Npp32s *pDst, int nDstStep, NppiSize oSizeROI, int nScaleFactor)

  Four 32-bit signed integer channel image subtraction, scale by $2^{(-nScaleFactor)}$, then clamp to saturated value.

- NppStatus nppiSub_32s_C4IRSfs (const Npp32s *pSrc, int nSrcStep, Npp32s *pSrcDst, int nSrcD-stStep, NppiSize oSizeROI, int nScaleFactor)

  Four 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 subtrac-tion, 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 nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

  Three 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^(-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)

  Three 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 nSrcD-stStep, 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 nSrcD-stStep, NppiSize oSizeROI)

    Three 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 nSrcD-stStep, NppiSize oSizeROI)

    Four 32-bit floating point complex number (32-bit real, 32-bit imaginary) channel in place image subtraction.

7.18.1 Detailed Description

Pixel by pixel subtraction of two images.

7.18.2 Function Documentation

7.18.2.1 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.

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

7.18.2.2 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

7.18.2.3 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

7.18.2.4 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.

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

7.18.2.5 NppStatus nppiSub_16s_C3IRSfs (const Npp16s ∗ *pSrc*, int *nSrcStep*, Npp16s ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Three 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

7.18.2.6 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.

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

7.18.2.7 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

7.18.2.8 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

7.18.2.9   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 $2^{\wedge}$(-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

7.18.2.10   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 $2^{\wedge}$(-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

7.18.2.11   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

7.18.2.12 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

7.18.2.13 NppStatus nppiSub_16sc_C3IRSfs (const Npp16sc ∗ *pSrc*, int *nSrcStep*, 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 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

7.18.2.14   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.

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

7.18.2.15   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 $2^{(-nScaleFactor)}$, 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

7.18.2.16   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 $2^{(-nScaleFactor)}$, 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

7.18.2.17 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

7.18.2.18 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

7.18.2.19 NppStatus nppiSub_16u_C3IRSfs (const Npp16u ∗ *pSrc*, int *nSrcStep*, Npp16u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Three 16-bit unsigned 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

7.18.2.20 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 $2^{(-nScaleFactor)}$, 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

7.18.2.21 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

7.18.2.22 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

7.18.2.23 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

7.18.2.24 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

7.18.2.25 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

7.18.2.26 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

7.18.2.27 NppStatus nppiSub_32f_C3IR (const Npp32f ∗ *pSrc*, int *nSrcStep*, Npp32f ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Three 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

7.18.2.28 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

7.18.2.29 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

7.18.2.30 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

7.18.2.31 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

7.18.2.32 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

7.18.2.33 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

7.18.2.34 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

7.18.2.35 NppStatus nppiSub_32fc_C3IR (const Npp32fc ∗ *pSrc*, int *nSrcStep*, Npp32fc ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Three 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

7.18.2.36   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

7.18.2.37   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

7.18.2.38   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

7.18.2.39 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 $2^{\wedge}$(-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

7.18.2.40 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

7.18.2.41 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

7.18.2.42 NppStatus nppiSub_32s_C3IRSfs (const Npp32s ∗ pSrc, int nSrcStep, Npp32s ∗ pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

Three 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

7.18.2.43 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

7.18.2.44 NppStatus nppiSub_32s_C4IRSfs (const Npp32s ∗ *pSrc*, int *nSrcStep*, Npp32s ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 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

7.18.2.45 NppStatus nppiSub_32s_C4RSfs (const Npp32s ∗ *pSrc1*, int *nSrc1Step*, const Npp32s ∗ *pSrc2*, int *nSrc2Step*, Npp32s ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Four 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

7.18.2.46 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

7.18.2.47 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

7.18.2.48 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

7.18.2.49 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

7.18.2.50 NppStatus nppiSub_32sc_C3IRSfs (const Npp32sc ∗ *pSrc*, int *nSrcStep*, Npp32sc ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Three 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

7.18.2.51 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 $2^{\wedge}$(-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

7.18.2.52 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 $2^{\wedge}$(-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

7.18.2.53 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

7.18.2.54 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

7.18.2.55 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

7.18.2.56 NppStatus nppiSub_8u_C3IRSfs (const Npp8u ∗ *pSrc*, int *nSrcStep*, Npp8u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Three 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

7.18.2.57 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.

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

7.18.2.58 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 $2^{(-nScaleFactor)}$, 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

7.18.2.59 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 $2^{(-nScaleFactor)}$, 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

7.19 Div

Pixel by pixel division of two images.

Functions

- 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 nSrcDst-Step, 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 nSrcDst-Step, NppiSize oSizeROI, int nScaleFactor)

  Three 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^(-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^(-nScaleFactor), then clamp to saturated value.

- NppStatus nppiDiv_16u_C3IRSfs (const Npp16u *pSrc, int nSrcStep, Npp16u *pSrcDst, int nSrcDstStep, NppiSize oSizeROI, int nScaleFactor)

  Three 16-bit unsigned short channel in place image division, scale by 2^(-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^(-nScaleFactor), then clamp to saturated value.

- 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^(-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^(-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)

  Three 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)

  Three 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)

  Three 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)

  Three 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 nSrcDst-Step, 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 nSrcDst-Step, NppiSize oSizeROI)

  Three 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 nSrcDst-Step, 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)

  Three 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 nSrcDstStep, 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 nSrcDstStep, NppiSize oSizeROI)

  > *Four 32-bit floating point complex number (32-bit real, 32-bit imaginary) channel in place image division.*

7.19.1 Detailed Description

Pixel by pixel division of two images.

7.19.2 Function Documentation

7.19.2.1 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

7.19.2.2 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.

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

7.19.2.3 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.

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

7.19.2.4 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.

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

7.19.2.5 NppStatus nppiDiv_16s_C3IRSfs (const Npp16s ∗ *pSrc*, int *nSrcStep*, Npp16s ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, 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).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.19.2.6 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.

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

7.19.2.7 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.

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

7.19.2.8 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

7.19.2.9 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

7.19.2.10   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.

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

7.19.2.11   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.

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

7.19.2.12   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.

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

7.19.2.13 NppStatus nppiDiv_16sc_C3IRSfs (const Npp16sc ∗ *pSrc*, int *nSrcStep*, 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 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

7.19.2.14 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

7.19.2.15 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 $2^{(-nScaleFactor)}$, 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

7.19.2.16 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 $2^{(-nScaleFactor)}$, 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

7.19.2.17 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

7.19.2.18 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

7.19.2.19 NppStatus nppiDiv_16u_C3IRSfs (const Npp16u * *pSrc*, int *nSrcStep*, Npp16u * *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Three 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

7.19.2.20 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

7.19.2.21 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

7.19.2.22 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.

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

7.19.2.23 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

7.19.2.24 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

7.19.2.25 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

7.19.2.26 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

7.19.2.27 NppStatus nppiDiv_32f_C3IR (const Npp32f ∗ *pSrc*, int *nSrcStep*, Npp32f ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Three 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

7.19.2.28 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

7.19.2.29 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

7.19.2.30   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

7.19.2.31   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

7.19.2.32   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

7.19.2.33 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

7.19.2.34 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

7.19.2.35 NppStatus nppiDiv_32fc_C3IR (const Npp32fc ∗ *pSrc*, int *nSrcStep*, Npp32fc ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Three 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

7.19.2.36 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

7.19.2.37 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

7.19.2.38 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

7.19.2.39 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

7.19.2.40 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

7.19.2.41 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 $2^{\wedge}$(-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

7.19.2.42 NppStatus nppiDiv_32s_C3IRSfs (const Npp32s ∗ *pSrc*, int *nSrcStep*, Npp32s ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Three 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

7.19.2.43 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 $2^\wedge$(-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

7.19.2.44 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 $2^\wedge$(-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

7.19.2.45 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

7.19.2.46 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.

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

7.19.2.47 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.

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

7.19.2.48 NppStatus nppiDiv_32sc_C3IRSfs (const Npp32sc ∗ *pSrc*, int *nSrcStep*, Npp32sc ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Three 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

7.19.2.49 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

7.19.2.50 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

7.19.2.51 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

7.19.2.52 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

7.19.2.53 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

7.19.2.54 NppStatus nppiDiv_8u_C3IRSfs (const Npp8u ∗ *pSrc*, int *nSrcStep*, Npp8u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, 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).

nScaleFactor Integer Result Scaling.

Returns:

Image Data Related Error Codes, ROI Related Error Codes

7.19.2.55   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

7.19.2.56   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

7.19.2.57   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

7.20 Div_Round

Pixel by pixel division of two images using result rounding modes.

Functions

- 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.

- 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.

- 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.

- 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.

- 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.

- 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.

- 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 $2^{\wedge}(-nScaleFactor)$, 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 $2^{\wedge}(-nScaleFactor)$, 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^(-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^(-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^(-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^(-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^(-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^(-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^(-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.

7.20.1 Detailed Description

Pixel by pixel division of two images using result rounding modes.

7.20.2 Function Documentation

7.20.2.1 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

7.20.2.2 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 $2^{(-nScaleFactor)}$, 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

7.20.2.3 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 $2^{(-nScaleFactor)}$, 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

7.20.2.4 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.

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

7.20.2.5 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.

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

7.20.2.6 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

7.20.2.7 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

7.20.2.8   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

7.20.2.9   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

7.20.2.10 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.

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

7.20.2.11 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 $2^\wedge$(-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

7.20.2.12 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 $2^{\wedge}$(-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

7.20.2.13 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.

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

7.20.2.14 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.

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

7.20.2.15 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 $2^{(-nScaleFactor)}$, 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

7.20.2.16 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^(-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

7.20.2.17 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.

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

7.20.2.18 **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

7.20.2.19 **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 satu-
rated 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

7.20.2.20 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

7.20.2.21 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

7.20.2.22 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

7.20.2.23 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

7.20.2.24 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

7.21 Abs

Absolute value of each pixel value in an image.

Functions

- 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, NppiSize 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, NppiSize 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.

7.21.1 Detailed Description

Absolute value of each pixel value in an image.

7.21.2 Function Documentation

7.21.2.1 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

7.21.2.2 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

7.21.2.3 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

7.21.2.4 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

7.21.2.5 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

7.21.2.6 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

7.21.2.7 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

7.21.2.8 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

7.21.2.9 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

7.21.2.10 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

7.21.2.11 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

7.21.2.12 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

7.21.2.13 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

7.21.2.14 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

7.21.2.15   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

7.21.2.16   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

7.22 AbsDiff

Pixel by pixel absolute difference between two images.

Functions

- 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_8u_C3R (const Npp8u ∗pSrc1, int nSrc1Step, const Npp8u ∗pSrc2, int nSrc2Step, Npp8u ∗pDst, int nDstStep, NppiSize oSizeROI)

  Three 8-bit unsigned char channels absolute difference of image1 minus image2.

- NppStatus nppiAbsDiff_8u_C4R (const Npp8u ∗pSrc1, int nSrc1Step, const Npp8u ∗pSrc2, int nSrc2Step, Npp8u ∗pDst, int nDstStep, NppiSize oSizeROI)

  Four 8-bit unsigned char channels 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.

7.22.1 Detailed Description

Pixel by pixel absolute difference between two images.

7.22.2 Function Documentation

7.22.2.1 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

7.22.2.2 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

7.22.2.3 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

7.22.2.4 NppStatus nppiAbsDiff_8u_C3R (const Npp8u ∗ pSrc1, int nSrc1Step, const Npp8u ∗ pSrc2, int nSrc2Step, Npp8u ∗ pDst, int nDstStep, NppiSize oSizeROI)

Three 8-bit unsigned char channels 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

7.22.2.5 NppStatus nppiAbsDiff_8u_C4R (const Npp8u ∗ *pSrc1*, int *nSrc1Step*, const Npp8u ∗ *pSrc2*, int *nSrc2Step*, Npp8u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Four 8-bit unsigned char channels 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

7.23 Sqr

Square each pixel in an image.

Functions

- 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 $2^{(-nScaleFactor)}$, 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 $2^{(-nScaleFactor)}$, 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 $2^{(-nScaleFactor)}$, 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 $2^{(-nScaleFactor)}$, 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 $2^{(-nScaleFactor)}$, 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 $2^{(-nScaleFactor)}$, 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 $2^{(-nScaleFactor)}$, 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 $2^{(-nScaleFactor)}$, 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 $2^{(-nScaleFactor)}$, 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 $2^{\wedge}$(-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 $2^{\wedge}$(-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 $2^{\wedge}$(-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 $2^{\wedge}$(-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 $2^{\wedge}$(-nScaleFactor), then clamp to saturated value.

- 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 $2^{\wedge}$(-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 $2^{\wedge}$(-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 $2^{\wedge}$(-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 $2^{\wedge}$(-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 $2^{(-nScaleFactor)}$, 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 $2^{(-nScaleFactor)}$, 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 $2^{(-nScaleFactor)}$, 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.

7.23.1 Detailed Description

Square each pixel in an image.

7.23.2 Function Documentation

7.23.2.1 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.

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

7.23.2.2 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 $2^{\wedge}$(-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

7.23.2.3 NppStatus nppiSqr_16s_C1IRSfs (Npp16s ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 16-bit signed short channel in place image squared, scale by $2^{\wedge}$(-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

7.23.2.4 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 $2^{\wedge}$(-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

7.23.2.5 NppStatus nppiSqr_16s_C3IRSfs (Npp16s ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Three 16-bit signed short channel in place image squared, scale by $2^{\wedge}$(-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

7.23.2.6 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 $2^{\wedge}$(-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

7.23.2.7 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

7.23.2.8 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

7.23.2.9 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.

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

7.23.2.10 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

7.23.2.11 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

7.23.2.12 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

7.23.2.13 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

7.23.2.14 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

7.23.2.15 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

7.23.2.16 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

7.23.2.17 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

7.23.2.18 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

7.23.2.19 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

7.23.2.20 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

7.23.2.21 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

7.23.2.22 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

7.23.2.23 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

7.23.2.24 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

7.23.2.25 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

7.23.2.26 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

7.23.2.27 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

7.23.2.28 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

7.23.2.29 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

7.23.2.30 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

7.23.2.31 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

7.23.2.32 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

7.24 Sqrt

Pixel by pixel square root of each pixel in an image.

Functions

- 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 $2^{(-nScaleFactor)}$, 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 $2^\wedge(-nScaleFactor)$, 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 $2^\wedge(-nScaleFactor)$, 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 $2^\wedge(-nScaleFactor)$, 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 $2^\wedge(-nScaleFactor)$, 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 $2^\wedge(-nScaleFactor)$, 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 $2^\wedge(-nScaleFactor)$, 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 $2^\wedge(-nScaleFactor)$, 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 $2^\wedge(-nScaleFactor)$, 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 $2^\wedge(-nScaleFactor)$, 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, Nppi-Size 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.

7.24.1   Detailed Description

Pixel by pixel square root of each pixel in an image.

7.24.2   Function Documentation

7.24.2.1   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 $2^{\wedge}($-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

7.24.2.2 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 $2^\wedge$(-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

7.24.2.3 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 $2^\wedge$(-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

7.24.2.4 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

7.24.2.5 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.

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

7.24.2.6 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.

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

7.24.2.7 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.

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

7.24.2.8 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

7.24.2.9 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

7.24.2.10 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.

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

7.24.2.11 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.

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

7.24.2.12 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.

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

7.24.2.13 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

7.24.2.14 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

7.24.2.15 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

7.24.2.16   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

7.24.2.17   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

7.24.2.18   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

7.24.2.19 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

7.24.2.20 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

7.24.2.21 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

7.24.2.22 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

7.24.2.23 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

7.24.2.24 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

7.24.2.25 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.

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

7.24.2.26 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.

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

7.25 Ln

Pixel by pixel natural logarithm of each pixel in an image.

Functions

- 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 nScale-Factor)

  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 nScale-Factor)

  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.

7.25.1 Detailed Description

Pixel by pixel natural logarithm of each pixel in an image.

7.25.2 Function Documentation

7.25.2.1 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.

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

7.25.2.2 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

7.25.2.3 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

7.25.2.4 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

7.25.2.5 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

7.25.2.6 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

7.25.2.7 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

7.25.2.8 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

7.25.2.9 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

7.25.2.10 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

7.25.2.11 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

7.25.2.12 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

7.25.2.13 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

7.25.2.14 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

7.25.2.15 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

7.25.2.16 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 $2^{\wedge}$(-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

7.26 Exp

Exponential value of each pixel in an image.

Functions

- 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, NppiSize 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, NppiSize 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.

7.26.1 Detailed Description

Exponential value of each pixel in an image.

7.26.2 Function Documentation

7.26.2.1 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.

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

7.26.2.2 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

7.26.2.3 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

7.26.2.4 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

7.26.2.5 NppStatus nppiExp_16u_C1IRSfs (Npp16u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

One 16-bit unsigned short channel in place image exponential, scale by $2^{\wedge}$(-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

7.26.2.6 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 $2^{\wedge}$(-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

7.26.2.7 NppStatus nppiExp_16u_C3IRSfs (Npp16u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*, int *nScaleFactor*)

Three 16-bit unsigned short channel in place image exponential, scale by $2^{\wedge}$(-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

7.26.2.8 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

7.26.2.9 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

7.26.2.10 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

7.26.2.11 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

7.26.2.12 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

7.26.2.13 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

7.26.2.14 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

7.26.2.15 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

7.26.2.16 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

7.27   Logical Operations

Modules

- AndC

    Pixel by pixel logical and of an image with a constant.

- OrC

    Pixel by pixel logical or of an image with a constant.

- XorC

    Pixel by pixel logical exclusive or of an image with a constant.

- RShiftC

    Pixel by pixel right shift of an image by a constant value.

- LShiftC

    Pixel by pixel left shift of an image by a constant value.

- And

    Pixel by pixel logical and of images.

- Or

    Pixel by pixel logical or of images.

- Xor

    Pixel by pixel logical exclusive or of images.

- Not

    Pixel by pixel logical not of image.

7.28 AndC

Pixel by pixel logical and of an image with a constant.

Functions

- 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, NppiSize 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 aConstants[3], Npp8u *pDst, int nDstStep, NppiSize oSizeROI)

    Three 8-bit unsigned char channel image logical and with constant.

- NppStatus nppiAndC_8u_C3IR (const Npp8u aConstants[3], Npp8u *pSrcDst, int nSrcDstStep, NppiSize 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 aConstants[3], 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 aConstants[3], 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 aConstants[4], Npp8u *pDst, int nDstStep, NppiSize oSizeROI)

    Four 8-bit unsigned char channel image logical and with constant.

- NppStatus nppiAndC_8u_C4IR (const Npp8u aConstants[4], Npp8u *pSrcDst, int nSrcDstStep, NppiSize 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 aConstants[3], Npp16u *pDst, int nDstStep, NppiSize oSizeROI)

    Three 16-bit unsigned short channel image logical and with constant.

- NppStatus nppiAndC_16u_C3IR (const Npp16u aConstants[3], 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 aConstants[3], 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 aConstants[3], Npp16u *pSrcDst, int nSrcDst-Step, 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 aConstants[4], Npp16u *pDst, int nDstStep, NppiSize oSizeROI)

    Four 16-bit unsigned short channel image logical and with constant.

- NppStatus nppiAndC_16u_C4IR (const Npp16u aConstants[4], 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 aConstants[3], Npp32s *pDst, int nDstStep, NppiSize oSizeROI)

    Three 32-bit signed integer channel image logical and with constant.

- NppStatus nppiAndC_32s_C3IR (const Npp32s aConstants[3], 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 aConstants[3], 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 aConstants[3], 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 aConstants[4], Npp32s *pDst, int nDstStep, NppiSize oSizeROI)

    Four 32-bit signed integer channel image logical and with constant.

- NppStatus nppiAndC_32s_C4IR (const Npp32s aConstants[4], Npp32s *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

    Four 32-bit signed integer channel in place image logical and with constant.

7.28.1 Detailed Description

Pixel by pixel logical and of an image with a constant.

7.28.2 Function Documentation

7.28.2.1 NppStatus nppiAndC_16u_AC4IR (const Npp16u *aConstants*[3], Npp16u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 16-bit unsigned short channel in place image logical and with constant with unmodified alpha.

Parameters:

> *aConstants* fixed size array 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

7.28.2.2 NppStatus nppiAndC_16u_AC4R (const Npp16u ∗ *pSrc1*, int *nSrc1Step*, const Npp16u *aConstants*[3], 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.
>
> *aConstants* fixed size array 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

7.28.2.3 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

7.28.2.4 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

7.28.2.5 NppStatus nppiAndC_16u_C3IR (const Npp16u *aConstants*[3], Npp16u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Three 16-bit unsigned short channel in place image logical and with constant.

Parameters:

aConstants fixed size array 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

7.28.2.6 NppStatus nppiAndC_16u_C3R (const Npp16u ∗ *pSrc1*, int *nSrc1Step*, const Npp16u *aConstants*[3], 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.

aConstants fixed size array 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

7.28.2.7 NppStatus nppiAndC_16u_C4IR (const Npp16u *aConstants*[4], Npp16u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 16-bit unsigned short channel in place image logical and with constant.

Parameters:

aConstants fixed size array 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

7.28.2.8 NppStatus nppiAndC_16u_C4R (const Npp16u ∗ *pSrc1*, int *nSrc1Step*, const Npp16u *aConstants*[4], 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.

aConstants fixed size array 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

7.28.2.9   NppStatus nppiAndC_32s_AC4IR (const Npp32s *aConstants*[3], Npp32s ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 32-bit signed integer channel in place image logical and with constant with unmodified alpha.

Parameters:

>   *aConstants* fixed size array 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

7.28.2.10   NppStatus nppiAndC_32s_AC4R (const Npp32s ∗ *pSrc1*, int *nSrc1Step*, const Npp32s *aConstants*[3], 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.
>
>   *aConstants* fixed size array 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

7.28.2.11   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

7.28.2.12 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

7.28.2.13 NppStatus nppiAndC_32s_C3IR (const Npp32s *aConstants*[3], Npp32s ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Three 32-bit signed integer channel in place image logical and with constant.

Parameters:

> *aConstants* fixed size array 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

7.28.2.14 NppStatus nppiAndC_32s_C3R (const Npp32s ∗ *pSrc1*, int *nSrc1Step*, const Npp32s *aConstants*[3], 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.
>
> *aConstants* fixed size array 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

7.28.2.15 NppStatus nppiAndC_32s_C4IR (const Npp32s *aConstants*[4], Npp32s * *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 32-bit signed integer channel in place image logical and with constant.

Parameters:

> *aConstants* fixed size array 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

7.28.2.16 NppStatus nppiAndC_32s_C4R (const Npp32s * *pSrc1*, int *nSrc1Step*, const Npp32s *aConstants*[4], 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.
>
> *aConstants* fixed size array 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

7.28.2.17 NppStatus nppiAndC_8u_AC4IR (const Npp8u *aConstants*[3], Npp8u * *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 8-bit unsigned char channel in place image logical and with constant with unmodified alpha.

Parameters:

> *aConstants* fixed size array 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

7.28.2.18 NppStatus nppiAndC_8u_AC4R (const Npp8u ∗ pSrc1, int nSrc1Step, const Npp8u aConstants[3], 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.

  aConstants fixed size array 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

7.28.2.19 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

7.28.2.20 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

7.28.2.21 NppStatus nppiAndC_8u_C3IR (const Npp8u *aConstants*[3], Npp8u * *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Three 8-bit unsigned char channel in place image logical and with constant.

Parameters:

> *aConstants* fixed size array 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

7.28.2.22 NppStatus nppiAndC_8u_C3R (const Npp8u * *pSrc1*, int *nSrc1Step*, const Npp8u *aConstants*[3], 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.
>
> *aConstants* fixed size array 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

7.28.2.23 NppStatus nppiAndC_8u_C4IR (const Npp8u *aConstants*[4], Npp8u * *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 8-bit unsigned char channel in place image logical and with constant.

Parameters:

> *aConstants* fixed size array 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

7.28.2.24   NppStatus nppiAndC_8u_C4R (const Npp8u ∗ *pSrc1*, int *nSrc1Step*, const Npp8u *aConstants*[4], 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.
>
> *aConstants* fixed size array 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

7.29 OrC

Pixel by pixel logical or of an image with a constant.

Functions

- 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 aConstants[3], Npp8u ∗pDst, int nDstStep, NppiSize oSizeROI)

  Three 8-bit unsigned char channel image logical or with constant.

- NppStatus nppiOrC_8u_C3IR (const Npp8u aConstants[3], 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 aConstants[3], 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 aConstants[3], 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 aConstants[4], Npp8u ∗pDst, int nDstStep, NppiSize oSizeROI)

  Four 8-bit unsigned char channel image logical or with constant.

- NppStatus nppiOrC_8u_C4IR (const Npp8u aConstants[4], 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 aConstants[3], Npp16u ∗pDst, int nDstStep, NppiSize oSizeROI)

  Three 16-bit unsigned short channel image logical or with constant.

- NppStatus nppiOrC_16u_C3IR (const Npp16u aConstants[3], 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 aConstants[3], 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 aConstants[3], 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 aConstants[4], Npp16u *pDst, int nDstStep, NppiSize oSizeROI)

    Four 16-bit unsigned short channel image logical or with constant.

- NppStatus nppiOrC_16u_C4IR (const Npp16u aConstants[4], 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 aConstants[3], Npp32s *pDst, int nDstStep, NppiSize oSizeROI)

    Three 32-bit signed integer channel image logical or with constant.

- NppStatus nppiOrC_32s_C3IR (const Npp32s aConstants[3], 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 aConstants[3], 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 aConstants[3], 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 aConstants[4], Npp32s *pDst, int nDstStep, NppiSize oSizeROI)

    Four 32-bit signed integer channel image logical or with constant.

- NppStatus nppiOrC_32s_C4IR (const Npp32s aConstants[4], Npp32s *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

    Four 32-bit signed integer channel in place image logical or with constant.

7.29.1 Detailed Description

Pixel by pixel logical or of an image with a constant.

7.29.2 Function Documentation

7.29.2.1 NppStatus nppiOrC_16u_AC4IR (const Npp16u *aConstants*[3], Npp16u * *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 16-bit unsigned short channel in place image logical or with constant with unmodified alpha.

Parameters:

> *aConstants* fixed size array 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

7.29.2.2 NppStatus nppiOrC_16u_AC4R (const Npp16u * *pSrc1*, int *nSrc1Step*, const Npp16u *aConstants*[3], 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.
>
> *aConstants* fixed size array 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

7.29.2.3 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

7.29.2.4 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

7.29.2.5 NppStatus nppiOrC_16u_C3IR (const Npp16u *aConstants*[3], Npp16u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Three 16-bit unsigned short channel in place image logical or with constant.

Parameters:

aConstants fixed size array 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

7.29.2.6 NppStatus nppiOrC_16u_C3R (const Npp16u ∗ *pSrc1*, int *nSrc1Step*, const Npp16u *aConstants*[3], 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.

aConstants fixed size array 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

7.29.2.7 NppStatus nppiOrC_16u_C4IR (const Npp16u *aConstants*[4], Npp16u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 16-bit unsigned short channel in place image logical or with constant.

Parameters:

aConstants fixed size array 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

7.29.2.8 NppStatus nppiOrC_16u_C4R (const Npp16u ∗ *pSrc1*, int *nSrc1Step*, const Npp16u *aConstants*[4], 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.

aConstants fixed size array 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

7.29.2.9 NppStatus nppiOrC_32s_AC4IR (const Npp32s *aConstants*[3], Npp32s ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 32-bit signed integer channel in place image logical or with constant with unmodified alpha.

Parameters:

aConstants fixed size array 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

7.29.2.10 NppStatus nppiOrC_32s_AC4R (const Npp32s ∗ *pSrc1*, int *nSrc1Step*, const Npp32s *aConstants*[3], 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.

aConstants fixed size array 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

7.29.2.11 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

7.29.2.12 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

7.29.2.13 NppStatus nppiOrC_32s_C3IR (const Npp32s *aConstants*[3], Npp32s ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Three 32-bit signed integer channel in place image logical or with constant.

Parameters:

> *aConstants* fixed size array 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

7.29.2.14 NppStatus nppiOrC_32s_C3R (const Npp32s ∗ *pSrc1*, int *nSrc1Step*, const Npp32s *aConstants*[3], 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.
> *aConstants* fixed size array 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

7.29.2.15 NppStatus nppiOrC_32s_C4IR (const Npp32s *aConstants*[4], Npp32s ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 32-bit signed integer channel in place image logical or with constant.

Parameters:

> *aConstants* fixed size array 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

7.29.2.16 NppStatus nppiOrC_32s_C4R (const Npp32s ∗ *pSrc1*, int *nSrc1Step*, const Npp32s *aConstants*[4], 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.
>
> *aConstants* fixed size array 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

7.29.2.17 NppStatus nppiOrC_8u_AC4IR (const Npp8u *aConstants*[3], Npp8u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 8-bit unsigned char channel in place image logical or with constant with unmodified alpha.

Parameters:

> *aConstants* fixed size array 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

7.29.2.18 NppStatus nppiOrC_8u_AC4R (const Npp8u ∗ *pSrc1*, int *nSrc1Step*, const Npp8u *aConstants*[3], 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.

    aConstants fixed size array 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

7.29.2.19 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

7.29.2.20 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

7.29.2.21 NppStatus nppiOrC_8u_C3IR (const Npp8u *aConstants*[3], Npp8u * *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Three 8-bit unsigned char channel in place image logical or with constant.

Parameters:

> *aConstants* fixed size array 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

7.29.2.22 NppStatus nppiOrC_8u_C3R (const Npp8u * *pSrc1*, int *nSrc1Step*, const Npp8u *aConstants*[3], 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.
>
> *aConstants* fixed size array 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

7.29.2.23 NppStatus nppiOrC_8u_C4IR (const Npp8u *aConstants*[4], Npp8u * *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 8-bit unsigned char channel in place image logical or with constant.

Parameters:

> *aConstants* fixed size array 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

7.29.2.24 NppStatus nppiOrC_8u_C4R (const Npp8u ∗ *pSrc1*, int *nSrc1Step*, const Npp8u *aConstants*[4], 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.

 aConstants fixed size array 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

7.30 XorC

Pixel by pixel logical exclusive or of an image with a constant.

Functions

- 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 aConstants[3], Npp8u ∗pDst, int nDstStep, NppiSize oSizeROI)

    Three 8-bit unsigned char channel image logical exclusive or with constant.

- NppStatus nppiXorC_8u_C3IR (const Npp8u aConstants[3], 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 aConstants[3], 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 aConstants[3], 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 aConstants[4], Npp8u ∗pDst, int nDstStep, NppiSize oSizeROI)

    Four 8-bit unsigned char channel image logical exclusive or with constant.

- NppStatus nppiXorC_8u_C4IR (const Npp8u aConstants[4], 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 aConstants[3], Npp16u ∗pDst, int nDstStep, NppiSize oSizeROI)

    Three 16-bit unsigned short channel image logical exclusive or with constant.

- NppStatus nppiXorC_16u_C3IR (const Npp16u aConstants[3], 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 aConstants[3], 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 aConstants[3], Npp16u *pSrcDst, int nSrcDst-Step, 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 aConstants[4], Npp16u *pDst, int nDstStep, NppiSize oSizeROI)

    Four 16-bit unsigned short channel image logical exclusive or with constant.

- NppStatus nppiXorC_16u_C4IR (const Npp16u aConstants[4], 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 aConstants[3], Npp32s *pDst, int nDstStep, NppiSize oSizeROI)

    Three 32-bit signed integer channel image logical exclusive or with constant.

- NppStatus nppiXorC_32s_C3IR (const Npp32s aConstants[3], 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 aConstants[3], 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 aConstants[3], 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 aConstants[4], Npp32s *pDst, int nDstStep, NppiSize oSizeROI)

    Four 32-bit signed integer channel image logical exclusive or with constant.

- NppStatus nppiXorC_32s_C4IR (const Npp32s aConstants[4], Npp32s *pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

    Four 32-bit signed integer channel in place image logical exclusive or with constant.

7.30.1 Detailed Description

Pixel by pixel logical exclusive or of an image with a constant.

7.30.2 Function Documentation

7.30.2.1 NppStatus nppiXorC_16u_AC4IR (const Npp16u *aConstants*[3], Npp16u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 16-bit unsigned short channel in place image logical exclusive or with constant with unmodified alpha.

Parameters:

aConstants fixed size array 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

7.30.2.2 NppStatus nppiXorC_16u_AC4R (const Npp16u ∗ *pSrc1*, int *nSrc1Step*, const Npp16u *aConstants*[3], 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.

aConstants fixed size array 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

7.30.2.3 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

7.30.2.4 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

7.30.2.5 NppStatus nppiXorC_16u_C3IR (const Npp16u *aConstants*[3], Npp16u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Three 16-bit unsigned short channel in place image logical exclusive or with constant.

Parameters:

aConstants fixed size array 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

7.30.2.6 NppStatus nppiXorC_16u_C3R (const Npp16u ∗ *pSrc1*, int *nSrc1Step*, const Npp16u *aConstants*[3], 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.

aConstants fixed size array 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

7.30.2.7 NppStatus nppiXorC_16u_C4IR (const Npp16u *aConstants*[4], Npp16u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 16-bit unsigned short channel in place image logical exclusive or with constant.

Parameters:

aConstants fixed size array 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

7.30.2.8 NppStatus nppiXorC_16u_C4R (const Npp16u ∗ *pSrc1*, int *nSrc1Step*, const Npp16u *aConstants*[4], 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.

aConstants fixed size array 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

7.30.2.9 NppStatus nppiXorC_32s_AC4IR (const Npp32s *aConstants*[3], Npp32s ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 32-bit signed integer channel in place image logical exclusive or with constant with unmodified alpha.

Parameters:

    aConstants fixed size array 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

7.30.2.10 NppStatus nppiXorC_32s_AC4R (const Npp32s ∗ *pSrc1*, int *nSrc1Step*, const Npp32s *aConstants*[3], 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.

    aConstants fixed size array 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

7.30.2.11 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

7.30.2.12 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

7.30.2.13 NppStatus nppiXorC_32s_C3IR (const Npp32s *aConstants*[3], Npp32s ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Three 32-bit signed integer channel in place image logical exclusive or with constant.

Parameters:

>   *aConstants* fixed size array 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

7.30.2.14 NppStatus nppiXorC_32s_C3R (const Npp32s ∗ *pSrc1*, int *nSrc1Step*, const Npp32s *aConstants*[3], 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.
>
>   *aConstants* fixed size array 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

7.30.2.15 NppStatus nppiXorC_32s_C4IR (const Npp32s *aConstants*[4], Npp32s ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 32-bit signed integer channel in place image logical exclusive or with constant.

Parameters:

    aConstants fixed size array 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

7.30.2.16 NppStatus nppiXorC_32s_C4R (const Npp32s ∗ *pSrc1*, int *nSrc1Step*, const Npp32s *aConstants*[4], 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.

    aConstants fixed size array 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

7.30.2.17 NppStatus nppiXorC_8u_AC4IR (const Npp8u *aConstants*[3], Npp8u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 8-bit unsigned char channel in place image logical exclusive or with constant with unmodified alpha.

Parameters:

    aConstants fixed size array 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

7.30.2.18 NppStatus nppiXorC_8u_AC4R (const Npp8u ∗ *pSrc1*, int *nSrc1Step*, const Npp8u *aConstants*[3], 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.
>
>   *aConstants* fixed size array 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

7.30.2.19 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

7.30.2.20 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

7.30.2.21 NppStatus nppiXorC_8u_C3IR (const Npp8u *aConstants*[3], Npp8u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Three 8-bit unsigned char channel in place image logical exclusive or with constant.

Parameters:

    aConstants fixed size array 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

7.30.2.22 NppStatus nppiXorC_8u_C3R (const Npp8u ∗ *pSrc1*, int *nSrc1Step*, const Npp8u *aConstants*[3], 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.

    aConstants fixed size array 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

7.30.2.23 NppStatus nppiXorC_8u_C4IR (const Npp8u *aConstants*[4], Npp8u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 8-bit unsigned char channel in place image logical exclusive or with constant.

Parameters:

    aConstants fixed size array 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

7.30.2.24 NppStatus nppiXorC_8u_C4R (const Npp8u ∗ *pSrc1*, int *nSrc1Step*, const Npp8u *aConstants*[4], 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.
>
> *aConstants* fixed size array 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

7.31 RShiftC

Pixel by pixel right shift of an image by a constant value.

Functions

- 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 aConstants[3], Npp8u *pDst, int nDstStep, NppiSize oSizeROI)

    Three 8-bit unsigned char channel image right shift by constant.

- NppStatus nppiRShiftC_8u_C3IR (const Npp32u aConstants[3], 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 aConstants[3], 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 aConstants[3], Npp8u *pSrcDst, int nSrcDst-Step, 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 aConstants[4], Npp8u *pDst, int nDstStep, NppiSize oSizeROI)

    Four 8-bit unsigned char channel image right shift by constant.

- NppStatus nppiRShiftC_8u_C4IR (const Npp32u aConstants[4], 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 aConstants[3], Npp8s *pDst, int nDstStep, NppiSize oSizeROI)

    Three 8-bit signed char channel image right shift by constant.

- NppStatus nppiRShiftC_8s_C3IR (const Npp32u aConstants[3], 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 aConstants[3], 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 aConstants[3], 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 aConstants[4], Npp8s ∗pDst, int nDstStep, NppiSize oSizeROI)

    Four 8-bit signed char channel image right shift by constant.

- NppStatus nppiRShiftC_8s_C4IR (const Npp32u aConstants[4], 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 aConstants[3], Npp16u ∗pDst, int nDstStep, NppiSize oSizeROI)

    Three 16-bit unsigned short channel image right shift by constant.

- NppStatus nppiRShiftC_16u_C3IR (const Npp32u aConstants[3], Npp16u ∗pSrcDst, int nSrcDst-Step, 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 aConstants[3], 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 aConstants[3], Npp16u ∗pSrcDst, int nSrcDst-Step, 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 aConstants[4], Npp16u ∗pDst, int nDstStep, NppiSize oSizeROI)

    Four 16-bit unsigned short channel image right shift by constant.

- NppStatus nppiRShiftC_16u_C4IR (const Npp32u aConstants[4], Npp16u ∗pSrcDst, int nSrcDst-Step, 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 aConstants[3], Npp16s *pDst, int nDstStep, NppiSize oSizeROI)

    Three 16-bit signed short channel image right shift by constant.

- NppStatus nppiRShiftC_16s_C3IR (const Npp32u aConstants[3], Npp16s *pSrcDst, int nSrcDst-Step, 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 aConstants[3], 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 aConstants[3], Npp16s *pSrcDst, int nSrcDst-Step, 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 aConstants[4], Npp16s *pDst, int nDstStep, NppiSize oSizeROI)

    Four 16-bit signed short channel image right shift by constant.

- NppStatus nppiRShiftC_16s_C4IR (const Npp32u aConstants[4], Npp16s *pSrcDst, int nSrcDst-Step, 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 aConstants[3], Npp32s *pDst, int nDstStep, NppiSize oSizeROI)

    Three 32-bit signed integer channel image right shift by constant.

- NppStatus nppiRShiftC_32s_C3IR (const Npp32u aConstants[3], Npp32s *pSrcDst, int nSrcDst-Step, 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 aConstants[3], 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 aConstants[3], 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 aConstants[4], Npp32s ∗pDst, int nDstStep, NppiSize oSizeROI)

    Four 32-bit signed integer channel image right shift by constant.

- NppStatus nppiRShiftC_32s_C4IR (const Npp32u aConstants[4], Npp32s ∗pSrcDst, int nSrcDst-Step, NppiSize oSizeROI)

    Four 32-bit signed integer channel in place image right shift by constant.

7.31.1 Detailed Description

Pixel by pixel right shift of an image by a constant value.

7.31.2 Function Documentation

7.31.2.1 NppStatus nppiRShiftC_16s_AC4IR (const Npp32u *aConstants*[3], Npp16s ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 16-bit signed short channel in place image right shift by constant with unmodified alpha.

Parameters:

aConstants fixed size array 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

7.31.2.2 NppStatus nppiRShiftC_16s_AC4R (const Npp16s ∗ *pSrc1*, int *nSrc1Step*, const Npp32u *aConstants*[3], 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.

aConstants fixed size array 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

7.31.2.3 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

7.31.2.4 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

7.31.2.5 NppStatus nppiRShiftC_16s_C3IR (const Npp32u *aConstants*[3], Npp16s ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Three 16-bit signed short channel in place image right shift by constant.

Parameters:

aConstants fixed size array 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

7.31.2.6 NppStatus nppiRShiftC_16s_C3R (const Npp16s ∗ *pSrc1*, int *nSrc1Step*, const Npp32u *aConstants*[3], 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.

aConstants fixed size array 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

7.31.2.7 NppStatus nppiRShiftC_16s_C4IR (const Npp32u *aConstants*[4], Npp16s ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 16-bit signed short channel in place image right shift by constant.

Parameters:

aConstants fixed size array 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

7.31.2.8 NppStatus nppiRShiftC_16s_C4R (const Npp16s ∗ *pSrc1*, int *nSrc1Step*, const Npp32u *aConstants*[4], 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.

aConstants fixed size array 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

7.31.2.9 NppStatus nppiRShiftC_16u_AC4IR (const Npp32u *aConstants*[3], Npp16u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 16-bit unsigned short channel in place image right shift by constant with unmodified alpha.

Parameters:

aConstants fixed size array 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

7.31.2.10 NppStatus nppiRShiftC_16u_AC4R (const Npp16u ∗ *pSrc1*, int *nSrc1Step*, const Npp32u *aConstants*[3], 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.

aConstants fixed size array 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

7.31.2.11 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

7.31.2.12 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

7.31.2.13 NppStatus nppiRShiftC_16u_C3IR (const Npp32u *aConstants*[3], Npp16u * *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Three 16-bit unsigned short channel in place image right shift by constant.

Parameters:

>*aConstants* fixed size array 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

7.31.2.14   NppStatus nppiRShiftC_16u_C3R (const Npp16u ∗ pSrc1, int nSrc1Step, const Npp32u aConstants[3], 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.
> *aConstants* fixed size array 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

7.31.2.15   NppStatus nppiRShiftC_16u_C4IR (const Npp32u aConstants[4], Npp16u ∗ pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

Four 16-bit unsigned short channel in place image right shift by constant.

Parameters:

> *aConstants* fixed size array 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

7.31.2.16   NppStatus nppiRShiftC_16u_C4R (const Npp16u ∗ pSrc1, int nSrc1Step, const Npp32u aConstants[4], 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.
> *aConstants* fixed size array 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

7.31.2.17 NppStatus nppiRShiftC_32s_AC4IR (const Npp32u *aConstants*[3], Npp32s ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 32-bit signed integer channel in place image right shift by constant with unmodified alpha.

Parameters:

aConstants fixed size array 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

7.31.2.18 NppStatus nppiRShiftC_32s_AC4R (const Npp32s ∗ *pSrc1*, int *nSrc1Step*, const Npp32u *aConstants*[3], 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.

aConstants fixed size array 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

7.31.2.19 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

7.31.2.20 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

7.31.2.21 NppStatus nppiRShiftC_32s_C3IR (const Npp32u *aConstants*[3], **Npp32s** ∗ *pSrcDst*, **int** *nSrcDstStep*, **NppiSize** *oSizeROI***)**

Three 32-bit signed integer channel in place image right shift by constant.

Parameters:

> *aConstants* fixed size array 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

7.31.2.22 NppStatus nppiRShiftC_32s_C3R (const Npp32s ∗ *pSrc1*, **int** *nSrc1Step*, **const Npp32u** *aConstants*[3], **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.
>
> *aConstants* fixed size array 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

7.31.2.23 NppStatus nppiRShiftC_32s_C4IR (const Npp32u *aConstants*[4], Npp32s ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 32-bit signed integer channel in place image right shift by constant.

Parameters:

> *aConstants* fixed size array 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

7.31.2.24 NppStatus nppiRShiftC_32s_C4R (const Npp32s ∗ *pSrc1*, int *nSrc1Step*, const Npp32u *aConstants*[4], 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.
>
> *aConstants* fixed size array 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

7.31.2.25 NppStatus nppiRShiftC_8s_AC4IR (const Npp32u *aConstants*[3], Npp8s ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 8-bit signed char channel in place image right shift by constant with unmodified alpha.

Parameters:

> *aConstants* fixed size array 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

7.31.2.26 NppStatus nppiRShiftC_8s_AC4R (const Npp8s $*$ **pSrc1,** **int** **nSrc1Step,** **const Npp32u** **aConstants[3], 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.
>
>**aConstants** fixed size array 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

7.31.2.27 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

7.31.2.28 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

7.31.2.29 NppStatus nppiRShiftC_8s_C3IR (const Npp32u *aConstants*[3], Npp8s ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Three 8-bit signed char channel in place image right shift by constant.

Parameters:

> *aConstants* fixed size array 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

7.31.2.30 NppStatus nppiRShiftC_8s_C3R (const Npp8s ∗ *pSrc1*, int *nSrc1Step*, const Npp32u *aConstants*[3], 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.
>
> *aConstants* fixed size array 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

7.31.2.31 NppStatus nppiRShiftC_8s_C4IR (const Npp32u *aConstants*[4], Npp8s ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 8-bit signed char channel in place image right shift by constant.

Parameters:

> *aConstants* fixed size array 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

7.31.2.32 NppStatus nppiRShiftC_8s_C4R (const Npp8s ∗ *pSrc1*, int *nSrc1Step*, const Npp32u *aConstants*[4], 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.

aConstants fixed size array 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

7.31.2.33 NppStatus nppiRShiftC_8u_AC4IR (const Npp32u *aConstants*[3], Npp8u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 8-bit unsigned char channel in place image right shift by constant with unmodified alpha.

Parameters:

aConstants fixed size array 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

7.31.2.34 NppStatus nppiRShiftC_8u_AC4R (const Npp8u ∗ *pSrc1*, int *nSrc1Step*, const Npp32u *aConstants*[3], 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.

aConstants fixed size array 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

7.31.2.35   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

7.31.2.36   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

7.31.2.37   NppStatus nppiRShiftC_8u_C3IR (const Npp32u *aConstants*[3], Npp8u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Three 8-bit unsigned char channel in place image right shift by constant.

Parameters:

> *aConstants* fixed size array 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

7.31.2.38 NppStatus nppiRShiftC_8u_C3R (const Npp8u ∗ pSrc1, int nSrc1Step, const Npp32u aConstants[3], 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.
>
> **aConstants** fixed size array 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

7.31.2.39 NppStatus nppiRShiftC_8u_C4IR (const Npp32u aConstants[4], Npp8u ∗ pSrcDst, int nSrcDstStep, NppiSize oSizeROI)

Four 8-bit unsigned char channel in place image right shift by constant.

Parameters:

> **aConstants** fixed size array 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

7.31.2.40 NppStatus nppiRShiftC_8u_C4R (const Npp8u ∗ pSrc1, int nSrc1Step, const Npp32u aConstants[4], 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.
>
> **aConstants** fixed size array 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

7.32   LShiftC

Pixel by pixel left shift of an image by a constant value.

Functions

- 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 aConstants[3], Npp8u ∗pDst, int nDstStep, NppiSize oSizeROI)

    Three 8-bit unsigned char channel image left shift by constant.

- NppStatus nppiLShiftC_8u_C3IR (const Npp32u aConstants[3], 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 aConstants[3], 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 aConstants[3], Npp8u ∗pSrcDst, int nSrcDst-Step, 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 aConstants[4], Npp8u ∗pDst, int nDstStep, NppiSize oSizeROI)

    Four 8-bit unsigned char channel image left shift by constant.

- NppStatus nppiLShiftC_8u_C4IR (const Npp32u aConstants[4], 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 aConstants[3], Npp16u ∗pDst, int nDstStep, NppiSize oSizeROI)

    Three 16-bit unsigned short channel image left shift by constant.

- NppStatus nppiLShiftC_16u_C3IR (const Npp32u aConstants[3], Npp16u *pSrcDst, int nSrcDst-Step, 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 aConstants[3], 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 aConstants[3], 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 aConstants[4], Npp16u *pDst, int nDstStep, NppiSize oSizeROI)

    Four 16-bit unsigned short channel image left shift by constant.

- NppStatus nppiLShiftC_16u_C4IR (const Npp32u aConstants[4], Npp16u *pSrcDst, int nSrcDst-Step, 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 aConstants[3], Npp32s *pDst, int nDstStep, NppiSize oSizeROI)

    Three 32-bit signed integer channel image left shift by constant.

- NppStatus nppiLShiftC_32s_C3IR (const Npp32u aConstants[3], Npp32s *pSrcDst, int nSrcDst-Step, 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 aConstants[3], 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 aConstants[3], 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 aConstants[4], Npp32s *pDst, int nDstStep, NppiSize oSizeROI)

    Four 32-bit signed integer channel image left shift by constant.

- NppStatus nppiLShiftC_32s_C4IR (const Npp32u aConstants[4], Npp32s *pSrcDst, int nSrcDst-Step, NppiSize oSizeROI)

    Four 32-bit signed integer channel in place image left shift by constant.

7.32.1 Detailed Description

Pixel by pixel left shift of an image by a constant value.

7.32.2 Function Documentation

7.32.2.1 NppStatus nppiLShiftC_16u_AC4IR (const Npp32u *aConstants*[3], Npp16u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 16-bit unsigned short channel in place image left shift by constant with unmodified alpha.

Parameters:

aConstants fixed size array 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

7.32.2.2 NppStatus nppiLShiftC_16u_AC4R (const Npp16u ∗ *pSrc1*, int *nSrc1Step*, const Npp32u *aConstants*[3], 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.

aConstants fixed size array 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

7.32.2.3 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

7.32.2.4 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

7.32.2.5 NppStatus nppiLShiftC_16u_C3IR (const Npp32u *aConstants*[3], Npp16u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Three 16-bit unsigned short channel in place image left shift by constant.

Parameters:

aConstants fixed size array 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

7.32.2.6 NppStatus nppiLShiftC_16u_C3R (const Npp16u ∗ *pSrc1*, int *nSrc1Step*, const Npp32u *aConstants*[3], Npp16u ∗ *pDst*, int *nDstStep*, NppiSize *oSizeROI*)

Three 16-bit unsigned short channel image left shift by constant.

Parameters:

pSrc1 Source-Image Pointer.

Copyright ©2009–2017 NVIDIA Corporation

nSrc1Step Source-Image Line Step.

aConstants fixed size array 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

7.32.2.7 NppStatus nppiLShiftC_16u_C4IR (const Npp32u *aConstants*[4], Npp16u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 16-bit unsigned short channel in place image left shift by constant.

Parameters:

aConstants fixed size array 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

7.32.2.8 NppStatus nppiLShiftC_16u_C4R (const Npp16u ∗ *pSrc1*, int *nSrc1Step*, const Npp32u *aConstants*[4], 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.

aConstants fixed size array 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

7.32.2.9 NppStatus nppiLShiftC_32s_AC4IR (const Npp32u *aConstants*[3], Npp32s ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 32-bit signed integer channel in place image left shift by constant with unmodified alpha.

Parameters:

    aConstants fixed size array 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

7.32.2.10 NppStatus nppiLShiftC_32s_AC4R (const Npp32s ∗ *pSrc1*, int *nSrc1Step*, const Npp32u *aConstants*[3], 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.

    aConstants fixed size array 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

7.32.2.11 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

7.32.2.12   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

7.32.2.13   NppStatus nppiLShiftC_32s_C3IR (const Npp32u *aConstants*[3], Npp32s ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Three 32-bit signed integer channel in place image left shift by constant.

Parameters:

> *aConstants* fixed size array 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

7.32.2.14   NppStatus nppiLShiftC_32s_C3R (const Npp32s ∗ *pSrc1*, int *nSrc1Step*, const Npp32u *aConstants*[3], 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.
>
> *aConstants* fixed size array 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

7.32.2.15 NppStatus nppiLShiftC_32s_C4IR (const Npp32u *aConstants*[4], Npp32s ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 32-bit signed integer channel in place image left shift by constant.

Parameters:

> *aConstants* fixed size array 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

7.32.2.16 NppStatus nppiLShiftC_32s_C4R (const Npp32s ∗ *pSrc1*, int *nSrc1Step*, const Npp32u *aConstants*[4], 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.
>
> *aConstants* fixed size array 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

7.32.2.17 NppStatus nppiLShiftC_8u_AC4IR (const Npp32u *aConstants*[3], Npp8u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 8-bit unsigned char channel in place image left shift by constant with unmodified alpha.

Parameters:

> *aConstants* fixed size array 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

7.32.2.18   NppStatus nppiLShiftC_8u_AC4R (const Npp8u ∗ pSrc1, int nSrc1Step, const Npp32u aConstants[3], 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.
>
> *aConstants* fixed size array 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

7.32.2.19   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

7.32.2.20   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

7.32.2.21 NppStatus nppiLShiftC_8u_C3IR (const Npp32u *aConstants*[3], Npp8u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Three 8-bit unsigned char channel in place image left shift by constant.

Parameters:

    aConstants fixed size array 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

7.32.2.22 NppStatus nppiLShiftC_8u_C3R (const Npp8u ∗ *pSrc1*, int *nSrc1Step*, const Npp32u *aConstants*[3], 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.

    aConstants fixed size array 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

7.32.2.23 NppStatus nppiLShiftC_8u_C4IR (const Npp32u *aConstants*[4], Npp8u ∗ *pSrcDst*, int *nSrcDstStep*, NppiSize *oSizeROI*)

Four 8-bit unsigned char channel in place image left shift by constant.

Parameters:

    aConstants fixed size array 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

7.32.2.24   NppStatus nppiLShiftC_8u_C4R (const Npp8u ∗ pSrc1, int nSrc1Step, const Npp32u aConstants[4], 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.

    aConstants fixed size array 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

7.33 And

Pixel by pixel logical and of images.

Functions

- 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.

7.33.1 Detailed Description

Pixel by pixel logical and of images.

7.33.2 Function Documentation

7.33.2.1 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

7.33.2.2 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

7.33.2.3 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

7.33.2.4 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

7.33.2.5 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

7.33.2.6 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

7.33.2.7 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

7.33.2.8 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

7.33.2.9 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

7.33.2.10 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

7.33.2.11 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

7.33.2.12 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

7.33.2.13 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

7.33.2.14   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

7.33.2.15   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

7.33.2.16   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

7.33.2.17 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

7.33.2.18 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

7.33.2.19 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

7.33.2.20 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

7.33.2.21 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

7.33.2.22 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

7.33.2.23 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

7.33.2.24 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

7.34 Or

Pixel by pixel logical or of images.

Functions

- 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 nSrcDstStep, 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.

7.34.1 Detailed Description

Pixel by pixel logical or of images.

7.34.2 Function Documentation

7.34.2.1 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

7.34.2.2 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

7.34.2.3 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

7.34.2.4 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

7.34.2.5 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

7.34.2.6 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

7.34.2.7 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

7.34.2.8 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

7.34.2.9 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

7.34.2.10 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

7.34.2.11 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

7.34.2.12 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

7.34.2.13 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

7.34.2.14 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

7.34.2.15 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

7.34.2.16 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

7.34.2.17 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

7.34.2.18 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

7.34.2.19   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

7.34.2.20   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

7.34.2.21   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

7.34.2.22 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

7.34.2.23 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

7.34.2.24 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

7.35 Xor

Pixel by pixel logical exclusive or of images.

Functions

- 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.

7.35.1 Detailed Description

Pixel by pixel logical exclusive or of images.

7.35.2 Function Documentation

7.35.2.1 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

7.35.2.2 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

7.35.2.3 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

7.35.2.4 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

7.35.2.5 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

7.35.2.6 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

7.35.2.7 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

7.35.2.8 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

7.35.2.9 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

7.35.2.10 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

7.35.2.11 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

7.35.2.12 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

7.35.2.13 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

7.35.2.14 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

7.35.2.15 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

7.35.2.16 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

7.35.2.17 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

7.35.2.18 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

7.35.2.19 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

7.35.2.20 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

7.35.2.21 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

7.35.2.22 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

7.35.2.23 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

7.35.2.24 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

7.36 Not

Pixel by pixel logical not of image.

Functions

- 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, Nppi-Size 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.

7.36.1 Detailed Description

Pixel by pixel logical not of image.

7.36.2 Function Documentation

7.36.2.1 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

7.36.2.2 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

7.36.2.3 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

7.36.2.4 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

7.36.2.5 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

7.36.2.6 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

7.36.2.7 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

7.36.2.8 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

7.37   Alpha Composition

Modules

- AlphaCompC

  Composite two images using constant alpha values.

- AlphaPremulC

  Premultiplies pixels of an image using a constant alpha value.

- AlphaComp

  Composite two images using alpha opacity values contained in each image.

- AlphaPremul

  Premultiplies image pixels by image alpha opacity values.

7.38 AlphaCompC

Composite two images using constant alpha values.

Functions

- 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.

7.38.1 Detailed Description

Composite two images using constant alpha values.

7.38.2 Function Documentation

7.38.2.1 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

7.38.2.2 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

7.38.2.3 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

7.38.2.4 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

7.38.2.5 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

7.38.2.6 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

7.38.2.7 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

7.38.2.8 **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

7.38.2.9 **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

7.38.2.10   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

7.38.2.11   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

7.38.2.12 **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

7.38.2.13 **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

7.39 AlphaPremulC

Premultiplies pixels of an image using a constant alpha value.

Functions

- 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.

7.39.1 Detailed Description

Premultiplies pixels of an image using a constant alpha value.

7.39.2 Function Documentation

7.39.2.1 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

7.39.2.2 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

7.39.2.3 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

7.39.2.4 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

7.39.2.5   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

7.39.2.6   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

7.39.2.7   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

7.39.2.8 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

7.39.2.9 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

7.39.2.10 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

7.39.2.11 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

7.39.2.12 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

7.39.2.13 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

7.39.2.14 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

7.39.2.15 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

7.39.2.16 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

7.40 AlphaComp

Composite two images using alpha opacity values contained in each image.

Functions

- 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).

7.40.1 Detailed Description

Composite two images using alpha opacity values contained in each image.

7.40.2 Function Documentation

7.40.2.1 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

7.40.2.2 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

7.40.2.3 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

7.40.2.4 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

7.40.2.5 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

7.40.2.6 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

7.40.2.7 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

7.40.2.8 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

7.40.2.9 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

7.40.2.10 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

7.40.2.11 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

7.40.2.12 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

7.41 AlphaPremul

Premultiplies image pixels by image alpha opacity values.

Functions

- NppStatus nppiAlphaPremul_8u_AC4R (const Npp8u ∗pSrc1, int nSrc1Step, Npp8u ∗pDst, int nD-stStep, 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).

7.41.1 Detailed Description

Premultiplies image pixels by image alpha opacity values.

7.41.2 Function Documentation

7.41.2.1 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

7.41.2.2 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

7.41.2.3 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

7.41.2.4 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

Chapter 8

Data Structure Documentation

8.1 NPP_ALIGN_16 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.

- Npp64f re

  Real part.

- Npp64f im

  Imaginary part.

8.1.1 Detailed Description

Complex Number This struct represents a long long complex number.

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

8.1.2 Field Documentation

8.1.2.1 Npp64f NPP_ALIGN_16::im

Imaginary part.

8.1.2.2 Npp64s NPP_ALIGN_16::im

Imaginary part.

8.1.2.3 Npp64f NPP_ALIGN_16::re

Real part.

8.1.2.4 Npp64s NPP_ALIGN_16::re

Real part.

The documentation for this struct was generated from the following file:

- C:/src/sw/rel/gpgpu/toolkit/r9.0/NPP/npp/include/nppdefs.h

8.2 NPP_ALIGN_8 Struct Reference

Complex Number This struct represents an unsigned int complex number.

```
#include <nppdefs.h>
```

Data Fields

- Npp32u re

    Real part.

- Npp32u im

    Imaginary part.

- Npp32s re

    Real part.

- Npp32s im

    Imaginary part.

- Npp32f re

    Real part.

- Npp32f im

    Imaginary part.

8.2.1 Detailed Description

Complex Number This struct represents an unsigned int complex number.

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

Complex Number This struct represents a signed int complex number.

8.2.2 Field Documentation

8.2.2.1 Npp32f NPP_ALIGN_8::im

Imaginary part.

8.2.2.2 Npp32s NPP_ALIGN_8::im

Imaginary part.

8.2.2.3 Npp32u NPP_ALIGN_8::im

Imaginary part.

8.2.2.4 Npp32f NPP_ALIGN_8::re

Real part.

8.2.2.5 Npp32s NPP_ALIGN_8::re

Real part.

8.2.2.6 Npp32u NPP_ALIGN_8::re

Real part.

The documentation for this struct was generated from the following file:

- C:/src/sw/rel/gpgpu/toolkit/r9.0/NPP/npp/include/nppdefs.h

8.3 NppiHaarBuffer Struct Reference

```
#include <nppdefs.h>
```

Data Fields

- int haarBufferSize

  size of the buffer

- Npp32s ∗ haarBuffer

  buffer

8.3.1 Field Documentation

8.3.1.1 Npp32s∗ NppiHaarBuffer::haarBuffer

buffer

8.3.1.2 int NppiHaarBuffer::haarBufferSize

size of the buffer

The documentation for this struct was generated from the following file:

- C:/src/sw/rel/gpgpu/toolkit/r9.0/NPP/npp/include/nppdefs.h

8.4 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

8.4.1 Field Documentation

8.4.1.1 Npp32s* NppiHaarClassifier_32f::classifiers

packed classifier data 40 bytes each

8.4.1.2 NppiSize NppiHaarClassifier_32f::classifierSize

8.4.1.3 size_t NppiHaarClassifier_32f::classifierStep

8.4.1.4 Npp32s* NppiHaarClassifier_32f::counterDevice

8.4.1.5 int NppiHaarClassifier_32f::numClassifiers

number of classifiers

The documentation for this struct was generated from the following file:

- C:/src/sw/rel/gpgpu/toolkit/r9.0/NPP/npp/include/nppdefs.h

8.5 NppiHOGConfig Struct Reference

The NppiHOGConfig structure defines the configuration parameters for the HOG descriptor:.

```
#include <nppdefs.h>
```

Data Fields

- int cellSize

    square cell size (pixels).

- int histogramBlockSize

    square histogram block size (pixels).

- int nHistogramBins

    required number of histogram bins.

- NppiSize detectionWindowSize

    detection window size (pixels).

8.5.1 Detailed Description

The NppiHOGConfig structure defines the configuration parameters for the HOG descriptor:.

8.5.2 Field Documentation

8.5.2.1 int NppiHOGConfig::cellSize

square cell size (pixels).

8.5.2.2 NppiSize NppiHOGConfig::detectionWindowSize

detection window size (pixels).

8.5.2.3 int NppiHOGConfig::histogramBlockSize

square histogram block size (pixels).

8.5.2.4 int NppiHOGConfig::nHistogramBins

required number of histogram bins.

The documentation for this struct was generated from the following file:

- C:/src/sw/rel/gpgpu/toolkit/r9.0/NPP/npp/include/nppdefs.h

8.6 NppiPoint Struct Reference

2D Point

```
#include <nppdefs.h>
```

Data Fields

- int x
    x-coordinate.

- int y
    y-coordinate.

8.6.1 Detailed Description

2D Point

8.6.2 Field Documentation

8.6.2.1 int NppiPoint::x

x-coordinate.

8.6.2.2 int NppiPoint::y

y-coordinate.

The documentation for this struct was generated from the following file:

- C:/src/sw/rel/gpgpu/toolkit/r9.0/NPP/npp/include/nppdefs.h

8.7 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 (lowest memory address).

- int y

    y-coordinate of upper left corner (lowest memory address).

- int width

    Rectangle width.

- int height

    Rectangle height.

8.7.1 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.

8.7.2 Field Documentation

8.7.2.1 int NppiRect::height

Rectangle height.

8.7.2.2 int NppiRect::width

Rectangle width.

8.7.2.3 int NppiRect::x

x-coordinate of upper left corner (lowest memory address).

8.7.2.4 int NppiRect::y

y-coordinate of upper left corner (lowest memory address).

The documentation for this struct was generated from the following file:

- C:/src/sw/rel/gpgpu/toolkit/r9.0/NPP/npp/include/nppdefs.h

8.8 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.

8.8.1 Detailed Description

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

8.8.2 Field Documentation

8.8.2.1 int NppiSize::height

Rectangle height.

8.8.2.2 int NppiSize::width

Rectangle width.

The documentation for this struct was generated from the following file:

- C:/src/sw/rel/gpgpu/toolkit/r9.0/NPP/npp/include/nppdefs.h

8.9   NppLibraryVersion Struct Reference

```
#include <nppdefs.h>
```

Data Fields

- int major

  Major version number.

- int minor

  Minor version number.

- int build

  Build number.

8.9.1   Field Documentation

8.9.1.1   int NppLibraryVersion::build

Build number.

This reflects the nightly build this release was made from.

8.9.1.2   int NppLibraryVersion::major

Major version number.

8.9.1.3   int NppLibraryVersion::minor

Minor version number.

The documentation for this struct was generated from the following file:

- C:/src/sw/rel/gpgpu/toolkit/r9.0/NPP/npp/include/nppdefs.h

8.10   NppPointPolar Struct Reference

2D Polar Point

```
#include <nppdefs.h>
```

Data Fields

- Npp32f rho
- Npp32f theta

8.10.1   Detailed Description

2D Polar Point

8.10.2   Field Documentation

8.10.2.1   Npp32f NppPointPolar::rho

8.10.2.2   Npp32f NppPointPolar::theta

The documentation for this struct was generated from the following file:

- C:/src/sw/rel/gpgpu/toolkit/r9.0/NPP/npp/include/nppdefs.h

Index