FlyCapture 2.1
API Programming Reference

Revised October 18, 2010

Point Grey Research Inc.
12051 Riverside Way • Richmond, BC • Canada • V6W 1K7 • **T** (604) 242-9937 •
www.ptgrey.com

Software Warranty

Software License Agreement

Contents

Chapter 1

Module Index

1.1 Modules

Here is a list of all modules:

Chapter 2

Namespace Index

2.1 Namespace List

Here is a list of all namespaces with brief descriptions:

Chapter 3

Class Index

3.1 Class Hierarchy

This inheritance list is sorted roughly, but not completely, alphabetically:

Chapter 4

Class Index

4.1 Class List

Here are the classes, structs, unions and interfaces with brief descriptions:

Chapter 5

File Index

5.1 File List

Here is a list of all files with brief descriptions:

Chapter 6

Module Documentation

6.1 Global constants

Variables

- static const unsigned int sk_maxStringLength = 512

  The maximum length that is allocated for a string.

- static const unsigned int sk_maxNumPorts = 32

  The maximum number of ports one device can have.

6.1.1 Variable Documentation

6.1.1.1 const unsigned int sk_maxNumPorts = 32 `[static]`

The maximum number of ports one device can have.

6.1.1.2 const unsigned int sk_maxStringLength = 512 `[static]`

The maximum length that is allocated for a string.

6.2 Enumerations

Enumerations

- enum ErrorType {
  PGRERROR_UNDEFINED = -1,
  PGRERROR_OK,
  PGRERROR_FAILED,
  PGRERROR_NOT_IMPLEMENTED,
  PGRERROR_FAILED_BUS_MASTER_CONNECTION,
  PGRERROR_NOT_CONNECTED,
  PGRERROR_INIT_FAILED,
  PGRERROR_NOT_INTITIALIZED,
  PGRERROR_INVALID_PARAMETER,
  PGRERROR_INVALID_SETTINGS,
  PGRERROR_INVALID_BUS_MANAGER,
  PGRERROR_MEMORY_ALLOCATION_FAILED,
  PGRERROR_LOW_LEVEL_FAILURE,
  PGRERROR_NOT_FOUND,
  PGRERROR_FAILED_GUID,
  PGRERROR_INVALID_PACKET_SIZE,
  PGRERROR_INVALID_MODE,
  PGRERROR_NOT_IN_FORMAT7,
  PGRERROR_NOT_SUPPORTED,
  PGRERROR_TIMEOUT,
  PGRERROR_BUS_MASTER_FAILED,
  PGRERROR_INVALID_GENERATION,
  PGRERROR_LUT_FAILED,
  PGRERROR_IIDC_FAILED,
  PGRERROR_STROBE_FAILED,
  PGRERROR_TRIGGER_FAILED,
  PGRERROR_PROPERTY_FAILED,
  PGRERROR_PROPERTY_NOT_PRESENT,
  PGRERROR_REGISTER_FAILED,
  PGRERROR_READ_REGISTER_FAILED,
  PGRERROR_WRITE_REGISTER_FAILED,
  PGRERROR_ISOCH_FAILED,
  PGRERROR_ISOCH_ALREADY_STARTED,
  PGRERROR_ISOCH_NOT_STARTED,
  PGRERROR_ISOCH_START_FAILED,
  PGRERROR_ISOCH_RETRIEVE_BUFFER_FAILED,

PGRERROR_ISOCH_STOP_FAILED,
PGRERROR_ISOCH_SYNC_FAILED,
PGRERROR_ISOCH_BANDWIDTH_EXCEEDED,
PGRERROR_IMAGE_CONVERSION_FAILED,
PGRERROR_IMAGE_LIBRARY_FAILURE,
PGRERROR_BUFFER_TOO_SMALL,
PGRERROR_IMAGE_CONSISTENCY_ERROR,
PGRERROR_FORCE_32BITS = FULL_32BIT_VALUE }

The error types returned by functions.

- enum BusCallbackType {
BUS_RESET,
ARRIVAL,
REMOVAL,
CALLBACK_TYPE_FORCE_32BITS = FULL_32BIT_VALUE }

  The type of bus callback to register a callback function for.

- enum GrabMode {
DROP_FRAMES,
BUFFER_FRAMES,
UNSPECIFIED_GRAB_MODE,
GRAB_MODE_FORCE_32BITS = FULL_32BIT_VALUE }

  The grab strategy employed during image transfer.

- enum GrabTimeout {
TIMEOUT_NONE = 0,
TIMEOUT_INFINITE = -1,
TIMEOUT_UNSPECIFIED = -2,
GRAB_TIMEOUT_FORCE_32BITS = FULL_32BIT_VALUE }

  Timeout options for grabbing images.

- enum BandwidthAllocation {
BANDWIDTH_ALLOCATION_OFF = 0,
BANDWIDTH_ALLOCATION_ON = 1,
BANDWIDTH_ALLOCATION_UNSUPPORTED = 2,
BANDWIDTH_ALLOCATION_UNSPECIFIED = 3,
BANDWIDTH_ALLOCATION_FORCE_32BITS = FULL_32BIT_VALUE }

  Bandwidth allocation options for 1394 devices.

- enum InterfaceType {
INTERFACE_IEEE1394,
INTERFACE_USB2,
INTERFACE_GIGE,
INTERFACE_UNKNOWN,
INTERFACE_TYPE_FORCE_32BITS = FULL_32BIT_VALUE }

Interfaces that a camera may use to communicate with a host.

- enum PropertyType {
  BRIGHTNESS,
  AUTO_EXPOSURE,
  SHARPNESS,
  WHITE_BALANCE,
  HUE,
  SATURATION,
  GAMMA,
  IRIS,
  FOCUS,
  ZOOM,
  PAN,
  TILT,
  SHUTTER,
  GAIN,
  TRIGGER_MODE,
  TRIGGER_DELAY,
  FRAME_RATE,
  TEMPERATURE,
  UNSPECIFIED_PROPERTY_TYPE,
  PROPERTY_TYPE_FORCE_32BITS = FULL_32BIT_VALUE }

  Camera properties.

- enum FrameRate {
  FRAMERATE_1_875,
  FRAMERATE_3_75,
  FRAMERATE_7_5,
  FRAMERATE_15,
  FRAMERATE_30,
  FRAMERATE_60,
  FRAMERATE_120,
  FRAMERATE_240,
  FRAMERATE_FORMAT7,
  NUM_FRAMERATES,
  FRAMERATE_FORCE_32BITS = FULL_32BIT_VALUE }

  Frame rates in frames per second.

- enum VideoMode {
  VIDEOMODE_160x120YUV444,
  VIDEOMODE_320x240YUV422,
  VIDEOMODE_640x480YUV411,
  VIDEOMODE_640x480YUV422,
  VIDEOMODE_640x480RGB,
  VIDEOMODE_640x480Y8,
  VIDEOMODE_640x480Y16,
  VIDEOMODE_800x600YUV422,
  VIDEOMODE_800x600RGB,
  VIDEOMODE_800x600Y8,
  VIDEOMODE_800x600Y16,
  VIDEOMODE_1024x768YUV422,
  VIDEOMODE_1024x768RGB,
  VIDEOMODE_1024x768Y8,
  VIDEOMODE_1024x768Y16,
  VIDEOMODE_1280x960YUV422,
  VIDEOMODE_1280x960RGB,
  VIDEOMODE_1280x960Y8,
  VIDEOMODE_1280x960Y16,
  VIDEOMODE_1600x1200YUV422,
  VIDEOMODE_1600x1200RGB,
  VIDEOMODE_1600x1200Y8,
  VIDEOMODE_1600x1200Y16,
  VIDEOMODE_FORMAT7,
  NUM_VIDEOMODES,
  VIDEOMODE_FORCE_32BITS = FULL_32BIT_VALUE }

  DCAM video modes.

- enum Mode {
  MODE_0 = 0,
  MODE_1,
  MODE_2,
  MODE_3,
  MODE_4,
  MODE_5,
  MODE_6,
  MODE_7,
  MODE_8,
  MODE_9,
  MODE_10,

MODE_11,
MODE_12,
MODE_13,
MODE_14,
MODE_15,
MODE_16,
MODE_17,
MODE_18,
MODE_19,
MODE_20,
MODE_21,
MODE_22,
MODE_23,
MODE_24,
MODE_25,
MODE_26,
MODE_27,
MODE_28,
MODE_29,
MODE_30,
MODE_31,
NUM_MODES,
MODE_FORCE_32BITS = FULL_32BIT_VALUE }

Camera modes for DCAM formats as well as Format7.

- enum PixelFormat {
PIXEL_FORMAT_MONO8 = 0x80000000,
PIXEL_FORMAT_411YUV8 = 0x40000000,
PIXEL_FORMAT_422YUV8 = 0x20000000,
PIXEL_FORMAT_444YUV8 = 0x10000000,
PIXEL_FORMAT_RGB8 = 0x08000000,
PIXEL_FORMAT_MONO16 = 0x04000000,
PIXEL_FORMAT_RGB16 = 0x02000000,
PIXEL_FORMAT_S_MONO16 = 0x01000000,
PIXEL_FORMAT_S_RGB16 = 0x00800000,
PIXEL_FORMAT_RAW8 = 0x00400000,
PIXEL_FORMAT_RAW16 = 0x00200000,
PIXEL_FORMAT_MONO12 = 0x00100000,
PIXEL_FORMAT_RAW12 = 0x00080000,
PIXEL_FORMAT_BGR = 0x80000008,
PIXEL_FORMAT_BGRU = 0x40000008,

PIXEL_FORMAT_RGB = PIXEL_FORMAT_RGB8,
PIXEL_FORMAT_RGBU = 0x40000002,
NUM_PIXEL_FORMATS = 15,
UNSPECIFIED_PIXEL_FORMAT = 0 }

Pixel formats available for Format7 modes.

- enum BusSpeed {
BUSSPEED_S100,
BUSSPEED_S200,
BUSSPEED_S400,
BUSSPEED_S480,
BUSSPEED_S800,
BUSSPEED_S1600,
BUSSPEED_S3200,
BUSSPEED_S5000,
BUSSPEED_10BASE_T,
BUSSPEED_100BASE_T,
BUSSPEED_1000BASE_T,
BUSSPEED_10000BASE_T,
BUSSPEED_S_FASTEST,
BUSSPEED_ANY,
BUSSPEED_SPEED_UNKNOWN = -1,
BUSSPEED_FORCE_32BITS = FULL_32BIT_VALUE }

  Bus speeds.

- enum DriverType {
DRIVER_1394_CAM,
DRIVER_1394_PRO,
DRIVER_1394_JUJU,
DRIVER_1394_VIDEO1394,
DRIVER_1394_RAW1394,
DRIVER_USB_NONE,
DRIVER_USB_CAM,
DRIVER_USB3_PRO,
DRIVER_GIGE_NONE,
DRIVER_GIGE_FILTER,
DRIVER_GIGE_PRO,
DRIVER_UNKNOWN = -1,
DRIVER_FORCE_32BITS = FULL_32BIT_VALUE }

  Types of low level drivers that flycapture uses.

- enum ColorProcessingAlgorithm {
  DEFAULT,
  NO_COLOR_PROCESSING,
  NEAREST_NEIGHBOR,
  EDGE_SENSING,
  HQ_LINEAR,
  RIGOROUS,
  IPP,
  COLOR_PROCESSING_ALGORITHM_FORCE_32BITS = FULL_32BIT_VALUE }

  Color processing algorithms.

- enum BayerTileFormat {
  NONE,
  RGGB,
  GRBG,
  GBRG,
  BGGR,
  BT_FORCE_32BITS = FULL_32BIT_VALUE }

  Bayer tile formats.

- enum ImageFileFormat {
  FROM_FILE_EXT = -1,
  PGM,
  PPM,
  BMP,
  JPEG,
  JPEG2000,
  TIFF,
  PNG,
  RAW,
  IMAGE_FILE_FORMAT_FORCE_32BITS = FULL_32BIT_VALUE }

  File formats to be used for saving images to disk.

6.2.1 Enumeration Type Documentation

6.2.1.1 enum BandwidthAllocation

Bandwidth allocation options for 1394 devices.

Enumerator:

BANDWIDTH_ALLOCATION_OFF Do not allocate bandwidth.

BANDWIDTH_ALLOCATION_ON Allocate bandwidth.
This is the default setting.

BANDWIDTH_ALLOCATION_UNSUPPORTED Bandwidth allocation is not supported by either the camera or operating system.

BANDWIDTH_ALLOCATION_UNSPECIFIED Not specified.

This leaves the current setting unchanged.

BANDWIDTH_ALLOCATION_FORCE_32BITS

6.2.1.2 enum BayerTileFormat

Bayer tile formats.

Enumerator:

NONE No bayer tile format.

RGGB Red-Green-Green-Blue.

GRBG Green-Red-Blue-Green.

GBRG Green-Blue-Red-Green.

BGGR Blue-Green-Green-Red.

BT_FORCE_32BITS

6.2.1.3 enum BusCallbackType

The type of bus callback to register a callback function for.

Enumerator:

BUS_RESET Register for all bus events.

ARRIVAL Register for arrivals only.

REMOVAL Register for removals only.

CALLBACK_TYPE_FORCE_32BITS

6.2.1.4 enum BusSpeed

Bus speeds.

Enumerator:

BUSSPEED_S100 100Mbits/sec.

BUSSPEED_S200 200Mbits/sec.

BUSSPEED_S400 400Mbits/sec.

BUSSPEED_S480 480Mbits/sec.

Only for USB2 cameras.

BUSSPEED_S800 800Mbits/sec.

BUSSPEED_S1600 1600Mbits/sec.

BUSSPEED_S3200 3200Mbits/sec.

BUSSPEED_S5000 5000Mbits/sec.

Only for USB3 cameras.

BUSSPEED_10BASE_T 10Base-T.

Only for GigE Vision cameras.

BUSSPEED_100BASE_T 100Base-T.

Only for GigE Vision cameras.

BUSSPEED_1000BASE_T 1000Base-T (Gigabit Ethernet).

Only for GigE Vision cameras.

BUSSPEED_10000BASE_T 10000Base-T.

Only for GigE Vision cameras.

BUSSPEED_S_FASTEST The fastest speed available.

BUSSPEED_ANY Any speed that is available.

BUSSPEED_SPEED_UNKNOWN Unknown bus speed.

BUSSPEED_FORCE_32BITS

6.2.1.5 enum ColorProcessingAlgorithm

Color processing algorithms.

Please refer to our knowledge base at article at `http://www.ptgrey.com/support/kb/index.asp?a=4&q=33` for complete details for each algorithm.

Enumerator:

DEFAULT Default method.

NO_COLOR_PROCESSING No color processing.

NEAREST_NEIGHBOR Fastest but lowest quality.

Equivalent to FLYCAPTURE_NEAREST_NEIGHBOR_FAST in FlyCapture.

EDGE_SENSING Weights surrounding pixels based on localized edge orientation.

HQ_LINEAR Similar quality to rigorous but much faster.

RIGOROUS Slowest but produces the best results.

IPP Multithreaded with similar results to edge sensing.

COLOR_PROCESSING_ALGORITHM_FORCE_32BITS

6.2.1.6 enum DriverType

Types of low level drivers that flycapture uses.

Enumerator:

DRIVER_1394_CAM PGRCam.sys.

DRIVER_1394_PRO PGR1394.sys.

DRIVER_1394_JUJU firewire_core.

DRIVER_1394_VIDEO1394 video1394.

DRIVER_1394_RAW1394 raw1394.

DRIVER_USB_NONE No usb driver used just BSD stack. (Linux only)

DRIVER_USB_CAM PGRUsbCam.sys.

DRIVER_USB3_PRO PGRXHCI.sys.

DRIVER_GIGE_NONE no gige drivers used,MS/BSD stack.

DRIVER_GIGE_FILTER PGRGigE.sys.

DRIVER_GIGE_PRO PGRGigEPro.sys.

DRIVER_UNKNOWN Unknown driver type.

DRIVER_FORCE_32BITS

6.2.1.7 enum ErrorType

The error types returned by functions.

Enumerator:

PGRERROR_UNDEFINED Undefined.

PGRERROR_OK Function returned with no errors.

PGRERROR_FAILED General failure.

PGRERROR_NOT_IMPLEMENTED Function has not been implemented.

PGRERROR_FAILED_BUS_MASTER_CONNECTION Could not connect to Bus Master.

PGRERROR_NOT_CONNECTED Camera has not been connected.

PGRERROR_INIT_FAILED Initialization failed.

PGRERROR_NOT_INTITIALIZED Camera has not been initialized.

PGRERROR_INVALID_PARAMETER Invalid parameter passed to function.

PGRERROR_INVALID_SETTINGS Setting set to camera is invalid.

PGRERROR_INVALID_BUS_MANAGER Invalid Bus Manager object.

PGRERROR_MEMORY_ALLOCATION_FAILED Could not allocate memory.

PGRERROR_LOW_LEVEL_FAILURE Low level error.

PGRERROR_NOT_FOUND Device not found.

PGRERROR_FAILED_GUID GUID failure.

PGRERROR_INVALID_PACKET_SIZE Packet size set to camera is invalid.

PGRERROR_INVALID_MODE Invalid mode has been passed to function.

PGRERROR_NOT_IN_FORMAT7 Error due to not being in Format7.

PGRERROR_NOT_SUPPORTED This feature is unsupported.

PGRERROR_TIMEOUT Timeout error.

PGRERROR_BUS_MASTER_FAILED Bus Master Failure.

PGRERROR_INVALID_GENERATION Generation Count Mismatch.

PGRERROR_LUT_FAILED Look Up Table failure.

PGRERROR_IIDC_FAILED IIDC failure.

PGRERROR_STROBE_FAILED Strobe failure.

PGRERROR_TRIGGER_FAILED Trigger failure.

PGRERROR_PROPERTY_FAILED Property failure.

PGRERROR_PROPERTY_NOT_PRESENT Property is not present.

PGRERROR_REGISTER_FAILED Register access failed.

PGRERROR_READ_REGISTER_FAILED Register read failed.

PGRERROR_WRITE_REGISTER_FAILED Register write failed.

PGRERROR_ISOCH_FAILED Isochronous failure.

PGRERROR_ISOCH_ALREADY_STARTED Isochronous transfer has already been started.

PGRERROR_ISOCH_NOT_STARTED Isochronous transfer has not been started.

PGRERROR_ISOCH_START_FAILED Isochronous start failed.

PGRERROR_ISOCH_RETRIEVE_BUFFER_FAILED Isochronous retrieve buffer failed.

PGRERROR_ISOCH_STOP_FAILED Isochronous stop failed.

PGRERROR_ISOCH_SYNC_FAILED Isochronous image synchronization failed.

PGRERROR_ISOCH_BANDWIDTH_EXCEEDED Isochronous bandwidth exceeded.

PGRERROR_IMAGE_CONVERSION_FAILED Image conversion failed.

PGRERROR_IMAGE_LIBRARY_FAILURE Image library failure.

PGRERROR_BUFFER_TOO_SMALL Buffer is too small.

PGRERROR_IMAGE_CONSISTENCY_ERROR There is an image consistency error.

PGRERROR_FORCE_32BITS

6.2.1.8 enum FrameRate

Frame rates in frames per second.

Enumerator:

FRAMERATE_1_875 1.875 fps.

FRAMERATE_3_75 3.75 fps.

FRAMERATE_7_5 7.5 fps.

FRAMERATE_15 15 fps.

FRAMERATE_30 30 fps.

FRAMERATE_60 60 fps.

FRAMERATE_120 120 fps.

FRAMERATE_240 240 fps.

FRAMERATE_FORMAT7 Custom frame rate for Format7 functionality.

NUM_FRAMERATES Number of possible camera frame rates.

FRAMERATE_FORCE_32BITS

6.2.1.9 enum GrabMode

The grab strategy employed during image transfer.

This type controls how images that stream off the camera accumulate in a user buffer for handling.

Enumerator:

DROP_FRAMES Grabs the newest image in the user buffer each time the RetrieveBuffer() function is called.

Older images are dropped instead of accumulating in the user buffer. Grabbing blocks if the camera has not finished transmitting the next available image. If the camera is transmitting images faster than the application can grab them, images may be dropped and only the most recent image is stored for grabbing. Note that this mode is the equivalent of flycaptureLockLatest in earlier versions of the FlyCapture SDK.

BUFFER_FRAMES Images accumulate in the user buffer, and the oldest image is grabbed for handling before being discarded.

This member can be used to guarantee that each image is seen. However, image processing time must not exceed transmission time from the camera to the buffer. Grabbing blocks if the camera has not finished transmitting the next available image. The buffer size is controlled by the numBuffers parameter in the FC2Config struct. Note that this mode is the equivalent of flycaptureLockNext in earlier versions of the FlyCapture SDK.

UNSPECIFIED_GRAB_MODE Unspecified grab mode.

GRAB_MODE_FORCE_32BITS

6.2.1.10 enum GrabTimeout

Timeout options for grabbing images.

Enumerator:

TIMEOUT_NONE Non-blocking wait.

TIMEOUT_INFINITE Wait indefinitely.

TIMEOUT_UNSPECIFIED Unspecified timeout setting.

GRAB_TIMEOUT_FORCE_32BITS

6.2.1.11 enum ImageFileFormat

File formats to be used for saving images to disk.

Enumerator:

FROM_FILE_EXT Determine file format from file extension.

PGM Portable gray map.

PPM Portable pixmap.

BMP Bitmap.

JPEG JPEG.

JPEG2000 JPEG 2000.

TIFF Tagged image file format.

PNG	Portable network graphics.
RAW	Raw data.
IMAGE_FILE_FORMAT_FORCE_32BITS	

6.2.1.12 enum InterfaceType

Interfaces that a camera may use to communicate with a host.

Enumerator:

INTERFACE_IEEE1394	IEEE-1394 (Includes 1394a and 1394b).
INTERFACE_USB2	USB 2.0.
INTERFACE_GIGE	GigE.
INTERFACE_UNKNOWN	Unknown interface.
INTERFACE_TYPE_FORCE_32BITS	

6.2.1.13 enum Mode

Camera modes for DCAM formats as well as Format7.

Enumerator:

MODE_0

MODE_1

MODE_2

MODE_3

MODE_4

MODE_5

MODE_6

MODE_7

MODE_8

MODE_9

MODE_10

MODE_11

MODE_12

MODE_13

MODE_14

MODE_15

MODE_16

MODE_17

MODE_18

MODE_19

MODE_20

MODE_21

MODE_22

MODE_23

MODE_24

MODE_25

MODE_26

MODE_27

MODE_28

MODE_29

MODE_30

MODE_31

NUM_MODES Number of modes.

MODE_FORCE_32BITS

6.2.1.14 enum PixelFormat

Pixel formats available for Format7 modes.

Enumerator:

PIXEL_FORMAT_MONO8 8 bits of mono information.

PIXEL_FORMAT_411YUV8 YUV 4:1:1.

PIXEL_FORMAT_422YUV8 YUV 4:2:2.

PIXEL_FORMAT_444YUV8 YUV 4:4:4.

PIXEL_FORMAT_RGB8 R = G = B = 8 bits.

PIXEL_FORMAT_MONO16 16 bits of mono information.

PIXEL_FORMAT_RGB16 R = G = B = 16 bits.

PIXEL_FORMAT_S_MONO16 16 bits of signed mono information.

PIXEL_FORMAT_S_RGB16 R = G = B = 16 bits signed.

PIXEL_FORMAT_RAW8 8 bit raw data output of sensor.

PIXEL_FORMAT_RAW16 16 bit raw data output of sensor.

PIXEL_FORMAT_MONO12 12 bits of mono information.

PIXEL_FORMAT_RAW12 12 bit raw data output of sensor.

PIXEL_FORMAT_BGR 24 bit BGR.

PIXEL_FORMAT_BGRU 32 bit BGRU.

PIXEL_FORMAT_RGB 24 bit RGB.

PIXEL_FORMAT_RGBU 32 bit RGBU.

NUM_PIXEL_FORMATS Number of pixel formats.

UNSPECIFIED_PIXEL_FORMAT Unspecified pixel format.

6.2.1.15 enum PropertyType

Camera properties.

Not all properties may be supported, depending on the camera model.

Enumerator:

BRIGHTNESS	Brightness.
AUTO_EXPOSURE	Auto exposure.
SHARPNESS	Sharpness.
WHITE_BALANCE	White balance.
HUE	Hue.
SATURATION	Saturation.
GAMMA	Gamma.
IRIS	Iris.
FOCUS	Focus.
ZOOM	Zoom.
PAN	Pan.
TILT	Tilt.
SHUTTER	Shutter.
GAIN	Gain.
TRIGGER_MODE	Trigger mode.
TRIGGER_DELAY	Trigger delay.
FRAME_RATE	Frame rate.
TEMPERATURE	Temperature.
UNSPECIFIED_PROPERTY_TYPE	Unspecified property type.
PROPERTY_TYPE_FORCE_32BITS	

6.2.1.16 enum VideoMode

DCAM video modes.

Enumerator:

VIDEOMODE_160x120YUV444	160x120 YUV444.
VIDEOMODE_320x240YUV422	320x240 YUV422.
VIDEOMODE_640x480YUV411	640x480 YUV411.
VIDEOMODE_640x480YUV422	640x480 YUV422.
VIDEOMODE_640x480RGB	640x480 24-bit RGB.
VIDEOMODE_640x480Y8	640x480 8-bit.
VIDEOMODE_640x480Y16	640x480 16-bit.
VIDEOMODE_800x600YUV422	800x600 YUV422.
VIDEOMODE_800x600RGB	800x600 RGB.
VIDEOMODE_800x600Y8	800x600 8-bit.

VIDEOMODE_800x600Y16	800x600 16-bit.
VIDEOMODE_1024x768YUV422	1024x768 YUV422.
VIDEOMODE_1024x768RGB	1024x768 RGB.
VIDEOMODE_1024x768Y8	1024x768 8-bit.
VIDEOMODE_1024x768Y16	1024x768 16-bit.
VIDEOMODE_1280x960YUV422	1280x960 YUV422.
VIDEOMODE_1280x960RGB	1280x960 RGB.
VIDEOMODE_1280x960Y8	1280x960 8-bit.
VIDEOMODE_1280x960Y16	1280x960 16-bit.
VIDEOMODE_1600x1200YUV422	1600x1200 YUV422.
VIDEOMODE_1600x1200RGB	1600x1200 RGB.
VIDEOMODE_1600x1200Y8	1600x1200 8-bit.
VIDEOMODE_1600x1200Y16	1600x1200 16-bit.
VIDEOMODE_FORMAT7	Custom video mode for Format7 functionality.
NUM_VIDEOMODES	Number of possible video modes.
VIDEOMODE_FORCE_32BITS	

6.3 GigE specific enumerations

These enumerations are specific to GigE camera operation only.

Enumerations

- enum GigEPropertyType {
  HEARTBEAT,
  HEARTBEAT_TIMEOUT,
  PACKET_SIZE,
  PACKET_DELAY }

    Possible properties that can be queried from the camera.

6.3.1 Detailed Description

These enumerations are specific to GigE camera operation only.

6.3.2 Enumeration Type Documentation

6.3.2.1 enum GigEPropertyType

Possible properties that can be queried from the camera.

Enumerator:

HEARTBEAT

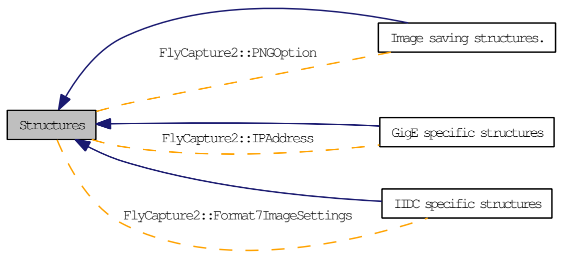
HEARTBEAT_TIMEOUT

PACKET_SIZE

PACKET_DELAY

6.4 Structures

Collaboration diagram for Structures:



Classes

- struct FC2Version

  The current version of the library.

- class PGRGuid

  A GUID to the camera.

- struct IPAddress

  IPv4 address.

- struct Format7ImageSettings

  Format 7 image settings.

- struct FC2Config

  Configuration for a camera.

- struct PropertyInfo

  Information about a specific camera property.

- struct Property

  A specific camera property.

- struct TriggerModeInfo

  Information about a camera trigger property.

- struct TriggerMode

  A camera trigger.

- struct StrobeInfo

  A camera strobe property.

- struct StrobeControl

  A camera strobe.

- struct TimeStamp

Timestamp information.

- struct ConfigROM

  Camera configuration ROM.

- struct CameraInfo

  Camera information.

- struct EmbeddedImageInfoProperty

  Properties of a single embedded image info property.

- struct EmbeddedImageInfo

  Properties of the possible embedded image information.

- struct ImageMetadata

  Metadata related to an image.

- struct LUTData

  Information about the camera's look up table.

- struct HostAdapterStats

  Information about the host adapter's statistics.

- struct CameraStats

  Camera diagnostic information.

- struct PNGOption

  Options for saving PNG images.

Modules

- GigE specific structures

  These structures are specific to GigE camera operation only.

- IIDC specific structures

  These structures are specific to IIDC camera operation only.

- Image saving structures.

  These structures define various parameters used for saving images.

Typedefs

- typedef PropertyInfo TriggerDelayInfo

  The TriggerDelayInfo structure is identical to PropertyInfo.

- typedef Property TriggerDelay

  The TriggerDelay structure is identical to Property.

6.4.1 Typedef Documentation

6.4.1.1 typedef Property TriggerDelay

The TriggerDelay structure is identical to Property.

6.4.1.2 typedef PropertyInfo TriggerDelayInfo

The TriggerDelayInfo structure is identical to PropertyInfo.

6.5 GigE specific structures

These structures are specific to GigE camera operation only.

Collaboration diagram for GigE specific structures:

Classes

- struct IPAddress

  IPv4 address.

- struct MACAddress

  MAC address.

- struct GigEProperty

  A GigE property.

- struct GigEStreamChannel

  Information about a single GigE stream channel.

- struct GigEConfig

  Configuration for a GigE camera.

- struct GigEImageSettingsInfo

  Format 7 information for a single mode.

- struct GigEImageSettings

  Image settings for a GigE camera.

6.5.1 Detailed Description

These structures are specific to GigE camera operation only.

6.6 IIDC specific structures

These structures are specific to IIDC camera operation only.

Collaboration diagram for IIDC specific structures:

Classes

- struct Format7ImageSettings

  Format 7 image settings.

- struct Format7Info

  Format 7 information for a single mode.

- struct Format7PacketInfo

  Format 7 packet information.

6.6.1 Detailed Description

These structures are specific to IIDC camera operation only.

6.7 Image saving structures.

These structures define various parameters used for saving images.

Collaboration diagram for Image saving structures.:

Classes

- struct PNGOption

  Options for saving PNG images.
- struct PPMOption

  Options for saving PPM images.
- struct PGMOption

  Options for saving PGM images.
- struct TIFFOption

  Options for saving TIFF images.
- struct JPEGOption

  Options for saving JPEG image.
- struct JPG2Option

  Options for saving JPEG2000 image.
- struct AVIOption

  Options for saving AVI files.

6.7.1 Detailed Description

These structures define various parameters used for saving images.

Chapter 7

Namespace Documentation

7.1 FlyCapture2 Namespace Reference

Classes

- class AVIRecorder

  The AVIRecorder class provides the functionality for the user to record images to an AVI file.

- class BusManager

  The BusManager class provides the functionality for the user to get an PGRGuid for a desired camera or device easily.

- class Camera

  The Camera object represents a physical camera that uses the IIDC register set.

- class CameraBase

  The CameraBase class is an abstract base class that defines a general interface to a camera.

- class Error

  The Error object represents an error that is returned from the library.

- struct FC2Version

  The current version of the library.

- class PGRGuid

  A GUID to the camera.

- struct IPAddress

  IPv4 address.

- struct MACAddress

  MAC address.

- struct GigEProperty

  A GigE property.

- struct GigEStreamChannel

  Information about a single GigE stream channel.

- struct GigEConfig

  Configuration for a GigE camera.

- struct GigEImageSettingsInfo

  Format 7 information for a single mode.

- struct GigEImageSettings

  Image settings for a GigE camera.

- struct Format7ImageSettings

  Format 7 image settings.

- struct Format7Info

  Format 7 information for a single mode.

- struct Format7PacketInfo

  Format 7 packet information.

- struct FC2Config

  Configuration for a camera.

- struct PropertyInfo

  Information about a specific camera property.

- struct Property

  A specific camera property.

- struct TriggerModeInfo

  Information about a camera trigger property.

- struct TriggerMode

  A camera trigger.

- struct StrobeInfo

  A camera strobe property.

- struct StrobeControl

  A camera strobe.

- struct TimeStamp

  Timestamp information.

- struct ConfigROM

  Camera configuration ROM.

- struct CameraInfo

Camera information.

- struct EmbeddedImageInfoProperty

  Properties of a single embedded image info property.

- struct EmbeddedImageInfo

  Properties of the possible embedded image information.

- struct ImageMetadata

  Metadata related to an image.

- struct LUTData

  Information about the camera's look up table.

- struct HostAdapterStats

  Information about the host adapter's statistics.

- struct CameraStats

  Camera diagnostic information.

- struct PNGOption

  Options for saving PNG images.

- struct PPMOption

  Options for saving PPM images.

- struct PGMOption

  Options for saving PGM images.

- struct TIFFOption

  Options for saving TIFF images.

- struct JPEGOption

  Options for saving JPEG image.

- struct JPG2Option

  Options for saving JPEG2000 image.

- struct AVIOption

  Options for saving AVI files.

- class CameraControlDlg

  The CameraControlDlg object represents a GTKmm dialog that provides a graphical interface to a specified camera.

- class CameraSelectionDlg

  The CameraSelectionDlg object represents a GTKmm dialog that provides a graphical interface that lists the number of cameras available to the library.

- class GigECamera

The GigECamera object represents a physical Gigabit Ethernet camera.

- class Image

  The Image class is used to retrieve images from a camera, convert between multiple pixel formats and save images to disk.

- class ImageStatistics

  The ImageStatistics object represents image statistics for an image.

- class TopologyNode

  The TopologyNode class contains topology information that can be used to generate a tree structure of all cameras and devices connected to a computer.

- struct SystemInfo

  Description of the system.

- class Utilities

  The Utility class is generally used to query for general system information such as operating system, available memory etc.

Typedefs

- typedef void(∗ BusEventCallback)(void ∗pParameter, unsigned int serialNumber)

  Bus event callback function prototype.

- typedef void ∗ CallbackHandle

  Handle that is returned when registering a callback.

- typedef void(∗ ImageEventCallback)(class Image ∗pImage, const void ∗pCallbackData)

  Image event callback function prototype.

- typedef PropertyInfo TriggerDelayInfo

  The TriggerDelayInfo structure is identical to PropertyInfo.

- typedef Property TriggerDelay

  The TriggerDelay structure is identical to Property.

- typedef void(∗ AsyncCommandCallback)(class Error retError, void ∗pUserData)

  Async command callback function prototype.

Enumerations

- enum ErrorType {

  PGRERROR_UNDEFINED = -1,

  PGRERROR_OK,

  PGRERROR_FAILED,

  PGRERROR_NOT_IMPLEMENTED,

PGRERROR_FAILED_BUS_MASTER_CONNECTION,
PGRERROR_NOT_CONNECTED,
PGRERROR_INIT_FAILED,
PGRERROR_NOT_INTITIALIZED,
PGRERROR_INVALID_PARAMETER,
PGRERROR_INVALID_SETTINGS,
PGRERROR_INVALID_BUS_MANAGER,
PGRERROR_MEMORY_ALLOCATION_FAILED,
PGRERROR_LOW_LEVEL_FAILURE,
PGRERROR_NOT_FOUND,
PGRERROR_FAILED_GUID,
PGRERROR_INVALID_PACKET_SIZE,
PGRERROR_INVALID_MODE,
PGRERROR_NOT_IN_FORMAT7,
PGRERROR_NOT_SUPPORTED,
PGRERROR_TIMEOUT,
PGRERROR_BUS_MASTER_FAILED,
PGRERROR_INVALID_GENERATION,
PGRERROR_LUT_FAILED,
PGRERROR_IIDC_FAILED,
PGRERROR_STROBE_FAILED,
PGRERROR_TRIGGER_FAILED,
PGRERROR_PROPERTY_FAILED,
PGRERROR_PROPERTY_NOT_PRESENT,
PGRERROR_REGISTER_FAILED,
PGRERROR_READ_REGISTER_FAILED,
PGRERROR_WRITE_REGISTER_FAILED,
PGRERROR_ISOCH_FAILED,
PGRERROR_ISOCH_ALREADY_STARTED,
PGRERROR_ISOCH_NOT_STARTED,
PGRERROR_ISOCH_START_FAILED,
PGRERROR_ISOCH_RETRIEVE_BUFFER_FAILED,
PGRERROR_ISOCH_STOP_FAILED,
PGRERROR_ISOCH_SYNC_FAILED,
PGRERROR_ISOCH_BANDWIDTH_EXCEEDED,
PGRERROR_IMAGE_CONVERSION_FAILED,
PGRERROR_IMAGE_LIBRARY_FAILURE,
PGRERROR_BUFFER_TOO_SMALL,
PGRERROR_IMAGE_CONSISTENCY_ERROR,
PGRERROR_FORCE_32BITS = FULL_32BIT_VALUE }

The error types returned by functions.

- enum BusCallbackType {
  BUS_RESET,
  ARRIVAL,
  REMOVAL,
  CALLBACK_TYPE_FORCE_32BITS = FULL_32BIT_VALUE }

  The type of bus callback to register a callback function for.

- enum GrabMode {
  DROP_FRAMES,
  BUFFER_FRAMES,
  UNSPECIFIED_GRAB_MODE,
  GRAB_MODE_FORCE_32BITS = FULL_32BIT_VALUE }

  The grab strategy employed during image transfer.

- enum GrabTimeout {
  TIMEOUT_NONE = 0,
  TIMEOUT_INFINITE = -1,
  TIMEOUT_UNSPECIFIED = -2,
  GRAB_TIMEOUT_FORCE_32BITS = FULL_32BIT_VALUE }

  Timeout options for grabbing images.

- enum BandwidthAllocation {
  BANDWIDTH_ALLOCATION_OFF = 0,
  BANDWIDTH_ALLOCATION_ON = 1,
  BANDWIDTH_ALLOCATION_UNSUPPORTED = 2,
  BANDWIDTH_ALLOCATION_UNSPECIFIED = 3,
  BANDWIDTH_ALLOCATION_FORCE_32BITS = FULL_32BIT_VALUE }

  Bandwidth allocation options for 1394 devices.

- enum InterfaceType {
  INTERFACE_IEEE1394,
  INTERFACE_USB2,
  INTERFACE_GIGE,
  INTERFACE_UNKNOWN,
  INTERFACE_TYPE_FORCE_32BITS = FULL_32BIT_VALUE }

  Interfaces that a camera may use to communicate with a host.

- enum PropertyType {
  BRIGHTNESS,
  AUTO_EXPOSURE,
  SHARPNESS,
  WHITE_BALANCE,
  HUE,

SATURATION,
GAMMA,
IRIS,
FOCUS,
ZOOM,
PAN,
TILT,
SHUTTER,
GAIN,
TRIGGER_MODE,
TRIGGER_DELAY,
FRAME_RATE,
TEMPERATURE,
UNSPECIFIED_PROPERTY_TYPE,
PROPERTY_TYPE_FORCE_32BITS = FULL_32BIT_VALUE }

Camera properties.

- enum FrameRate {
FRAMERATE_1_875,
FRAMERATE_3_75,
FRAMERATE_7_5,
FRAMERATE_15,
FRAMERATE_30,
FRAMERATE_60,
FRAMERATE_120,
FRAMERATE_240,
FRAMERATE_FORMAT7,
NUM_FRAMERATES,
FRAMERATE_FORCE_32BITS = FULL_32BIT_VALUE }

Frame rates in frames per second.

- enum VideoMode {
VIDEOMODE_160x120YUV444,
VIDEOMODE_320x240YUV422,
VIDEOMODE_640x480YUV411,
VIDEOMODE_640x480YUV422,
VIDEOMODE_640x480RGB,
VIDEOMODE_640x480Y8,
VIDEOMODE_640x480Y16,
VIDEOMODE_800x600YUV422,
VIDEOMODE_800x600RGB,
VIDEOMODE_800x600Y8,

VIDEOMODE_800x600Y16,
VIDEOMODE_1024x768YUV422,
VIDEOMODE_1024x768RGB,
VIDEOMODE_1024x768Y8,
VIDEOMODE_1024x768Y16,
VIDEOMODE_1280x960YUV422,
VIDEOMODE_1280x960RGB,
VIDEOMODE_1280x960Y8,
VIDEOMODE_1280x960Y16,
VIDEOMODE_1600x1200YUV422,
VIDEOMODE_1600x1200RGB,
VIDEOMODE_1600x1200Y8,
VIDEOMODE_1600x1200Y16,
VIDEOMODE_FORMAT7,
NUM_VIDEOMODES,
VIDEOMODE_FORCE_32BITS = FULL_32BIT_VALUE }

DCAM video modes.

- enum Mode {
MODE_0 = 0,
MODE_1,
MODE_2,
MODE_3,
MODE_4,
MODE_5,
MODE_6,
MODE_7,
MODE_8,
MODE_9,
MODE_10,
MODE_11,
MODE_12,
MODE_13,
MODE_14,
MODE_15,
MODE_16,
MODE_17,
MODE_18,
MODE_19,
MODE_20,
MODE_21,

MODE_22,
MODE_23,
MODE_24,
MODE_25,
MODE_26,
MODE_27,
MODE_28,
MODE_29,
MODE_30,
MODE_31,
NUM_MODES,
MODE_FORCE_32BITS = FULL_32BIT_VALUE }

Camera modes for DCAM formats as well as Format7.

- enum PixelFormat {
PIXEL_FORMAT_MONO8 = 0x80000000,
PIXEL_FORMAT_411YUV8 = 0x40000000,
PIXEL_FORMAT_422YUV8 = 0x20000000,
PIXEL_FORMAT_444YUV8 = 0x10000000,
PIXEL_FORMAT_RGB8 = 0x08000000,
PIXEL_FORMAT_MONO16 = 0x04000000,
PIXEL_FORMAT_RGB16 = 0x02000000,
PIXEL_FORMAT_S_MONO16 = 0x01000000,
PIXEL_FORMAT_S_RGB16 = 0x00800000,
PIXEL_FORMAT_RAW8 = 0x00400000,
PIXEL_FORMAT_RAW16 = 0x00200000,
PIXEL_FORMAT_MONO12 = 0x00100000,
PIXEL_FORMAT_RAW12 = 0x00080000,
PIXEL_FORMAT_BGR = 0x80000008,
PIXEL_FORMAT_BGRU = 0x40000008,
PIXEL_FORMAT_RGB = PIXEL_FORMAT_RGB8,
PIXEL_FORMAT_RGBU = 0x40000002,
NUM_PIXEL_FORMATS = 15,
UNSPECIFIED_PIXEL_FORMAT = 0 }

  Pixel formats available for Format7 modes.

- enum BusSpeed {
BUSSPEED_S100,
BUSSPEED_S200,
BUSSPEED_S400,
BUSSPEED_S480,
BUSSPEED_S800,

BUSSPEED_S1600,
BUSSPEED_S3200,
BUSSPEED_S5000,
BUSSPEED_10BASE_T,
BUSSPEED_100BASE_T,
BUSSPEED_1000BASE_T,
BUSSPEED_10000BASE_T,
BUSSPEED_S_FASTEST,
BUSSPEED_ANY,
BUSSPEED_SPEED_UNKNOWN = -1,
BUSSPEED_FORCE_32BITS = FULL_32BIT_VALUE }

Bus speeds.

- enum DriverType {
DRIVER_1394_CAM,
DRIVER_1394_PRO,
DRIVER_1394_JUJU,
DRIVER_1394_VIDEO1394,
DRIVER_1394_RAW1394,
DRIVER_USB_NONE,
DRIVER_USB_CAM,
DRIVER_USB3_PRO,
DRIVER_GIGE_NONE,
DRIVER_GIGE_FILTER,
DRIVER_GIGE_PRO,
DRIVER_UNKNOWN = -1,
DRIVER_FORCE_32BITS = FULL_32BIT_VALUE }

  Types of low level drivers that flycapture uses.

- enum ColorProcessingAlgorithm {
DEFAULT,
NO_COLOR_PROCESSING,
NEAREST_NEIGHBOR,
EDGE_SENSING,
HQ_LINEAR,
RIGOROUS,
IPP,
COLOR_PROCESSING_ALGORITHM_FORCE_32BITS = FULL_32BIT_VALUE }

  Color processing algorithms.

- enum BayerTileFormat {
  NONE,
  RGGB,
  GRBG,
  GBRG,
  BGGR,
  BT_FORCE_32BITS = FULL_32BIT_VALUE }

  Bayer tile formats.

- enum ImageFileFormat {
  FROM_FILE_EXT = -1,
  PGM,
  PPM,
  BMP,
  JPEG,
  JPEG2000,
  TIFF,
  PNG,
  RAW,
  IMAGE_FILE_FORMAT_FORCE_32BITS = FULL_32BIT_VALUE }

  File formats to be used for saving images to disk.

- enum GigEPropertyType {
  HEARTBEAT,
  HEARTBEAT_TIMEOUT,
  PACKET_SIZE,
  PACKET_DELAY }

  Possible properties that can be queried from the camera.

- enum OSType {
  WINDOWS_X86,
  WINDOWS_X64,
  LINUX_X86,
  LINUX_X64,
  MAC,
  UNKNOWN_OS,
  OSTYPE_FORCE_32BITS = FULL_32BIT_VALUE }

  Possible operating systems.

- enum ByteOrder {
  BYTE_ORDER_LITTLE_ENDIAN,
  BYTE_ORDER_BIG_ENDIAN,
  BYTE_ORDER_FORCE_32BITS = FULL_32BIT_VALUE }

  Possible byte orders.

Variables

- static const unsigned int sk_maxStringLength = 512

  The maximum length that is allocated for a string.

- static const unsigned int sk_maxNumPorts = 32

  The maximum number of ports one device can have.

7.1.1 Typedef Documentation

7.1.1.1 typedef void(∗ AsyncCommandCallback)(class Error retError, void ∗pUserData)

Async command callback function prototype.

Defines the syntax of the async command function that is passed into LaunchCommandAsync().

7.1.1.2 typedef void(∗ BusEventCallback)(void ∗pParameter, unsigned int serialNumber)

Bus event callback function prototype.

Defines the syntax of the callback function that is passed into RegisterCallback() and UnregisterCallback().

7.1.1.3 typedef void∗ CallbackHandle

Handle that is returned when registering a callback.

It is required when unregistering the callback.

7.1.1.4 typedef void(∗ ImageEventCallback)(class Image ∗pImage, const void ∗pCallbackData)

Image event callback function prototype.

Defines the syntax of the image callback function that is passed into StartCapture(). It is possible for this function to be called simultaneously. Therefore, users must make sure that code in the callback is thread safe.

7.1.2 Enumeration Type Documentation

7.1.2.1 enum ByteOrder

Possible byte orders.

Enumerator:

BYTE_ORDER_LITTLE_ENDIAN

BYTE_ORDER_BIG_ENDIAN

BYTE_ORDER_FORCE_32BITS

7.1.2.2 enum OSType

Possible operating systems.

Enumerator:

WINDOWS_X86	All Windows 32-bit variants.
WINDOWS_X64	All Windows 64-bit variants.
LINUX_X86	All Linux 32-bit variants.
LINUX_X64	All Linux 32-bit variants.
MAC	Mac OSX.
UNKNOWN_OS	Unknown operating system.
OSTYPE_FORCE_32BITS	

Chapter 8

Class Documentation

8.1 AVIOption Struct Reference

Options for saving AVI files.

Public Member Functions

- AVIOption ()

Public Attributes

- float frameRate

    Frame rate of the stream.

- unsigned int reserved [256]

    Reserved for future use.

8.1.1 Detailed Description

Options for saving AVI files.

8.1.2 Constructor & Destructor Documentation

8.1.2.1 AVIOption () `[inline]`

8.1.3 Member Data Documentation

8.1.3.1 float frameRate

Frame rate of the stream.

8.1.3.2 unsigned int reserved[256]

Reserved for future use.

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

- FlyCapture2Defs.h

8.2 AVIRecorder Class Reference

The AVIRecorder class provides the functionality for the user to record images to an AVI file.

Public Member Functions

- AVIRecorder ()

  Default constructor.

- virtual ∼AVIRecorder ()

  Default destructor.

- virtual Error AVIOpen (const char ∗pFileName, AVIOption ∗pOption)

  Open an AVI file in preparation for writing Images to disk.

- virtual Error AVIAppend (Image ∗pImage)

  Append an image to the AVI file.

- virtual Error AVIClose ()

  Close the AVI file.

8.2.1 Detailed Description

The AVIRecorder class provides the functionality for the user to record images to an AVI file.

8.2.2 Constructor & Destructor Documentation

8.2.2.1 AVIRecorder ()

Default constructor.

8.2.2.2 virtual ∼AVIRecorder () `[virtual]`

Default destructor.

8.2.3 Member Function Documentation

8.2.3.1 virtual Error AVIAppend (Image ∗ *pImage*) `[virtual]`

Append an image to the AVI file.

Parameters:

pImage The image to append.

Returns:

An Error indicating the success or failure of the function.

8.2.3.2 virtual Error AVIClose () `[virtual]`

Close the AVI file.

See also:

AVIOpen()

Returns:

An Error indicating the success or failure of the function.

8.2.3.3 virtual Error AVIOpen (const char $*$ *pFileName*, AVIOption $*$ *pOption*) `[virtual]`

Open an AVI file in preparation for writing Images to disk.

The size of AVI files is limited to 2GB. The filenames are automatically generated using the filename specified.

Parameters:

pFileName	The filename of the AVI file.
pOption	Options to apply to the AVI file.

See also:

AVIClose()

Returns:

An Error indicating the success or failure of the function.

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

- AVIRecorder.h

8.3 BusManager Class Reference

The BusManager class provides the functionality for the user to get an PGRGuid for a desired camera or device easily.

Public Member Functions

- BusManager ()

  Default constructor.

- virtual ∼BusManager ()

  Default destructor.

- virtual Error FireBusReset (PGRGuid ∗pGuid)

  Fire a bus reset.

- virtual Error GetNumOfCameras (unsigned int ∗pNumCameras)

  Gets the number of cameras attached to the PC.

- virtual Error GetCameraFromIPAddress (IPAddress ipAddress, PGRGuid ∗pGuid)

  Gets the PGRGuid for a camera with the specified IPv4 address.

- virtual Error GetCameraFromIndex (unsigned int index, PGRGuid ∗pGuid)

  Gets the PGRGuid for a camera on the PC.

- virtual Error GetCameraFromSerialNumber (unsigned int serialNumber, PGRGuid ∗pGuid)

  Gets the PGRGuid for a camera on the PC.

- virtual Error GetCameraSerialNumberFromIndex (unsigned int index, unsigned int ∗pSerialNumber)

  Gets the serial number of the camera with the specified index.

- virtual Error GetInterfaceTypeFromGuid (PGRGuid ∗pGuid, InterfaceType ∗pInterfaceType)

  Gets the interface type associated with a PGRGuid.

- virtual Error GetNumOfDevices (unsigned int ∗pNumDevices)

  Gets the number of devices.

- virtual Error GetDeviceFromIndex (unsigned int index, PGRGuid ∗pGuid)

  Gets the PGRGuid for a device.

- virtual Error ReadPhyRegister (PGRGuid guid, unsigned int page, unsigned int port, unsigned int address, unsigned int ∗pValue)

  Read a phy register on the specified device.

- virtual Error WritePhyRegister (PGRGuid guid, unsigned int page, unsigned int port, unsigned int address, unsigned int value)

  Write a phy register on the specified device.

- virtual Error GetTopology (TopologyNode ∗pNode)

Gets the topology information for the PC.

- virtual Error RegisterCallback (BusEventCallback busEventCallback, BusCallbackType callback-Type, void ∗pParameter, CallbackHandle ∗pCallbackHandle)

  Register a callback function that will be called when the specified callback event occurs.

- virtual Error UnregisterCallback (CallbackHandle callbackHandle)

  Unregister a callback function.

- virtual Error RescanBus ()

  Force a rescan of the buses.

Static Public Member Functions

- static Error ForceIPAddressToCamera (MACAddress macAddress, IPAddress ipAddress, IPAddress subnetMask, IPAddress defaultGateway)

  Force the camera with the specific MAC address to the specified IP address, subnet mask and default gate-way.

- static Error DiscoverGigECameras (CameraInfo ∗gigECameras, unsigned int ∗arraySize)

  Discover all cameras connected to the network even if they reside on a different subnet.

8.3.1 Detailed Description

The BusManager class provides the functionality for the user to get an PGRGuid for a desired camera or device easily.

Once the camera or device token is found, it can then be used to connect to the camera or device through the camera class or device class. In addition, the BusManager class provides the ability to be notified when a camera or device is added or removed or some event occurs on the PC.

8.3.2 Constructor & Destructor Documentation

8.3.2.1 BusManager ()

Default constructor.

8.3.2.2 virtual ∼BusManager () `[virtual]`

Default destructor.

8.3.3 Member Function Documentation

8.3.3.1 static Error DiscoverGigECameras (CameraInfo ∗ *gigECameras*, unsigned int ∗ *arraySize*) `[static]`

Discover all cameras connected to the network even if they reside on a different subnet.

This is useful in situations where a GigE camera is using Persistent IP and the application's subnet is different from the device subnet. After discovering the camera, it is easy to use ForceIPAddressToCamera() to set a different IP configuration.

Parameters:

gigECameras Pointer to an array of CameraInfo structures.

arraySize Size of the array. Number of discovered cameras is returned in the same value.

Returns:

An Error indicating the success or failure of the function. If the error is PGRERROR_BUFFER_-TOO_SMALL then arraySize will contain the minimum size needed for gigECameras array.

8.3.3.2 virtual Error FireBusReset (PGRGuid $*$ *pGuid*) `[virtual]`

Fire a bus reset.

The actual bus reset is only fired for the specified 1394 bus, but it will effectively cause a global bus reset for the library.

Parameters:

pGuid PGRGuid of the camera or the device to cause bus reset.

Returns:

An Error indicating the success or failure of the function.

8.3.3.3 static Error ForceIPAddressToCamera (MACAddress *macAddress*, IPAddress *ipAddress*, IPAddress *subnetMask*, IPAddress *defaultGateway*) `[static]`

Force the camera with the specific MAC address to the specified IP address, subnet mask and default gateway.

This is useful in situations where a GigE Vision camera is using Persistent IP and the application's subnet is different from the device subnet.

Parameters:

macAddress MAC address of the camera.

ipAddress IP address to set on the camera.

subnetMask Subnet mask to set on the camera.

defaultGateway Default gateway to set on the camera.

Returns:

An Error indicating the success or failure of the function.

8.3.3.4 virtual Error GetCameraFromIndex (unsigned int *index*, PGRGuid ∗ *pGuid*) `[virtual]`

Gets the PGRGuid for a camera on the PC.

It uniquely identifies the camera specified by the index and is used to identify the camera during a Camera::Connect() call.

Parameters:

index Zero based index of camera.

pGuid Unique PGRGuid for the camera.

See also:

GetCameraFromSerialNumber()

Returns:

An Error indicating the success or failure of the function.

8.3.3.5 virtual Error GetCameraFromIPAddress (IPAddress *ipAddress*, PGRGuid ∗ *pGuid*) `[virtual]`

Gets the PGRGuid for a camera with the specified IPv4 address.

Parameters:

ipAddress IP address to get GUID for.

pGuid Unique PGRGuid for the camera.

Returns:

An Error indicating the success or failure of the function.

8.3.3.6 virtual Error GetCameraFromSerialNumber (unsigned int *serialNumber*, PGRGuid ∗ *pGuid*) `[virtual]`

Gets the PGRGuid for a camera on the PC.

It uniquely identifies the camera specified by the serial number and is used to identify the camera during a Camera::Connect() call.

Parameters:

serialNumber Serial number of camera.

pGuid Unique PGRGuid for the camera.

See also:

GetCameraFromIndex()

Returns:

An Error indicating the success or failure of the function.

8.3.3.7 virtual Error GetCameraSerialNumberFromIndex (unsigned int *index*, unsigned int ∗ *pSerialNumber*) `[virtual]`

Gets the serial number of the camera with the specified index.

Parameters:

index Zero based index of desired camera.

pSerialNumber Serial number of camera.

Returns:

An Error indicating the success or failure of the function.

8.3.3.8 virtual Error GetDeviceFromIndex (unsigned int *index*, PGRGuid ∗ *pGuid*) `[virtual]`

Gets the PGRGuid for a device.

It uniquely identifies the device specified by the index.

Parameters:

index Zero based index of device.

pGuid Unique PGRGuid for the device.

See also:

GetNumOfDevices()

Returns:

An Error indicating the success or failure of the function.

8.3.3.9 virtual Error GetInterfaceTypeFromGuid (PGRGuid ∗ *pGuid*, InterfaceType ∗ *pInterfaceType*) `[virtual]`

Gets the interface type associated with a PGRGuid.

This is useful in situations where there is a need to enumerate all cameras for a particular interface.

Parameters:

pGuid The PGRGuid to get the interface for.

pInterfaceType The interface type of the PGRGuid.

Returns:

An Error indicating the success or failure of the function.

8.3.3.10 virtual Error GetNumOfCameras (unsigned int ∗ *pNumCameras*) `[virtual]`

Gets the number of cameras attached to the PC.

Parameters:

pNumCameras The number of cameras attached.

Returns:

An Error indicating the success or failure of the function.

8.3.3.11 virtual Error GetNumOfDevices (unsigned int ∗ *pNumDevices*) `[virtual]`

Gets the number of devices.

This may include hubs, host controllers and other hardware devices (including cameras).

Parameters:

pNumDevices The number of devices found.

Returns:

An Error indicating the success or failure of the function.

8.3.3.12 virtual Error GetTopology (TopologyNode ∗ *pNode*) `[virtual]`

Gets the topology information for the PC.

Parameters:

pNode TopologyNode object that will contain the topology information.

Returns:

An Error indicating the success or failure of the function.

8.3.3.13 virtual Error ReadPhyRegister (PGRGuid *guid*, unsigned int *page*, unsigned int *port*, unsigned int *address*, unsigned int ∗ *pValue*) `[virtual]`

Read a phy register on the specified device.

The full address to be read from is determined by the page, port and address.

Parameters:

guid PGRGuid of the device to read from.
page Page to read from.
port Port to read from.
address Address to read from.
pValue Value read from the phy register.

Returns:

An Error indicating the success or failure of the function.

8.3.3.14 virtual Error RegisterCallback (BusEventCallback *busEventCallback*, BusCallbackType *callbackType*, void ∗ *pParameter*, CallbackHandle ∗ *pCallbackHandle*) `[virtual]`

Register a callback function that will be called when the specified callback event occurs.

Parameters:

busEventCallback Pointer to function that will receive the callback.

callbackType Type of callback to register for.

pParameter Callback parameter to be passed to callback.

pCallbackHandle Unique callback handle used for unregistering callback.

See also:

UnregisterCallback()

Returns:

An Error indicating the success or failure of the function.

8.3.3.15 virtual Error RescanBus () `[virtual]`

Force a rescan of the buses.

This does not trigger a bus reset. However, any current connections to a Camera object will be invalidated.

Returns:

An Error indicating the success or failure of the function.

8.3.3.16 virtual Error UnregisterCallback (CallbackHandle *callbackHandle*) `[virtual]`

Unregister a callback function.

Parameters:

callbackHandle Unique callback handle.

See also:

RegisterCallback()

Returns:

An Error indicating the success or failure of the function.

8.3.3.17 virtual Error WritePhyRegister (PGRGuid *guid*, unsigned int *page*, unsigned int *port*, unsigned int *address*, unsigned int *value*) `[virtual]`

Write a phy register on the specified device.

The full address to be written to is determined by the page, port and address.

Parameters:

guid	PGRGuid of the device to write to.
page	Page to write to.
port	Port to write to.
address	Address to write to.
value	Value to write to phy register.

Returns:

An Error indicating the success or failure of the function.

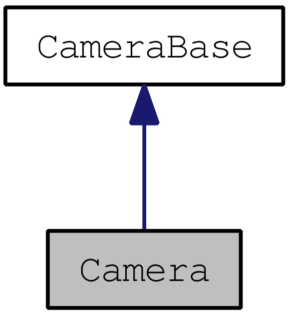
The documentation for this class was generated from the following file:

- BusManager.h

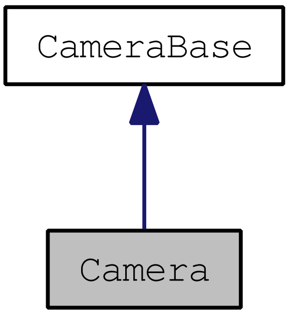
8.4 Camera Class Reference

The Camera object represents a physical camera that uses the IIDC register set.

Inheritance diagram for Camera:



Collaboration diagram for Camera:



Public Member Functions

- Camera ()

  Default constructor.

- virtual ∼Camera ()

  Default destructor.

- virtual Error Connect (PGRGuid ∗pGuid=NULL)

  The following functions are inherited from CameraBase.

- virtual Error Disconnect ()

  Disconnects the camera object from the camera.

- virtual bool IsConnected ()

  Checks if the camera object is currently connected to a physical camera.

- virtual Error SetCallback (ImageEventCallback callbackFn, const void ∗pCallbackData=NULL)

Sets the callback data to be used on completion of image transfer.

- virtual Error StartCapture (ImageEventCallback callbackFn=NULL, const void ∗pCallbackData=NULL)

  Starts isochronous image capture.

- virtual Error RetrieveBuffer (Image ∗pImage)

  Retrieves the the next image object containing the next image.

- virtual Error StopCapture ()

  Stops isochronous image transfer and cleans up all associated resources.

- virtual Error WaitForBufferEvent (Image ∗pImage, unsigned int eventNumber)

  Retrieves the next image event containing the next part of the image.

- virtual Error SetUserBuffers (unsigned char ∗const pMemBuffers, int size, int numBuffers)

  Specify user allocated buffers to use as image data buffers.

- virtual Error GetConfiguration (FC2Config ∗pConfig)

  Get the configuration associated with the camera object.

- virtual Error SetConfiguration (const FC2Config ∗pConfig)

  Set the configuration associated with the camera object.

- virtual Error GetCameraInfo (CameraInfo ∗pCameraInfo)

  Retrieves information from the camera such as serial number, model name and other camera information.

- virtual Error GetPropertyInfo (PropertyInfo ∗pPropInfo)

  Retrieves information about the specified camera property.

- virtual Error GetProperty (Property ∗pProp)

  Reads the settings for the specified property from the camera.

- virtual Error SetProperty (const Property ∗pProp, bool broadcast=false)

  Writes the settings for the specified property to the camera.

- virtual Error GetGPIOPinDirection (unsigned int pin, unsigned int ∗pDirection)

  Get the GPIO pin direction for the specified pin.

- virtual Error SetGPIOPinDirection (unsigned int pin, unsigned int direction, bool broadcast=false)

  Set the GPIO pin direction for the specified pin.

- virtual Error GetTriggerModeInfo (TriggerModeInfo ∗pTriggerModeInfo)

  Retrieve trigger information from the camera.

- virtual Error GetTriggerMode (TriggerMode ∗pTriggerMode)

  Retrieve current trigger settings from the camera.

- virtual Error SetTriggerMode (const TriggerMode ∗pTriggerMode, bool broadcast=false)

  Set the specified trigger settings to the camera.

- virtual Error FireSoftwareTrigger (bool broadcast=false)

  Fire the software trigger according to the DCAM specifications.

- virtual Error GetTriggerDelayInfo (TriggerDelayInfo ∗pTriggerDelayInfo)

  Retrieve trigger delay information from the camera.

- virtual Error GetTriggerDelay (TriggerDelay ∗pTriggerDelay)

  Retrieve current trigger delay settings from the camera.

- virtual Error SetTriggerDelay (const TriggerDelay ∗pTriggerDelay, bool broadcast=false)

  Set the specified trigger delay settings to the camera.

- virtual Error GetStrobeInfo (StrobeInfo ∗pStrobeInfo)

  Retrieve strobe information from the camera.

- virtual Error GetStrobe (StrobeControl ∗pStrobeControl)

  Retrieve current strobe settings from the camera.

- virtual Error SetStrobe (const StrobeControl ∗pStrobeControl, bool broadcast=false)

  Set current strobe settings to the camera.

- virtual Error GetLUTInfo (LUTData ∗pData)

  Query if LUT support is available on the camera.

- virtual Error GetLUTBankInfo (unsigned int bank, bool ∗pReadSupported, bool ∗pWriteSupported)

  Query the read/write status of a single LUT bank.

- virtual Error GetActiveLUTBank (unsigned int ∗pActiveBank)

  Get the LUT bank that is currently being used.

- virtual Error SetActiveLUTBank (unsigned int activeBank)

  Set the LUT bank that will be used.

- virtual Error EnableLUT (bool on)

  Enable or disable LUT functionality on the camera.

- virtual Error GetLUTChannel (unsigned int bank, unsigned int channel, unsigned int sizeEntries, unsigned int ∗pEntries)

  Get the LUT channel settings from the camera.

- virtual Error SetLUTChannel (unsigned int bank, unsigned int channel, unsigned int sizeEntries, const unsigned int ∗pEntries)

  Set the LUT channel settings to the camera.

- virtual Error GetMemoryChannel (unsigned int ∗pCurrentChannel)

  Retrieve the current memory channel from the camera.

- virtual Error SaveToMemoryChannel (unsigned int channel)

Save the current settings to the specfied current memory channel.

- virtual Error RestoreFromMemoryChannel (unsigned int channel)

  Restore the specfied current memory channel.

- virtual Error GetMemoryChannelInfo (unsigned int ∗pNumChannels)

  Query the camera for memory channel support.

- virtual Error GetEmbeddedImageInfo (EmbeddedImageInfo ∗pInfo)

  Get the current status of the embedded image information register, as well as the availability of each embedded property.

- virtual Error SetEmbeddedImageInfo (EmbeddedImageInfo ∗pInfo)

  Sets the on/off values of the embedded image information structure to the camera.

- virtual Error WriteRegister (unsigned int address, unsigned int value, bool broadcast=false)

  Write to the specified register on the camera.

- virtual Error ReadRegister (unsigned int address, unsigned int ∗pValue)

  Read the specified register from the camera.

- virtual Error WriteRegisterBlock (unsigned short addressHigh, unsigned int addressLow, const unsigned int ∗pBuffer, unsigned int length)

  Write to the specified register block on the camera.

- virtual Error ReadRegisterBlock (unsigned short addressHigh, unsigned int addressLow, unsigned int ∗pBuffer, unsigned int length)

  Read from the specified register block on the camera.

Static Public Member Functions

- static Error StartSyncCapture (unsigned int numCameras, const Camera ∗∗ppCameras, const ImageEventCallback ∗pCallbackFns=NULL, const void ∗∗pCallbackDataArray=NULL)
- static const char ∗ GetRegisterString (unsigned int registerVal)

  Returns a text representation of the register value.

DCAM Formats

These functions deal with DCAM video mode and frame rate on the camera.

- virtual Error GetVideoModeAndFrameRateInfo (VideoMode videoMode, FrameRate frameRate, bool ∗pSupported)

  Query the camera to determine if the specified video mode and frame rate is supported.

- virtual Error GetVideoModeAndFrameRate (VideoMode ∗pVideoMode, FrameRate ∗pFrameRate)

  Get the current video mode and frame rate from the camera.

- virtual Error SetVideoModeAndFrameRate (VideoMode videoMode, FrameRate frameRate)

  Set the specified video mode and frame rate to the camera.

Format7

These functions deal with Format7 custom image control on the camera.

- virtual Error GetFormat7Info (Format7Info ∗pInfo, bool ∗pSupported)

  Retrieve the availability of Format7 custom image mode and the camera capabilities for the specified Format7 mode.

- virtual Error ValidateFormat7Settings (const Format7ImageSettings ∗pImageSettings, bool ∗pSettingsAreValid, Format7PacketInfo ∗pPacketInfo)

  Validates Format7ImageSettings structure and returns valid packet size information if the image settings are valid.

- virtual Error GetFormat7Configuration (Format7ImageSettings ∗pImageSettings, unsigned int ∗pPacketSize, float ∗pPercentage)

  Get the current Format7 configuration from the camera.

- virtual Error SetFormat7Configuration (const Format7ImageSettings ∗pImageSettings, unsigned int packetSize)

  Set the current Format7 configuration to the camera.

- virtual Error SetFormat7Configuration (const Format7ImageSettings ∗pImageSettings, float percentSpeed)

  Set the current Format7 configuration to the camera.

8.4.1 Detailed Description

The Camera object represents a physical camera that uses the IIDC register set.

The object must first be connected to using Connect() before any other operations can proceed.

It is possible for more than 1 Camera object to connect to a single physical camera. However, isochronous transmission to more than 1 Camera object is not supported.

8.4.2 Constructor & Destructor Documentation

8.4.2.1 Camera ()

Default constructor.

8.4.2.2 virtual ∼Camera () `[virtual]`

Default destructor.

8.4.3 Member Function Documentation

8.4.3.1 virtual Error Connect (PGRGuid $*$ *pGuid* = `NULL`) `[virtual]`

The following functions are inherited from CameraBase.

See CameraBase.h for further information.

Implements CameraBase.

8.4.3.2 virtual Error Disconnect () `[virtual]`

Disconnects the camera object from the camera.

This allows another physical camera to be connected to the camera object.

See also:

Connect()

Returns:

An Error indicating the success or failure of the function.

Implements CameraBase.

8.4.3.3 virtual Error EnableLUT (bool *on*) `[virtual]`

Enable or disable LUT functionality on the camera.

Parameters:

on Whether to enable or disable LUT.

See also:

GetLUTInfo()
GetLUTChannel()
SetLUTChannel()

Returns:

An Error indicating the success or failure of the function.

Implements CameraBase.

8.4.3.4 virtual Error FireSoftwareTrigger (bool *broadcast* = `false`) `[virtual]`

Fire the software trigger according to the DCAM specifications.

Parameters:

broadcast Whether the action should be broadcast.

Returns:

An Error indicating the success or failure of the function.

Implements CameraBase.

8.4.3.5 virtual Error GetActiveLUTBank (unsigned int ∗ *pActiveBank*) `[virtual]`

Get the LUT bank that is currently being used.

For cameras with PGR LUT, the active bank is always 0.

Parameters:

pActiveBank The currently active bank.

Returns:

An Error indicating the success or failure of the function.

Implements CameraBase.

8.4.3.6 virtual Error GetCameraInfo (CameraInfo ∗ *pCameraInfo*) `[virtual]`

Retrieves information from the camera such as serial number, model name and other camera information.

Parameters:

pCameraInfo Pointer to the camera information structure to be filled.

Returns:

An Error indicating the success or failure of the function.

Implements CameraBase.

8.4.3.7 virtual Error GetConfiguration (FC2Config ∗ *pConfig*) `[virtual]`

Get the configuration associated with the camera object.

Parameters:

pConfig Pointer to the configuration structure to be filled.

See also:

SetConfiguration()

Returns:

An Error indicating the success or failure of the function.

Implements CameraBase.

8.4.3.8 virtual Error GetEmbeddedImageInfo (EmbeddedImageInfo ∗ *pInfo*) `[virtual]`

Get the current status of the embedded image information register, as well as the availability of each embedded property.

Parameters:

pInfo Structure to be filled.

See also:

SetEmbeddedImageInfo()

Returns:

An Error indicating the success or failure of the function.

Implements CameraBase.

8.4.3.9 virtual Error GetFormat7Configuration (Format7ImageSettings ∗ *pImageSettings*, unsigned int ∗ *pPacketSize*, float ∗ *pPercentage*) `[virtual]`

Get the current Format7 configuration from the camera.

This call will only succeed if the camera is already in Format7.

Parameters:

pImageSettings Current image settings.

pPacketSize Current packet size.

pPercentage Current packet size as a percentage.

See also:

GetFormat7Info()
ValidateFormat7Settings()
SetFormat7Configuration()
GetVideoModeAndFrameRate()

Returns:

An Error indicating the success or failure of the function.

8.4.3.10 virtual Error GetFormat7Info (Format7Info ∗ *pInfo*, bool ∗ *pSupported*) `[virtual]`

Retrieve the availability of Format7 custom image mode and the camera capabilities for the specified Format7 mode.

The mode must be specified in the Format7Info structure in order for the function to succeed.

Parameters:

pInfo Structure to be filled with the capabilities of the specified mode and the current state in the specified mode.

pSupported Whether the specified mode is supported.

See also:

ValidateFormat7Settings()
GetFormat7Configuration()
SetFormat7Configuration()

Returns:

An Error indicating the success or failure of the function.

8.4.3.11 virtual Error GetGPIOPinDirection (unsigned int *pin*, unsigned int ∗ *pDirection*) `[virtual]`

Get the GPIO pin direction for the specified pin.

This is not a required call when using the trigger or strobe functions as the pin direction is set automatically internally.

Parameters:

pin Pin to get the direction for.

pDirection Direction of the pin. 0 for input, 1 for output.

See also:

SetGPIOPinDirection()

Returns:

An Error indicating the success or failure of the function.

Implements CameraBase.

8.4.3.12 virtual Error GetLUTBankInfo (unsigned int *bank*, bool ∗ *pReadSupported*, bool ∗ *pWriteSupported*) `[virtual]`

Query the read/write status of a single LUT bank.

Parameters:

bank The bank to query.

pReadSupported Whether reading from the bank is supported.

pWriteSupported Whether writing to the bank is supported.

Returns:

An Error indicating the success or failure of the function.

Implements CameraBase.

8.4.3.13 virtual Error GetLUTChannel (unsigned int *bank*, unsigned int *channel*, unsigned int *sizeEntries*, unsigned int ∗ *pEntries*) `[virtual]`

Get the LUT channel settings from the camera.

Parameters:

bank Bank to retrieve.

channel Channel to retrieve.

sizeEntries Number of entries in LUT table to read.

pEntries Array to store LUT entries.

See also:

GetLUTInfo()
EnableLUT()
SetLUTChannel()

Returns:

An Error indicating the success or failure of the function.

Implements CameraBase.

8.4.3.14 virtual Error GetLUTInfo (LUTData ∗ *pData*) `[virtual]`

Query if LUT support is available on the camera.

Parameters:

pData The LUT structure to be filled.

See also:

EnableLUT()
GetLUTChannel()
SetLUTChannel()

Returns:

An Error indicating the success or failure of the function.

Implements CameraBase.

8.4.3.15 virtual Error GetMemoryChannel (unsigned int ∗ *pCurrentChannel*) `[virtual]`

Retrieve the current memory channel from the camera.

Parameters:

pCurrentChannel Current memory channel.

See also:

SaveToMemoryChannel()
RestoreFromMemoryChannel()
GetMemoryChannelInfo()

Returns:

An Error indicating the success or failure of the function.

Implements CameraBase.

8.4.3.16 virtual Error GetMemoryChannelInfo (unsigned int ∗ *pNumChannels*) `[virtual]`

Query the camera for memory channel support.

If the number of channels is 0, then memory channel support is not available.

Parameters:

pNumChannels Number of memory channels supported.

See also:

GetMemoryChannel()
SaveToMemoryChannel()
RestoreFromMemoryChannel()

Returns:

An Error indicating the success or failure of the function.

Implements CameraBase.

8.4.3.17 virtual Error GetProperty (Property ∗ *pProp*) `[virtual]`

Reads the settings for the specified property from the camera.

The property type must be specified in the Property structure passed into the function in order for the function to succeed. If auto is on, the integer and abs values returned may not be consistent with each other.

Parameters:

pProp Pointer to the Property structure to be filled.

See also:

GetPropertyInfo()
SetProperty()

Returns:

An Error indicating the success or failure of the function.

Implements CameraBase.

8.4.3.18 virtual Error GetPropertyInfo (PropertyInfo ∗ *pPropInfo*) `[virtual]`

Retrieves information about the specified camera property.

The property type must be specified in the PropertyInfo structure passed into the function in order for the function to succeed.

Parameters:

pPropInfo Pointer to the PropertyInfo structure to be filled.

See also:

GetProperty()
SetProperty()

Returns:

An Error indicating the success or failure of the function.

Implements CameraBase.

8.4.3.19 static const char∗ GetRegisterString (unsigned int *registerVal*) `[static]`

Returns a text representation of the register value.

Parameters:

registerVal The register value to query.

Returns:

The text representation of the register.

Reimplemented from CameraBase.

8.4.3.20 virtual Error GetStrobe (StrobeControl ∗ *pStrobeControl*) `[virtual]`

Retrieve current strobe settings from the camera.

The strobe pin must be specified in the structure before being passed in to the function.

Parameters:

pStrobeControl Structure to receive strobe settings.

See also:

GetStrobeInfo()
SetStrobe()

Returns:

An Error indicating the success or failure of the function.

Implements CameraBase.

8.4.3.21 virtual Error GetStrobeInfo (StrobeInfo ∗ *pStrobeInfo*) `[virtual]`

Retrieve strobe information from the camera.

Parameters:

pStrobeInfo Structure to receive strobe information.

See also:

GetStrobe()
SetStrobe()

Returns:

An Error indicating the success or failure of the function.

Implements CameraBase.

8.4.3.22 virtual Error GetTriggerDelay (TriggerDelay ∗ *pTriggerDelay*) `[virtual]`

Retrieve current trigger delay settings from the camera.

Parameters:

pTriggerDelay Structure to receive trigger delay settings.

See also:

GetTriggerModeInfo()
GetTriggerMode()
SetTriggerMode()
GetTriggerDelayInfo()
SetTriggerDelay()

Returns:

An Error indicating the success or failure of the function.

Implements CameraBase.

8.4.3.23 virtual Error GetTriggerDelayInfo (TriggerDelayInfo ∗ *pTriggerDelayInfo*) `[virtual]`

Retrieve trigger delay information from the camera.

Parameters:

pTriggerDelayInfo Structure to receive trigger delay information.

See also:

GetTriggerModeInfo()
GetTriggerMode()
SetTriggerMode()
GetTriggerDelay()
SetTriggerDelay()

Returns:

An Error indicating the success or failure of the function.

Implements CameraBase.

8.4.3.24 virtual Error GetTriggerMode (TriggerMode ∗ *pTriggerMode*) `[virtual]`

Retrieve current trigger settings from the camera.

Parameters:

pTriggerMode Structure to receive trigger mode settings.

See also:

GetTriggerModeInfo()
SetTriggerMode()
GetTriggerDelayInfo()
GetTriggerDelay()
SetTriggerDelay()

Returns:

An Error indicating the success or failure of the function.

Implements CameraBase.

8.4.3.25 virtual Error GetTriggerModeInfo (TriggerModeInfo ∗ *pTriggerModeInfo*) `[virtual]`

Retrieve trigger information from the camera.

Parameters:

pTriggerModeInfo Structure to receive trigger information.

See also:

GetTriggerMode()
SetTriggerMode()
GetTriggerDelayInfo()
GetTriggerDelay()
SetTriggerDelay()

Returns:

An Error indicating the success or failure of the function.

Implements CameraBase.

8.4.3.26 virtual Error GetVideoModeAndFrameRate (VideoMode ∗ *pVideoMode*, FrameRate ∗ *pFrameRate*) `[virtual]`

Get the current video mode and frame rate from the camera.

If the camera is in Format7, the video mode will be VIDEOMODE_FORMAT7 and the frame rate will be FRAMERATE_FORMAT7.

Parameters:

pVideoMode Current video mode.

pFrameRate Current frame rate.

See also:

GetVideoModeAndFrameRateInfo()
SetVideoModeAndFrameRate()

Returns:

An Error indicating the success or failure of the function.

8.4.3.27 virtual Error GetVideoModeAndFrameRateInfo (VideoMode *videoMode*, FrameRate *frameRate*, bool ∗ *pSupported*) `[virtual]`

Query the camera to determine if the specified video mode and frame rate is supported.

Parameters:

videoMode Video mode to check.

frameRate Frame rate to check.

pSupported Whether the video mode and frame rate is supported.

See also:

GetVideoModeAndFrameRate()
SetVideoModeAndFrameRate()

Returns:

An Error indicating the success or failure of the function.

8.4.3.28 virtual bool IsConnected () `[virtual]`

Checks if the camera object is currently connected to a physical camera.

See also:

Connect()
Disconnect()

Returns:

Whether the camera object is connected to a physical camera.

Implements CameraBase.

8.4.3.29 virtual Error ReadRegister (unsigned int *address*, unsigned int ∗ *pValue*) `[virtual]`

Read the specified register from the camera.

Parameters:

address DCAM address to be read from.

pValue The value that is read.

See also:

WriteRegister()

Returns:

An Error indicating the success or failure of the function.

Implements CameraBase.

8.4.3.30 virtual Error ReadRegisterBlock (unsigned short *addressHigh*, unsigned int *addressLow*, unsigned int ∗ *pBuffer*, unsigned int *length*) `[virtual]`

Read from the specified register block on the camera.

Parameters:

addressHigh Top 16 bits of the 48 bit absolute address to read from.

addressLow Bottom 32 bits of the 48 bits absolute address to read from.

pBuffer Array to store read data.

length Size of array, in quadlets.

See also:

WriteRegisterBlock()

Returns:

An Error indicating the success or failure of the function.

Implements CameraBase.

8.4.3.31 virtual Error RestoreFromMemoryChannel (unsigned int *channel*) `[virtual]`

Restore the specfied current memory channel.

Parameters:

channel Memory channel to restore from.

See also:

GetMemoryChannel()
SaveToMemoryChannel()
GetMemoryChannelInfo()

Returns:

An Error indicating the success or failure of the function.

Implements CameraBase.

8.4.3.32 virtual Error RetrieveBuffer (Image * *pImage*) [virtual]

Retrieves the the next image object containing the next image.

If the grab mode has not been set, or has been set to DROP_FRAMES the default behavior is to re-queue images for DMA if they have not been retrieved by the time the next image transfer completes. If BUFFER_FRAMES is specified, the next image in the sequence will be retrieved. Note that for the BUFFER_FRAMES case, if retrieval does not keep up with the DMA process, images will be lost. The default behavior is to perform DROP_FRAMES image retrieval.

Parameters:

pImage Pointer to Image object to store image data.

See also:

StartCapture()
StopCapture()

Returns:

An Error indicating the success or failure of the function.

Implements CameraBase.

8.4.3.33 virtual Error SaveToMemoryChannel (unsigned int *channel*) [virtual]

Save the current settings to the specfied current memory channel.

Parameters:

channel Memory channel to save to.

See also:

GetMemoryChannel()
RestoreFromMemoryChannel()
GetMemoryChannelInfo()

Returns:

An Error indicating the success or failure of the function.

Implements CameraBase.

8.4.3.34 virtual Error SetActiveLUTBank (unsigned int *activeBank*) [virtual]

Set the LUT bank that will be used.

Parameters:

activeBank The bank to be set as active.

Returns:

An Error indicating the success or failure of the function.

Implements CameraBase.

8.4.3.35 virtual Error SetCallback (ImageEventCallback *callbackFn*, const void ∗ *pCallbackData* = NULL) [virtual]

Sets the callback data to be used on completion of image transfer.

To clear the current stored callback data, pass in NULL for both arguments.

Parameters:

callbackFn A function to be called when a new image is received.

pCallbackData A pointer to data that can be passed to the callback function.

See also:

StartCapture()

Returns:

An Error indicating the success or failure of the function.

Implements CameraBase.

8.4.3.36 virtual Error SetConfiguration (const FC2Config ∗ *pConfig*) [virtual]

Set the configuration associated with the camera object.

Parameters:

pConfig Pointer to the configuration structure to be used.

See also:

GetConfiguration()

Returns:

An Error indicating the success or failure of the function.

Implements CameraBase.

8.4.3.37 virtual Error SetEmbeddedImageInfo (EmbeddedImageInfo ∗ *pInfo*) [virtual]

Sets the on/off values of the embedded image information structure to the camera.

Parameters:

pInfo Structure to be used.

See also:

GetEmbeddedImageInfo()

Returns:

An Error indicating the success or failure of the function.

Implements CameraBase.

8.4.3.38 virtual Error SetFormat7Configuration (const Format7ImageSettings * *pImageSettings*, float *percentSpeed*) `[virtual]`

Set the current Format7 configuration to the camera.

Parameters:

pImageSettings	Image settings to be written to the camera.
percentSpeed	Percentage of packet size to be written to the camera.

See also:

GetFormat7Info()
ValidateFormat7Settings()
GetFormat7Configuration()

Returns:

An Error indicating the success or failure of the function.

8.4.3.39 virtual Error SetFormat7Configuration (const Format7ImageSettings * *pImageSettings*, unsigned int *packetSize*) `[virtual]`

Set the current Format7 configuration to the camera.

Parameters:

pImageSettings	Image settings to be written to the camera.
packetSize	Packet size to be written to the camera.

See also:

GetFormat7Info()
ValidateFormat7Settings()
GetFormat7Configuration()

Returns:

An Error indicating the success or failure of the function.

8.4.3.40 virtual Error SetGPIOPinDirection (unsigned int *pin*, unsigned int *direction*, bool *broadcast* = `false`) `[virtual]`

Set the GPIO pin direction for the specified pin.

This is useful if there is a need to set the pin into an input pin (i.e. to read the voltage) off the pin without setting it as a trigger source. This is not a required call when using the trigger or strobe functions as the pin direction is set automatically internally.

Parameters:

pin	Pin to get the direction for.
direction	Direction of the pin. 0 for input, 1 for output.

broadcast Whether the action should be broadcast.

See also:

GetGPIOPinDirection()

Returns:

An Error indicating the success or failure of the function.

Implements CameraBase.

8.4.3.41 virtual Error SetLUTChannel (unsigned int *bank*, unsigned int *channel*, unsigned int *sizeEntries*, const unsigned int ∗ *pEntries*) `[virtual]`

Set the LUT channel settings to the camera.

Parameters:

bank Bank to set.

channel Channel to set.

sizeEntries Number of entries in LUT table to write.

pEntries Array containing LUT entries to write.

See also:

GetLUTInfo()
EnableLUT()
GetLUTChannel()

Returns:

An Error indicating the success or failure of the function.

Implements CameraBase.

8.4.3.42 virtual Error SetProperty (const Property ∗ *pProp*, bool *broadcast* = `false`) `[virtual]`

Writes the settings for the specified property to the camera.

The property type must be specified in the Property structure passed into the function in order for the function to succeed. The absControl flag controls whether the absolute or integer value is written to the camera.

Parameters:

pProp Pointer to the Property structure to be used.

broadcast Whether the action should be broadcast.

See also:

GetPropertyInfo()
GetProperty()

Returns:

An Error indicating the success or failure of the function.

Implements CameraBase.

8.4.3.43 virtual Error SetStrobe (const StrobeControl ∗ *pStrobeControl*, bool *broadcast* = `false`) `[virtual]`

Set current strobe settings to the camera.

The strobe pin must be specified in the structure before being passed in to the function.

Parameters:

pStrobeControl Structure providing strobe settings.

broadcast Whether the action should be broadcast.

See also:

GetStrobeInfo()
GetStrobe()

Returns:

An Error indicating the success or failure of the function.

Implements CameraBase.

8.4.3.44 virtual Error SetTriggerDelay (const TriggerDelay ∗ *pTriggerDelay*, bool *broadcast* = `false`) `[virtual]`

Set the specified trigger delay settings to the camera.

Parameters:

pTriggerDelay Structure providing trigger delay settings.

broadcast Whether the action should be broadcast.

See also:

GetTriggerModeInfo()
GetTriggerMode()
SetTriggerMode()
GetTriggerDelayInfo()
GetTriggerDelay()

Returns:

An Error indicating the success or failure of the function.

Implements CameraBase.

8.4.3.45 virtual Error SetTriggerMode (const TriggerMode ∗ *pTriggerMode*, bool *broadcast* = `false`) `[virtual]`

Set the specified trigger settings to the camera.

Parameters:

pTriggerMode Structure providing trigger mode settings.

broadcast Whether the action should be broadcast.

See also:

GetTriggerModeInfo()
GetTriggerMode()
GetTriggerDelayInfo()
GetTriggerDelay()
SetTriggerDelay()

Returns:

An Error indicating the success or failure of the function.

Implements CameraBase.

8.4.3.46 virtual Error SetUserBuffers (unsigned char ∗const *pMemBuffers*, int *size*, int *numBuffers*) `[virtual]`

Specify user allocated buffers to use as image data buffers.

To prevent image tearing, the size of each buffer should be equal to ((unsigned int)(bufferSize + packetSize - 1)/packetSize) ∗ packetSize. The total size should be (size ∗ numBuffers) or larger.

Parameters:

pMemBuffers Pointer to memory buffers to be written to.

size The size of each buffer (in bytes).

numBuffers Number of buffers in the array.

See also:

StartCapture()
RetrieveBuffer()
StopCapture()

Returns:

An Error indicating the success or failure of the function.

Implements CameraBase.

8.4.3.47 virtual Error SetVideoModeAndFrameRate (VideoMode *videoMode*, FrameRate *frameRate*) `[virtual]`

Set the specified video mode and frame rate to the camera.

It is not possible to set the camera to VIDEOMODE_FORMAT7 or FRAMERATE_FORMAT7. Use the Format7 functions to set the camera into Format7.

Parameters:

videoMode	Video mode to set to camera.
frameRate	Frame rate to set to camera.

See also:

GetVideoModeAndFrameRateInfo()
GetVideoModeAndFrameRate()

Returns:

An Error indicating the success or failure of the function.

8.4.3.48 virtual Error StartCapture (ImageEventCallback *callbackFn* = `NULL`, const void * *pCallbackData* = `NULL`) `[virtual]`

Starts isochronous image capture.

It will use either the current video mode or the most recently set video mode of the camera. The optional callback function parameter is called on completion of image transfer. Alternatively, the callback parameter can be set to NULL and RetrieveBuffer() can be called as a blocking call to get the image data.

Parameters:

callbackFn	A function to be called when a new image is received.
pCallbackData	A pointer to data that can be passed to the callback function.

See also:

RetrieveBuffer()
StartSyncCapture()
StopCapture()

Returns:

An Error indicating the success or failure of the function.

Implements CameraBase.

8.4.3.49 static Error StartSyncCapture (unsigned int *numCameras*, const Camera ** *ppCameras*, const ImageEventCallback * *pCallbackFns* = `NULL`, const void ** *pCallbackDataArray* = `NULL`) `[static]`

8.4.3.50 virtual Error StopCapture () `[virtual]`

Stops isochronous image transfer and cleans up all associated resources.

See also:

StartCapture()
RetrieveBuffer()

Returns:

An Error indicating the success or failure of the function.

Implements CameraBase.

8.4.3.51 virtual Error ValidateFormat7Settings (const Format7ImageSettings ∗ *pImageSettings*, bool ∗ *pSettingsAreValid*, Format7PacketInfo ∗ *pPacketInfo*) `[virtual]`

Validates Format7ImageSettings structure and returns valid packet size information if the image settings are valid.

The current image settings are cached while validation is taking place. The cached settings are restored when validation is complete.

Parameters:

pImageSettings Structure containing the image settings.

pSettingsAreValid Whether the settings are valid.

pPacketInfo Packet size information that can be used to determine a valid packet size.

See also:

GetFormat7Info()
GetFormat7Configuration()
SetFormat7Configuration()

Returns:

An Error indicating the success or failure of the function.

8.4.3.52 virtual Error WaitForBufferEvent (Image ∗ *pImage*, unsigned int *eventNumber*) `[virtual]`

Retrieves the next image event containing the next part of the image.

Parameters:

pImage Pointer to Image object to store image data.

eventNumber The event number to wait for.

See also:

StartCapture()
RetrieveBuffer()
StopCapture()

Returns:

An Error indicating the success or failure of the function.

Implements CameraBase.

8.4.3.53 virtual Error WriteRegister (unsigned int *address*, unsigned int *value*, bool *broadcast* = `false`) `[virtual]`

Write to the specified register on the camera.

Parameters:

address DCAM address to be written to.

value The value to be written.

broadcast Whether the action should be broadcast.

See also:

ReadRegister()

Returns:

An Error indicating the success or failure of the function.

Implements CameraBase.

8.4.3.54 virtual Error WriteRegisterBlock (unsigned short *addressHigh*, unsigned int *addressLow*, const unsigned int ∗ *pBuffer*, unsigned int *length*) `[virtual]`

Write to the specified register block on the camera.

Parameters:

addressHigh Top 16 bits of the 48 bit absolute address to write to.

addressLow Bottom 32 bits of the 48 bits absolute address to write to.

pBuffer Array containing data to be written.

length Size of array, in quadlets.

See also:

ReadRegisterBlock()

Returns:

An Error indicating the success or failure of the function.

Implements CameraBase.

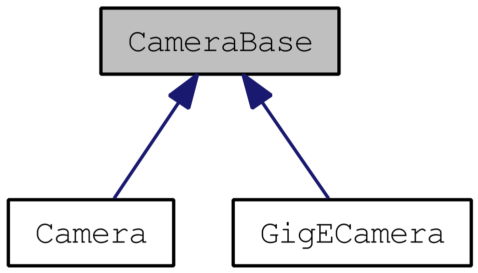
The documentation for this class was generated from the following file:

- Camera.h

8.5 CameraBase Class Reference

The CameraBase class is an abstract base class that defines a general interface to a camera.

Inheritance diagram for CameraBase:



Public Member Functions

- CameraBase ()

  Default constructor.

- virtual ~CameraBase ()

  Default destructor.

Protected Attributes

- CameraData ∗ m_pCameraData

Connection and Image Retrieval

These functions deal with connections and image retrieval from the camera.

- virtual Error Connect (PGRGuid ∗pGuid=NULL)=0

  Connects the camera object to the camera specified by the GUID.

- virtual Error Disconnect ()=0

  Disconnects the camera object from the camera.

- virtual bool IsConnected ()=0

  Checks if the camera object is currently connected to a physical camera.

- virtual Error SetCallback (ImageEventCallback callbackFn, const void ∗pCallbackData=NULL)=0

  Sets the callback data to be used on completion of image transfer.

- virtual Error StartCapture (ImageEventCallback callbackFn=NULL, const void ∗pCallbackData=NULL)=0

  Starts isochronous image capture.

- virtual Error RetrieveBuffer (Image ∗pImage)=0

    Retrieves the the next image object containing the next image.

- virtual Error StopCapture ()=0

    Stops isochronous image transfer and cleans up all associated resources.

- virtual Error WaitForBufferEvent (Image ∗pImage, unsigned int eventNumber)=0

    Retrieves the next image event containing the next part of the image.

- virtual Error SetUserBuffers (unsigned char ∗const pMemBuffers, int size, int numBuffers)=0

    Specify user allocated buffers to use as image data buffers.

- virtual Error GetConfiguration (FC2Config ∗pConfig)=0

    Get the configuration associated with the camera object.

- virtual Error SetConfiguration (const FC2Config ∗pConfig)=0

    Set the configuration associated with the camera object.

- static Error StartSyncCapture (unsigned int numCameras, const CameraBase ∗∗ppCameras, const ImageEventCallback ∗pCallbackFns=NULL, const void ∗∗pCallbackDataArray=NULL)

    Starts isochronous image capture on multiple cameras.

Information and Properties

These functions deal with information and properties can be retrieved from the camera.

- virtual Error GetCameraInfo (CameraInfo ∗pCameraInfo)=0

    Retrieves information from the camera such as serial number, model name and other camera information.

- virtual Error GetPropertyInfo (PropertyInfo ∗pPropInfo)=0

    Retrieves information about the specified camera property.

- virtual Error GetProperty (Property ∗pProp)=0

    Reads the settings for the specified property from the camera.

- virtual Error SetProperty (const Property ∗pProp, bool broadcast=false)=0

    Writes the settings for the specified property to the camera.

General Purpose Input / Output

These functions deal with general GPIO pin control on the camera.

- virtual Error GetGPIOPinDirection (unsigned int pin, unsigned int ∗pDirection)=0

    Get the GPIO pin direction for the specified pin.

- virtual Error SetGPIOPinDirection (unsigned int pin, unsigned int direction, bool broadcast=false)=0

    Set the GPIO pin direction for the specified pin.

Trigger

These functions deal with trigger control on the camera.

- virtual Error GetTriggerModeInfo (TriggerModeInfo ∗pTriggerModeInfo)=0

  Retrieve trigger information from the camera.

- virtual Error GetTriggerMode (TriggerMode ∗pTriggerMode)=0

  Retrieve current trigger settings from the camera.

- virtual Error SetTriggerMode (const TriggerMode ∗pTriggerMode, bool broadcast=false)=0

  Set the specified trigger settings to the camera.

- virtual Error FireSoftwareTrigger (bool broadcast=false)=0

  Fire the software trigger according to the DCAM specifications.

- virtual Error GetTriggerDelayInfo (TriggerDelayInfo ∗pTriggerDelayInfo)=0

  Retrieve trigger delay information from the camera.

- virtual Error GetTriggerDelay (TriggerDelay ∗pTriggerDelay)=0

  Retrieve current trigger delay settings from the camera.

- virtual Error SetTriggerDelay (const TriggerDelay ∗pTriggerDelay, bool broadcast=false)=0

  Set the specified trigger delay settings to the camera.

Strobe

These functions deal with strobe control on the camera.

- virtual Error GetStrobeInfo (StrobeInfo ∗pStrobeInfo)=0

  Retrieve strobe information from the camera.

- virtual Error GetStrobe (StrobeControl ∗pStrobeControl)=0

  Retrieve current strobe settings from the camera.

- virtual Error SetStrobe (const StrobeControl ∗pStrobeControl, bool broadcast=false)=0

  Set current strobe settings to the camera.

Look Up Table

These functions deal with Look Up Table control on the camera.

- virtual Error GetLUTInfo (LUTData ∗pData)=0

  Query if LUT support is available on the camera.

- virtual Error GetLUTBankInfo (unsigned int bank, bool ∗pReadSupported, bool ∗pWriteSupported)=0

Query the read/write status of a single LUT bank.

- virtual Error GetActiveLUTBank (unsigned int ∗pActiveBank)=0

  Get the LUT bank that is currently being used.

- virtual Error SetActiveLUTBank (unsigned int activeBank)=0

  Set the LUT bank that will be used.

- virtual Error EnableLUT (bool on)=0

  Enable or disable LUT functionality on the camera.

- virtual Error GetLUTChannel (unsigned int bank, unsigned int channel, unsigned int sizeEntries, unsigned int ∗pEntries)=0

  Get the LUT channel settings from the camera.

- virtual Error SetLUTChannel (unsigned int bank, unsigned int channel, unsigned int sizeEntries, const unsigned int ∗pEntries)=0

  Set the LUT channel settings to the camera.

Memory Channels

These functions deal with memory channel control on the camera.

- virtual Error GetMemoryChannel (unsigned int ∗pCurrentChannel)=0

  Retrieve the current memory channel from the camera.

- virtual Error SaveToMemoryChannel (unsigned int channel)=0

  Save the current settings to the specfied current memory channel.

- virtual Error RestoreFromMemoryChannel (unsigned int channel)=0

  Restore the specfied current memory channel.

- virtual Error GetMemoryChannelInfo (unsigned int ∗pNumChannels)=0

  Query the camera for memory channel support.

Embedded Image Information

These functions deal with embedded image information control on the camera.

- virtual Error GetEmbeddedImageInfo (EmbeddedImageInfo ∗pInfo)=0

  Get the current status of the embedded image information register, as well as the availability of each embedded property.

- virtual Error SetEmbeddedImageInfo (EmbeddedImageInfo ∗pInfo)=0

  Sets the on/off values of the embedded image information structure to the camera.

Register Operation

These functions deal with register operation on the camera.

- virtual Error WriteRegister (unsigned int address, unsigned int value, bool broadcast=false)=0

  Write to the specified register on the camera.

- virtual Error ReadRegister (unsigned int address, unsigned int ∗pValue)=0

  Read the specified register from the camera.

- virtual Error WriteRegisterBlock (unsigned short addressHigh, unsigned int addressLow, const unsigned int ∗pBuffer, unsigned int length)=0

  Write to the specified register block on the camera.

- virtual Error ReadRegisterBlock (unsigned short addressHigh, unsigned int addressLow, unsigned int ∗pBuffer, unsigned int length)=0

  Read from the specified register block on the camera.

- static const char ∗ GetRegisterString (unsigned int registerVal)

  Returns a text representation of the register value.

8.5.1 Detailed Description

The CameraBase class is an abstract base class that defines a general interface to a camera.

8.5.2 Constructor & Destructor Documentation

8.5.2.1 CameraBase () `[inline]`

Default constructor.

8.5.2.2 virtual ∼CameraBase () `[inline, virtual]`

Default destructor.

8.5.3 Member Function Documentation

8.5.3.1 virtual Error Connect (PGRGuid ∗ *pGuid* = `NULL`) `[pure virtual]`

Connects the camera object to the camera specified by the GUID.

If the guid is omitted or set to NULL, the connection will be made to the first camera detected on the PC (i.e. index = 0).

Parameters:

pGuid The unique identifier for a specific camera on the PC.

See also:

BusManager::GetCameraFromIndex()
BusManager::GetCameraFromSerialNumber()

Returns:

An Error indicating the success or failure of the function.

Implemented in Camera, and GigECamera.

8.5.3.2 virtual Error Disconnect () `[pure virtual]`

Disconnects the camera object from the camera.

This allows another physical camera to be connected to the camera object.

See also:

Connect()

Returns:

An Error indicating the success or failure of the function.

Implemented in Camera, and GigECamera.

8.5.3.3 virtual Error EnableLUT (bool *on*) `[pure virtual]`

Enable or disable LUT functionality on the camera.

Parameters:

on Whether to enable or disable LUT.

See also:

GetLUTInfo()
GetLUTChannel()
SetLUTChannel()

Returns:

An Error indicating the success or failure of the function.

Implemented in Camera, and GigECamera.

8.5.3.4 virtual Error FireSoftwareTrigger (bool *broadcast* = `false`) `[pure virtual]`

Fire the software trigger according to the DCAM specifications.

Parameters:

broadcast Whether the action should be broadcast.

Returns:

An Error indicating the success or failure of the function.

Implemented in Camera, and GigECamera.

8.5.3.5 virtual Error GetActiveLUTBank (unsigned int ∗ *pActiveBank*) `[pure virtual]`

Get the LUT bank that is currently being used.

For cameras with PGR LUT, the active bank is always 0.

Parameters:

pActiveBank The currently active bank.

Returns:

An Error indicating the success or failure of the function.

Implemented in Camera, and GigECamera.

8.5.3.6 virtual Error GetCameraInfo (CameraInfo ∗ *pCameraInfo*) `[pure virtual]`

Retrieves information from the camera such as serial number, model name and other camera information.

Parameters:

pCameraInfo Pointer to the camera information structure to be filled.

Returns:

An Error indicating the success or failure of the function.

Implemented in Camera, and GigECamera.

8.5.3.7 virtual Error GetConfiguration (FC2Config ∗ *pConfig*) `[pure virtual]`

Get the configuration associated with the camera object.

Parameters:

pConfig Pointer to the configuration structure to be filled.

See also:

SetConfiguration()

Returns:

An Error indicating the success or failure of the function.

Implemented in Camera, and GigECamera.

8.5.3.8 virtual Error GetEmbeddedImageInfo (EmbeddedImageInfo ∗ *pInfo*) `[pure virtual]`

Get the current status of the embedded image information register, as well as the availability of each embedded property.

Parameters:

pInfo Structure to be filled.

See also:

SetEmbeddedImageInfo()

Returns:

An Error indicating the success or failure of the function.

Implemented in Camera, and GigECamera.

8.5.3.9 virtual Error GetGPIOPinDirection (unsigned int *pin*, unsigned int ∗ *pDirection*) `[pure virtual]`

Get the GPIO pin direction for the specified pin.

This is not a required call when using the trigger or strobe functions as the pin direction is set automatically internally.

Parameters:

pin Pin to get the direction for.

pDirection Direction of the pin. 0 for input, 1 for output.

See also:

SetGPIOPinDirection()

Returns:

An Error indicating the success or failure of the function.

Implemented in Camera, and GigECamera.

8.5.3.10 virtual Error GetLUTBankInfo (unsigned int *bank*, bool ∗ *pReadSupported*, bool ∗ *pWriteSupported*) `[pure virtual]`

Query the read/write status of a single LUT bank.

Parameters:

bank The bank to query.

pReadSupported Whether reading from the bank is supported.

pWriteSupported Whether writing to the bank is supported.

Returns:

An Error indicating the success or failure of the function.

Implemented in Camera, and GigECamera.

8.5.3.11 virtual Error GetLUTChannel (unsigned int *bank*, unsigned int *channel*, unsigned int *sizeEntries*, unsigned int ∗ *pEntries*) `[pure virtual]`

Get the LUT channel settings from the camera.

Parameters:

bank Bank to retrieve.

channel Channel to retrieve.

sizeEntries Number of entries in LUT table to read.

pEntries Array to store LUT entries.

See also:

GetLUTInfo()
EnableLUT()
SetLUTChannel()

Returns:

An Error indicating the success or failure of the function.

Implemented in Camera, and GigECamera.

8.5.3.12 virtual Error GetLUTInfo (LUTData ∗ *pData*) `[pure virtual]`

Query if LUT support is available on the camera.

Parameters:

pData The LUT structure to be filled.

See also:

EnableLUT()
GetLUTChannel()
SetLUTChannel()

Returns:

An Error indicating the success or failure of the function.

Implemented in Camera, and GigECamera.

8.5.3.13 virtual Error GetMemoryChannel (unsigned int ∗ *pCurrentChannel*) `[pure virtual]`

Retrieve the current memory channel from the camera.

Parameters:

pCurrentChannel Current memory channel.

See also:

SaveToMemoryChannel()
RestoreFromMemoryChannel()
GetMemoryChannelInfo()

Returns:

An Error indicating the success or failure of the function.

Implemented in Camera, and GigECamera.

8.5.3.14 virtual Error GetMemoryChannelInfo (unsigned int ∗ *pNumChannels*) `[pure virtual]`

Query the camera for memory channel support.

If the number of channels is 0, then memory channel support is not available.

Parameters:

pNumChannels Number of memory channels supported.

See also:

GetMemoryChannel()
SaveToMemoryChannel()
RestoreFromMemoryChannel()

Returns:

An Error indicating the success or failure of the function.

Implemented in Camera, and GigECamera.

8.5.3.15 virtual Error GetProperty (Property ∗ *pProp*) `[pure virtual]`

Reads the settings for the specified property from the camera.

The property type must be specified in the Property structure passed into the function in order for the function to succeed. If auto is on, the integer and abs values returned may not be consistent with each other.

Parameters:

pProp Pointer to the Property structure to be filled.

See also:

GetPropertyInfo()
SetProperty()

Returns:

An Error indicating the success or failure of the function.

Implemented in Camera, and GigECamera.

8.5.3.16 virtual Error GetPropertyInfo (PropertyInfo ∗ *pPropInfo*) `[pure virtual]`

Retrieves information about the specified camera property.

The property type must be specified in the PropertyInfo structure passed into the function in order for the function to succeed.

Parameters:

pPropInfo Pointer to the PropertyInfo structure to be filled.

See also:

GetProperty()
SetProperty()

Returns:

An Error indicating the success or failure of the function.

Implemented in Camera, and GigECamera.

8.5.3.17 static const char∗ GetRegisterString (unsigned int *registerVal*) `[static]`

Returns a text representation of the register value.

Parameters:

registerVal The register value to query.

Returns:

The text representation of the register.

Reimplemented in Camera, and GigECamera.

8.5.3.18 virtual Error GetStrobe (StrobeControl ∗ *pStrobeControl*) `[pure virtual]`

Retrieve current strobe settings from the camera.

The strobe pin must be specified in the structure before being passed in to the function.

Parameters:

pStrobeControl Structure to receive strobe settings.

See also:

GetStrobeInfo()
SetStrobe()

Returns:

An Error indicating the success or failure of the function.

Implemented in Camera, and GigECamera.

8.5.3.19 virtual Error GetStrobeInfo (StrobeInfo ∗ *pStrobeInfo*) `[pure virtual]`

Retrieve strobe information from the camera.

Parameters:

pStrobeInfo Structure to receive strobe information.

See also:

GetStrobe()
SetStrobe()

Returns:

An Error indicating the success or failure of the function.

Implemented in Camera, and GigECamera.

8.5.3.20 virtual Error GetTriggerDelay (TriggerDelay ∗ *pTriggerDelay*) `[pure virtual]`

Retrieve current trigger delay settings from the camera.

Parameters:

pTriggerDelay Structure to receive trigger delay settings.

See also:

GetTriggerModeInfo()
GetTriggerMode()
SetTriggerMode()
GetTriggerDelayInfo()
SetTriggerDelay()

Returns:

An Error indicating the success or failure of the function.

Implemented in Camera, and GigECamera.

8.5.3.21 virtual Error GetTriggerDelayInfo (TriggerDelayInfo ∗ *pTriggerDelayInfo*) `[pure virtual]`

Retrieve trigger delay information from the camera.

Parameters:

pTriggerDelayInfo Structure to receive trigger delay information.

See also:

GetTriggerModeInfo()
GetTriggerMode()
SetTriggerMode()
GetTriggerDelay()
SetTriggerDelay()

Returns:

An Error indicating the success or failure of the function.

Implemented in Camera, and GigECamera.

8.5.3.22 virtual Error GetTriggerMode (TriggerMode ∗ *pTriggerMode*) `[pure virtual]`

Retrieve current trigger settings from the camera.

Parameters:

pTriggerMode Structure to receive trigger mode settings.

See also:

GetTriggerModeInfo()
SetTriggerMode()
GetTriggerDelayInfo()
GetTriggerDelay()
SetTriggerDelay()

Returns:

An Error indicating the success or failure of the function.

Implemented in Camera, and GigECamera.

8.5.3.23 virtual Error GetTriggerModeInfo (TriggerModeInfo ∗ *pTriggerModeInfo*) `[pure virtual]`

Retrieve trigger information from the camera.

Parameters:

pTriggerModeInfo Structure to receive trigger information.

See also:

GetTriggerMode()
SetTriggerMode()
GetTriggerDelayInfo()
GetTriggerDelay()
SetTriggerDelay()

Returns:

An Error indicating the success or failure of the function.

Implemented in Camera, and GigECamera.

8.5.3.24 virtual bool IsConnected () `[pure virtual]`

Checks if the camera object is currently connected to a physical camera.

See also:

Connect()
Disconnect()

Returns:

Whether the camera object is connected to a physical camera.

Implemented in Camera, and GigECamera.

8.5.3.25 virtual Error ReadRegister (unsigned int *address*, unsigned int ∗ *pValue*) `[pure virtual]`

Read the specified register from the camera.

Parameters:

address DCAM address to be read from.

pValue The value that is read.

See also:

WriteRegister()

Returns:

An Error indicating the success or failure of the function.

Implemented in Camera, and GigECamera.

8.5.3.26 virtual Error ReadRegisterBlock (unsigned short *addressHigh*, unsigned int *addressLow*, unsigned int ∗ *pBuffer*, unsigned int *length*) `[pure virtual]`

Read from the specified register block on the camera.

Parameters:

addressHigh Top 16 bits of the 48 bit absolute address to read from.

addressLow Bottom 32 bits of the 48 bits absolute address to read from.

pBuffer Array to store read data.

length Size of array, in quadlets.

See also:

WriteRegisterBlock()

Returns:

An Error indicating the success or failure of the function.

Implemented in Camera, and GigECamera.

8.5.3.27 virtual Error RestoreFromMemoryChannel (unsigned int *channel*) `[pure virtual]`

Restore the specfied current memory channel.

Parameters:

channel Memory channel to restore from.

See also:

GetMemoryChannel()
SaveToMemoryChannel()
GetMemoryChannelInfo()

Returns:

An Error indicating the success or failure of the function.

Implemented in Camera, and GigECamera.

8.5.3.28 virtual Error RetrieveBuffer (Image ∗ *pImage*) `[pure virtual]`

Retrieves the the next image object containing the next image.

If the grab mode has not been set, or has been set to DROP_FRAMES the default behavior is to requeue images for DMA if they have not been retrieved by the time the next image transfer completes. If BUFFER_FRAMES is specified, the next image in the sequence will be retrieved. Note that for the BUFFER_FRAMES case, if retrieval does not keep up with the DMA process, images will be lost. The default behavior is to perform DROP_FRAMES image retrieval.

Parameters:

pImage Pointer to Image object to store image data.

See also:

StartCapture()
StopCapture()

Returns:

An Error indicating the success or failure of the function.

Implemented in Camera, and GigECamera.

8.5.3.29 virtual Error SaveToMemoryChannel (unsigned int *channel*) `[pure virtual]`

Save the current settings to the specfied current memory channel.

Parameters:

channel Memory channel to save to.

See also:

GetMemoryChannel()
RestoreFromMemoryChannel()
GetMemoryChannelInfo()

Returns:

An Error indicating the success or failure of the function.

Implemented in Camera, and GigECamera.

8.5.3.30 virtual Error SetActiveLUTBank (unsigned int *activeBank*) `[pure virtual]`

Set the LUT bank that will be used.

Parameters:

activeBank The bank to be set as active.

Returns:

An Error indicating the success or failure of the function.

Implemented in Camera, and GigECamera.

8.5.3.31 virtual Error SetCallback (ImageEventCallback *callbackFn*, const void ∗ *pCallbackData* = `NULL`) `[pure virtual]`

Sets the callback data to be used on completion of image transfer.

To clear the current stored callback data, pass in NULL for both arguments.

Parameters:

callbackFn A function to be called when a new image is received.
pCallbackData A pointer to data that can be passed to the callback function.

See also:

StartCapture()

Returns:

An Error indicating the success or failure of the function.

Implemented in Camera, and GigECamera.

8.5.3.32 virtual Error SetConfiguration (const FC2Config ∗ *pConfig*) `[pure virtual]`

Set the configuration associated with the camera object.

Parameters:

pConfig Pointer to the configuration structure to be used.

See also:

GetConfiguration()

Returns:

An Error indicating the success or failure of the function.

Implemented in Camera, and GigECamera.

8.5.3.33 virtual Error SetEmbeddedImageInfo (EmbeddedImageInfo $*$ *pInfo*) `[pure virtual]`

Sets the on/off values of the embedded image information structure to the camera.

Parameters:

pInfo Structure to be used.

See also:

GetEmbeddedImageInfo()

Returns:

An Error indicating the success or failure of the function.

Implemented in Camera, and GigECamera.

8.5.3.34 virtual Error SetGPIOPinDirection (unsigned int *pin*, unsigned int *direction*, bool *broadcast* = `false`) `[pure virtual]`

Set the GPIO pin direction for the specified pin.

This is useful if there is a need to set the pin into an input pin (i.e. to read the voltage) off the pin without setting it as a trigger source. This is not a required call when using the trigger or strobe functions as the pin direction is set automatically internally.

Parameters:

pin Pin to get the direction for.

direction Direction of the pin. 0 for input, 1 for output.

broadcast Whether the action should be broadcast.

See also:

GetGPIOPinDirection()

Returns:

An Error indicating the success or failure of the function.

Implemented in Camera, and GigECamera.

8.5.3.35 virtual Error SetLUTChannel (unsigned int *bank*, unsigned int *channel*, unsigned int *sizeEntries*, const unsigned int $*$ *pEntries*) `[pure virtual]`

Set the LUT channel settings to the camera.

Parameters:

bank Bank to set.

channel Channel to set.

sizeEntries Number of entries in LUT table to write.

pEntries Array containing LUT entries to write.

See also:

GetLUTInfo()
EnableLUT()
GetLUTChannel()

Returns:

An Error indicating the success or failure of the function.

Implemented in Camera, and GigECamera.

8.5.3.36 virtual Error SetProperty (const Property ∗ *pProp*, bool *broadcast* = `false`) `[pure virtual]`

Writes the settings for the specified property to the camera.

The property type must be specified in the Property structure passed into the function in order for the function to succeed. The absControl flag controls whether the absolute or integer value is written to the camera.

Parameters:

pProp Pointer to the Property structure to be used.

broadcast Whether the action should be broadcast.

See also:

GetPropertyInfo()
GetProperty()

Returns:

An Error indicating the success or failure of the function.

Implemented in Camera, and GigECamera.

8.5.3.37 virtual Error SetStrobe (const StrobeControl ∗ *pStrobeControl*, bool *broadcast* = `false`) `[pure virtual]`

Set current strobe settings to the camera.

The strobe pin must be specified in the structure before being passed in to the function.

Parameters:

pStrobeControl Structure providing strobe settings.

broadcast Whether the action should be broadcast.

See also:

GetStrobeInfo()
GetStrobe()

Returns:

An Error indicating the success or failure of the function.

Implemented in Camera, and GigECamera.

8.5.3.38 virtual Error SetTriggerDelay (const TriggerDelay ∗ *pTriggerDelay*, bool *broadcast* = `false`) `[pure virtual]`

Set the specified trigger delay settings to the camera.

Parameters:

pTriggerDelay Structure providing trigger delay settings.

broadcast Whether the action should be broadcast.

See also:

GetTriggerModeInfo()
GetTriggerMode()
SetTriggerMode()
GetTriggerDelayInfo()
GetTriggerDelay()

Returns:

An Error indicating the success or failure of the function.

Implemented in Camera, and GigECamera.

8.5.3.39 virtual Error SetTriggerMode (const TriggerMode ∗ *pTriggerMode*, bool *broadcast* = `false`) `[pure virtual]`

Set the specified trigger settings to the camera.

Parameters:

pTriggerMode Structure providing trigger mode settings.

broadcast Whether the action should be broadcast.

See also:

GetTriggerModeInfo()
GetTriggerMode()
GetTriggerDelayInfo()
GetTriggerDelay()
SetTriggerDelay()

Returns:

An Error indicating the success or failure of the function.

Implemented in Camera, and GigECamera.

8.5.3.40 virtual Error SetUserBuffers (unsigned char ∗const *pMemBuffers*, int *size*, int *numBuffers*) `[pure virtual]`

Specify user allocated buffers to use as image data buffers.

To prevent image tearing, the size of each buffer should be equal to ((unsigned int)(bufferSize + packetSize - 1)/packetSize) ∗ packetSize. The total size should be (size ∗ numBuffers) or larger.

Parameters:

pMemBuffers Pointer to memory buffers to be written to.

size The size of each buffer (in bytes).

numBuffers Number of buffers in the array.

See also:

StartCapture()
RetrieveBuffer()
StopCapture()

Returns:

An Error indicating the success or failure of the function.

Implemented in Camera, and GigECamera.

8.5.3.41 virtual Error StartCapture (ImageEventCallback *callbackFn* = `NULL`, const void ∗ *pCallbackData* = `NULL`) `[pure virtual]`

Starts isochronous image capture.

It will use either the current video mode or the most recently set video mode of the camera. The optional callback function parameter is called on completion of image transfer. Alternatively, the callback parameter can be set to NULL and RetrieveBuffer() can be called as a blocking call to get the image data.

Parameters:

callbackFn A function to be called when a new image is received.

pCallbackData A pointer to data that can be passed to the callback function.

See also:

RetrieveBuffer()
StartSyncCapture()
StopCapture()

Returns:

An Error indicating the success or failure of the function.

Implemented in Camera, and GigECamera.

8.5.3.42 static Error StartSyncCapture (unsigned int *numCameras*, const CameraBase ** *ppCameras*, const ImageEventCallback * *pCallbackFns* = NULL, const void ** *pCallbackDataArray* = NULL) [static]

Starts isochronous image capture on multiple cameras.

On each frame, the time stamps across the cameras are aligned which means the frames are synchronized. Note that the cameras must be synchronized by external means in order for this function to work. This means that the cameras should either be on the same bus, hardware synchronized (e.g. through triggering) or Multisync is running.

Parameters:

numCameras Number of Camera objects in the ppCameras array.

ppCameras Array of pointers to Camera objects containing the cameras to be started and synchronized.

pCallbackFns Array of callback functions for each camera.

pCallbackDataArray Array of callback data pointers.

See also:

RetrieveBuffer()
StartCapture()
StopCapture()

Returns:

An Error indicating the success or failure of the function.

8.5.3.43 virtual Error StopCapture () [pure virtual]

Stops isochronous image transfer and cleans up all associated resources.

See also:

StartCapture()
RetrieveBuffer()

Returns:

An Error indicating the success or failure of the function.

Implemented in Camera, and GigECamera.

8.5.3.44 virtual Error WaitForBufferEvent (Image * *pImage*, unsigned int *eventNumber*) [pure virtual]

Retrieves the next image event containing the next part of the image.

Parameters:

pImage Pointer to Image object to store image data.

eventNumber The event number to wait for.

See also:

StartCapture()
RetrieveBuffer()
StopCapture()

Returns:

An Error indicating the success or failure of the function.

Implemented in Camera, and GigECamera.

8.5.3.45 virtual Error WriteRegister (unsigned int *address*, unsigned int *value*, bool *broadcast* = `false`) `[pure virtual]`

Write to the specified register on the camera.

Parameters:

address DCAM address to be written to.

value The value to be written.

broadcast Whether the action should be broadcast.

See also:

ReadRegister()

Returns:

An Error indicating the success or failure of the function.

Implemented in Camera, and GigECamera.

8.5.3.46 virtual Error WriteRegisterBlock (unsigned short *addressHigh*, unsigned int *addressLow*, const unsigned int ∗ *pBuffer*, unsigned int *length*) `[pure virtual]`

Write to the specified register block on the camera.

Parameters:

addressHigh Top 16 bits of the 48 bit absolute address to write to.

addressLow Bottom 32 bits of the 48 bits absolute address to write to.

pBuffer Array containing data to be written.

length Size of array, in quadlets.

See also:

ReadRegisterBlock()

Returns:

An Error indicating the success or failure of the function.

Implemented in Camera, and GigECamera.

8.5.4 Member Data Documentation

8.5.4.1 CameraData$*$ m_pCameraData `[protected]`

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

- CameraBase.h

8.6 CameraControlDlg Class Reference

The CameraControlDlg object represents a GTKmm dialog that provides a graphical interface to a specified camera.

Public Member Functions

- CameraControlDlg ()

  Default constructor.

- ∼CameraControlDlg ()

  Default destructor.

- void Connect (CameraBase ∗pCamera)

  Connect dialog to a camera.

- void Disconnect ()

  Disconnect a connected camera from the dialog.

- void Show ()

  Show the dialog.

- void Hide ()

  Hide the dialog.

- bool IsVisible ()

  Get the visibility of the dialog.

8.6.1 Detailed Description

The CameraControlDlg object represents a GTKmm dialog that provides a graphical interface to a specified camera.

8.6.2 Constructor & Destructor Documentation

8.6.2.1 CameraControlDlg ()

Default constructor.

8.6.2.2 ∼CameraControlDlg ()

Default destructor.

8.6.3 Member Function Documentation

8.6.3.1 void Connect (CameraBase ∗ *pCamera*)

Connect dialog to a camera.

Parameters:

pCamera Camera object to connect the dialog to.

8.6.3.2 void Disconnect ()

Disconnect a connected camera from the dialog.

8.6.3.3 void Hide ()

Hide the dialog.

8.6.3.4 bool IsVisible ()

Get the visibility of the dialog.

Returns:

Whether the dialog is visible.

8.6.3.5 void Show ()

Show the dialog.

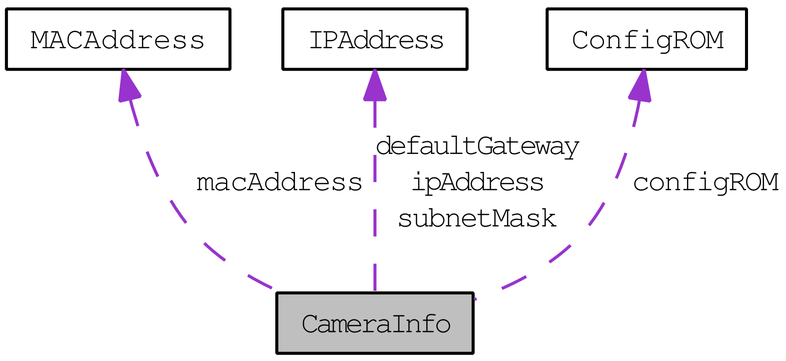
The documentation for this class was generated from the following file:

- FlyCapture2GUI.h

8.7 CameraInfo Struct Reference

Camera information.

Collaboration diagram for CameraInfo:



Public Member Functions

- CameraInfo ()

Public Attributes

- unsigned int serialNumber

  Device serial number.

- InterfaceType interfaceType

  Interface type.

- DriverType driverType

  Driver type.

- bool isColorCamera

  Flag indicating if this is a color camera.

- char modelName [sk_maxStringLength]

  Device model name.

- char vendorName [sk_maxStringLength]

  Device vendor name.

- char sensorInfo [sk_maxStringLength]

  String detailing the sensor information.

- char sensorResolution [sk_maxStringLength]

  String providing the sensor resolution.

- char driverName [sk_maxStringLength]

Driver name of driver being used.

- char firmwareVersion [sk_maxStringLength]

  Firmware version of camera.

- char firmwareBuildTime [sk_maxStringLength]

  Firmware build time.

- BusSpeed maximumBusSpeed

  Maximum bus speed.

- BayerTileFormat bayerTileFormat

  Bayer tile format.

- unsigned int reserved [16]

  Reserved for future use.

IIDC specific information

- unsigned int iidcVer

  DCAM version.

- ConfigROM configROM

  Configuration ROM data.

GigE specific information

- unsigned int gigEMajorVersion

  GigE Vision version.

- unsigned int gigEMinorVersion

  GigE Vision minor version.

- char userDefinedName [sk_maxStringLength]

  User defined name.

- char xmlURL1 [sk_maxStringLength]

  XML URL 1.

- char xmlURL2 [sk_maxStringLength]

  XML URL 2.

- MACAddress macAddress

  MAC address.

- IPAddress ipAddress

  IP address.

- IPAddress subnetMask

  Subnet mask.

- IPAddress defaultGateway

  Default gateway.

8.7.1 Detailed Description

Camera information.

8.7.2 Constructor & Destructor Documentation

8.7.2.1 CameraInfo () `[inline]`

8.7.3 Member Data Documentation

8.7.3.1 BayerTileFormat bayerTileFormat

Bayer tile format.

8.7.3.2 ConfigROM configROM

Configuration ROM data.

8.7.3.3 IPAddress defaultGateway

Default gateway.

8.7.3.4 char driverName[sk_maxStringLength]

Driver name of driver being used.

8.7.3.5 DriverType driverType

Driver type.

8.7.3.6 char firmwareBuildTime[sk_maxStringLength]

Firmware build time.

8.7.3.7 char firmwareVersion[sk_maxStringLength]

Firmware version of camera.

8.7.3.8 unsigned int gigEMajorVersion

GigE Vision version.

8.7.3.9 unsigned int gigEMinorVersion

GigE Vision minor version.

8.7.3.10 unsigned int iidcVer

DCAM version.

8.7.3.11 InterfaceType interfaceType

Interface type.

8.7.3.12 IPAddress ipAddress

IP address.

8.7.3.13 bool isColorCamera

Flag indicating if this is a color camera.

8.7.3.14 MACAddress macAddress

MAC address.

8.7.3.15 BusSpeed maximumBusSpeed

Maximum bus speed.

8.7.3.16 char modelName[sk_maxStringLength]

Device model name.

8.7.3.17 unsigned int reserved[16]

Reserved for future use.

8.7.3.18 char sensorInfo[sk_maxStringLength]

String detailing the sensor information.

8.7.3.19 char sensorResolution[sk_maxStringLength]

String providing the sensor resolution.

8.7.3.20 unsigned int serialNumber

Device serial number.

8.7.3.21 IPAddress subnetMask

Subnet mask.

8.7.3.22 char userDefinedName[sk_maxStringLength]

User defined name.

8.7.3.23 char vendorName[sk_maxStringLength]

Device vendor name.

8.7.3.24 char xmlURL1[sk_maxStringLength]

XML URL 1.

8.7.3.25 char xmlURL2[sk_maxStringLength]

XML URL 2.

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

- FlyCapture2Defs.h

8.8 CameraSelectionDlg Class Reference

The CameraSelectionDlg object represents a GTKmm dialog that provides a graphical interface that lists the number of cameras available to the library.

Public Member Functions

- CameraSelectionDlg ()

  Default constructor.

- ∼CameraSelectionDlg ()

  Default destructor.

- void ShowModal (bool ∗pOk, PGRGuid ∗pGuid, unsigned int ∗pSize)

  Show the CameraSelectionDlg.

8.8.1 Detailed Description

The CameraSelectionDlg object represents a GTKmm dialog that provides a graphical interface that lists the number of cameras available to the library.

8.8.2 Constructor & Destructor Documentation

8.8.2.1 CameraSelectionDlg ()

Default constructor.

8.8.2.2 ∼CameraSelectionDlg ()

Default destructor.

8.8.3 Member Function Documentation

8.8.3.1 void ShowModal (bool ∗ *pOk*, PGRGuid ∗ *pGuid*, unsigned int ∗ *pSize*)

Show the CameraSelectionDlg.

Parameters:

pOk Whether Ok (true) or Cancel (false) was clicked.

pGuid Array of PGRGuids containing the selected cameras.

pSize Size of PGRGuid array.

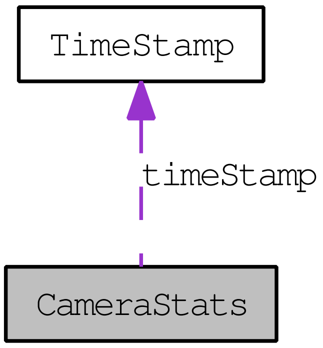
The documentation for this class was generated from the following file:

- FlyCapture2GUI.h

8.9 CameraStats Struct Reference

Camera diagnostic information.

Collaboration diagram for CameraStats:



Public Member Functions

- CameraStats ()

Public Attributes

- unsigned int imageDropped
- unsigned int imageCorrupt
- unsigned int imageXmitFailed
- unsigned int imageDriverDropped
- unsigned int regReadFailed
- unsigned int regWriteFailed
- unsigned int portErrors
- bool cameraPowerUp
- float cameraVoltages [8]
- unsigned int numVoltages

    The number of voltage registers available.

- float cameraCurrents [8]
- unsigned int numCurrents

    The number of current registers available.

- unsigned int temperature
- unsigned int timeSinceInitialization
- unsigned int timeSinceBusReset
- TimeStamp timeStamp
- unsigned int reserved [16]

    Reserved for future use.

8.9.1 Detailed Description

Camera diagnostic information.

8.9.2 Constructor & Destructor Documentation

8.9.2.1 CameraStats () `[inline]`

8.9.3 Member Data Documentation

8.9.3.1 float cameraCurrents[8]

8.9.3.2 bool cameraPowerUp

8.9.3.3 float cameraVoltages[8]

8.9.3.4 unsigned int imageCorrupt

8.9.3.5 unsigned int imageDriverDropped

8.9.3.6 unsigned int imageDropped

8.9.3.7 unsigned int imageXmitFailed

8.9.3.8 unsigned int numCurrents

The number of current registers available.

0: the values in cameraCurrents[] are invalid.

8.9.3.9 unsigned int numVoltages

The number of voltage registers available.

0: the values in cameraVoltages[] are invalid.

8.9.3.10 unsigned int portErrors

8.9.3.11 unsigned int regReadFailed

8.9.3.12 unsigned int regWriteFailed

8.9.3.13 unsigned int reserved[16]

Reserved for future use.

8.9.3.14 unsigned int temperature

8.9.3.15 unsigned int timeSinceBusReset

8.9.3.16 unsigned int timeSinceInitialization

8.9.3.17 TimeStamp timeStamp

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

- FlyCapture2Defs.h

8.10 ConfigROM Struct Reference

Camera configuration ROM.

Public Member Functions

- ConfigROM ()

Public Attributes

- unsigned int nodeVendorId

  Vendor ID of a node.

- unsigned int chipIdHi

  Chip ID (high part).

- unsigned int chipIdLo

  Chip ID (low part).

- unsigned int unitSpecId

  Unit Spec ID, usually 0xa02d.

- unsigned int unitSWVer

  Unit software version.

- unsigned int unitSubSWVer

  Unit sub software version.

- unsigned int vendorUniqueInfo_0

  Vendor unique info 0.

- unsigned int vendorUniqueInfo_1

  Vendor unique info 1.

- unsigned int vendorUniqueInfo_2

  Vendor unique info 2.

- unsigned int vendorUniqueInfo_3

  Vendor unique info 3.

- char pszKeyword [sk_maxStringLength]

  Keyword.

- unsigned int reserved [16]

  Reserved for future use.

8.10.1 Detailed Description

Camera configuration ROM.

8.10.2 Constructor & Destructor Documentation

8.10.2.1 ConfigROM () `[inline]`

8.10.3 Member Data Documentation

8.10.3.1 unsigned int chipIdHi

Chip ID (high part).

8.10.3.2 unsigned int chipIdLo

Chip ID (low part).

8.10.3.3 unsigned int nodeVendorId

Vendor ID of a node.

8.10.3.4 char pszKeyword[sk_maxStringLength]

Keyword.

8.10.3.5 unsigned int reserved[16]

Reserved for future use.

8.10.3.6 unsigned int unitSpecId

Unit Spec ID, usually 0xa02d.

8.10.3.7 unsigned int unitSubSWVer

Unit sub software version.

8.10.3.8 unsigned int unitSWVer

Unit software version.

8.10.3.9 unsigned int vendorUniqueInfo_0

Vendor unique info 0.

8.10.3.10 unsigned int vendorUniqueInfo_1

Vendor unique info 1.

8.10.3.11 unsigned int vendorUniqueInfo_2

Vendor unique info 2.

8.10.3.12 unsigned int vendorUniqueInfo_3

Vendor unique info 3.

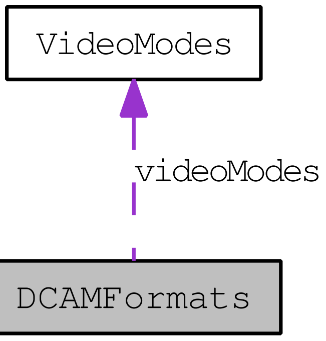
The documentation for this struct was generated from the following file:

- FlyCapture2Defs.h

8.11 DCAMFormats Struct Reference

DCAM formats supported by the camera as returned by GetAvailableFormats().

Collaboration diagram for DCAMFormats:



Public Attributes

- VideoModes videoModes [FlyCapture2::NUM_VIDEOMODES]
- unsigned int numFormats

8.11.1 Detailed Description

DCAM formats supported by the camera as returned by GetAvailableFormats().

8.11.2 Member Data Documentation

8.11.2.1 unsigned int numFormats

8.11.2.2 VideoModes videoModes[FlyCapture2::NUM_VIDEOMODES]

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

- PGRDirectShow.h

8.12 EmbeddedImageInfo Struct Reference

Properties of the possible embedded image information.

Collaboration diagram for EmbeddedImageInfo:

EmbeddedImageInfoProperty
brightness
frameCounter
ROIPosition
strobePattern
whiteBalance
GPIOPinState
shutter
timestamp
exposure
gain
...
EmbeddedImageInfo

Public Attributes

- EmbeddedImageInfoProperty timestamp
- EmbeddedImageInfoProperty gain
- EmbeddedImageInfoProperty shutter
- EmbeddedImageInfoProperty brightness
- EmbeddedImageInfoProperty exposure
- EmbeddedImageInfoProperty whiteBalance
- EmbeddedImageInfoProperty frameCounter
- EmbeddedImageInfoProperty strobePattern
- EmbeddedImageInfoProperty GPIOPinState
- EmbeddedImageInfoProperty ROIPosition

8.12.1 Detailed Description

Properties of the possible embedded image information.

8.12.2 Member Data Documentation

8.12.2.1 EmbeddedImageInfoProperty brightness

8.12.2.2 EmbeddedImageInfoProperty exposure

8.12.2.3 EmbeddedImageInfoProperty frameCounter

8.12.2.4 EmbeddedImageInfoProperty gain

8.12.2.5 EmbeddedImageInfoProperty GPIOPinState

8.12.2.6 EmbeddedImageInfoProperty ROIPosition

8.12.2.7 EmbeddedImageInfoProperty shutter

8.12.2.8 EmbeddedImageInfoProperty strobePattern

8.12.2.9 EmbeddedImageInfoProperty timestamp

8.12.2.10 EmbeddedImageInfoProperty whiteBalance

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

- FlyCapture2Defs.h

8.13 EmbeddedImageInfoProperty Struct Reference

Properties of a single embedded image info property.

Public Member Functions

- EmbeddedImageInfoProperty ()

Public Attributes

- bool available

  Whether this property is available.
- bool onOff

  Whether this property is on or off.

8.13.1 Detailed Description

Properties of a single embedded image info property.

8.13.2 Constructor & Destructor Documentation

8.13.2.1 EmbeddedImageInfoProperty () `[inline]`

8.13.3 Member Data Documentation

8.13.3.1 bool available

Whether this property is available.

8.13.3.2 bool onOff

Whether this property is on or off.

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

- FlyCapture2Defs.h

8.14 Error Class Reference

The Error object represents an error that is returned from the library.

Public Member Functions

- Error ()

  Default constructor.

- Error (const Error &error)

  Copy constructor.

- virtual ∼Error ()

  Default destructor.

- virtual Error & operator= (const Error &error)

  Assignment operator.

- virtual bool operator== (const Error &error)

  Equality operator.

- virtual bool operator== (const ErrorType &errorType)

  Equality operator.

- virtual bool operator!= (const Error &error)

  Inequality operator.

- virtual bool operator!= (const ErrorType &errorType)

  Inequality operator.

- virtual ErrorType GetType () const

  Retrieve the ErrorType of the error.

- virtual const char ∗ GetDescription () const

  Retrieve the top level description of the error that occurred.

- virtual unsigned int GetLine () const

  Retrieve the line number where the error originated.

- virtual const char ∗ GetFilename () const

  Retrieve the source filename where the error originated.

- virtual Error GetCause () const

  Get the error which caused this error.

- virtual const char ∗ GetBuildDate () const

  Retrieve the build date of the file where the error originated.

- virtual const char ∗ CollectSupportInformation () const

Retrieve the support information.

- virtual void PrintErrorTrace () const

  Print a formatted log trace to stderr.

Friends

- class InternalError

8.14.1 Detailed Description

The Error object represents an error that is returned from the library.

Overloaded operators allow comparisons against other Error objects or the ErrorType enumeration.

8.14.2 Constructor & Destructor Documentation

8.14.2.1 Error ()

Default constructor.

8.14.2.2 Error (const Error & *error*)

Copy constructor.

8.14.2.3 virtual ∼Error () `[virtual]`

Default destructor.

8.14.3 Member Function Documentation

8.14.3.1 virtual const char∗ CollectSupportInformation () const `[virtual]`

Retrieve the support information.

It is not implemented in this release.

Returns:

A string containing support information.

8.14.3.2 virtual const char∗ GetBuildDate () const `[virtual]`

Retrieve the build date of the file where the error originated.

Returns:

A string with the build date and time.

8.14.3.3 virtual Error GetCause () const `[virtual]`

Get the error which caused this error.

Returns:

An error object representing the cause of this error.

8.14.3.4 virtual const char∗ GetDescription () const `[virtual]`

Retrieve the top level description of the error that occurred.

Returns:

A string with the error description.

8.14.3.5 virtual const char∗ GetFilename () const `[virtual]`

Retrieve the source filename where the error originated.

Returns:

A string with the file name.

8.14.3.6 virtual unsigned int GetLine () const `[virtual]`

Retrieve the line number where the error originated.

Returns:

The line number.

8.14.3.7 virtual ErrorType GetType () const `[virtual]`

Retrieve the ErrorType of the error.

Returns:

The ErrorType of the error.

8.14.3.8 virtual bool operator!= (const ErrorType & *errorType*) `[virtual]`

Inequality operator.

This overloaded operator compares the ErrorType of the Error against the specified ErrorType.

8.14.3.9 virtual bool operator!= (const Error & *error*) `[virtual]`

Inequality operator.

8.14.3.10 virtual Error& operator= (const Error & *error*) `[virtual]`

Assignment operator.

8.14.3.11 virtual bool operator== (const ErrorType & *errorType*) `[virtual]`

Equality operator.

This overloaded operator compares the ErrorType of the Error against the specified ErrorType.

8.14.3.12 virtual bool operator== (const Error & *error*) `[virtual]`

Equality operator.

8.14.3.13 virtual void PrintErrorTrace () const `[virtual]`

Print a formatted log trace to stderr.

8.14.4 Friends And Related Function Documentation

8.14.4.1 friend class InternalError `[friend]`

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

- Error.h

8.15 FC2Config Struct Reference

Configuration for a camera.

Public Member Functions

- FC2Config ()

Public Attributes

- unsigned int numBuffers

  Number of buffers used by the FlyCapture2 library to grab images.

- unsigned int numImageNotifications

  Number of notifications per image.

- int grabTimeout

  Time in milliseconds that RetrieveBuffer() and WaitForBufferEvent() will wait for an image before timing out and returning.

- GrabMode grabMode

  Grab mode for the camera.

- BusSpeed isochBusSpeed

  Isochronous bus speed.

- BusSpeed asyncBusSpeed

  Asynchronous bus speed.

- BandwidthAllocation bandwidthAllocation

  Bandwidth allocation flag that tells the camera the bandwidth allocation strategy to employ.

- unsigned int reserved [16]

  Reserved for future use.

8.15.1 Detailed Description

Configuration for a camera.

These options are options that are generally should be set before starting isochronous transfer.

8.15.2 Constructor & Destructor Documentation

8.15.2.1 FC2Config () `[inline]`

8.15.3 Member Data Documentation

8.15.3.1 BusSpeed asyncBusSpeed

Asynchronous bus speed.

8.15.3.2 BandwidthAllocation bandwidthAllocation

Bandwidth allocation flag that tells the camera the bandwidth allocation strategy to employ.

8.15.3.3 GrabMode grabMode

Grab mode for the camera.

The default is DROP_FRAMES.

8.15.3.4 int grabTimeout

Time in milliseconds that RetrieveBuffer() and WaitForBufferEvent() will wait for an image before timing out and returning.

8.15.3.5 BusSpeed isochBusSpeed

Isochronous bus speed.

8.15.3.6 unsigned int numBuffers

Number of buffers used by the FlyCapture2 library to grab images.

8.15.3.7 unsigned int numImageNotifications

Number of notifications per image.

The default number of notifications is 1.

There are 4 general scenarios:

- 1 notification - End of image
- 2 notifications - After first packet and end of image
- 3 notifications - After first packet, middle of image and end of image
- x notifications - After first packet, (x -2) spread evenly and end of image

8.15.3.8 unsigned int reserved[16]

Reserved for future use.

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

- FlyCapture2Defs.h

8.16 FC2Version Struct Reference

The current version of the library.

Public Attributes

- unsigned int major

  Major version number.

- unsigned int minor

  Minor version number.

- unsigned int type

  Type version number.

- unsigned int build

  Build version number.

8.16.1 Detailed Description

The current version of the library.

8.16.2 Member Data Documentation

8.16.2.1 unsigned int build

Build version number.

8.16.2.2 unsigned int major

Major version number.

8.16.2.3 unsigned int minor

Minor version number.

8.16.2.4 unsigned int type

Type version number.

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

- FlyCapture2Defs.h

8.17 Format7ImageSettings Struct Reference

Format 7 image settings.

Public Member Functions

- Format7ImageSettings ()

Public Attributes

- Mode mode

    Format 7 mode.

- unsigned int offsetX

    Horizontal image offset.

- unsigned int offsetY

    Vertical image offset.

- unsigned int width

    Width of image.

- unsigned int height

    Height of image.

- PixelFormat pixelFormat

    Pixel format of image.

- unsigned int reserved [8]

    Reserved for future use.

8.17.1 Detailed Description

Format 7 image settings.

8.17.2 Constructor & Destructor Documentation

8.17.2.1 Format7ImageSettings () `[inline]`

8.17.3 Member Data Documentation

8.17.3.1 unsigned int height

Height of image.

8.17.3.2 Mode mode

Format 7 mode.

8.17.3.3 unsigned int offsetX

Horizontal image offset.

8.17.3.4 unsigned int offsetY

Vertical image offset.

8.17.3.5 PixelFormat pixelFormat

Pixel format of image.

8.17.3.6 unsigned int reserved[8]

Reserved for future use.

8.17.3.7 unsigned int width

Width of image.

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

- FlyCapture2Defs.h

8.18 Format7Info Struct Reference

Format 7 information for a single mode.

Public Member Functions

- Format7Info ()

Public Attributes

- Mode mode

  Format 7 mode.

- unsigned int maxWidth

  Maximum image width.

- unsigned int maxHeight

  Maximum image height.

- unsigned int offsetHStepSize

  Horizontal step size for the offset.

- unsigned int offsetVStepSize

  Vertical step size for the offset.

- unsigned int imageHStepSize

  Horizontal step size for the image.

- unsigned int imageVStepSize

  Vertical step size for the image.

- unsigned int pixelFormatBitField

  Supported pixel formats in a bit field.

- unsigned int packetSize

  Current packet size in bytes.

- unsigned int minPacketSize

  Minimum packet size in bytes for current mode.

- unsigned int maxPacketSize

  Maximum packet size in bytes for current mode.

- float percentage

  Current packet size as a percentage of maximum packet size.

- unsigned int reserved [16]

  Reserved for future use.

8.18.1 Detailed Description

Format 7 information for a single mode.

8.18.2 Constructor & Destructor Documentation

8.18.2.1 Format7Info () `[inline]`

8.18.3 Member Data Documentation

8.18.3.1 unsigned int imageHStepSize

Horizontal step size for the image.

8.18.3.2 unsigned int imageVStepSize

Vertical step size for the image.

8.18.3.3 unsigned int maxHeight

Maximum image height.

8.18.3.4 unsigned int maxPacketSize

Maximum packet size in bytes for current mode.

8.18.3.5 unsigned int maxWidth

Maximum image width.

8.18.3.6 unsigned int minPacketSize

Minimum packet size in bytes for current mode.

8.18.3.7 Mode mode

Format 7 mode.

8.18.3.8 unsigned int offsetHStepSize

Horizontal step size for the offset.

8.18.3.9 unsigned int offsetVStepSize

Vertical step size for the offset.

8.18.3.10 unsigned int packetSize

Current packet size in bytes.

8.18.3.11 float percentage

Current packet size as a percentage of maximum packet size.

8.18.3.12 unsigned int pixelFormatBitField

Supported pixel formats in a bit field.

8.18.3.13 unsigned int reserved[16]

Reserved for future use.

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

- FlyCapture2Defs.h

8.19 Format7PacketInfo Struct Reference

Format 7 packet information.

Public Member Functions

- Format7PacketInfo ()

Public Attributes

- unsigned int recommendedBytesPerPacket

  Recommended bytes per packet.

- unsigned int maxBytesPerPacket

  Maximum bytes per packet.

- unsigned int unitBytesPerPacket

  Minimum bytes per packet.

- unsigned int reserved [8]

  Reserved for future use.

8.19.1 Detailed Description

Format 7 packet information.

8.19.2 Constructor & Destructor Documentation

8.19.2.1 Format7PacketInfo () `[inline]`

8.19.3 Member Data Documentation

8.19.3.1 unsigned int maxBytesPerPacket

Maximum bytes per packet.

8.19.3.2 unsigned int recommendedBytesPerPacket

Recommended bytes per packet.

8.19.3.3 unsigned int reserved[8]

Reserved for future use.

8.19.3.4 unsigned int unitBytesPerPacket

Minimum bytes per packet.

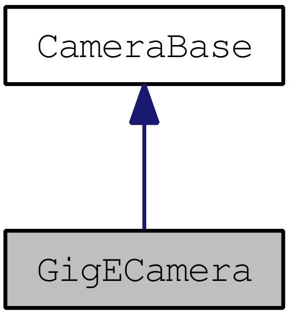
The documentation for this struct was generated from the following file:

- FlyCapture2Defs.h

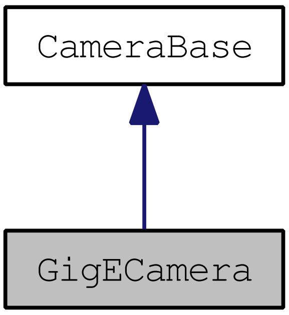
8.20 GigECamera Class Reference

The GigECamera object represents a physical Gigabit Ethernet camera.

Inheritance diagram for GigECamera:



Collaboration diagram for GigECamera:



Public Member Functions

- GigECamera ()

  Default constructor.

- virtual ∼GigECamera ()

  Default destructor.

- virtual Error Connect (PGRGuid ∗pGuid=NULL)

  The following functions are inherited from CameraBase.

- virtual Error Disconnect ()

  Disconnects the camera object from the camera.

- virtual bool IsConnected ()

  Checks if the camera object is currently connected to a physical camera.

- virtual Error SetCallback (ImageEventCallback callbackFn, const void ∗pCallbackData=NULL)

Sets the callback data to be used on completion of image transfer.

- virtual Error StartCapture (ImageEventCallback callbackFn=NULL, const void ∗pCallbackData=NULL)

  Starts isochronous image capture.

- virtual Error RetrieveBuffer (Image ∗pImage)

  Retrieves the the next image object containing the next image.

- virtual Error StopCapture ()

  Stops isochronous image transfer and cleans up all associated resources.

- virtual Error WaitForBufferEvent (Image ∗pImage, unsigned int eventNumber)

  Retrieves the next image event containing the next part of the image.

- virtual Error SetUserBuffers (unsigned char ∗const pMemBuffers, int size, int numBuffers)

  Specify user allocated buffers to use as image data buffers.

- virtual Error GetConfiguration (FC2Config ∗pConfig)

  Get the configuration associated with the camera object.

- virtual Error SetConfiguration (const FC2Config ∗pConfig)

  Set the configuration associated with the camera object.

- virtual Error GetCameraInfo (CameraInfo ∗pCameraInfo)

  Retrieves information from the camera such as serial number, model name and other camera information.

- virtual Error GetPropertyInfo (PropertyInfo ∗pPropInfo)

  Retrieves information about the specified camera property.

- virtual Error GetProperty (Property ∗pProp)

  Reads the settings for the specified property from the camera.

- virtual Error SetProperty (const Property ∗pProp, bool broadcast=false)

  Writes the settings for the specified property to the camera.

- virtual Error GetGPIOPinDirection (unsigned int pin, unsigned int ∗pDirection)

  Get the GPIO pin direction for the specified pin.

- virtual Error SetGPIOPinDirection (unsigned int pin, unsigned int direction, bool broadcast=false)

  Set the GPIO pin direction for the specified pin.

- virtual Error GetTriggerModeInfo (TriggerModeInfo ∗pTriggerModeInfo)

  Retrieve trigger information from the camera.

- virtual Error GetTriggerMode (TriggerMode ∗pTriggerMode)

  Retrieve current trigger settings from the camera.

- virtual Error SetTriggerMode (const TriggerMode ∗pTriggerMode, bool broadcast=false)

  Set the specified trigger settings to the camera.

- virtual Error FireSoftwareTrigger (bool broadcast=false)

    Fire the software trigger according to the DCAM specifications.

- virtual Error GetTriggerDelayInfo (TriggerDelayInfo ∗pTriggerDelayInfo)

    Retrieve trigger delay information from the camera.

- virtual Error GetTriggerDelay (TriggerDelay ∗pTriggerDelay)

    Retrieve current trigger delay settings from the camera.

- virtual Error SetTriggerDelay (const TriggerDelay ∗pTriggerDelay, bool broadcast=false)

    Set the specified trigger delay settings to the camera.

- virtual Error GetStrobeInfo (StrobeInfo ∗pStrobeInfo)

    Retrieve strobe information from the camera.

- virtual Error GetStrobe (StrobeControl ∗pStrobeControl)

    Retrieve current strobe settings from the camera.

- virtual Error SetStrobe (const StrobeControl ∗pStrobeControl, bool broadcast=false)

    Set current strobe settings to the camera.

- virtual Error GetLUTInfo (LUTData ∗pData)

    Query if LUT support is available on the camera.

- virtual Error GetLUTBankInfo (unsigned int bank, bool ∗pReadSupported, bool ∗pWriteSupported)

    Query the read/write status of a single LUT bank.

- virtual Error GetActiveLUTBank (unsigned int ∗pActiveBank)

    Get the LUT bank that is currently being used.

- virtual Error SetActiveLUTBank (unsigned int activeBank)

    Set the LUT bank that will be used.

- virtual Error EnableLUT (bool on)

    Enable or disable LUT functionality on the camera.

- virtual Error GetLUTChannel (unsigned int bank, unsigned int channel, unsigned int sizeEntries, unsigned int ∗pEntries)

    Get the LUT channel settings from the camera.

- virtual Error SetLUTChannel (unsigned int bank, unsigned int channel, unsigned int sizeEntries, const unsigned int ∗pEntries)

    Set the LUT channel settings to the camera.

- virtual Error GetMemoryChannel (unsigned int ∗pCurrentChannel)

    Retrieve the current memory channel from the camera.

- virtual Error SaveToMemoryChannel (unsigned int channel)

Save the current settings to the specfied current memory channel.

- virtual Error RestoreFromMemoryChannel (unsigned int channel)

  Restore the specfied current memory channel.

- virtual Error GetMemoryChannelInfo (unsigned int ∗pNumChannels)

  Query the camera for memory channel support.

- virtual Error GetEmbeddedImageInfo (EmbeddedImageInfo ∗pInfo)

  Get the current status of the embedded image information register, as well as the availability of each embedded property.

- virtual Error SetEmbeddedImageInfo (EmbeddedImageInfo ∗pInfo)

  Sets the on/off values of the embedded image information structure to the camera.

- virtual Error WriteRegister (unsigned int address, unsigned int value, bool broadcast=false)

  Write to the specified register on the camera.

- virtual Error ReadRegister (unsigned int address, unsigned int ∗pValue)

  Read the specified register from the camera.

- virtual Error WriteRegisterBlock (unsigned short addressHigh, unsigned int addressLow, const unsigned int ∗pBuffer, unsigned int length)

  Write to the specified register block on the camera.

- virtual Error ReadRegisterBlock (unsigned short addressHigh, unsigned int addressLow, unsigned int ∗pBuffer, unsigned int length)

  Read from the specified register block on the camera.

Static Public Member Functions

- static Error StartSyncCapture (unsigned int numCameras, const GigECamera ∗∗ppCameras, const ImageEventCallback ∗pCallbackFns=NULL, const void ∗∗pCallbackDataArray=NULL)
- static const char ∗ GetRegisterString (unsigned int registerVal)

  Returns a text representation of the register value.

GVCP Register Operation

These functions deal with GVCP register operation on the camera.

- virtual Error WriteGVCPRegister (unsigned int address, unsigned int value, bool broadcast=false)

  Write a GVCP register.

- virtual Error ReadGVCPRegister (unsigned int address, unsigned int ∗pValue)

  Read a GVCP register.

- virtual Error WriteGVCPRegisterBlock (unsigned int address, const unsigned int ∗pBuffer, unsigned int length)

Write a GVCP register block.

- virtual Error ReadGVCPRegisterBlock (unsigned int address, unsigned int ∗pBuffer, unsigned int length)

  Read a GVCP register block.

- virtual Error WriteGVCPMemory (unsigned int address, const unsigned char ∗pBuffer, unsigned int length)

  Write a GVCP Memory block.

- virtual Error ReadGVCPMemory (unsigned int address, unsigned char ∗pBuffer, unsigned int length)

  Read a GVCP memory block.

GigE property manipulation

These functions deal with GigE properties.

- virtual Error GetGigEProperty (GigEProperty ∗pGigEProp)

  Get the specified GigEProperty.

- virtual Error SetGigEProperty (const GigEProperty ∗pGigEProp)

  Set the specified GigEProperty.

- virtual Error DiscoverGigEPacketSize (unsigned int ∗packetSize)

  Discover the largest packet size that works for the network link between the PC and the camera.

GigE image settings

These functions deal with GigE image setting.

- virtual Error QueryGigEImagingMode (Mode mode, bool ∗isSupported)

  Check if the particular imaging mode is supported by the camera.

- virtual Error GetGigEImagingMode (Mode ∗mode)

  Get the current imaging mode on the camera.

- virtual Error SetGigEImagingMode (Mode mode)

  Set the current imaging mode to the camera.

- virtual Error GetGigEImageSettingsInfo (GigEImageSettingsInfo ∗pInfo)

  Get information about the image settings possible on the camera.

- virtual Error GetGigEImageSettings (GigEImageSettings ∗pImageSettings)

  Get the current image settings on the camera.

- virtual Error SetGigEImageSettings (const GigEImageSettings ∗pImageSettings)

  Set the image settings specified to the camera.

GigE image binning settings

These functions deal with GigE image binning settings.

- virtual Error GetGigEImageBinningSettings (unsigned int ∗horzBinnningValue, unsigned int ∗vertBinnningValue)

  Get the current binning settings on the camera.

- virtual Error SetGigEImageBinningSettings (unsigned int horzBinnningValue, unsigned int vertBinnningValue)

  Set the specified binning values to the camera.

GigE image stream configuration

These functions deal with GigE image stream configuration.

- virtual Error GetNumStreamChannels (unsigned int ∗numChannels)

  Get the number of stream channels present on the camera.

- virtual Error GetGigEStreamChannelInfo (unsigned int channel, GigEStreamChannel ∗pChannel)

  Get the stream channel information for the specified channel.

- virtual Error SetGigEStreamChannelInfo (unsigned int channel, GigEStreamChannel ∗pChannel)

  Set the stream channel information for the specified channel.

8.20.1 Detailed Description

The GigECamera object represents a physical Gigabit Ethernet camera.

The object must first be connected to using Connect() before any other operations can proceed.

Please see Camera.h for basic functions that this class inherits from.

8.20.2 Constructor & Destructor Documentation

8.20.2.1 GigECamera ()

Default constructor.

8.20.2.2 virtual ∼GigECamera () `[virtual]`

Default destructor.

8.20.3 Member Function Documentation

8.20.3.1 virtual Error Connect (PGRGuid ∗ *pGuid* = `NULL`) `[virtual]`

The following functions are inherited from CameraBase.

See CameraBase.h for further information.

Implements CameraBase.

8.20.3.2 virtual Error Disconnect () `[virtual]`

Disconnects the camera object from the camera.

This allows another physical camera to be connected to the camera object.

See also:

Connect()

Returns:

An Error indicating the success or failure of the function.

Implements CameraBase.

8.20.3.3 virtual Error DiscoverGigEPacketSize (unsigned int ∗ *packetSize*) `[virtual]`

Discover the largest packet size that works for the network link between the PC and the camera.

This is useful in cases where there may be multiple links between the PC and the camera and there is a possiblity of a component not supporting the recommended jumbo frame packet size of 9000.

Parameters:

packetSize The maximum packet size supported by the link.

Returns:

An Error indicating the success or failure of the function.

8.20.3.4 virtual Error EnableLUT (bool *on*) `[virtual]`

Enable or disable LUT functionality on the camera.

Parameters:

on Whether to enable or disable LUT.

See also:

GetLUTInfo()
GetLUTChannel()
SetLUTChannel()

Returns:

An Error indicating the success or failure of the function.

Implements CameraBase.

8.20.3.5 virtual Error FireSoftwareTrigger (bool *broadcast* = `false`) `[virtual]`

Fire the software trigger according to the DCAM specifications.

Parameters:

broadcast Whether the action should be broadcast.

Returns:

An Error indicating the success or failure of the function.

Implements CameraBase.

8.20.3.6 virtual Error GetActiveLUTBank (unsigned int ∗ *pActiveBank*) `[virtual]`

Get the LUT bank that is currently being used.

For cameras with PGR LUT, the active bank is always 0.

Parameters:

pActiveBank The currently active bank.

Returns:

An Error indicating the success or failure of the function.

Implements CameraBase.

8.20.3.7 virtual Error GetCameraInfo (CameraInfo ∗ *pCameraInfo*) `[virtual]`

Retrieves information from the camera such as serial number, model name and other camera information.

Parameters:

pCameraInfo Pointer to the camera information structure to be filled.

Returns:

An Error indicating the success or failure of the function.

Implements CameraBase.

8.20.3.8 virtual Error GetConfiguration (FC2Config ∗ *pConfig*) `[virtual]`

Get the configuration associated with the camera object.

Parameters:

pConfig Pointer to the configuration structure to be filled.

See also:

SetConfiguration()

Returns:

An Error indicating the success or failure of the function.

Implements CameraBase.

8.20.3.9 virtual Error GetEmbeddedImageInfo (EmbeddedImageInfo ∗ *pInfo*) `[virtual]`

Get the current status of the embedded image information register, as well as the availability of each embedded property.

Parameters:

pInfo Structure to be filled.

See also:

SetEmbeddedImageInfo()

Returns:

An Error indicating the success or failure of the function.

Implements CameraBase.

8.20.3.10 virtual Error GetGigEImageBinningSettings (unsigned int ∗ *horzBinnningValue*, unsigned int ∗ *vertBinnningValue*) `[virtual]`

Get the current binning settings on the camera.

Parameters:

horzBinnningValue Current horizontal binning value.

vertBinnningValue Current vertical binning value.

Returns:

An Error indicating the success or failure of the function.

8.20.3.11 virtual Error GetGigEImageSettings (GigEImageSettings ∗ *pImageSettings*) `[virtual]`

Get the current image settings on the camera.

Parameters:

pImageSettings Current image settings on camera.

Returns:

An Error indicating the success or failure of the function.

8.20.3.12 virtual Error GetGigEImageSettingsInfo (GigEImageSettingsInfo ∗ *pInfo*) `[virtual]`

Get information about the image settings possible on the camera.

Parameters:

pInfo Image settings information.

Returns:

An Error indicating the success or failure of the function.

8.20.3.13 virtual Error GetGigEImagingMode (Mode ∗ *mode*) `[virtual]`

Get the current imaging mode on the camera.

Parameters:

mode Current imaging mode on the camera.

Returns:

An Error indicating the success or failure of the function.

8.20.3.14 virtual Error GetGigEProperty (GigEProperty ∗ *pGigEProp*) `[virtual]`

Get the specified GigEProperty.

The GigEPropertyType field must be set in order for this function to succeed.

Parameters:

pGigEProp The GigE property to get.

Returns:

An Error indicating the success or failure of the function.

8.20.3.15 virtual Error GetGigEStreamChannelInfo (unsigned int *channel*, GigEStreamChannel ∗ *pChannel*) `[virtual]`

Get the stream channel information for the specified channel.

Parameters:

channel Channel number to use.

pChannel Stream channel information for the specified channel.

Returns:

An Error indicating the success or failure of the function.

8.20.3.16 virtual Error GetGPIOPinDirection (unsigned int *pin*, unsigned int ∗ *pDirection*) [virtual]

Get the GPIO pin direction for the specified pin.

This is not a required call when using the trigger or strobe functions as the pin direction is set automatically internally.

Parameters:

pin Pin to get the direction for.

pDirection Direction of the pin. 0 for input, 1 for output.

See also:

SetGPIOPinDirection()

Returns:

An Error indicating the success or failure of the function.

Implements CameraBase.

8.20.3.17 virtual Error GetLUTBankInfo (unsigned int *bank*, bool ∗ *pReadSupported*, bool ∗ *pWriteSupported*) [virtual]

Query the read/write status of a single LUT bank.

Parameters:

bank The bank to query.

pReadSupported Whether reading from the bank is supported.

pWriteSupported Whether writing to the bank is supported.

Returns:

An Error indicating the success or failure of the function.

Implements CameraBase.

8.20.3.18 virtual Error GetLUTChannel (unsigned int *bank*, unsigned int *channel*, unsigned int *sizeEntries*, unsigned int ∗ *pEntries*) [virtual]

Get the LUT channel settings from the camera.

Parameters:

bank Bank to retrieve.

channel Channel to retrieve.

sizeEntries Number of entries in LUT table to read.

pEntries Array to store LUT entries.

See also:

GetLUTInfo()
EnableLUT()
SetLUTChannel()

Returns:

An Error indicating the success or failure of the function.

Implements CameraBase.

8.20.3.19 virtual Error GetLUTInfo (LUTData ∗ *pData*) `[virtual]`

Query if LUT support is available on the camera.

Parameters:

pData The LUT structure to be filled.

See also:

EnableLUT()
GetLUTChannel()
SetLUTChannel()

Returns:

An Error indicating the success or failure of the function.

Implements CameraBase.

8.20.3.20 virtual Error GetMemoryChannel (unsigned int ∗ *pCurrentChannel*) `[virtual]`

Retrieve the current memory channel from the camera.

Parameters:

pCurrentChannel Current memory channel.

See also:

SaveToMemoryChannel()
RestoreFromMemoryChannel()
GetMemoryChannelInfo()

Returns:

An Error indicating the success or failure of the function.

Implements CameraBase.

8.20.3.21 virtual Error GetMemoryChannelInfo (unsigned int ∗ *pNumChannels*) `[virtual]`

Query the camera for memory channel support.

If the number of channels is 0, then memory channel support is not available.

Parameters:

pNumChannels Number of memory channels supported.

See also:

GetMemoryChannel()
SaveToMemoryChannel()
RestoreFromMemoryChannel()

Returns:

An Error indicating the success or failure of the function.

Implements CameraBase.

8.20.3.22 virtual Error GetNumStreamChannels (unsigned int ∗ *numChannels*) `[virtual]`

Get the number of stream channels present on the camera.

Parameters:

numChannels Number of stream channels present.

Returns:

An Error indicating the success or failure of the function.

8.20.3.23 virtual Error GetProperty (Property ∗ *pProp*) `[virtual]`

Reads the settings for the specified property from the camera.

The property type must be specified in the Property structure passed into the function in order for the function to succeed. If auto is on, the integer and abs values returned may not be consistent with each other.

Parameters:

pProp Pointer to the Property structure to be filled.

See also:

GetPropertyInfo()
SetProperty()

Returns:

An Error indicating the success or failure of the function.

Implements CameraBase.

8.20.3.24 virtual Error GetPropertyInfo (PropertyInfo ∗ *pPropInfo*) `[virtual]`

Retrieves information about the specified camera property.

The property type must be specified in the PropertyInfo structure passed into the function in order for the function to succeed.

Parameters:

pPropInfo Pointer to the PropertyInfo structure to be filled.

See also:

GetProperty()
SetProperty()

Returns:

An Error indicating the success or failure of the function.

Implements CameraBase.

8.20.3.25 static const char∗ GetRegisterString (unsigned int *registerVal*) `[static]`

Returns a text representation of the register value.

Parameters:

registerVal The register value to query.

Returns:

The text representation of the register.

Reimplemented from CameraBase.

8.20.3.26 virtual Error GetStrobe (StrobeControl ∗ *pStrobeControl*) `[virtual]`

Retrieve current strobe settings from the camera.

The strobe pin must be specified in the structure before being passed in to the function.

Parameters:

pStrobeControl Structure to receive strobe settings.

See also:

GetStrobeInfo()
SetStrobe()

Returns:

An Error indicating the success or failure of the function.

Implements CameraBase.

8.20.3.27 virtual Error GetStrobeInfo (StrobeInfo ∗ *pStrobeInfo*) `[virtual]`

Retrieve strobe information from the camera.

Parameters:

pStrobeInfo Structure to receive strobe information.

See also:

GetStrobe()
SetStrobe()

Returns:

An Error indicating the success or failure of the function.

Implements CameraBase.

8.20.3.28 virtual Error GetTriggerDelay (TriggerDelay ∗ *pTriggerDelay*) `[virtual]`

Retrieve current trigger delay settings from the camera.

Parameters:

pTriggerDelay Structure to receive trigger delay settings.

See also:

GetTriggerModeInfo()
GetTriggerMode()
SetTriggerMode()
GetTriggerDelayInfo()
SetTriggerDelay()

Returns:

An Error indicating the success or failure of the function.

Implements CameraBase.

8.20.3.29 virtual Error GetTriggerDelayInfo (TriggerDelayInfo ∗ *pTriggerDelayInfo*) `[virtual]`

Retrieve trigger delay information from the camera.

Parameters:

pTriggerDelayInfo Structure to receive trigger delay information.

See also:

GetTriggerModeInfo()
GetTriggerMode()
SetTriggerMode()
GetTriggerDelay()
SetTriggerDelay()

Returns:

An Error indicating the success or failure of the function.

Implements CameraBase.

8.20.3.30 virtual Error GetTriggerMode (TriggerMode ∗ *pTriggerMode*) `[virtual]`

Retrieve current trigger settings from the camera.

Parameters:

pTriggerMode Structure to receive trigger mode settings.

See also:

GetTriggerModeInfo()
SetTriggerMode()
GetTriggerDelayInfo()
GetTriggerDelay()
SetTriggerDelay()

Returns:

An Error indicating the success or failure of the function.

Implements CameraBase.

8.20.3.31 virtual Error GetTriggerModeInfo (TriggerModeInfo ∗ *pTriggerModeInfo*) `[virtual]`

Retrieve trigger information from the camera.

Parameters:

pTriggerModeInfo Structure to receive trigger information.

See also:

GetTriggerMode()
SetTriggerMode()
GetTriggerDelayInfo()
GetTriggerDelay()
SetTriggerDelay()

Returns:

An Error indicating the success or failure of the function.

Implements CameraBase.

8.20.3.32 virtual bool IsConnected () `[virtual]`

Checks if the camera object is currently connected to a physical camera.

See also:

Connect()
Disconnect()

Returns:

Whether the camera object is connected to a physical camera.

Implements CameraBase.

8.20.3.33 virtual Error QueryGigEImagingMode (Mode *mode*, bool ∗ *isSupported*) `[virtual]`

Check if the particular imaging mode is supported by the camera.

Parameters:

mode The mode to check.
isSupported Whether the mode is supported.

Returns:

An Error indicating the success or failure of the function.

8.20.3.34 virtual Error ReadGVCPMemory (unsigned int *address*, unsigned char ∗ *pBuffer*, unsigned int *length*) `[virtual]`

Read a GVCP memory block.

Parameters:

address GVCP address to be read from.
pBuffer Array for data to be read into.
length Size of array, in quadlets.

Returns:

An Error indicating the success or failure of the function.

8.20.3.35 virtual Error ReadGVCPRegister (unsigned int *address*, unsigned int ∗ *pValue*) `[virtual]`

Read a GVCP register.

Parameters:

address GVCP address to be read from.
pValue The value that is read.

Returns:

An Error indicating the success or failure of the function.

8.20.3.36 virtual Error ReadGVCPRegisterBlock (unsigned int *address*, unsigned int ∗ *pBuffer*, unsigned int *length*) `[virtual]`

Read a GVCP register block.

Parameters:

address GVCP address to be read from.

pBuffer Array for data to be read into.

length Size of array, in quadlets.

Returns:

An Error indicating the success or failure of the function.

8.20.3.37 virtual Error ReadRegister (unsigned int *address*, unsigned int ∗ *pValue*) `[virtual]`

Read the specified register from the camera.

Parameters:

address DCAM address to be read from.

pValue The value that is read.

See also:

WriteRegister()

Returns:

An Error indicating the success or failure of the function.

Implements CameraBase.

8.20.3.38 virtual Error ReadRegisterBlock (unsigned short *addressHigh*, unsigned int *addressLow*, unsigned int ∗ *pBuffer*, unsigned int *length*) `[virtual]`

Read from the specified register block on the camera.

Parameters:

addressHigh Top 16 bits of the 48 bit absolute address to read from.

addressLow Bottom 32 bits of the 48 bits absolute address to read from.

pBuffer Array to store read data.

length Size of array, in quadlets.

See also:

WriteRegisterBlock()

Returns:

An Error indicating the success or failure of the function.

Implements CameraBase.

8.20.3.39 virtual Error RestoreFromMemoryChannel (unsigned int *channel*) `[virtual]`

Restore the specfied current memory channel.

Parameters:

channel Memory channel to restore from.

See also:

GetMemoryChannel()
SaveToMemoryChannel()
GetMemoryChannelInfo()

Returns:

An Error indicating the success or failure of the function.

Implements CameraBase.

8.20.3.40 virtual Error RetrieveBuffer (Image ∗ *pImage*) `[virtual]`

Retrieves the the next image object containing the next image.

If the grab mode has not been set, or has been set to DROP_FRAMES the default behavior is to requeue images for DMA if they have not been retrieved by the time the next image transfer completes. If BUFFER_FRAMES is specified, the next image in the sequence will be retrieved. Note that for the BUFFER_FRAMES case, if retrieval does not keep up with the DMA process, images will be lost. The default behavior is to perform DROP_FRAMES image retrieval.

Parameters:

pImage Pointer to Image object to store image data.

See also:

StartCapture()
StopCapture()

Returns:

An Error indicating the success or failure of the function.

Implements CameraBase.

8.20.3.41 virtual Error SaveToMemoryChannel (unsigned int *channel*) `[virtual]`

Save the current settings to the specfied current memory channel.

Parameters:

channel Memory channel to save to.

See also:

GetMemoryChannel()
RestoreFromMemoryChannel()
GetMemoryChannelInfo()

Returns:

An Error indicating the success or failure of the function.

Implements CameraBase.

8.20.3.42 virtual Error SetActiveLUTBank (unsigned int *activeBank*) `[virtual]`

Set the LUT bank that will be used.

Parameters:

activeBank The bank to be set as active.

Returns:

An Error indicating the success or failure of the function.

Implements CameraBase.

8.20.3.43 virtual Error SetCallback (ImageEventCallback *callbackFn*, const void ∗ *pCallbackData* = `NULL`) `[virtual]`

Sets the callback data to be used on completion of image transfer.

To clear the current stored callback data, pass in NULL for both arguments.

Parameters:

callbackFn A function to be called when a new image is received.
pCallbackData A pointer to data that can be passed to the callback function.

See also:

StartCapture()

Returns:

An Error indicating the success or failure of the function.

Implements CameraBase.

8.20.3.44 virtual Error SetConfiguration (const FC2Config ∗ *pConfig*) `[virtual]`

Set the configuration associated with the camera object.

Parameters:

pConfig Pointer to the configuration structure to be used.

See also:

GetConfiguration()

Returns:

An Error indicating the success or failure of the function.

Implements CameraBase.

8.20.3.45 virtual Error SetEmbeddedImageInfo (EmbeddedImageInfo ∗ *pInfo*) [virtual]

Sets the on/off values of the embedded image information structure to the camera.

Parameters:

pInfo Structure to be used.

See also:

GetEmbeddedImageInfo()

Returns:

An Error indicating the success or failure of the function.

Implements CameraBase.

8.20.3.46 virtual Error SetGigEImageBinningSettings (unsigned int *horzBinnningValue*, unsigned int *vertBinnningValue*) [virtual]

Set the specified binning values to the camera.

It is recommended that GetGigEImageSettingsInfo() be called after this function succeeds to retrieve the new image settings information for the new binning mode.

Parameters:

horzBinnningValue Horizontal binning value.

vertBinnningValue Vertical binning value.

Returns:

An Error indicating the success or failure of the function.

8.20.3.47 virtual Error SetGigEImageSettings (const GigEImageSettings ∗ *pImageSettings*) [virtual]

Set the image settings specified to the camera.

Parameters:

pImageSettings Image settings to set to camera.

Returns:

An Error indicating the success or failure of the function.

8.20.3.48 virtual Error SetGigEImagingMode (Mode *mode*) [virtual]

Set the current imaging mode to the camera.

This should only be done when the camera is not streaming images.

Parameters:

mode Imaging mode to set to the camera.

Returns:

An Error indicating the success or failure of the function.

8.20.3.49 virtual Error SetGigEProperty (const GigEProperty ∗ *pGigEProp*) `[virtual]`

Set the specified GigEProperty.

The GigEPropertyType field must be set in order for this function to succeed.

Parameters:

pGigEProp The GigE property to set.

Returns:

An Error indicating the success or failure of the function.

8.20.3.50 virtual Error SetGigEStreamChannelInfo (unsigned int *channel*, GigEStreamChannel ∗ *pChannel*) `[virtual]`

Set the stream channel information for the specified channel.

Parameters:

channel Channel number to use.

pChannel Stream channel information to use for the specified channel.

Returns:

An Error indicating the success or failure of the function.

8.20.3.51 virtual Error SetGPIOPinDirection (unsigned int *pin*, unsigned int *direction*, bool *broadcast* = `false`) `[virtual]`

Set the GPIO pin direction for the specified pin.

This is useful if there is a need to set the pin into an input pin (i.e. to read the voltage) off the pin without setting it as a trigger source. This is not a required call when using the trigger or strobe functions as the pin direction is set automatically internally.

Parameters:

pin Pin to get the direction for.

direction Direction of the pin. 0 for input, 1 for output.

broadcast Whether the action should be broadcast.

See also:

GetGPIOPinDirection()

Returns:

An Error indicating the success or failure of the function.

Implements CameraBase.

8.20.3.52 virtual Error SetLUTChannel (unsigned int *bank*, unsigned int *channel*, unsigned int *sizeEntries*, const unsigned int ∗ *pEntries*) `[virtual]`

Set the LUT channel settings to the camera.

Parameters:

bank Bank to set.

channel Channel to set.

sizeEntries Number of entries in LUT table to write.

pEntries Array containing LUT entries to write.

See also:

GetLUTInfo()
EnableLUT()
GetLUTChannel()

Returns:

An Error indicating the success or failure of the function.

Implements CameraBase.

8.20.3.53 virtual Error SetProperty (const Property ∗ *pProp*, bool *broadcast* = `false`) `[virtual]`

Writes the settings for the specified property to the camera.

The property type must be specified in the Property structure passed into the function in order for the function to succeed. The absControl flag controls whether the absolute or integer value is written to the camera.

Parameters:

pProp Pointer to the Property structure to be used.

broadcast Whether the action should be broadcast.

See also:

GetPropertyInfo()
GetProperty()

Returns:

An Error indicating the success or failure of the function.

Implements CameraBase.

8.20.3.54 virtual Error SetStrobe (const StrobeControl * *pStrobeControl*, bool *broadcast* = `false`) `[virtual]`

Set current strobe settings to the camera.

The strobe pin must be specified in the structure before being passed in to the function.

Parameters:

pStrobeControl Structure providing strobe settings.

broadcast Whether the action should be broadcast.

See also:

GetStrobeInfo()
GetStrobe()

Returns:

An Error indicating the success or failure of the function.

Implements CameraBase.

8.20.3.55 virtual Error SetTriggerDelay (const TriggerDelay * *pTriggerDelay*, bool *broadcast* = `false`) `[virtual]`

Set the specified trigger delay settings to the camera.

Parameters:

pTriggerDelay Structure providing trigger delay settings.

broadcast Whether the action should be broadcast.

See also:

GetTriggerModeInfo()
GetTriggerMode()
SetTriggerMode()
GetTriggerDelayInfo()
GetTriggerDelay()

Returns:

An Error indicating the success or failure of the function.

Implements CameraBase.

8.20.3.56 virtual Error SetTriggerMode (const TriggerMode * *pTriggerMode*, bool *broadcast* = `false`) `[virtual]`

Set the specified trigger settings to the camera.

Parameters:

pTriggerMode Structure providing trigger mode settings.

broadcast Whether the action should be broadcast.

See also:

GetTriggerModeInfo()
GetTriggerMode()
GetTriggerDelayInfo()
GetTriggerDelay()
SetTriggerDelay()

Returns:

An Error indicating the success or failure of the function.

Implements CameraBase.

8.20.3.57 virtual Error SetUserBuffers (unsigned char ∗const *pMemBuffers*, int *size*, int *numBuffers*) `[virtual]`

Specify user allocated buffers to use as image data buffers.

To prevent image tearing, the size of each buffer should be equal to ((unsigned int)(bufferSize + packetSize - 1)/packetSize) ∗ packetSize. The total size should be (size ∗ numBuffers) or larger.

Parameters:

pMemBuffers Pointer to memory buffers to be written to.

size The size of each buffer (in bytes).

numBuffers Number of buffers in the array.

See also:

StartCapture()
RetrieveBuffer()
StopCapture()

Returns:

An Error indicating the success or failure of the function.

Implements CameraBase.

8.20.3.58 virtual Error StartCapture (ImageEventCallback *callbackFn* = `NULL`, const void ∗ *pCallbackData* = `NULL`) `[virtual]`

Starts isochronous image capture.

It will use either the current video mode or the most recently set video mode of the camera. The optional callback function parameter is called on completion of image transfer. Alternatively, the callback parameter can be set to NULL and RetrieveBuffer() can be called as a blocking call to get the image data.

Parameters:

callbackFn A function to be called when a new image is received.

pCallbackData A pointer to data that can be passed to the callback function.

See also:

RetrieveBuffer()
StartSyncCapture()
StopCapture()

Returns:

An Error indicating the success or failure of the function.

Implements CameraBase.

8.20.3.59 static Error StartSyncCapture (unsigned int *numCameras*, const GigECamera ** *ppCameras*, const ImageEventCallback * *pCallbackFns* = `NULL`, const void ** *pCallbackDataArray* = `NULL`) `[static]`

8.20.3.60 virtual Error StopCapture () `[virtual]`

Stops isochronous image transfer and cleans up all associated resources.

See also:

StartCapture()
RetrieveBuffer()

Returns:

An Error indicating the success or failure of the function.

Implements CameraBase.

8.20.3.61 virtual Error WaitForBufferEvent (Image * *pImage*, unsigned int *eventNumber*) `[virtual]`

Retrieves the next image event containing the next part of the image.

Parameters:

pImage Pointer to Image object to store image data.

eventNumber The event number to wait for.

See also:

StartCapture()
RetrieveBuffer()
StopCapture()

Returns:

An Error indicating the success or failure of the function.

Implements CameraBase.

8.20.3.62 virtual Error WriteGVCPMemory (unsigned int *address*, const unsigned char ∗ *pBuffer*, unsigned int *length*) `[virtual]`

Write a GVCP Memory block.

Parameters:

address GVCP address to be write to.

pBuffer Array containing data to be written in increments.

length Size of array, in quadlets.

Returns:

An Error indicating the success or failure of the function.

8.20.3.63 virtual Error WriteGVCPRegister (unsigned int *address*, unsigned int *value*, bool *broadcast* = `false`) `[virtual]`

Write a GVCP register.

Parameters:

address GVCP address to be written to.

value The value to be written.

broadcast Whether the action should be broadcast.

Returns:

An Error indicating the success or failure of the function.

8.20.3.64 virtual Error WriteGVCPRegisterBlock (unsigned int *address*, const unsigned int ∗ *pBuffer*, unsigned int *length*) `[virtual]`

Write a GVCP register block.

Parameters:

address GVCP address to be write to.

pBuffer Array containing data to be written.

length Size of array, in quadlets.

Returns:

An Error indicating the success or failure of the function.

8.20.3.65 virtual Error WriteRegister (unsigned int *address*, unsigned int *value*, bool *broadcast* = `false`) `[virtual]`

Write to the specified register on the camera.

Parameters:

address DCAM address to be written to.

value The value to be written.

broadcast Whether the action should be broadcast.

See also:

ReadRegister()

Returns:

An Error indicating the success or failure of the function.

Implements CameraBase.

8.20.3.66 virtual Error WriteRegisterBlock (unsigned short *addressHigh*, unsigned int *addressLow*, const unsigned int ∗ *pBuffer*, unsigned int *length*) `[virtual]`

Write to the specified register block on the camera.

Parameters:

addressHigh Top 16 bits of the 48 bit absolute address to write to.

addressLow Bottom 32 bits of the 48 bits absolute address to write to.

pBuffer Array containing data to be written.

length Size of array, in quadlets.

See also:

ReadRegisterBlock()

Returns:

An Error indicating the success or failure of the function.

Implements CameraBase.

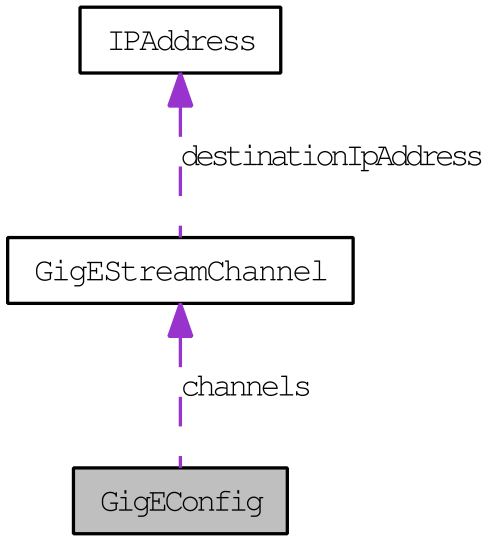
The documentation for this class was generated from the following file:

- GigECamera.h

8.21 GigEConfig Struct Reference

Configuration for a GigE camera.

Collaboration diagram for GigEConfig:



Public Member Functions

- GigEConfig ()

Public Attributes

- unsigned int numChannels

  Number of stream channels.

- GigEStreamChannel channels [512]

  Array of stream channel data.

8.21.1 Detailed Description

Configuration for a GigE camera.

These options are options that are generally should be set before starting isochronous transfer.

8.21.2 Constructor & Destructor Documentation

8.21.2.1 GigEConfig () `[inline]`

8.21.3 Member Data Documentation

8.21.3.1 GigEStreamChannel channels[512]

Array of stream channel data.

8.21.3.2 unsigned int numChannels

Number of stream channels.

Read only.

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

- FlyCapture2Defs.h

8.22 GigEImageSettings Struct Reference

Image settings for a GigE camera.

Public Member Functions

- GigEImageSettings ()

Public Attributes

- unsigned int offsetX

  Horizontal image offset.
- unsigned int offsetY

  Vertical image offset.
- unsigned int width

  Width of image.
- unsigned int height

  Height of image.
- PixelFormat pixelFormat

  Pixel format of image.
- unsigned int reserved [8]

  Reserved for future use.

8.22.1 Detailed Description

Image settings for a GigE camera.

8.22.2 Constructor & Destructor Documentation

8.22.2.1 GigEImageSettings () `[inline]`

8.22.3 Member Data Documentation

8.22.3.1 unsigned int height

Height of image.

8.22.3.2 unsigned int offsetX

Horizontal image offset.

8.22.3.3 unsigned int offsetY

Vertical image offset.

8.22.3.4 PixelFormat pixelFormat

Pixel format of image.

8.22.3.5 unsigned int reserved[8]

Reserved for future use.

8.22.3.6 unsigned int width

Width of image.

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

- FlyCapture2Defs.h

8.23 GigEImageSettingsInfo Struct Reference

Format 7 information for a single mode.

Public Member Functions

- GigEImageSettingsInfo ()

Public Attributes

- unsigned int maxWidth

  Maximum image width.
- unsigned int maxHeight

  Maximum image height.
- unsigned int offsetHStepSize

  Horizontal step size for the offset.
- unsigned int offsetVStepSize

  Vertical step size for the offset.
- unsigned int imageHStepSize

  Horizontal step size for the image.
- unsigned int imageVStepSize

  Vertical step size for the image.
- unsigned int pixelFormatBitField

  Supported pixel formats in a bit field.
- unsigned int reserved [16]

  Reserved for future use.

8.23.1 Detailed Description

Format 7 information for a single mode.

8.23.2 Constructor & Destructor Documentation

8.23.2.1 GigEImageSettingsInfo () `[inline]`

8.23.3 Member Data Documentation

8.23.3.1 unsigned int imageHStepSize

Horizontal step size for the image.

8.23.3.2 unsigned int imageVStepSize

Vertical step size for the image.

8.23.3.3 unsigned int maxHeight

Maximum image height.

8.23.3.4 unsigned int maxWidth

Maximum image width.

8.23.3.5 unsigned int offsetHStepSize

Horizontal step size for the offset.

8.23.3.6 unsigned int offsetVStepSize

Vertical step size for the offset.

8.23.3.7 unsigned int pixelFormatBitField

Supported pixel formats in a bit field.

8.23.3.8 unsigned int reserved[16]

Reserved for future use.

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

- FlyCapture2Defs.h

8.24 GigEProperty Struct Reference

A GigE property.

Public Attributes

- GigEPropertyType propType

  The type of property.
- bool isReadable

  Whether the property is readable.
- bool isWritable

  Whether the property is writable.
- unsigned int min

  Minimum value.
- unsigned int max

  Maximum value.
- unsigned int value

  Current value.

8.24.1 Detailed Description

A GigE property.

8.24.2 Member Data Documentation

8.24.2.1 bool isReadable

Whether the property is readable.

If this is false, then no other value in this structure is valid.

8.24.2.2 bool isWritable

Whether the property is writable.

8.24.2.3 unsigned int max

Maximum value.

8.24.2.4 unsigned int min

Minimum value.

8.24.2.5 GigEPropertyType propType

The type of property.

8.24.2.6 unsigned int value

Current value.

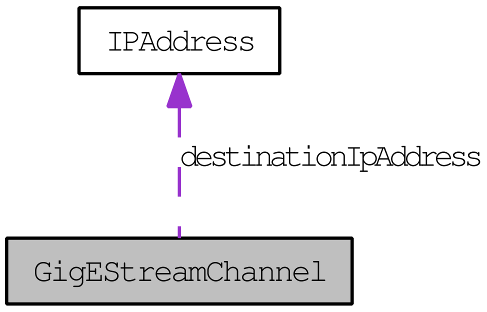
The documentation for this struct was generated from the following file:

- FlyCapture2Defs.h

8.25 GigEStreamChannel Struct Reference

Information about a single GigE stream channel.

Collaboration diagram for GigEStreamChannel:



Public Member Functions

- GigEStreamChannel ()

Public Attributes

- unsigned int networkInterfaceIndex

  Network interface index used (or to use).

- unsigned int hostPost

  Host port on the PC where the camera will send the data stream.

- bool doNotFragment

  Disable IP fragmentation of packets.

- unsigned int packetSize

  Packet size, in bytes.

- unsigned int interPacketDelay

  Inter packet delay, in timestamp counter units.

- IPAddress destinationIpAddress

  Destination IP address.

- unsigned int sourcePort

  Source UDP port of the stream channel.

8.25.1 Detailed Description

Information about a single GigE stream channel.

8.25.2 Constructor & Destructor Documentation

8.25.2.1 GigEStreamChannel () `[inline]`

8.25.3 Member Data Documentation

8.25.3.1 IPAddress destinationIpAddress

Destination IP address.

It can be a multicast or unicast address.

8.25.3.2 bool doNotFragment

Disable IP fragmentation of packets.

8.25.3.3 unsigned int hostPost

Host port on the PC where the camera will send the data stream.

8.25.3.4 unsigned int interPacketDelay

Inter packet delay, in timestamp counter units.

8.25.3.5 unsigned int networkInterfaceIndex

Network interface index used (or to use).

8.25.3.6 unsigned int packetSize

Packet size, in bytes.

8.25.3.7 unsigned int sourcePort

Source UDP port of the stream channel.

Read only.

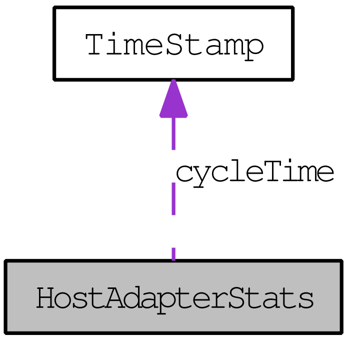
The documentation for this struct was generated from the following file:

- FlyCapture2Defs.h

8.26 HostAdapterStats Struct Reference

Information about the host adapter's statistics.

Collaboration diagram for HostAdapterStats:



Public Member Functions

- HostAdapterStats ()

Public Attributes

- char vendor [sk_maxStringLength]
- unsigned int numPorts
- unsigned int portErrors [sk_maxNumPorts]
- unsigned int fifoOverflows
- unsigned int busResets
- unsigned int deviceArrivals
- unsigned int deviceRemovals
- unsigned int busErrors
- unsigned int gapCount
- TimeStamp cycleTime

8.26.1 Detailed Description

Information about the host adapter's statistics.

8.26.2 Constructor & Destructor Documentation

8.26.2.1 HostAdapterStats () `[inline]`

8.26.3 Member Data Documentation

8.26.3.1 unsigned int busErrors

8.26.3.2 unsigned int busResets

8.26.3.3 TimeStamp cycleTime

8.26.3.4 unsigned int deviceArrivals

8.26.3.5 unsigned int deviceRemovals

8.26.3.6 unsigned int fifoOverflows

8.26.3.7 unsigned int gapCount

8.26.3.8 unsigned int numPorts

8.26.3.9 unsigned int portErrors[sk_maxNumPorts]

8.26.3.10 char vendor[sk_maxStringLength]

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

- FlyCapture2Defs.h

8.27 Image Class Reference

The Image class is used to retrieve images from a camera, convert between multiple pixel formats and save images to disk.

Public Member Functions

- Image ()

  Default constructor.

- Image (unsigned int rows, unsigned int cols, unsigned int stride, unsigned char ∗pData, unsigned int dataSize, PixelFormat format, BayerTileFormat bayerFormat=NONE)

  Construct an Image object with the specified arguments.

- Image (unsigned char ∗pData, unsigned int dataSize)

  Construct an Image object with the specified arguments.

- Image (unsigned int rows, unsigned int cols, PixelFormat format, BayerTileFormat bayerFormat=NONE)

  Construct an Image object with the specified arguments.

- Image (const Image &image)

  Copy constructor.

- virtual ∼Image ()

  Default destructor.

- virtual Image & operator= (const Image &image)

  Assignment operator.

- virtual unsigned char ∗ operator[ ] (unsigned int index)

  Indexing operator.

- virtual unsigned char ∗ operator() (unsigned int row, unsigned int col)

  Indexing operator.

- virtual Error DeepCopy (const Image ∗pImage)

  Perform a deep copy of the Image.

- virtual Error SetDimensions (unsigned int rows, unsigned int cols, unsigned int stride, PixelFormat pixelFormat, BayerTileFormat bayerFormat)

  Sets the dimensions of the image object.

- virtual Error SetData (const unsigned char ∗pData, unsigned int dataSize)

  Set the data of the Image object.

- virtual PixelFormat GetPixelFormat () const

  Get the current pixel format.

- virtual ColorProcessingAlgorithm GetColorProcessing () const

Get the current color processing algorithm.

- virtual Error SetColorProcessing (ColorProcessingAlgorithm colorProc)

  Set the color processing algorithm.

- virtual unsigned int GetCols () const

  Get the number of columns in the image.

- virtual unsigned int GetRows () const

  Get the number of rows in the image.

- virtual unsigned int GetStride () const

  Get the stride in the image.

- virtual unsigned int GetBitsPerPixel () const

  Get the bits per pixel of the image.

- virtual BayerTileFormat GetBayerTileFormat () const

  Get the Bayer tile format of the image.

- virtual unsigned int GetDataSize () const

  Get the size of the buffer associated with the image, in bytes.

- virtual void GetDimensions (unsigned int ∗pRows, unsigned int ∗pCols=NULL, unsigned int ∗pStride=NULL, PixelFormat ∗pPixelFormat=NULL, BayerTileFormat ∗pBayerFormat=NULL) const

  Get the image dimensions associated with the image.

- virtual unsigned char ∗ GetData ()

  Get a pointer to the data associated with the image.

- virtual unsigned char ∗const GetData () const
- virtual ImageMetadata GetMetadata () const

  Get the metadata associated with the image.

- virtual Error CalculateStatistics (ImageStatistics ∗pStatistics)

  Calculate statistics associated with the image.

- virtual TimeStamp GetTimeStamp () const

  Get the timestamp data associated with the image.

- virtual Error Save (const char ∗pFilename, ImageFileFormat format=FROM_FILE_EXT)

  Save the image to the specified file name with the file format specified.

- virtual Error Save (const char ∗pFilename, PNGOption ∗pOption)

  Save the image to the specified file name with the options specified.

- virtual Error Save (const char ∗pFilename, PPMOption ∗pOption)

  Save the image to the specified file name with the options specified.

- virtual Error Save (const char ∗pFilename, PGMOption ∗pOption)

  Save the image to the specified file name with the options specified.

- virtual Error Save (const char ∗pFilename, TIFFOption ∗pOption)

  Save the image to the specified file name with the options specified.

- virtual Error Save (const char ∗pFilename, JPEGOption ∗pOption)

  Save the image to the specified file name with the options specified.

- virtual Error Save (const char ∗pFilename, JPG2Option ∗pOption)

  Save the image to the specified file name with the options specified.

- virtual Error Convert (PixelFormat format, Image ∗pDestImage) const

  Converts the current image buffer to the specified output format and stores the result in the specified image.

- virtual Error Convert (Image ∗pDestImage) const

  Converts the current image buffer to the specified output format and stores the result in the specified image.

- virtual Error ReleaseBuffer ()

  Release the buffer associated with the Image.

Static Public Member Functions

- static Error SetDefaultColorProcessing (ColorProcessingAlgorithm defaultMethod)

  Set the default color processing algorithm.

- static ColorProcessingAlgorithm GetDefaultColorProcessing ()

  Get the default color processing algorithm.

- static Error SetDefaultOutputFormat (PixelFormat format)

  Set the default output pixel format.

- static PixelFormat GetDefaultOutputFormat ()

  Get the default output pixel format.

- static unsigned int DetermineBitsPerPixel (PixelFormat format)

  Calculate the bits per pixel for the specified pixel format.

Friends

- class Iso

8.27.1 Detailed Description

The Image class is used to retrieve images from a camera, convert between multiple pixel formats and save images to disk.

Operations on Image objects are not guaranteed to be thread safe. It is recommended that operations on Image objects be protected by thread synchronization constructs such as mutexes.

8.27.2 Constructor & Destructor Documentation

8.27.2.1 Image ()

Default constructor.

8.27.2.2 Image (unsigned int *rows*, unsigned int *cols*, unsigned int *stride*, unsigned char $*$ *pData*, unsigned int *dataSize*, PixelFormat *format*, BayerTileFormat *bayerFormat* = `NONE`)

Construct an Image object with the specified arguments.

Ownership of the image buffer is not transferred to the Image object. It is the user's responsibility to delete the buffer when it is no longer in use.

Parameters:

rows	Rows in the image.
cols	Columns in the image.
stride	Stride of the image buffer.
pData	Pointer to the image buffer.
dataSize	Size of the image buffer.
format	Pixel format.
bayerFormat	Format of the Bayer tiled raw image.

8.27.2.3 Image (unsigned char $*$ *pData*, unsigned int *dataSize*)

Construct an Image object with the specified arguments.

Ownership of the image buffer is not transferred to the Image object. It is the user's responsibility to delete the buffer when it is no longer in use.

Parameters:

pData	Pointer to the image buffer.
dataSize	Size of the image buffer.

8.27.2.4 Image (unsigned int *rows*, unsigned int *cols*, PixelFormat *format*, BayerTileFormat *bayerFormat* = `NONE`)

Construct an Image object with the specified arguments.

Parameters:

rows	Rows in the image.
cols	Columns in the image.
format	Pixel format.
bayerFormat	Format of the Bayer tiled raw image.

8.27.2.5 Image (const Image & *image*)

Copy constructor.

Both images will point to the same image buffer internally.

8.27.2.6 virtual ~Image () `[virtual]`

Default destructor.

The internal image buffer will be released if there are no other Image objects holding a reference to it. This will also allow the buffer to be requeued internally.

8.27.3 Member Function Documentation

8.27.3.1 virtual Error CalculateStatistics (ImageStatistics ∗ *pStatistics*) `[virtual]`

Calculate statistics associated with the image.

In order to collect statistics for a particular channel, the enabled flag for the channel must be set to true. Statistics can only be collected for images in Mono8, Mono16, RGB, RGBU, BGR and BGRU.

Parameters:

pStatistics The ImageStatistics object to hold the statistics.

Returns:

An Error indicating the success or failure of the function.

8.27.3.2 virtual Error Convert (Image ∗ *pDestImage*) const `[virtual]`

Converts the current image buffer to the specified output format and stores the result in the specified image.

The destination image does not need to be configured in anyway before the call is made.

Parameters:

pDestImage Destination image.

Returns:

An Error indicating the success or failure of the function.

8.27.3.3 virtual Error Convert (PixelFormat *format*, Image ∗ *pDestImage*) const `[virtual]`

Converts the current image buffer to the specified output format and stores the result in the specified image.

The destination image does not need to be configured in any way before the call is made.

Parameters:

format Output format of the converted image.

pDestImage Destination image.

Returns:

An Error indicating the success or failure of the function.

8.27.3.4 virtual Error DeepCopy (const Image * *pImage*) `[virtual]`

Perform a deep copy of the Image.

After this operation, the image contents and member variables will be the same. The Images will not share a buffer. The Image's current buffer will not be released.

Parameters:

pImage The Image to copy the data from.

Returns:

An Error indicating the success or failure of the function.

8.27.3.5 static unsigned int DetermineBitsPerPixel (PixelFormat *format*) `[static]`

Calculate the bits per pixel for the specified pixel format.

Parameters:

format The pixel format.

Returns:

The bits per pixel.

8.27.3.6 virtual BayerTileFormat GetBayerTileFormat () const `[virtual]`

Get the Bayer tile format of the image.

Returns:

The Bayer tile format.

8.27.3.7 virtual unsigned int GetBitsPerPixel () const `[virtual]`

Get the bits per pixel of the image.

Returns:

The bits per pixel.

8.27.3.8 virtual ColorProcessingAlgorithm GetColorProcessing () const `[virtual]`

Get the current color processing algorithm.

See also:

SetColorProcessing()

Returns:

The current color processing algorithm.

8.27.3.9 virtual unsigned int GetCols () const `[virtual]`

Get the number of columns in the image.

Returns:

The number of columns.

8.27.3.10 virtual unsigned char* const GetData () const `[virtual]`

8.27.3.11 virtual unsigned char* GetData () `[virtual]`

Get a pointer to the data associated with the image.

This function is considered unsafe. The pointer returned could be invalidated if the buffer is resized or released. The pointer may also be invalidated if the Image object is passed to Camera::RetrieveBuffer(). It is recommended that a Image::DeepCopy() be performed if a seperate copy of the Image data is required for further processing.

Returns:

A pointer to the image data.

8.27.3.12 virtual unsigned int GetDataSize () const `[virtual]`

Get the size of the buffer associated with the image, in bytes.

Returns:

The size of the buffer, in bytes.

8.27.3.13 static ColorProcessingAlgorithm GetDefaultColorProcessing () `[static]`

Get the default color processing algorithm.

See also:

SetDefaultColorProcessing()

Returns:

The default color processing algorithm.

8.27.3.14 static PixelFormat GetDefaultOutputFormat () `[static]`

Get the default output pixel format.

See also:

SetDefaultOutputFormat()

Returns:

The default pixel format.

8.27.3.15 virtual void GetDimensions (unsigned int ∗ *pRows*, unsigned int ∗ *pCols* = `NULL`, unsigned int ∗ *pStride* = `NULL`, PixelFormat ∗ *pPixelFormat* = `NULL`, BayerTileFormat ∗ *pBayerFormat* = `NULL`) const `[virtual]`

Get the image dimensions associated with the image.

Parameters:

pRows	Number of rows.
pCols	Number of columns.
pStride	The stride.
pPixelFormat	Pixel format.
pBayerFormat	Bayer tile format.

8.27.3.16 virtual ImageMetadata GetMetadata () const `[virtual]`

Get the metadata associated with the image.

This includes embedded image information.

Returns:

Metadata associated with the image.

8.27.3.17 virtual PixelFormat GetPixelFormat () const `[virtual]`

Get the current pixel format.

Returns:

The current pixel format.

8.27.3.18 virtual unsigned int GetRows () const `[virtual]`

Get the number of rows in the image.

Returns:

The number of rows.

8.27.3.19 virtual unsigned int GetStride () const `[virtual]`

Get the stride in the image.

Returns:

The stride (The number of bytes between rows of the image).

8.27.3.20 virtual TimeStamp GetTimeStamp () const `[virtual]`

Get the timestamp data associated with the image.

Returns:

Timestamp data associated with the image.

8.27.3.21 virtual unsigned char∗ operator() (unsigned int *row*, unsigned int *col*) `[virtual]`

Indexing operator.

Parameters:

row The row of the pixel to return.

col The column of the pixel to return.

Returns:

The address of the specified byte from the image data.

8.27.3.22 virtual Image& operator= (const Image & *image*) `[virtual]`

Assignment operator.

Both images will point to the same image buffer internally. If the Image already has a buffer attached to it, it will will be released.

Parameters:

image The image to copy from.

8.27.3.23 virtual unsigned char∗ operator[ ] (unsigned int *index*) `[virtual]`

Indexing operator.

Parameters:

index The index of the byte to return.

Returns:

The address of the specified byte from the image data.

8.27.3.24 virtual Error ReleaseBuffer () `[virtual]`

Release the buffer associated with the Image.

If no buffer is associated, the function does nothing.

Returns:

An Error indicating the success or failure of the function.

8.27.3.25 virtual Error Save (const char ∗ *pFilename*, JPG2Option ∗ *pOption*) `[virtual]`

Save the image to the specified file name with the options specified.

Parameters:

pFilename	Filename to save image with.
pOption	Options to use while saving image.

Returns:

An Error indicating the success or failure of the function.

8.27.3.26 virtual Error Save (const char ∗ *pFilename*, JPEGOption ∗ *pOption*) `[virtual]`

Save the image to the specified file name with the options specified.

Parameters:

pFilename	Filename to save image with.
pOption	Options to use while saving image.

Returns:

An Error indicating the success or failure of the function.

8.27.3.27 virtual Error Save (const char ∗ *pFilename*, TIFFOption ∗ *pOption*) `[virtual]`

Save the image to the specified file name with the options specified.

Parameters:

pFilename	Filename to save image with.
pOption	Options to use while saving image.

Returns:

An Error indicating the success or failure of the function.

8.27.3.28 virtual Error Save (const char ∗ *pFilename*, PGMOption ∗ *pOption*) `[virtual]`

Save the image to the specified file name with the options specified.

Parameters:

pFilename Filename to save image with.

pOption Options to use while saving image.

Returns:

An Error indicating the success or failure of the function.

8.27.3.29 virtual Error Save (const char ∗ *pFilename*, PPMOption ∗ *pOption*) `[virtual]`

Save the image to the specified file name with the options specified.

Parameters:

pFilename Filename to save image with.

pOption Options to use while saving image.

Returns:

An Error indicating the success or failure of the function.

8.27.3.30 virtual Error Save (const char ∗ *pFilename*, PNGOption ∗ *pOption*) `[virtual]`

Save the image to the specified file name with the options specified.

Parameters:

pFilename Filename to save image with.

pOption Options to use while saving image.

Returns:

An Error indicating the success or failure of the function.

8.27.3.31 virtual Error Save (const char ∗ *pFilename*, ImageFileFormat *format* = `FROM_FILE_EXT`) `[virtual]`

Save the image to the specified file name with the file format specified.

Parameters:

pFilename Filename to save image with.

format File format to save in.

Returns:

An Error indicating the success or failure of the function.

8.27.3.32 virtual Error SetColorProcessing (ColorProcessingAlgorithm *colorProc*) [virtual]

Set the color processing algorithm.

This should be set on the input Image object.

Parameters:

colorProc The color processing algorithm to use.

See also:

GetColorProcessing()

Returns:

An Error indicating the success or failure of the function.

8.27.3.33 virtual Error SetData (const unsigned char ∗ *pData*, unsigned int *dataSize*) [virtual]

Set the data of the Image object.

Ownership of the image buffer is not transferred to the Image object. It is the user's responsibility to delete the buffer when it is no longer in use.

Parameters:

pData Pointer to the image buffer.

dataSize Size of the image buffer.

8.27.3.34 static Error SetDefaultColorProcessing (ColorProcessingAlgorithm *defaultMethod*) [static]

Set the default color processing algorithm.

This method will be used for any image with the DEFAULT algorithm set. The method used is determined at the time of the Convert() call, therefore the most recent execution of this function will take precedence. The default setting is shared within the current process.

Parameters:

defaultMethod The color processing algorithm to set.

See also:

GetDefaultColorProcessing()

Returns:

An Error indicating the success or failure of the function.

8.27.3.35 static Error SetDefaultOutputFormat (PixelFormat *format*) `[static]`

Set the default output pixel format.

This format will be used for any call to Convert() that does not specify an output format. The format used will be determined at the time of the Convert() call, therefore the most recent execution of this function will take precedence. The default is shared within the current process.

Parameters:

format The output pixel format to set.

See also:

GetDefaultOutputFormat()

Returns:

The default color processing algorithm.

8.27.3.36 virtual Error SetDimensions (unsigned int *rows*, unsigned int *cols*, unsigned int *stride*, PixelFormat *pixelFormat*, BayerTileFormat *bayerFormat*) `[virtual]`

Sets the dimensions of the image object.

Parameters:

rows Number of rows to set.

cols Number of cols to set.

stride Stride to set.

pixelFormat Pixel format to set.

bayerFormat Bayer tile format to set.

See also:

GetDimensions()

Returns:

An Error indicating the success or failure of the function.

8.27.4 Friends And Related Function Documentation

8.27.4.1 friend class Iso `[friend]`

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

- Image.h

8.28 ImageMetadata Struct Reference

Metadata related to an image.

Public Member Functions

- ImageMetadata ()

Public Attributes

- unsigned int embeddedTimeStamp

  Embedded timestamp.

- unsigned int embeddedGain

  Embedded gain.

- unsigned int embeddedShutter

  Embedded shutter.

- unsigned int embeddedBrightness

  Embedded brightness.

- unsigned int embeddedExposure

  Embedded exposure.

- unsigned int embeddedWhiteBalance

  Embedded white balance.

- unsigned int embeddedFrameCounter

  Embedded frame counter.

- unsigned int embeddedStrobePattern

  Embedded strobe pattern.

- unsigned int embeddedGPIOPinState

  Embedded GPIO pin state.

- unsigned int embeddedROIPosition

  Embedded ROI position.

- unsigned int reserved [31]

  Reserved for future use.

8.28.1 Detailed Description

Metadata related to an image.

8.28.2 Constructor & Destructor Documentation

8.28.2.1 ImageMetadata () `[inline]`

8.28.3 Member Data Documentation

8.28.3.1 unsigned int embeddedBrightness

Embedded brightness.

8.28.3.2 unsigned int embeddedExposure

Embedded exposure.

8.28.3.3 unsigned int embeddedFrameCounter

Embedded frame counter.

8.28.3.4 unsigned int embeddedGain

Embedded gain.

8.28.3.5 unsigned int embeddedGPIOPinState

Embedded GPIO pin state.

8.28.3.6 unsigned int embeddedROIPosition

Embedded ROI position.

8.28.3.7 unsigned int embeddedShutter

Embedded shutter.

8.28.3.8 unsigned int embeddedStrobePattern

Embedded strobe pattern.

8.28.3.9 unsigned int embeddedTimeStamp

Embedded timestamp.

8.28.3.10 unsigned int embeddedWhiteBalance

Embedded white balance.

8.28.3.11 unsigned int reserved[31]

Reserved for future use.

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

- FlyCapture2Defs.h

8.29 ImageStatistics Class Reference

The ImageStatistics object represents image statistics for an image.

Public Types

- enum StatisticsChannel {
  GREY,
  RED,
  GREEN,
  BLUE,
  HUE,
  SATURATION,
  LIGHTNESS,
  NUM_STATISTICS_CHANNELS }

  Channels that allow statistics to be calculated.

Public Member Functions

- ImageStatistics ()

  Default constructor.
- virtual ~ImageStatistics ()

  Default destructor.
- ImageStatistics (const ImageStatistics &other)

  Copy constructor.
- ImageStatistics & operator= (const ImageStatistics &other)

  Assignment operator.
- Error EnableAll ()

  Enable all channels.
- Error DisableAll ()

  Disable all channels.
- Error EnableGreyOnly ()

  Enable only the grey channel.
- Error EnableRGBOnly ()

  Enable only the RGB channels.
- Error EnableHSLOnly ()

  Enable only the HSL channels.
- Error GetChannelStatus (StatisticsChannel channel, bool ∗pEnabled) const

  Get the status of a statistics channel.

- Error SetChannelStatus (StatisticsChannel channel, bool enabled)
  Set the status of a statistics channel.
- Error GetRange (StatisticsChannel channel, unsigned int ∗pMin, unsigned int ∗pMax) const
  Get the range of a statistics channel.
- Error GetPixelValueRange (StatisticsChannel channel, unsigned int ∗pPixelValueMin, unsigned int ∗pPixelValueMax) const
  Get the range of a statistics channel.
- Error GetNumPixelValues (StatisticsChannel channel, unsigned int ∗pNumPixelValues) const
  Get the number of unique pixel values in the image.
- Error GetMean (StatisticsChannel channel, float ∗pPixelValueMean) const
  Get the mean of the image.
- Error GetHistogram (StatisticsChannel channel, int ∗∗ppHistogram) const
  Get the histogram for the image.
- Error GetStatistics (StatisticsChannel channel, unsigned int ∗pRangeMin=NULL, unsigned int ∗pRangeMax=NULL, unsigned int ∗pPixelValueMin=NULL, unsigned int ∗pPixelValueMax=NULL, unsigned int ∗pNumPixelValues=NULL, float ∗pPixelValueMean=NULL, int ∗∗ppHistogram=NULL) const
  Get all statistics for the image.

Friends

- class ImageStatsCalculator

8.29.1 Detailed Description

The ImageStatistics object represents image statistics for an image.

8.29.2 Member Enumeration Documentation

8.29.2.1 enum StatisticsChannel

Channels that allow statistics to be calculated.

Enumerator:

GREY
RED
GREEN
BLUE
HUE
SATURATION
LIGHTNESS
NUM_STATISTICS_CHANNELS

8.29.3 Constructor & Destructor Documentation

8.29.3.1 ImageStatistics ()

Default constructor.

8.29.3.2 virtual ~ImageStatistics () `[virtual]`

Default destructor.

8.29.3.3 ImageStatistics (const ImageStatistics & *other*)

Copy constructor.

8.29.4 Member Function Documentation

8.29.4.1 Error DisableAll ()

Disable all channels.

Returns:

An Error indicating the success or failure of the function.

8.29.4.2 Error EnableAll ()

Enable all channels.

Returns:

An Error indicating the success or failure of the function.

8.29.4.3 Error EnableGreyOnly ()

Enable only the grey channel.

Returns:

An Error indicating the success or failure of the function.

8.29.4.4 Error EnableHSLOnly ()

Enable only the HSL channels.

Returns:

An Error indicating the success or failure of the function.

8.29.4.5 Error EnableRGBOnly ()

Enable only the RGB channels.

Returns:

An Error indicating the success or failure of the function.

8.29.4.6 Error GetChannelStatus (StatisticsChannel *channel*, bool ∗ *pEnabled*) const

Get the status of a statistics channel.

Parameters:

channel The statistics channel.
pEnabled Whether the channel is enabled.

See also:

SetChannelStatus()

Returns:

An Error indicating the success or failure of the function.

8.29.4.7 Error GetHistogram (StatisticsChannel *channel*, int ∗∗ *ppHistogram*) const

Get the histogram for the image.

Parameters:

channel The statistics channel.
ppHistogram Pointer to an array containing the histogram.

Returns:

An Error indicating the success or failure of the function.

8.29.4.8 Error GetMean (StatisticsChannel *channel*, float ∗ *pPixelValueMean*) const

Get the mean of the image.

Parameters:

channel The statistics channel.
pPixelValueMean The mean of the image.

Returns:

An Error indicating the success or failure of the function.

8.29.4.9 Error GetNumPixelValues (StatisticsChannel *channel*, unsigned int ∗ *pNumPixelValues*) const

Get the number of unique pixel values in the image.

Parameters:

channel The statistics channel.
pNumPixelValues The number of unique pixel values.

Returns:

An Error indicating the success or failure of the function.

8.29.4.10 Error GetPixelValueRange (StatisticsChannel *channel*, unsigned int ∗ *pPixelValueMin*, unsigned int ∗ *pPixelValueMax*) const

Get the range of a statistics channel.

The values returned are the maximum values recorded for all pixels in the image.

Parameters:

channel The statistics channel.

pPixelValueMin The minimum pixel value.

pPixelValueMax The maximum pixel value.

Returns:

An Error indicating the success or failure of the function.

8.29.4.11 Error GetRange (StatisticsChannel *channel*, unsigned int ∗ *pMin*, unsigned int ∗ *pMax*) const

Get the range of a statistics channel.

The values returned are the maximum possible values for any given pixel in the image. This is generally 0-255 for 8 bit images, and 0-65535 for 16 bit images.

Parameters:

channel The statistics channel.

pMin The minimum possible value.

pMax The maximum possible value.

Returns:

An Error indicating the success or failure of the function.

8.29.4.12 Error GetStatistics (StatisticsChannel *channel*, unsigned int ∗ *pRangeMin* = `NULL`, unsigned int ∗ *pRangeMax* = `NULL`, unsigned int ∗ *pPixelValueMin* = `NULL`, unsigned int ∗ *pPixelValueMax* = `NULL`, unsigned int ∗ *pNumPixelValues* = `NULL`, float ∗ *pPixelValueMean* = `NULL`, int ∗∗ *ppHistogram* = `NULL`) const

Get all statistics for the image.

Parameters:

channel The statistics channel.

pRangeMin The minimum possible value.

pRangeMax The maximum possible value.

pPixelValueMin The minimum pixel value.

pPixelValueMax The maximum pixel value.

pNumPixelValues The number of unique pixel values.

pPixelValueMean The mean of the image.

ppHistogram Pointer to an array containing the histogram.

Returns:

An Error indicating the success or failure of the function.

8.29.4.13 ImageStatistics& operator= (const ImageStatistics & *other*)

Assignment operator.

Parameters:

other The ImageStatistics object to copy from.

8.29.4.14 Error SetChannelStatus (StatisticsChannel *channel*, bool *enabled*)

Set the status of a statistics channel.

Parameters:

channel The statistics channel.

enabled Whether the channel should be enabled.

See also:

GetChannelStatus()

Returns:

An Error indicating the success or failure of the function.

8.29.5 Friends And Related Function Documentation

8.29.5.1 friend class ImageStatsCalculator `[friend]`

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

– ImageStatistics.h

8.30 IPAddress Struct Reference

IPv4 address.

Public Member Functions

- IPAddress ()
- IPAddress (unsigned int ipAddressVal)
- bool operator== (const IPAddress &address)

  Equality operator.

- bool operator!= (const IPAddress &address)

  Inequality operator.

Public Attributes

- unsigned char octets [4]

8.30.1 Detailed Description

IPv4 address.

8.30.2 Constructor & Destructor Documentation

8.30.2.1 IPAddress () `[inline]`

8.30.2.2 IPAddress (unsigned int *ipAddressVal*) `[inline]`

8.30.3 Member Function Documentation

8.30.3.1 bool operator!= (const IPAddress & *address*) `[inline]`

Inequality operator.

8.30.3.2 bool operator== (const IPAddress & *address*) `[inline]`

Equality operator.

8.30.4 Member Data Documentation

8.30.4.1 unsigned char octets[4]

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

- FlyCapture2Defs.h

8.31 JPEGOption Struct Reference

Options for saving JPEG image.

Public Member Functions

- JPEGOption ()

Public Attributes

- bool progressive
  Whether to save as a progressive JPEG file.
- unsigned int quality
  JPEG image quality in range (0-100).
- unsigned int reserved [16]
  Reserved for future use.

8.31.1 Detailed Description

Options for saving JPEG image.

8.31.2 Constructor & Destructor Documentation

8.31.2.1 JPEGOption () `[inline]`

8.31.3 Member Data Documentation

8.31.3.1 bool progressive

Whether to save as a progressive JPEG file.

8.31.3.2 unsigned int quality

JPEG image quality in range (0-100).

- 100 - Superb quality.
- 75 - Good quality.
- 50 - Normal quality.
- 10 - Poor quality.

8.31.3.3 unsigned int reserved[16]

Reserved for future use.

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

- FlyCapture2Defs.h

8.32 JPG2Option Struct Reference

Options for saving JPEG2000 image.

Public Member Functions

- JPG2Option ()

Public Attributes

- unsigned int quality
  JPEG saving quality in range (1-512).
- unsigned int reserved [16]
  Reserved for future use.

8.32.1 Detailed Description

Options for saving JPEG2000 image.

8.32.2 Constructor & Destructor Documentation

8.32.2.1 JPG2Option () `[inline]`

8.32.3 Member Data Documentation

8.32.3.1 unsigned int quality

JPEG saving quality in range (1-512).

8.32.3.2 unsigned int reserved[16]

Reserved for future use.

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

- FlyCapture2Defs.h

8.33 LUTData Struct Reference

Information about the camera's look up table.

Public Member Functions

- LUTData ()

Public Attributes

- bool supported
  Flag indicating if LUT is supported.
- bool enabled
  Flag indicating if LUT is enabled.
- unsigned int numBanks
  The number of LUT banks available (Always 1 for PGR LUT).
- unsigned int numChannels
  The number of LUT channels per bank available.
- unsigned int inputBitDepth
  The input bit depth of the LUT.
- unsigned int outputBitDepth
  The output bit depth of the LUT.
- unsigned int numEntries
  The number of entries in the LUT.
- unsigned int reserved [8]
  Reserved for future use.

8.33.1 Detailed Description

Information about the camera's look up table.

8.33.2 Constructor & Destructor Documentation

8.33.2.1 LUTData () `[inline]`

8.33.3 Member Data Documentation

8.33.3.1 bool enabled

Flag indicating if LUT is enabled.

8.33.3.2 unsigned int inputBitDepth

The input bit depth of the LUT.

8.33.3.3 unsigned int numBanks

The number of LUT banks available (Always 1 for PGR LUT).

8.33.3.4 unsigned int numChannels

The number of LUT channels per bank available.

8.33.3.5 unsigned int numEntries

The number of entries in the LUT.

8.33.3.6 unsigned int outputBitDepth

The output bit depth of the LUT.

8.33.3.7 unsigned int reserved[8]

Reserved for future use.

8.33.3.8 bool supported

Flag indicating if LUT is supported.

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

- FlyCapture2Defs.h

8.34 MACAddress Struct Reference

MAC address.

Public Member Functions

- MACAddress ()
- MACAddress (unsigned int macAddressValHigh, unsigned int macAddressValLow)
- bool operator== (const MACAddress &address)

  Equality operator.

- bool operator!= (const MACAddress &address)

  Inequality operator.

Public Attributes

- unsigned char octets [6]

8.34.1 Detailed Description

MAC address.

8.34.2 Constructor & Destructor Documentation

8.34.2.1 MACAddress () `[inline]`

8.34.2.2 MACAddress (unsigned int *macAddressValHigh*, unsigned int *macAddressValLow*) `[inline]`

8.34.3 Member Function Documentation

8.34.3.1 bool operator!= (const MACAddress & *address*) `[inline]`

Inequality operator.

8.34.3.2 bool operator== (const MACAddress & *address*) `[inline]`

Equality operator.

8.34.4 Member Data Documentation

8.34.4.1 unsigned char octets[6]

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

- FlyCapture2Defs.h

8.35 PGMOption Struct Reference

Options for saving PGM images.

Public Member Functions

- PGMOption ()

Public Attributes

- bool binaryFile
  Whether to save the PPM as a binary file.
- unsigned int reserved [16]
  Reserved for future use.

8.35.1 Detailed Description

Options for saving PGM images.

8.35.2 Constructor & Destructor Documentation

8.35.2.1 PGMOption () `[inline]`

8.35.3 Member Data Documentation

8.35.3.1 bool binaryFile

Whether to save the PPM as a binary file.

8.35.3.2 unsigned int reserved[16]

Reserved for future use.

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

- FlyCapture2Defs.h

8.36 PGRGuid Class Reference

A GUID to the camera.

Public Member Functions

- PGRGuid ()
  Constructor.
- bool operator== (const PGRGuid &guid)
  Equality operator.
- bool operator!= (const PGRGuid &guid)
  Inequality operator.

Public Attributes

- unsigned int value [4]

8.36.1 Detailed Description

A GUID to the camera.

It is used to uniquely identify a camera.

8.36.2 Constructor & Destructor Documentation

8.36.2.1 PGRGuid () `[inline]`

Constructor.

8.36.3 Member Function Documentation

8.36.3.1 bool operator!= (const PGRGuid & *guid*) `[inline]`

Inequality operator.

8.36.3.2 bool operator== (const PGRGuid & *guid*) `[inline]`

Equality operator.

8.36.4 Member Data Documentation

8.36.4.1 unsigned int value[4]

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

- FlyCapture2Defs.h

8.37 PNGOption Struct Reference

Options for saving PNG images.

Public Member Functions

- PNGOption ()

Public Attributes

- bool interlaced
  Whether to save the PNG as interlaced.
- unsigned int compressionLevel
  Compression level (0-9).
- unsigned int reserved [16]
  Reserved for future use.

8.37.1 Detailed Description

Options for saving PNG images.

8.37.2 Constructor & Destructor Documentation

8.37.2.1 PNGOption () `[inline]`

8.37.3 Member Data Documentation

8.37.3.1 unsigned int compressionLevel

Compression level (0-9).

0 is no compression, 9 is best compression.

8.37.3.2 bool interlaced

Whether to save the PNG as interlaced.

8.37.3.3 unsigned int reserved[16]

Reserved for future use.

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

- FlyCapture2Defs.h

8.38 PPMOption Struct Reference

Options for saving PPM images.

Public Member Functions

- PPMOption ()

Public Attributes

- bool binaryFile

  Whether to save the PPM as a binary file.
- unsigned int reserved [16]

  Reserved for future use.

8.38.1 Detailed Description

Options for saving PPM images.

8.38.2 Constructor & Destructor Documentation

8.38.2.1 PPMOption () `[inline]`

8.38.3 Member Data Documentation

8.38.3.1 bool binaryFile

Whether to save the PPM as a binary file.

8.38.3.2 unsigned int reserved[16]

Reserved for future use.

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

- FlyCapture2Defs.h

8.39 Property Struct Reference

A specific camera property.

Public Member Functions

- Property ()
- Property (PropertyType propType)

Public Attributes

- PropertyType type

  Property info type.

- bool present

  Flag indicating if the property is present.

- bool absControl

  Flag controlling absolute mode.

- bool onePush

  Flag controlling one push.

- bool onOff

  Flag controlling on/off.

- bool autoManualMode

  Flag controlling auto.

- unsigned int valueA

  Value A (integer).

- unsigned int valueB

  Value B (integer).

- float absValue

  Floating point value.

- unsigned int reserved [8]

  Reserved for future use.

8.39.1 Detailed Description

A specific camera property.

8.39.2 Constructor & Destructor Documentation

8.39.2.1 Property () `[inline]`

8.39.2.2 Property (PropertyType *propType*) `[inline]`

8.39.3 Member Data Documentation

8.39.3.1 bool absControl

Flag controlling absolute mode.

8.39.3.2 float absValue

Floating point value.

8.39.3.3 bool autoManualMode

Flag controlling auto.

8.39.3.4 bool onePush

Flag controlling one push.

8.39.3.5 bool onOff

Flag controlling on/off.

8.39.3.6 bool present

Flag indicating if the property is present.

8.39.3.7 unsigned int reserved[8]

Reserved for future use.

8.39.3.8 PropertyType type

Property info type.

8.39.3.9 unsigned int valueA

Value A (integer).

8.39.3.10 unsigned int valueB

Value B (integer).
Applies only to the white balance blue value. Use Value A for the red value.
The documentation for this struct was generated from the following file:

- FlyCapture2Defs.h

8.40 PropertyInfo Struct Reference

Information about a specific camera property.

Public Member Functions

- PropertyInfo ()
- PropertyInfo (PropertyType propType)

Public Attributes

- PropertyType type
  Property info type.
- bool present
  Flag indicating if the property is present.
- bool autoSupported
  Flag indicating if auto is supported.
- bool manualSupported
  Flag indicating if manual is supported.
- bool onOffSupported
  Flag indicating if on/off is supported.
- bool onePushSupported
  Flag indicating if one push is supported.
- bool absValSupported
  Flag indicating if absolute mode is supported.
- bool readOutSupported
  Flag indicating if property value can be read out.
- unsigned int min
  Minimum value (as an integer).
- unsigned int max
  Maximum value (as an integer).
- float absMin
  Minimum value (as a floating point value).
- float absMax
  Maximum value (as a floating point value).
- char pUnits [sk_maxStringLength]
  Textual description of units.
- char pUnitAbbr [sk_maxStringLength]
  Abbreviated textual description of units.
- unsigned int reserved [8]
  Reserved for future use.

8.40.1 Detailed Description

Information about a specific camera property.

This structure is also also used as the TriggerDelayInfo structure.

8.40.2 Constructor & Destructor Documentation

8.40.2.1 PropertyInfo () `[inline]`

8.40.2.2 PropertyInfo (PropertyType *propType*) `[inline]`

8.40.3 Member Data Documentation

8.40.3.1 float absMax

Maximum value (as a floating point value).

8.40.3.2 float absMin

Minimum value (as a floating point value).

8.40.3.3 bool absValSupported

Flag indicating if absolute mode is supported.

8.40.3.4 bool autoSupported

Flag indicating if auto is supported.

8.40.3.5 bool manualSupported

Flag indicating if manual is supported.

8.40.3.6 unsigned int max

Maximum value (as an integer).

8.40.3.7 unsigned int min

Minimum value (as an integer).

8.40.3.8 bool onePushSupported

Flag indicating if one push is supported.

8.40.3.9 bool onOffSupported

Flag indicating if on/off is supported.

8.40.3.10 bool present

Flag indicating if the property is present.

8.40.3.11 char pUnitAbbr[sk_maxStringLength]

Abbreviated textual description of units.

8.40.3.12 char pUnits[sk_maxStringLength]

Textual description of units.

8.40.3.13 bool readOutSupported

Flag indicating if property value can be read out.

8.40.3.14 unsigned int reserved[8]

Reserved for future use.

8.40.3.15 PropertyType type

Property info type.

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

– FlyCapture2Defs.h

8.41 StrobeControl Struct Reference

A camera strobe.

Public Member Functions

- StrobeControl ()

Public Attributes

- unsigned int source
  Source value.
- bool onOff
  Flag controlling on/off.
- unsigned int polarity
  Signal polarity.
- float delay
  Signal delay (in ms).
- float duration
  Signal duration (in ms).
- unsigned int reserved [8]
  Reserved for future use.

8.41.1 Detailed Description

A camera strobe.

8.41.2 Constructor & Destructor Documentation

8.41.2.1 StrobeControl () `[inline]`

8.41.3 Member Data Documentation

8.41.3.1 float delay

Signal delay (in ms).

8.41.3.2 float duration

Signal duration (in ms).

8.41.3.3 bool onOff

Flag controlling on/off.

8.41.3.4 unsigned int polarity

Signal polarity.

8.41.3.5 unsigned int reserved[8]

Reserved for future use.

8.41.3.6 unsigned int source

Source value.

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

– FlyCapture2Defs.h

8.42 StrobeInfo Struct Reference

A camera strobe property.

Public Member Functions

- StrobeInfo ()

Public Attributes

- unsigned int source
  Source value.
- bool present
  Presence of strobe.
- bool readOutSupported
  Flag indicating if strobe value can be read out.
- bool onOffSupported
  Flag indicating if on/off is supported.
- bool polaritySupported
  Flag indicating if polarity is supported.
- float minValue
  Minimum value.
- float maxValue
  Maximum value.
- unsigned int reserved [8]
  Reserved for future use.

8.42.1 Detailed Description

A camera strobe property.

8.42.2 Constructor & Destructor Documentation

8.42.2.1 StrobeInfo () `[inline]`

8.42.3 Member Data Documentation

8.42.3.1 float maxValue

Maximum value.

8.42.3.2 float minValue

Minimum value.

8.42.3.3 bool onOffSupported

Flag indicating if on/off is supported.

8.42.3.4 bool polaritySupported

Flag indicating if polarity is supported.

8.42.3.5 bool present

Presence of strobe.

8.42.3.6 bool readOutSupported

Flag indicating if strobe value can be read out.

8.42.3.7 unsigned int reserved[8]

Reserved for future use.

8.42.3.8 unsigned int source

Source value.

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

- FlyCapture2Defs.h

8.43 SystemInfo Struct Reference

Description of the system.

Public Attributes

- OSType osType
  Operating system type as described by OSType.
- char osDescription [sk_maxStringLength]
  Detailed description of the operating system.
- ByteOrder byteOrder
  Byte order of the system.
- size_t sysMemSize
  Amount of memory available on the system.
- char cpuDescription [sk_maxStringLength]
  Detailed description of the CPU.
- size_t numCpuCores
  Number of cores on all CPUs on the system.
- char driverList [sk_maxStringLength]
  List of drivers used.
- char libraryList [sk_maxStringLength]
  List of libraries used.
- char gpuDescription [sk_maxStringLength]
  Detailed description of the GPU.
- size_t screenWidth
  Screen resolution width in pixels.
- size_t screenHeight
  Screen resolution height in pixels.
- unsigned int reserved [16]
  Reserved for future use.

8.43.1 Detailed Description

Description of the system.

8.43.2 Member Data Documentation

8.43.2.1 ByteOrder byteOrder

Byte order of the system.

8.43.2.2 char cpuDescription[sk_maxStringLength]

Detailed description of the CPU.

8.43.2.3 char driverList[sk_maxStringLength]

List of drivers used.

8.43.2.4 char gpuDescription[sk_maxStringLength]

Detailed description of the GPU.

8.43.2.5 char libraryList[sk_maxStringLength]

List of libraries used.

8.43.2.6 size_t numCpuCores

Number of cores on all CPUs on the system.

8.43.2.7 char osDescription[sk_maxStringLength]

Detailed description of the operating system.

8.43.2.8 OSType osType

Operating system type as described by OSType.

8.43.2.9 unsigned int reserved[16]

Reserved for future use.

8.43.2.10 size_t screenHeight

Screen resolution height in pixels.

8.43.2.11 size_t screenWidth

Screen resolution width in pixels.

8.43.2.12 size_t sysMemSize

Amount of memory available on the system.

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

- Utilities.h

8.44 TIFFOption Struct Reference

Options for saving TIFF images.

Public Types

- enum CompressionMethod {
  NONE = 1,
  PACKBITS,
  DEFLATE,
  ADOBE_DEFLATE,
  CCITTFAX3,
  CCITTFAX4,
  LZW,
  JPEG }

Public Member Functions

* TIFFOption ()

Public Attributes

* CompressionMethod compression
  Compression method to use for encoding TIFF images.
* unsigned int reserved [16]
  Reserved for future use.

8.44.1 Detailed Description

Options for saving TIFF images.

8.44.2 Member Enumeration Documentation

8.44.2.1 enum CompressionMethod

Enumerator:

NONE Save without any compression.
PACKBITS Save using PACKBITS compression.
DEFLATE Save using DEFLATE compression (ZLIB compression).
ADOBE_DEFLATE Save using ADOBE DEFLATE compression.
CCITTFAX3 Save using CCITT Group 3 fax encoding.

This is only valid for 1-bit images only. Default to LZW for other bit depths.

CCITTFAX4 Save using CCITT Group 4 fax encoding.

This is only valid for 1-bit images only. Default to LZW for other bit depths.

LZW Save using LZW compression.
JPEG Save using JPEG compression.

This is only valid for 8-bit greyscale and 24-bit only. Default to LZW for other bit depths.

8.44.3 Constructor & Destructor Documentation

8.44.3.1 TIFFOption () `[inline]`

8.44.4 Member Data Documentation

8.44.4.1 CompressionMethod compression

Compression method to use for encoding TIFF images.

8.44.4.2 unsigned int reserved[16]

Reserved for future use.
The documentation for this struct was generated from the following file:

* FlyCapture2Defs.h

8.45 TimeStamp Struct Reference

Timestamp information.

Public Member Functions

- TimeStamp ()

Public Attributes

- long long seconds
  Seconds.
- unsigned int microSeconds
  Microseconds.
- unsigned int cycleSeconds
  1394 cycle time seconds.
- unsigned int cycleCount
  1394 cycle time count.
- unsigned int cycleOffset
  1394 cycle time offset.
- unsigned int reserved [8]
  Reserved for future use.

8.45.1 Detailed Description

Timestamp information.

8.45.2 Constructor & Destructor Documentation

8.45.2.1 TimeStamp () `[inline]`

8.45.3 Member Data Documentation

8.45.3.1 unsigned int cycleCount

1394 cycle time count.

8.45.3.2 unsigned int cycleOffset

1394 cycle time offset.

8.45.3.3 unsigned int cycleSeconds

1394 cycle time seconds.

8.45.3.4 unsigned int microSeconds

Microseconds.

8.45.3.5 unsigned int reserved[8]

Reserved for future use.

8.45.3.6 long long seconds

Seconds.

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

* FlyCapture2Defs.h

8.46 TopologyNode Class Reference

The TopologyNode class contains topology information that can be used to generate a tree structure of all cameras and devices connected to a computer.

Public Types

- enum PortType {
  NOT_CONNECTED = 1,
  CONNECTED_TO_PARENT,
  CONNECTED_TO_CHILD }

  Possible states of a port on a node.
- enum NodeType {
  COMPUTER,
  BUS,
  CAMERA,
  NODE }

  Type of node.

Public Member Functions

- TopologyNode ()

  Default constructor.
- TopologyNode (PGRGuid guid, int deviceId, NodeType nodeType, InterfaceType interfaceType)

  Constructor.
- virtual ~TopologyNode ()

  Default destructor.
- TopologyNode (const TopologyNode &other)

  Copy constructor.
- virtual TopologyNode & operator= (const TopologyNode &other)

  Assignment operator.
- virtual PGRGuid GetGuid ()

  Get the PGRGuid associated with the node.
- virtual int GetDeviceId ()

  Get the device ID associated with the node.
- virtual NodeType GetNodeType ()

  Get the node type associated with the node.
- virtual InterfaceType GetInterfaceType ()

  Get the interface type associated with the node.
- virtual unsigned int GetNumChildren ()

  Get the number of child nodes.
- virtual TopologyNode GetChild (unsigned int position)

  Get child node located at the specified position.
- virtual void AddChild (TopologyNode childNode)

  Add the specified TopologyNode as a child of the node.

- virtual unsigned int GetNumPorts ()
  Get the number of ports.
- virtual PortType GetPortType (unsigned int position)
  Get type of port located at the specified position.
- virtual void AddPort (PortType childPort)
  Add the specified PortType as a port of the node.
- virtual bool AssignGuidToNode (PGRGuid guid, int deviceId)
  Assign a PGRGuid and device ID to the node.
- virtual bool AssignGuidToNode (PGRGuid guid, int deviceId, NodeType nodeType)
  Assign a PGRGuid, device ID and nodeType to the node.

8.46.1 Detailed Description

The TopologyNode class contains topology information that can be used to generate a tree structure of all cameras and devices connected to a computer.

8.46.2 Member Enumeration Documentation

8.46.2.1 enum NodeType

Type of node.
Enumerator:

COMPUTER
BUS
CAMERA
NODE

8.46.2.2 enum PortType

Possible states of a port on a node.
Enumerator:

NOT_CONNECTED
CONNECTED_TO_PARENT
CONNECTED_TO_CHILD

8.46.3 Constructor & Destructor Documentation

8.46.3.1 TopologyNode ()

Default constructor.

8.46.3.2 TopologyNode (PGRGuid *guid*, int *deviceId*, NodeType *nodeType*, InterfaceType *interfaceType*)

Constructor.
Parameters:

guid The PGRGuid of the node (if applicable).
deviceId Device ID of the node.
nodeType Type of the node.
interfaceType Interface type of the node.

8.46.3.3 virtual ~TopologyNode () `[virtual]`

Default destructor.

8.46.3.4 TopologyNode (const TopologyNode & *other*)

Copy constructor.

8.46.4 Member Function Documentation

8.46.4.1 virtual void AddChild (TopologyNode *childNode*) `[virtual]`

Add the specified TopologyNode as a child of the node.
Parameters:

childNode The TopologyNode to add.

8.46.4.2 virtual void AddPort (PortType *childPort*) `[virtual]`

Add the specified PortType as a port of the node.
Parameters:

childPort The port to add.

8.46.4.3 virtual bool AssignGuidToNode (PGRGuid *guid*, int *deviceId*, NodeType *nodeType*) `[virtual]`

Assign a PGRGuid, device ID and nodeType to the node.
Parameters:

guid PGRGuid to be assigned.
deviceId Device ID to be assigned.
nodeType NodeType to be assigned

Returns:

Whether the data was successfully set to the node.

8.46.4.4 virtual bool AssignGuidToNode (PGRGuid *guid*, int *deviceId*) `[virtual]`

Assign a PGRGuid and device ID to the node.
Parameters:

guid PGRGuid to be assigned.
deviceId Device ID to be assigned.

Returns:

Whether the data was successfully set to the node.

8.46.4.5 virtual TopologyNode GetChild (unsigned int *position*) `[virtual]`

Get child node located at the specified position.
Parameters:

position Position of the node.

Returns:

TopologyNode at the specified position.

8.46.4.6 virtual int GetDeviceId () `[virtual]`

Get the device ID associated with the node.
Returns:

Device ID of the node.

8.46.4.7 virtual PGRGuid GetGuid () `[virtual]`

Get the PGRGuid associated with the node.
Returns:

PGRGuid of the node.

8.46.4.8 virtual InterfaceType GetInterfaceType () `[virtual]`

Get the interface type associated with the node.
Returns:

Interface type of the node.

8.46.4.9 virtual NodeType GetNodeType () `[virtual]`

Get the node type associated with the node.
Returns:

Node type of the node.

8.46.4.10 virtual unsigned int GetNumChildren () `[virtual]`

Get the number of child nodes.
Returns:

Number of child nodes.

8.46.4.11 virtual unsigned int GetNumPorts () `[virtual]`

Get the number of ports.
Returns:

Number of ports.

8.46.4.12 virtual PortType GetPortType (unsigned int *position*) `[virtual]`

Get type of port located at the specified position.
Parameters:

position Position of the port.
Returns:

PortType at the specified position.

8.46.4.13 virtual TopologyNode& operator= (const TopologyNode & *other*) `[virtual]`

Assignment operator.
Parameters:

other The TopologyNode to copy from.
The documentation for this class was generated from the following file:
- TopologyNode.h

8.47 TriggerMode Struct Reference

A camera trigger.

Public Member Functions

- TriggerMode ()

Public Attributes

- bool onOff
  Flag controlling on/off.
- unsigned int polarity
  Polarity value.
- unsigned int source
  Source value.
- unsigned int mode
  Mode value.
- unsigned int parameter
  Parameter value.
- unsigned int reserved [8]
  Reserved for future use.

8.47.1 Detailed Description

A camera trigger.

8.47.2 Constructor & Destructor Documentation

8.47.2.1 TriggerMode () `[inline]`

8.47.3 Member Data Documentation

8.47.3.1 unsigned int mode

Mode value.

8.47.3.2 bool onOff

Flag controlling on/off.

8.47.3.3 unsigned int parameter

Parameter value.

8.47.3.4 unsigned int polarity

Polarity value.

8.47.3.5 unsigned int reserved[8]

Reserved for future use.

8.47.3.6 unsigned int source

Source value.

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

- FlyCapture2Defs.h

8.48 TriggerModeInfo Struct Reference

Information about a camera trigger property.

Public Member Functions

- TriggerModeInfo ()

Public Attributes

- bool present
  Presence of trigger mode.
- bool readOutSupported
  Flag indicating if trigger value can be read out.
- bool onOffSupported
  Flag indicating if on/off is supported.
- bool polaritySupported
  Flag indicating if polarity is supported.
- bool valueReadable
  Flag indicating if the value is readable.
- unsigned int sourceMask
  Source mask.
- bool softwareTriggerSupported
  Flag indicating if software trigger is supported.
- unsigned int modeMask
  Mode mask.
- unsigned int reserved [8]
  Reserved for future use.

8.48.1 Detailed Description

Information about a camera trigger property.

8.48.2 Constructor & Destructor Documentation

8.48.2.1 TriggerModeInfo () `[inline]`

8.48.3 Member Data Documentation

8.48.3.1 unsigned int modeMask

Mode mask.

8.48.3.2 bool onOffSupported

Flag indicating if on/off is supported.

8.48.3.3 bool polaritySupported

Flag indicating if polarity is supported.

8.48.3.4 bool present

Presence of trigger mode.

8.48.3.5 bool readOutSupported

Flag indicating if trigger value can be read out.

8.48.3.6 unsigned int reserved[8]

Reserved for future use.

8.48.3.7 bool softwareTriggerSupported

Flag indicating if software trigger is supported.

8.48.3.8 unsigned int sourceMask

Source mask.

8.48.3.9 bool valueReadable

Flag indicating if the value is readable.

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

- FlyCapture2Defs.h

8.49 Utilities Class Reference

The Utility class is generally used to query for general system information such as operating system, available memory etc.

Static Public Member Functions

- static Error GetSystemInfo (SystemInfo ∗pSystemInfo)
  Get system information.
- static Error GetLibraryVersion (FC2Version ∗pVersion)
  Get library version.
- static Error LaunchBrowser (const char ∗pAddress)
  Launch a URL in the system default browser.
- static Error LaunchHelp (const char ∗pFileName)
  Open a CHM file in the system default CHM viewer.
- static Error LaunchCommand (const char ∗pCommand)
  Execute a command in the terminal.
- static Error LaunchCommandAsync (const char ∗pCommand, AsyncCommandCallback pCallback, void ∗pUserData)
  Execute a command in the terminal.

8.49.1 Detailed Description

The Utility class is generally used to query for general system information such as operating system, available memory etc.
It can also be used to launch browsers, CHM viewers or terminal commands.

8.49.2 Member Function Documentation

8.49.2.1 static Error GetLibraryVersion (FC2Version ∗ *pVersion*) `[static]`

Get library version.
Parameters:

pVersion Structure to receive the library version.

Returns:

An Error indicating the success or failure of the function.

8.49.2.2 static Error GetSystemInfo (SystemInfo ∗ *pSystemInfo*) `[static]`

Get system information.
Parameters:

pSystemInfo Structure to receive system information.

Returns:

An Error indicating the success or failure of the function.

8.49.2.3 static Error LaunchBrowser (const char ∗ *pAddress*) `[static]`

Launch a URL in the system default browser.

Parameters:

pAddress URL to open in browser.

Returns:

An Error indicating the success or failure of the function.

8.49.2.4 static Error LaunchCommand (const char ∗ *pCommand*) `[static]`

Execute a command in the terminal.
This is a blocking call that will return when the command completes.

Parameters:

pCommand Command to execute.

See also:

LaunchCommandAsync()

Returns:

An Error indicating the success or failure of the function.

8.49.2.5 static Error LaunchCommandAsync (const char ∗ *pCommand*, AsyncCommandCallback *pCallback*, void ∗ *pUserData*) `[static]`

Execute a command in the terminal.
This is a non-blocking call that will return immediately. The return value of the command can be retrieved in the callback.

Parameters:

pCommand Command to execute.
pCallback Callback to fire when command is complete.
pUserData Data pointer to pass to callback.

See also:

LaunchCommand()

Returns:

An Error indicating the success or failure of the function.

8.49.2.6 static Error LaunchHelp (const char ∗ *pFileName*) `[static]`

Open a CHM file in the system default CHM viewer.

Parameters:

pFileName Filename of CHM file to open.

Returns:

An Error indicating the success or failure of the function.

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

- Utilities.h

8.50 VideoModes Struct Reference

Information about a single DCAM format.

Public Attributes

- FlyCapture2::VideoMode videoMode
- FlyCapture2::FrameRate frameRate
- unsigned int width
- unsigned int height

8.50.1 Detailed Description

Information about a single DCAM format.

8.50.2 Member Data Documentation

8.50.2.1 FlyCapture2::FrameRate frameRate

8.50.2.2 unsigned int height

8.50.2.3 FlyCapture2::VideoMode videoMode

8.50.2.4 unsigned int width

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

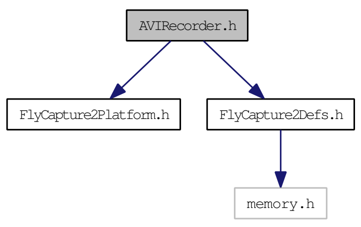
- PGRDirectShow.h

Chapter 9

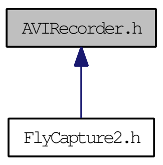
File Documentation

9.1 AVIRecorder.h File Reference

Include dependency graph for AVIRecorder.h:



This graph shows which files directly or indirectly include this file:



Classes

- class AVIRecorder

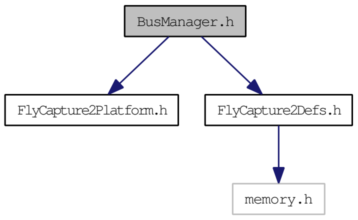
  The AVIRecorder class provides the functionality for the user to record images to an AVI file.

Namespaces

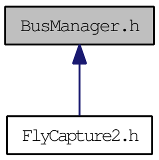
- namespace FlyCapture2

9.2 BusManager.h File Reference

Include dependency graph for BusManager.h:



This graph shows which files directly or indirectly include this file:



Classes

- class BusManager
  The BusManager class provides the functionality for the user to get an PGRGuid for a desired camera or device easily.

Namespaces

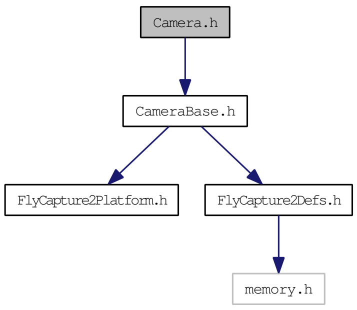
- namespace FlyCapture2

Typedefs

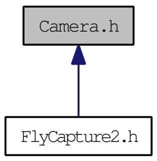
- typedef void(∗ BusEventCallback)(void ∗pParameter, unsigned int serialNumber)
  Bus event callback function prototype.
- typedef void ∗ CallbackHandle
  Handle that is returned when registering a callback.

9.3 Camera.h File Reference

Include dependency graph for Camera.h:



This graph shows which files directly or indirectly include this file:



Classes

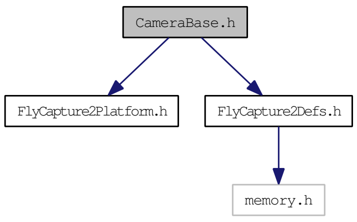
- class Camera
  The Camera object represents a physical camera that uses the IIDC register set.

Namespaces

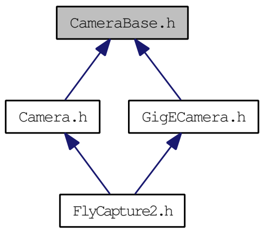
- namespace FlyCapture2

9.4 CameraBase.h File Reference

Include dependency graph for CameraBase.h:



This graph shows which files directly or indirectly include this file:



Classes

- class CameraBase
  The CameraBase class is an abstract base class that defines a general interface to a camera.

Namespaces

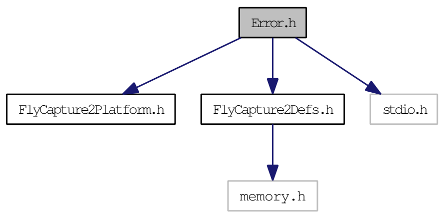
- namespace FlyCapture2

Typedefs

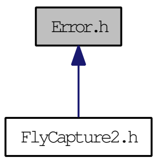
- typedef void(∗ ImageEventCallback)(class Image ∗pImage, const void ∗pCallbackData)
  Image event callback function prototype.

9.5 Error.h File Reference

Include dependency graph for Error.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Error

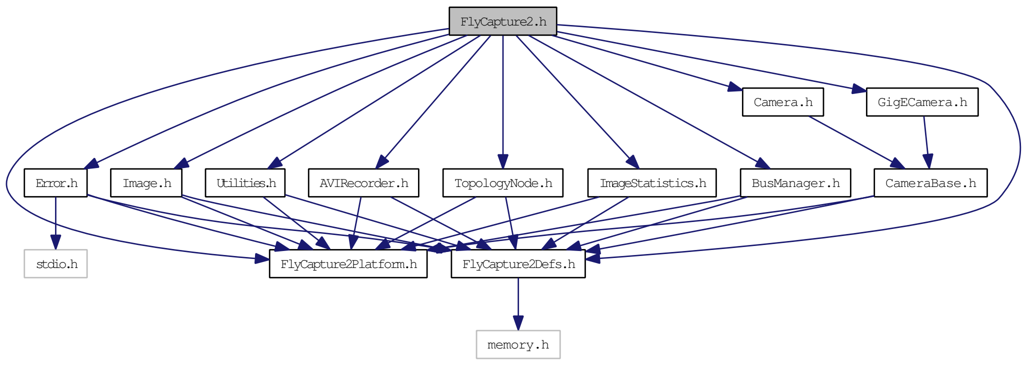
  The Error object represents an error that is returned from the library.

Namespaces

- namespace FlyCapture2

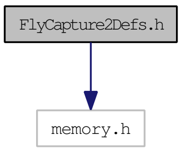
9.6 FlyCapture2.h File Reference

Include dependency graph for FlyCapture2.h:

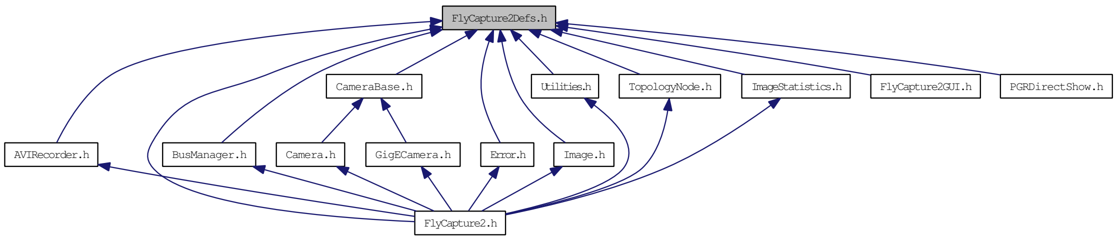


9.7 FlyCapture2Defs.h File Reference

Include dependency graph for FlyCapture2Defs.h:



This graph shows which files directly or indirectly include this file:



Classes

- struct FC2Version
  The current version of the library.
- class PGRGuid
  A GUID to the camera.
- struct IPAddress
  IPv4 address.
- struct MACAddress
  MAC address.
- struct GigEProperty
  A GigE property.
- struct GigEStreamChannel
  Information about a single GigE stream channel.
- struct GigEConfig
  Configuration for a GigE camera.
- struct GigEImageSettingsInfo
  Format 7 information for a single mode.
- struct GigEImageSettings
  Image settings for a GigE camera.
- struct Format7ImageSettings
  Format 7 image settings.
- struct Format7Info
  Format 7 information for a single mode.
- struct Format7PacketInfo
  Format 7 packet information.

- struct FC2Config
  Configuration for a camera.
- struct PropertyInfo
  Information about a specific camera property.
- struct Property
  A specific camera property.
- struct TriggerModeInfo
  Information about a camera trigger property.
- struct TriggerMode
  A camera trigger.
- struct StrobeInfo
  A camera strobe property.
- struct StrobeControl
  A camera strobe.
- struct TimeStamp
  Timestamp information.
- struct ConfigROM
  Camera configuration ROM.
- struct CameraInfo
  Camera information.
- struct EmbeddedImageInfoProperty
  Properties of a single embedded image info property.
- struct EmbeddedImageInfo
  Properties of the possible embedded image information.
- struct ImageMetadata
  Metadata related to an image.
- struct LUTData
  Information about the camera's look up table.
- struct HostAdapterStats
  Information about the host adapter's statistics.
- struct CameraStats
  Camera diagnostic information.
- struct PNGOption
  Options for saving PNG images.
- struct PPMOption
  Options for saving PPM images.
- struct PGMOption
  Options for saving PGM images.
- struct TIFFOption
  Options for saving TIFF images.
- struct JPEGOption
  Options for saving JPEG image.

- struct JPG2Option
  Options for saving JPEG2000 image.
- struct AVIOption
  Options for saving AVI files.

Namespaces

- namespace FlyCapture2

Defines

- #define NULL 0
- #define FULL_32BIT_VALUE 0x7FFFFFFF

Typedefs

- typedef PropertyInfo TriggerDelayInfo
  The TriggerDelayInfo structure is identical to PropertyInfo.
- typedef Property TriggerDelay
  The TriggerDelay structure is identical to Property.

Enumerations

- enum ErrorType {
  PGRERROR_UNDEFINED = -1,
  PGRERROR_OK,
  PGRERROR_FAILED,
  PGRERROR_NOT_IMPLEMENTED,
  PGRERROR_FAILED_BUS_MASTER_CONNECTION,
  PGRERROR_NOT_CONNECTED,
  PGRERROR_INIT_FAILED,
  PGRERROR_NOT_INTITIALIZED,
  PGRERROR_INVALID_PARAMETER,
  PGRERROR_INVALID_SETTINGS,
  PGRERROR_INVALID_BUS_MANAGER,
  PGRERROR_MEMORY_ALLOCATION_FAILED,
  PGRERROR_LOW_LEVEL_FAILURE,
  PGRERROR_NOT_FOUND,
  PGRERROR_FAILED_GUID,
  PGRERROR_INVALID_PACKET_SIZE,
  PGRERROR_INVALID_MODE,
  PGRERROR_NOT_IN_FORMAT7,
  PGRERROR_NOT_SUPPORTED,
  PGRERROR_TIMEOUT,
  PGRERROR_BUS_MASTER_FAILED,
  PGRERROR_INVALID_GENERATION,
  PGRERROR_LUT_FAILED,
  PGRERROR_IIDC_FAILED,
  PGRERROR_STROBE_FAILED,
  PGRERROR_TRIGGER_FAILED,
  PGRERROR_PROPERTY_FAILED,

PGRERROR_PROPERTY_NOT_PRESENT,
PGRERROR_REGISTER_FAILED,
PGRERROR_READ_REGISTER_FAILED,
PGRERROR_WRITE_REGISTER_FAILED,
PGRERROR_ISOCH_FAILED,
PGRERROR_ISOCH_ALREADY_STARTED,
PGRERROR_ISOCH_NOT_STARTED,
PGRERROR_ISOCH_START_FAILED,
PGRERROR_ISOCH_RETRIEVE_BUFFER_FAILED,
PGRERROR_ISOCH_STOP_FAILED,
PGRERROR_ISOCH_SYNC_FAILED,
PGRERROR_ISOCH_BANDWIDTH_EXCEEDED,
PGRERROR_IMAGE_CONVERSION_FAILED,
PGRERROR_IMAGE_LIBRARY_FAILURE,
PGRERROR_BUFFER_TOO_SMALL,
PGRERROR_IMAGE_CONSISTENCY_ERROR,
PGRERROR_FORCE_32BITS = FULL_32BIT_VALUE }
The error types returned by functions.

- enum BusCallbackType {
BUS_RESET,
ARRIVAL,
REMOVAL,
CALLBACK_TYPE_FORCE_32BITS = FULL_32BIT_VALUE }
The type of bus callback to register a callback function for.

- enum GrabMode {
DROP_FRAMES,
BUFFER_FRAMES,
UNSPECIFIED_GRAB_MODE,
GRAB_MODE_FORCE_32BITS = FULL_32BIT_VALUE }
The grab strategy employed during image transfer.

- enum GrabTimeout {
TIMEOUT_NONE = 0,
TIMEOUT_INFINITE = -1,
TIMEOUT_UNSPECIFIED = -2,
GRAB_TIMEOUT_FORCE_32BITS = FULL_32BIT_VALUE }
Timeout options for grabbing images.

- enum BandwidthAllocation {
BANDWIDTH_ALLOCATION_OFF = 0,
BANDWIDTH_ALLOCATION_ON = 1,
BANDWIDTH_ALLOCATION_UNSUPPORTED = 2,
BANDWIDTH_ALLOCATION_UNSPECIFIED = 3,
BANDWIDTH_ALLOCATION_FORCE_32BITS = FULL_32BIT_VALUE }
Bandwidth allocation options for 1394 devices.

- enum InterfaceType {
INTERFACE_IEEE1394,
INTERFACE_USB2,
INTERFACE_GIGE,
INTERFACE_UNKNOWN,
INTERFACE_TYPE_FORCE_32BITS = FULL_32BIT_VALUE }
Interfaces that a camera may use to communicate with a host.

- enum PropertyType {
BRIGHTNESS,
AUTO_EXPOSURE,
SHARPNESS,
WHITE_BALANCE,
HUE,
SATURATION,
GAMMA,
IRIS,
FOCUS,
ZOOM,
PAN,
TILT,
SHUTTER,
GAIN,
TRIGGER_MODE,
TRIGGER_DELAY,
FRAME_RATE,
TEMPERATURE,
UNSPECIFIED_PROPERTY_TYPE,
PROPERTY_TYPE_FORCE_32BITS = FULL_32BIT_VALUE }
  Camera properties.

- enum FrameRate {
FRAMERATE_1_875,
FRAMERATE_3_75,
FRAMERATE_7_5,
FRAMERATE_15,
FRAMERATE_30,
FRAMERATE_60,
FRAMERATE_120,
FRAMERATE_240,
FRAMERATE_FORMAT7,
NUM_FRAMERATES,
FRAMERATE_FORCE_32BITS = FULL_32BIT_VALUE }
  Frame rates in frames per second.

- enum VideoMode {
VIDEOMODE_160x120YUV444,
VIDEOMODE_320x240YUV422,
VIDEOMODE_640x480YUV411,
VIDEOMODE_640x480YUV422,
VIDEOMODE_640x480RGB,
VIDEOMODE_640x480Y8,
VIDEOMODE_640x480Y16,
VIDEOMODE_800x600YUV422,
VIDEOMODE_800x600RGB,
VIDEOMODE_800x600Y8,
VIDEOMODE_800x600Y16,
VIDEOMODE_1024x768YUV422,
VIDEOMODE_1024x768RGB,
VIDEOMODE_1024x768Y8,
VIDEOMODE_1024x768Y16,
VIDEOMODE_1280x960YUV422,

VIDEOMODE_1280x960RGB,
VIDEOMODE_1280x960Y8,
VIDEOMODE_1280x960Y16,
VIDEOMODE_1600x1200YUV422,
VIDEOMODE_1600x1200RGB,
VIDEOMODE_1600x1200Y8,
VIDEOMODE_1600x1200Y16,
VIDEOMODE_FORMAT7,
NUM_VIDEOMODES,
VIDEOMODE_FORCE_32BITS = FULL_32BIT_VALUE }
DCAM video modes.

- enum Mode {
MODE_0 = 0,
MODE_1,
MODE_2,
MODE_3,
MODE_4,
MODE_5,
MODE_6,
MODE_7,
MODE_8,
MODE_9,
MODE_10,
MODE_11,
MODE_12,
MODE_13,
MODE_14,
MODE_15,
MODE_16,
MODE_17,
MODE_18,
MODE_19,
MODE_20,
MODE_21,
MODE_22,
MODE_23,
MODE_24,
MODE_25,
MODE_26,
MODE_27,
MODE_28,
MODE_29,
MODE_30,
MODE_31,
NUM_MODES,
MODE_FORCE_32BITS = FULL_32BIT_VALUE }
Camera modes for DCAM formats as well as Format7.

- enum PixelFormat {
PIXEL_FORMAT_MONO8 = 0x80000000,
PIXEL_FORMAT_411YUV8 = 0x40000000,
PIXEL_FORMAT_422YUV8 = 0x20000000,
PIXEL_FORMAT_444YUV8 = 0x10000000,

PIXEL_FORMAT_RGB8 = 0x08000000,
PIXEL_FORMAT_MONO16 = 0x04000000,
PIXEL_FORMAT_RGB16 = 0x02000000,
PIXEL_FORMAT_S_MONO16 = 0x01000000,
PIXEL_FORMAT_S_RGB16 = 0x00800000,
PIXEL_FORMAT_RAW8 = 0x00400000,
PIXEL_FORMAT_RAW16 = 0x00200000,
PIXEL_FORMAT_MONO12 = 0x00100000,
PIXEL_FORMAT_RAW12 = 0x00080000,
PIXEL_FORMAT_BGR = 0x80000008,
PIXEL_FORMAT_BGRU = 0x40000008,
PIXEL_FORMAT_RGB = PIXEL_FORMAT_RGB8,
PIXEL_FORMAT_RGBU = 0x40000002,
NUM_PIXEL_FORMATS = 15,
UNSPECIFIED_PIXEL_FORMAT = 0 }

Pixel formats available for Format7 modes.

- enum BusSpeed {
BUSSPEED_S100,
BUSSPEED_S200,
BUSSPEED_S400,
BUSSPEED_S480,
BUSSPEED_S800,
BUSSPEED_S1600,
BUSSPEED_S3200,
BUSSPEED_S5000,
BUSSPEED_10BASE_T,
BUSSPEED_100BASE_T,
BUSSPEED_1000BASE_T,
BUSSPEED_10000BASE_T,
BUSSPEED_S_FASTEST,
BUSSPEED_ANY,
BUSSPEED_SPEED_UNKNOWN = -1,
BUSSPEED_FORCE_32BITS = FULL_32BIT_VALUE }

Bus speeds.

- enum DriverType {
DRIVER_1394_CAM,
DRIVER_1394_PRO,
DRIVER_1394_JUJU,
DRIVER_1394_VIDEO1394,
DRIVER_1394_RAW1394,
DRIVER_USB_NONE,
DRIVER_USB_CAM,
DRIVER_USB3_PRO,
DRIVER_GIGE_NONE,
DRIVER_GIGE_FILTER,
DRIVER_GIGE_PRO,
DRIVER_UNKNOWN = -1,
DRIVER_FORCE_32BITS = FULL_32BIT_VALUE }

Types of low level drivers that flycapture uses.

- enum ColorProcessingAlgorithm {
DEFAULT,
NO_COLOR_PROCESSING,

NEAREST_NEIGHBOR,
EDGE_SENSING,
HQ_LINEAR,
RIGOROUS,
IPP,
COLOR_PROCESSING_ALGORITHM_FORCE_32BITS = FULL_32BIT_VALUE
}
Color processing algorithms.

- enum BayerTileFormat {
NONE,
RGGB,
GRBG,
GBRG,
BGGR,
BT_FORCE_32BITS = FULL_32BIT_VALUE }
Bayer tile formats.
- enum ImageFileFormat {
FROM_FILE_EXT = -1,
PGM,
PPM,
BMP,
JPEG,
JPEG2000,
TIFF,
PNG,
RAW,
IMAGE_FILE_FORMAT_FORCE_32BITS = FULL_32BIT_VALUE }
File formats to be used for saving images to disk.
- enum GigEPropertyType {
HEARTBEAT,
HEARTBEAT_TIMEOUT,
PACKET_SIZE,
PACKET_DELAY }
Possible properties that can be queried from the camera.

Variables

- static const unsigned int sk_maxStringLength = 512
The maximum length that is allocated for a string.
- static const unsigned int sk_maxNumPorts = 32
The maximum number of ports one device can have.

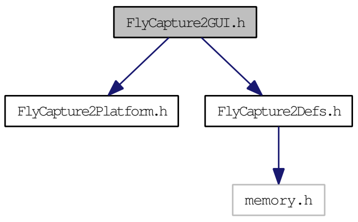
9.7.1 Define Documentation

9.7.1.1 #define FULL_32BIT_VALUE 0x7FFFFFFF

9.7.1.2 #define NULL 0

9.8 FlyCapture2GUI.h File Reference

Include dependency graph for FlyCapture2GUI.h:



Classes

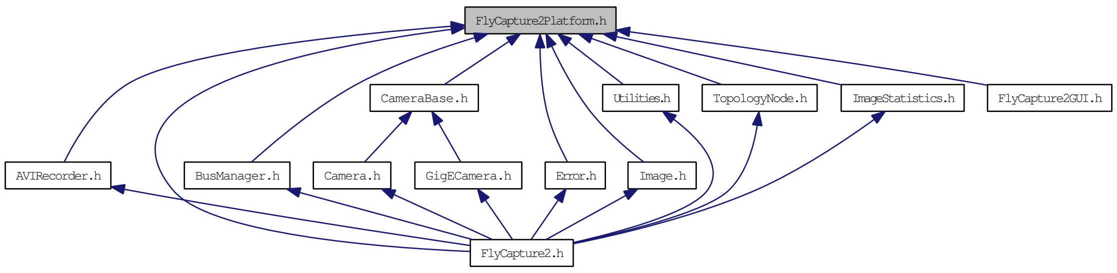
- class CameraControlDlg
  The CameraControlDlg object represents a GTKmm dialog that provides a graphical interface to a specified camera.
- class CameraSelectionDlg
  The CameraSelectionDlg object represents a GTKmm dialog that provides a graphical interface that lists the number of cameras available to the library.

Namespaces

- namespace FlyCapture2

9.9 FlyCapture2Platform.h File Reference

This graph shows which files directly or indirectly include this file:



Defines

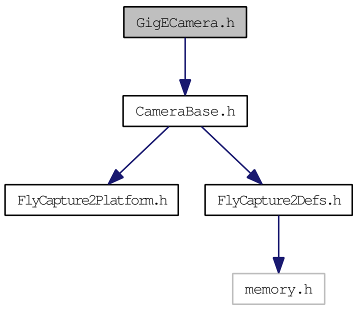
- #define FLYCAPTURE2_API

9.9.1 Define Documentation

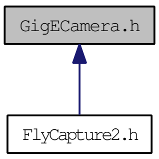
9.9.1.1 #define FLYCAPTURE2_API

9.10 GigECamera.h File Reference

Include dependency graph for GigECamera.h:



This graph shows which files directly or indirectly include this file:



Classes

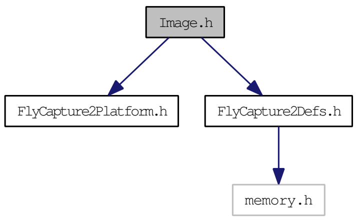
- class GigECamera
  The GigECamera object represents a physical Gigabit Ethernet camera.

Namespaces

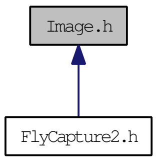
- namespace FlyCapture2

9.11 Image.h File Reference

Include dependency graph for Image.h:



This graph shows which files directly or indirectly include this file:



Classes

- class Image

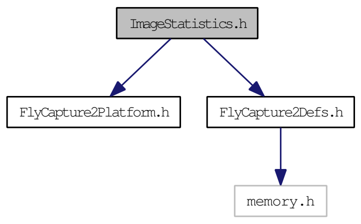
  The Image class is used to retrieve images from a camera, convert between multiple pixel formats and save images to disk.

Namespaces

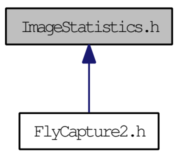
- namespace FlyCapture2

9.12 ImageStatistics.h File Reference

Include dependency graph for ImageStatistics.h:



This graph shows which files directly or indirectly include this file:



Classes

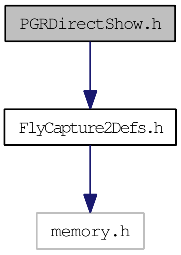
- class ImageStatistics
  The ImageStatistics object represents image statistics for an image.

Namespaces

- namespace FlyCapture2

9.13 PGRDirectShow.h File Reference

Include dependency graph for PGRDirectShow.h:



Classes

- struct VideoModes
  Information about a single DCAM format.
- struct DCAMFormats
  DCAM formats supported by the camera as returned by GetAvailableFormats().

Functions

- STDMETHOD() GetImageFormat (unsigned long ∗pulFormat)=0
  Returns the index of the format currently set.
- STDMETHOD() SetImageFormat (unsigned long ulFormat)=0
  Sets the index of the format to be used.

Register functions

These functions deal with register manipulation on the camera.

- STDMETHOD() ReadRegister (unsigned int offset, unsigned int ∗pValue)=0
  Read the specified register from the camera.
- STDMETHOD() WriteRegister (unsigned int offset, unsigned int value, bool broadcast=false)=0
  Write to the specified register on the camera.

Brightness functions

These functions deal with brightness control on the camera.

- STDMETHOD() GetBrightness (long ∗pBrightness, bool ∗pIsAutoEnabled=NULL)=0
- STDMETHOD() SetBrightness (long brightness, bool isAutoEnabled=false)=0
- STDMETHOD() GetBrightnessRange (long ∗pMin, long ∗pMax, bool ∗pIsAutoSupported=NULL)=0
- STDMETHOD() GetAbsBrightness (float ∗pBrightness, bool ∗pIsAutoEnabled=NULL)=0
- STDMETHOD() SetAbsBrightness (float brightness, bool isAutoEnabled=false)=0
- STDMETHOD() GetAbsBrightnessRange (float ∗pMin, float ∗pMax, bool ∗pIsAutoSupported=NULL, const char ∗∗pUnits=NULL)=0

Exposure functions

These functions deal with exposure control on the camera.

- STDMETHOD() GetExposure (long ∗pExposure, bool ∗pIsAutoEnabled=NULL)=0
- STDMETHOD() SetExposure (long exposure, bool isAutoEnabled=false)=0

- STDMETHOD() GetExposureRange (long ∗pMin, long ∗pMax, bool ∗pIsAutoSupported=NULL)=0
- STDMETHOD() GetAbsExposure (float ∗pExposure, bool ∗pIsAutoEnabled=NULL)=0
- STDMETHOD() SetAbsExposure (float exposure, bool isAutoEnabled=false)=0
- STDMETHOD() GetAbsExposureRange (float ∗pMin, float ∗pMax, bool ∗pIsAutoSupported=NULL, const char ∗∗pUnits=NULL)=0

Shutter functions

These functions deal with shutter control on the camera.

- STDMETHOD() GetShutter (long ∗pShutter, bool ∗pIsAutoEnabled=NULL)=0
- STDMETHOD() SetShutter (long shutter, bool isAutoEnabled=false)=0
- STDMETHOD() GetShutterRange (long ∗pMin, long ∗pMax, bool ∗pIsAutoSupported=NULL)=0
- STDMETHOD() GetAbsShutter (float ∗pShutter, bool ∗pIsAutoEnabled=NULL)=0
- STDMETHOD() SetAbsShutter (float shutter, bool isAutoEnabled=false)=0
- STDMETHOD() GetAbsShutterRange (float ∗pMin, float ∗pMax, bool ∗pIsAutoSupported=NULL, const char ∗∗pUnits=NULL)=0

Sharpness functions

These functions deal with sharpness control on the camera.

- STDMETHOD() GetSharpness (long ∗pSharpness, bool ∗pIsAutoEnabled=NULL)=0
- STDMETHOD() SetSharpness (long sharpness, bool isAutoEnabled=false)=0
- STDMETHOD() GetSharpnessRange (long ∗pMin, long ∗pMax, bool ∗pIsAutoSupported=NULL)=0
- STDMETHOD() GetAbsSharpness (float ∗plSharpness, bool ∗pIsAutoEnabled=NULL)=0
- STDMETHOD() SetAbsSharpness (float lSharpness, bool isAutoEnabled=false)=0
- STDMETHOD() GetAbsSharpnessRange (float ∗pMin, float ∗pMax, bool ∗pIsAutoSupported=NULL, const char ∗∗pUnits=NULL)=0

Gain functions

These functions deal with gain control on the camera.

- STDMETHOD() GetGain (long ∗pGain, bool ∗pIsAutoEnabled=NULL)=0
- STDMETHOD() SetGain (long gain, bool isAutoEnabled=false)=0
- STDMETHOD() GetGainRange (long ∗pMin, long ∗pMax, bool ∗pIsAutoSupported=NULL)=0
- STDMETHOD() GetAbsGain (float ∗gain, bool ∗pIsAutoEnabled=NULL)=0
- STDMETHOD() SetAbsGain (float lGain, bool isAutoEnabled=false)=0
- STDMETHOD() GetAbsGainRange (float ∗pMin, float ∗pMax, bool ∗pIsAutoSupported=NULL, const char ∗∗pUnits=NULL)=0

Hue functions

These functions deal with hue control on the camera.

- STDMETHOD() GetHue (long ∗pHue, bool ∗pIsAutoEnabled=NULL)=0
- STDMETHOD() SetHue (long hue, bool isAutoEnabled=false)=0
- STDMETHOD() GetHueRange (long ∗pMin, long ∗pMax, bool ∗pIsAutoSupported=NULL)=0
- STDMETHOD() GetAbsHue (float ∗pHue, bool ∗pIsAutoEnabled=NULL)=0
- STDMETHOD() SetAbsHue (float hue, bool isAutoEnabled=false)=0
- STDMETHOD() GetAbsHueRange (float ∗pMin, float ∗pMax, bool ∗pIsAutoSupported=NULL, const char ∗∗pUnits=NULL)=0

Saturation functions

These functions deal with saturation control on the camera.

- STDMETHOD() GetSaturation (long ∗pSaturation, bool ∗pIsAutoEnabled=NULL)=0
- STDMETHOD() SetSaturation (long saturation, bool isAutoEnabled=false)=0
- STDMETHOD() GetSaturationRange (long ∗pMin, long ∗pMax, bool ∗pIsAutoSupported=NULL)=0
- STDMETHOD() GetAbsSaturation (float ∗pSaturation, bool ∗pIsAutoEnabled=NULL)=0
- STDMETHOD() SetAbsSaturation (float saturation, bool isAutoEnabled=false)=0
- STDMETHOD() GetAbsSaturationRange (float ∗pMin, float ∗pMax, bool ∗pIsAutoSupported=NULL, const char ∗∗pUnits=NULL)=0

Gamma functions

These functions deal with gamma control on the camera.

- STDMETHOD() GetGamma (long ∗pGamma, bool ∗pIsAutoEnabled=NULL)=0
- STDMETHOD() SetGamma (long gamma, bool isAutoEnabled=false)=0
- STDMETHOD() GetGammaRange (long ∗pMin, long ∗pMax, bool ∗pIsAutoSupported=NULL)=0
- STDMETHOD() GetAbsGamma (float ∗pGamma, bool ∗pIsAutoEnabled=NULL)=0
- STDMETHOD() SetAbsGamma (float gamma, bool isAutoEnabled=false)=0
- STDMETHOD() GetAbsGammaRange (float ∗pMin, float ∗pMax, bool ∗pIsAutoSupported=NULL, const char ∗∗pUnits=NULL)=0

Pan functions

These functions deal with pan control on the camera.

- STDMETHOD() GetPan (long ∗pPan, bool ∗pIsAutoEnabled=NULL)=0
- STDMETHOD() SetPan (long pan, bool isAutoEnabled=false)=0
- STDMETHOD() GetPanRange (long ∗pMin, long ∗pMax, bool ∗pIsAutoSupported=NULL)=0
- STDMETHOD() GetAbsPan (float ∗pPan, bool ∗pIsAutoEnabled=NULL)=0
- STDMETHOD() SetAbsPan (float pan, bool isAutoEnabled=false)=0
- STDMETHOD() GetAbsPanRange (float ∗pMin, float ∗pMax, bool ∗pIsAutoSupported=NULL, const char ∗∗pUnits=NULL)=0

Tilt functions

These functions deal with tilt control on the camera.

- STDMETHOD() GetTilt (long ∗pTilt, bool ∗pIsAutoEnabled=NULL)=0
- STDMETHOD() SetTilt (long tilt, bool isAutoEnabled=false)=0
- STDMETHOD() GetTiltRange (long ∗pMin, long ∗pMax, bool ∗pIsAutoSupported=NULL)=0
- STDMETHOD() GetAbsTilt (float ∗pTilt, bool ∗pIsAutoEnabled=NULL)=0
- STDMETHOD() SetAbsTilt (float tilt, bool isAutoEnabled=false)=0
- STDMETHOD() GetAbsTiltRange (float ∗pMin, float ∗pMax, bool ∗pIsAutoSupported=NULL, const char ∗∗pUnits=NULL)=0

White balance functions

These functions deal with white balance control on the camera.

- STDMETHOD() GetWhiteBalance (long ∗plWhiteBalance, bool ∗pIsAutoEnabled=NULL)=0
- STDMETHOD() SetWhiteBalance (long lWhiteBalance, bool isAutoEnabled=false)=0
- STDMETHOD() GetWhiteBalanceRange (long ∗pMin, long ∗pMax, bool ∗pIsAutoSupported=NULL)=0
- STDMETHOD() GetAbsWhiteBalance (float ∗plWhiteBalance, bool ∗pIsAutoEnabled=NULL)=0
- STDMETHOD() SetAbsWhiteBalance (float lWhiteBalance, bool isAutoEnabled=false)=0
- STDMETHOD() GetAbsWhiteBalanceRange (float ∗pMin, float ∗pMax, bool ∗pIsAutoSupported=NULL, const char ∗∗pUnits=NULL)=0

Custom Image / Format7 functions

These functions deal with custom image and Format7 image control.

- STDMETHOD() GetOutputVerticalFlip (bool ∗pIsVerticallyFlipped)=0

  Get whether the image is vertically flipped.

- STDMETHOD() SetOutputVerticalFlip (bool enableVerticalFlip)=0

  Set the image to be vertically flipped (or not).

- STDMETHOD() GetCustomImageMode (bool ∗pIsInCustomImageMode)=0

  Get whether the camera is in custom image / Format7 mode.

- STDMETHOD() SetCustomImageMode (bool enableCustomImageMode)=0

  Set the camera into custom image / Format7 mode (or not).

- STDMETHOD() QueryCustomImage (unsigned int mode, bool ∗pAvailable,

unsigned int ∗pMaxWidth, unsigned int ∗pMaxHeight, unsigned int ∗pPixelFormatsBitMask)=0
Get information for a particular custom image / Format7 mode.

- STDMETHOD() SetCustomImage (unsigned int mode, unsigned int left, unsigned int top, unsigned int width, unsigned int height, unsigned int pixelFormat)=0
Set custom image / Format7 image settings to camera.

- STDMETHOD() GetCustomImage (unsigned int ∗pMode, unsigned int ∗pLeft, unsigned int ∗pTop, unsigned int ∗pWidth, unsigned int ∗pHeight, unsigned int ∗pPixelFormat)=0
Get custom image / Format7 settings from camera.

Variables

- const IID IID_IFlyCaptureProperties = {0x2bd99656, 0x1552, 0x4d98, {0xb6,0x48,0xd,0xd0,0x19,0x6d,0x16,0x49}}
This is the Interface that allows Users to get and set Properties on the camera.

9.13.1 Function Documentation

9.13.1.1 STDMETHOD() GetAbsBrightness (float ∗ *pBrightness*, bool ∗ *pIsAutoEnabled* = `NULL`) `[pure virtual]`

9.13.1.2 STDMETHOD() GetAbsBrightnessRange (float ∗ *pMin*, float ∗ *pMax*, bool ∗ *pIsAutoSupported* = `NULL`, const char ∗∗ *pUnits* = `NULL`) `[pure virtual]`

9.13.1.3 STDMETHOD() GetAbsExposure (float ∗ *pExposure*, bool ∗ *pIsAutoEnabled* = `NULL`) `[pure virtual]`

9.13.1.4 STDMETHOD() GetAbsExposureRange (float ∗ *pMin*, float ∗ *pMax*, bool ∗ *pIsAutoSupported* = `NULL`, const char ∗∗ *pUnits* = `NULL`) `[pure virtual]`

9.13.1.5 STDMETHOD() GetAbsGain (float ∗ *gain*, bool ∗ *pIsAutoEnabled* = `NULL`) `[pure virtual]`

9.13.1.6 STDMETHOD() GetAbsGainRange (float ∗ *pMin*, float ∗ *pMax*, bool ∗ *pIsAutoSupported* = `NULL`, const char ∗∗ *pUnits* = `NULL`) `[pure virtual]`

9.13.1.7 STDMETHOD() GetAbsGamma (float ∗ *pGamma*, bool ∗ *pIsAutoEnabled* = `NULL`) `[pure virtual]`

9.13.1.8 STDMETHOD() GetAbsGammaRange (float ∗ *pMin*, float ∗ *pMax*, bool ∗ *pIsAutoSupported* = `NULL`, const char ∗∗ *pUnits* = `NULL`) `[pure virtual]`

9.13.1.9 STDMETHOD() GetAbsHue (float ∗ *pHue*, bool ∗ *pIsAutoEnabled* = `NULL`) `[pure virtual]`

9.13.1.10 STDMETHOD() GetAbsHueRange (float ∗ *pMin*, float ∗ *pMax*, bool ∗ *pIsAutoSupported* = `NULL`, const char ∗∗ *pUnits* = `NULL`) `[pure virtual]`

9.13.1.11 STDMETHOD() GetAbsPan (float ∗ *pPan*, bool ∗ *pIsAutoEnabled* = `NULL`) `[pure virtual]`

9.13.1.12 STDMETHOD() GetAbsPanRange (float ∗ *pMin*, float ∗ *pMax*, bool ∗ *pIsAutoSupported* = `NULL`, const char ∗∗ *pUnits* = `NULL`) `[pure virtual]`

9.13.1.13 STDMETHOD() GetAbsSaturation (float ∗ *pSaturation*, bool ∗ *pIsAutoEnabled* = `NULL`) `[pure virtual]`

9.13.1.14 STDMETHOD() GetAbsSaturationRange (float ∗ *pMin*, float ∗ *pMax*, bool ∗ *pIsAutoSupported* = `NULL`, const char ∗∗ *pUnits* = `NULL`) `[pure virtual]`

9.13.1.15 STDMETHOD() GetAbsSharpness (float ∗ *plSharpness*, bool ∗ *pIsAutoEnabled* = `NULL`) `[pure virtual]`

9.13.1.16 STDMETHOD() GetAbsSharpnessRange (float ∗ *pMin*, float ∗ *pMax*, bool ∗ *pIsAutoSupported* = `NULL`, const char ∗∗ *pUnits* = `NULL`) `[pure virtual]`

9.13.1.17 STDMETHOD() GetAbsShutter (float ∗ *pShutter*, bool ∗ *pIsAutoEnabled* = `NULL`) `[pure virtual]`

9.13.1.18 STDMETHOD() GetAbsShutterRange (float ∗ *pMin*, float ∗ *pMax*, bool ∗ *pIsAutoSupported* = `NULL`, const char ∗∗ *pUnits* = `NULL`) `[pure virtual]`

9.13.1.19 STDMETHOD() GetAbsTilt (float ∗ *pTilt*, bool ∗ *pIsAutoEnabled* = `NULL`) `[pure virtual]`

9.13.1.20 STDMETHOD() GetAbsTiltRange (float ∗ *pMin*, float ∗ *pMax*, bool ∗ *pIsAutoSupported* = `NULL`, const char ∗∗ *pUnits* = `NULL`) `[pure virtual]`

9.13.1.21 STDMETHOD() GetAbsWhiteBalance (float ∗ *plWhiteBalance*, bool ∗ *pIsAutoEnabled* = `NULL`) `[pure virtual]`

9.13.1.22 STDMETHOD() GetAbsWhiteBalanceRange (float ∗ *pMin*, float ∗ *pMax*, bool ∗ *pIsAutoSupported* = `NULL`, const char ∗∗ *pUnits* = `NULL`) `[pure virtual]`

Parameters:

pMode Custom image / Format7 settings on camera.
pLeft Left offset.
pTop Top offset.
pWidth Image width.
pHeight Image height.
pPixelFormat Pixel format.

Returns:

An HRESULT error code indicating the success or failure of the function.

9.13.1.26 STDMETHOD() GetCustomImageMode (bool ∗ *pIsInCustomImageMode*) `[pure virtual]`

Get whether the camera is in custom image / Format7 mode.

Parameters:

pIsInCustomImageMode Whether the camera is in custom image / Format7 mode.

Returns:

An HRESULT error code indicating the success or failure of the function.

9.13.1.27 STDMETHOD() GetExposure (long ∗ *pExposure*, bool ∗ *pIsAutoEnabled* = `NULL`) `[pure virtual]`

9.13.1.28 STDMETHOD() GetExposureRange (long ∗ *pMin*, long ∗ *pMax*, bool ∗ *pIsAutoSupported* = `NULL`) `[pure virtual]`

9.13.1.29 STDMETHOD() GetGain (long ∗ *pGain*, bool ∗ *pIsAutoEnabled* = `NULL`) `[pure virtual]`

9.13.1.30 STDMETHOD() GetGainRange (long ∗ *pMin*, long ∗ *pMax*, bool ∗ *pIsAutoSupported* = `NULL`) `[pure virtual]`

9.13.1.31 STDMETHOD() GetGamma (long ∗ *pGamma*, bool ∗ *pIsAutoEnabled* = `NULL`) `[pure virtual]`

9.13.1.32 STDMETHOD() GetGammaRange (long ∗ *pMin*, long ∗ *pMax*, bool ∗ *pIsAutoSupported* = `NULL`) `[pure virtual]`

9.13.1.33 STDMETHOD() GetHue (long ∗ *pHue*, bool ∗ *pIsAutoEnabled* = `NULL`) `[pure virtual]`

9.13.1.34 STDMETHOD() GetHueRange (long ∗ *pMin*, long ∗ *pMax*, bool ∗ *pIsAutoSupported* = `NULL`) `[pure virtual]`

9.13.1.35 STDMETHOD() GetImageFormat (unsigned long ∗ *pulFormat*) `[pure virtual]`

Returns the index of the format currently set.
The index refers to the index of the videoModes array in the DCAMFormats structure returned by a call to GetAvailableFormats().

Parameters:

pulFormat Index of currently set format.

Returns:

An HRESULT indicating the success or failure of the function.

9.13.1.36 STDMETHOD() GetOutputVerticalFlip (bool ∗ *pIsVerticallyFlipped*) `[pure virtual]`

Get whether the image is vertically flipped.

Parameters:

pIsVerticallyFlipped Whether the image is flipped.

Returns:

An HRESULT error code indicating the success or failure of the function.

9.13.1.37 STDMETHOD() GetPan (long ∗ *pPan*, bool ∗ *pIsAutoEnabled* = `NULL`) `[pure virtual]`

9.13.1.38 STDMETHOD() GetPanRange (long ∗ *pMin*, long ∗ *pMax*, bool ∗ *pIsAutoSupported* = `NULL`) `[pure virtual]`

9.13.1.39 STDMETHOD() GetSaturation (long ∗ *pSaturation*, bool ∗ *pIsAutoEnabled* = `NULL`) `[pure virtual]`

9.13.1.40 STDMETHOD() GetSaturationRange (long ∗ *pMin*, long ∗ *pMax*, bool ∗ *pIsAutoSupported* = `NULL`) `[pure virtual]`

9.13.1.41 STDMETHOD() GetSharpness (long ∗ *pSharpness*, bool ∗ *pIsAutoEnabled* = `NULL`) `[pure virtual]`

9.13.1.42 STDMETHOD() GetSharpnessRange (long ∗ *pMin*, long ∗ *pMax*, bool ∗ *pIsAutoSupported* = `NULL`) `[pure virtual]`

9.13.1.43 STDMETHOD() GetShutter (long ∗ *pShutter*, bool ∗ *pIsAutoEnabled* = `NULL`) `[pure virtual]`

9.13.1.44 STDMETHOD() GetShutterRange (long ∗ *pMin*, long ∗ *pMax*, bool ∗ *pIsAutoSupported* = `NULL`) `[pure virtual]`

9.13.1.45 STDMETHOD() GetTilt (long ∗ *pTilt*, bool ∗ *pIsAutoEnabled* = `NULL`) `[pure virtual]`

9.13.1.46 STDMETHOD() GetTiltRange (long ∗ *pMin*, long ∗ *pMax*, bool ∗ *pIsAutoSupported* = `NULL`) `[pure virtual]`

9.13.1.47 STDMETHOD() GetWhiteBalance (long ∗ *plWhiteBalance*, bool ∗ *pIsAutoEnabled* = `NULL`) `[pure virtual]`

9.13.1.48 STDMETHOD() GetWhiteBalanceRange (long ∗ *pMin*, long ∗ *pMax*, bool ∗ *pIsAutoSupported* = `NULL`) `[pure virtual]`

9.13.1.49 STDMETHOD() QueryCustomImage (unsigned int *mode*, bool ∗ *pAvailable*, unsigned int ∗ *pMaxWidth*, unsigned int ∗ *pMaxHeight*, unsigned int ∗ *pPixelFormatsBitMask*) `[pure virtual]`

Get information for a particular custom image / Format7 mode.

Parameters:

mode Mode to query.
pAvailable Whether mode is supported.
pMaxWidth Maximum width.
pMaxHeight Maximum height.
pPixelFormatsBitMask Pixel format bit mask.

Returns:

An HRESULT error code indicating the success or failure of the function.

9.13.1.50 STDMETHOD() ReadRegister (unsigned int *offset*, unsigned int ∗ *pValue*) `[pure virtual]`

Read the specified register from the camera.

Parameters:

offset DCAM address to be read from.
pValue The value that is read.

Returns:

An HRESULT error code indicating the success or failure of the function.

9.13.1.51 STDMETHOD() SetAbsBrightness (float *brightness*, bool *isAutoEnabled* = `false`) `[pure virtual]`

9.13.1.52 STDMETHOD() SetAbsExposure (float *exposure*, bool *isAutoEnabled* = `false`) `[pure virtual]`

9.13.1.53 STDMETHOD() SetAbsGain (float *lGain*, bool *isAutoEnabled* = `false`) `[pure virtual]`

9.13.1.54 STDMETHOD() SetAbsGamma (float *gamma*, bool *isAutoEnabled* = `false`) `[pure virtual]`

9.13.1.55 STDMETHOD() SetAbsHue (float *hue*, bool *isAutoEnabled* = `false`) `[pure virtual]`

9.13.1.56 STDMETHOD() SetAbsPan (float *pan*, bool *isAutoEnabled* = `false`) `[pure virtual]`

9.13.1.57 STDMETHOD() SetAbsSaturation (float *saturation*, bool *isAutoEnabled* = `false`) `[pure virtual]`

9.13.1.58 STDMETHOD() SetAbsSharpness (float *lSharpness*, bool *isAutoEnabled* = `false`) `[pure virtual]`

9.13.1.59 STDMETHOD() SetAbsShutter (float *shutter*, bool *isAutoEnabled* = `false`) `[pure virtual]`

9.13.1.60 STDMETHOD() SetAbsTilt (float *tilt*, bool *isAutoEnabled* = `false`) `[pure virtual]`

9.13.1.61 STDMETHOD() SetAbsWhiteBalance (float *lWhiteBalance*, bool *isAutoEnabled* = `false`) `[pure virtual]`

9.13.1.62 STDMETHOD() SetBrightness (long *brightness*, bool *isAutoEnabled* = `false`) `[pure virtual]`

9.13.1.63 STDMETHOD() SetCustomImage (unsigned int *mode*, unsigned int *left*, unsigned int *top*, unsigned int *width*, unsigned int *height*, unsigned int *pixelFormat*) `[pure virtual]`

Set custom image / Format7 image settings to camera.

Parameters:

mode Custom image / Format7 settings to use.
left Left offset.
top Top offset.
width Image width.
height Image height.
pixelFormat Pixel format index to use.

Returns:

An HRESULT error code indicating the success or failure of the function.

9.13.1.64 STDMETHOD() SetCustomImageMode (bool *enableCustomImageMode*) `[pure virtual]`

Set the camera into custom image / Format7 mode (or not).

Parameters:

enableCustomImageMode Whether to set the camera into custom image / Format7 mode.

Returns:

An HRESULT error code indicating the success or failure of the function.

9.13.1.65 STDMETHOD() SetExposure (long *exposure*, bool *isAutoEnabled* = `false`) `[pure virtual]`

9.13.1.66 STDMETHOD() SetGain (long *gain*, bool *isAutoEnabled* = `false`) `[pure virtual]`

9.13.1.67 STDMETHOD() SetGamma (long *gamma*, bool *isAutoEnabled* = `false`) `[pure virtual]`

9.13.1.68 STDMETHOD() SetHue (long *hue*, bool *isAutoEnabled* = `false`) `[pure virtual]`

9.13.1.69 STDMETHOD() SetImageFormat (unsigned long *ulFormat*) `[pure virtual]`

Sets the index of the format to be used.
The index refers to the index of the videoModes array in the DCAMFormats structure returned by a call to GetAvailableFormats().

Parameters:

ulFormat index of the format to be set.

Returns:

An HRESULT error code indicating the success or failure of the function.

9.13.1.70 STDMETHOD() SetOutputVerticalFlip (bool *enableVerticalFlip*) `[pure virtual]`

Set the image to be vertically flipped (or not).

Parameters:

enableVerticalFlip Whether the image should be vertically flipped.

Returns:

An HRESULT error code indicating the success or failure of the function.

9.13.1.71 STDMETHOD() SetPan (long *pan*, bool *isAutoEnabled* = `false`) `[pure virtual]`

9.13.1.72 STDMETHOD() SetSaturation (long *saturation*, bool *isAutoEnabled* = `false`) `[pure virtual]`

9.13.1.73 STDMETHOD() SetSharpness (long *sharpness*, bool *isAutoEnabled* = `false`) `[pure virtual]`

9.13.1.74 STDMETHOD() SetShutter (long *shutter*, bool *isAutoEnabled* = `false`) `[pure virtual]`

9.13.1.75 STDMETHOD() SetTilt (long *tilt*, bool *isAutoEnabled* = `false`) `[pure virtual]`

9.13.1.76 STDMETHOD() SetWhiteBalance (long *lWhiteBalance*, bool *isAutoEnabled* = `false`) `[pure virtual]`

9.13.1.77 STDMETHOD() WriteRegister (unsigned int *offset*, unsigned int *value*, bool *broadcast* = `false`) `[pure virtual]`

Write to the specified register on the camera.
Parameters:

offset DCAM address to be written to.
value The value to be written.
broadcast Whether the action should be broadcast.

Returns:

An HRESULT error code indicating the success or failure of the function.

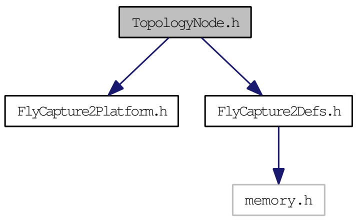
9.13.2 Variable Documentation

9.13.2.1 const IID IID_IFlyCaptureProperties = {0x2bd99656, 0x1552, 0x4d98, {0xb6,0x48,0xd,0xd0,0x19,0x6d,0x16,0x49}}

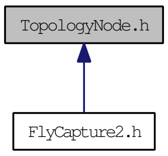
This is the Interface that allows Users to get and set Properties on the camera.
You can query the PGRDirectShowSource Capture Filter for IID_IFlyCaptureProperties and it will return a pointer to the IFlyCaptureProperties interface. The GUID is equivalent to {2BD99656-1552-4d98-B648-0DD0196D1649}.

9.14 TopologyNode.h File Reference

Include dependency graph for TopologyNode.h:



This graph shows which files directly or indirectly include this file:



Classes

- class TopologyNode

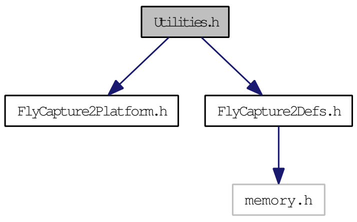
  The TopologyNode class contains topology information that can be used to generate a tree structure of all cameras and devices connected to a computer.

Namespaces

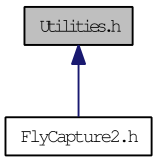
- namespace FlyCapture2

9.15 Utilities.h File Reference

Include dependency graph for Utilities.h:



This graph shows which files directly or indirectly include this file:



Classes

- struct SystemInfo
  Description of the system.
- class Utilities
  The Utility class is generally used to query for general system information such as operating system, available memory etc.

Namespaces

- namespace FlyCapture2

Typedefs

- typedef void(∗ AsyncCommandCallback)(class Error retError, void ∗pUserData)
  Async command callback function prototype.

Enumerations

- enum OSType {
  WINDOWS_X86,
  WINDOWS_X64,
  LINUX_X86,
  LINUX_X64,
  MAC,
  UNKNOWN_OS,
  OSTYPE_FORCE_32BITS = FULL_32BIT_VALUE }
  Possible operating systems.
- enum ByteOrder {
  BYTE_ORDER_LITTLE_ENDIAN,
  BYTE_ORDER_BIG_ENDIAN,

BYTE_ORDER_FORCE_32BITS = FULL_32BIT_VALUE }
Possible byte orders.

Index