

eGrabber

eGrabber 26.02 Release Notes



This documentation is provided with **eGrabber 26.02.0** (doc build 2212).
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1. Release Benefits

Benefits of added or improved features of eGrabber 26.02

Frame Grabbers

[New "4-camera, line-scan" firmware variant for PC3625 Coaxlink QSFP+](#)

This release of eGrabber adds the 4-camera, line-scan firmware for PC3625 Coaxlink QSFP+.

The "4-camera, line-scan" firmware variant allows connecting up to four single-connection line-scan cameras to PC3625 Coaxlink QSFP+ via a breakout cable.

[Extended support for 1X_2YE TapGeometry](#)

This release of eGrabber adds the support for 1X_2YE TapGeometry to the "1-camera" firmware variant of PC3622 Coaxlink Duo CXP-12 and PC3622-LH Coaxlink Duo CXP-12 LH frame grabbers.

The 1X_2YE tap geometry is a configuration used in CoaXPress for area-scan cameras that feature two zones across the vertical direction.

eGrabber Studio

[Opening multiple sources at the same time](#)

This release of eGrabber adds the possibility to open multiple sources at the same time from the [Welcome Tab](#).

[Multi-part display for GenDC](#)

Added multi-part display support for buffers with GenDC payload type. Each GenDC part can now be enabled or disabled for display from the [Buffer pane](#).

[Improvements in the Features Pane](#)

This release of eGrabber brings the following improvements to the [GenApi tree](#) of the [Features Pane](#):

- Added multi-bank support, which enables the tree view to adapt to the number of sub-grabbers and display all feature values in a merged tree.
- For string-based selectors, the tree view can show the selected features as selector children; the option can be enabled/disabled individually per selector from the context menu option [Show All Selector Values](#).
- The GenApi feature values indicate the status of the pending operations (i.e. whether a feature value is currently being updated, read or written).

- The tooltip of GenApi features now also include the access mode or the current operation status when applicable.
- Added [Copy/Paste](#) of tree item content (using the standard key sequences); this simplifies the configuration process of sub-grabbers by replicating values in multi-bank cases.

2. Release Specification

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2.1. Supported Products

This topic shows, for each product series and sub-series, the list of officially¹ supported products by eGrabber 26.02.

- The **Product code and name** column shows the order code and the official name of the product.
- The **Class** column shows the functional class of the product (e.g.: Frame Grabber, I/O Extension ...).
- The **Icon** column shows the [product icon](#) used in this documentation package.

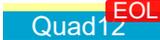
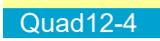
Camera Link products

Product code and name	Class	Icon	First release
PC1628 Grablink Duo	Frame Grabber		eGrabber 23.02

CoaXPress CXP-6 products

Product code and name	Class	Icon	First release
PC1629 Coaxlink Duo PCIe/104-EMB	Frame Grabber		Coaxlink 7.0
PC1630 Coaxlink Mono	Frame Grabber		Coaxlink 2.0
PC1631 Coaxlink Duo	Frame Grabber		Coaxlink 2.0
PC1632 Coaxlink Quad	Frame Grabber		Coaxlink 1.0
PC1633 Coaxlink Quad G3	Frame Grabber		Coaxlink 4.0
PC1633-LH Coaxlink Quad G3 LH	Frame Grabber		Coaxlink 11.1
PC1635 Coaxlink Quad G3 DF	Frame Grabber		Coaxlink 5.0
PC1637 Coaxlink Quad 3D-LLE	Frame Grabber		Coaxlink 9.0
PC3602 Coaxlink Octo	Frame Grabber		Coaxlink 10.0

CoaXPress CXP-12 products

Product code and name	Class	Icon	First release
PC3603 Coaxlink Quad CXP-12	Frame Grabber		Coaxlink 10.4
PC3603-4 Coaxlink Quad CXP-12	Frame Grabber		eGrabber 15.0

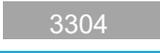
¹ Excluding preliminary products

Product code and name	Class	Icon	First release
PC3621 Coaxlink Mono CXP-12	Frame Grabber		Coaxlink 12.4
PC3621-LH Coaxlink Mono CXP-12 LH	Frame Grabber		Coaxlink 12.4
PC3622 Coaxlink Duo CXP-12	Frame Grabber		Coaxlink 12.4
PC3622-LH Coaxlink Duo CXP-12 LH	Frame Grabber		Coaxlink 12.4
PC3623 Coaxlink Quad CXP-12 Value	Frame Grabber		eGrabber 23.08
PC3624 Coaxlink Quad CXP-12 DF	Frame Grabber		eGrabber 24.03
PC3633 Coaxlink Quad CXP-12 3D-LLE	Frame Grabber		eGrabber 24.12

CoaXPress-over-Fiber products

Product code and name	Class	Icon	First release
PC3625 Coaxlink QSFP+	Frame Grabber		eGrabber 17.0
PC3628 Coaxlink QSFP28	Frame Grabber		eGrabber 25.10
PC3629 Coaxlink CXP-12 to QSFP+ Converter	Converter		eGrabber 24.10

Accessories

Product code and name	Class	Icon	First release
PC1625 DB25F I/O Adapter Cable	Cable Adapter		
PC1636 InterPC C2C-Link Adapter	Adapter		Coaxlink 8.0
PC1676 AC-DC Power Adapter, 24V, 160W	Power Adapter		eGrabber 24.10
PC3300 HD26F I/O module for Coaxlink Duo PCIe/104	I/O Module		
PC3301 Thermal drain (Model 1) for Coaxlink Duo PCIe/104	Heatsink		
PC3302 DIN1.0/2.3 Coaxial cable for Coaxlink Duo PCIe/104	Cable		
PC3303 C2C-Link Ribbon Cable	Cable		
PC3304 HD26F I/O Adapter Cable	Cable Adapter		
PC3610 HD26F I/O Extension Module - TTL-RS422	I/O Extension		Coaxlink 10.4
PC3612 HD26F I/O Extension Module - TTL-CMOS5V-RS422	I/O Extension		Coaxlink 10.4
PC3613 JTAG Adapter Xilinx for Coaxlink	Cable Adapter		

Product code and name	Class	Icon	First release
PC3614 HD26F I/O Extension Module - Standard I/O Set	I/O Extension	3614	Coaxlink 10.4
PC3618 HD26F I/O Extension Module - Fast I/O	I/O Extension	3618	
PC6514 Neo USB Dongle (empty)	Dongle	6514	
PC6516 Neo USB Header (empty)	Dongle	6516 ^{Prelim}	

Software libraries

Product code and name	Class	Icon	First release
PC4401 eGrabber Recorder and Playlink	Library	Recorder	eGrabber 15.1
PC4401-EV eGrabber Recorder and Playlink (30-day evaluation)	Library	RecorderEV	eGrabber 16.0

Free software

Product code and name	Class	Icon	First release
PC4400 eGrabber Gigelink	Library	Gigelink	eGrabber 15.0
PC4403 eGrabber Studio	Application	Studio	eGrabber 22.03
PC4406 eGrabber Driver	Driver	eGrabber	

2.2. Firmware Variants

This topic shows, for each officially supported product (group), the list of officially available¹ firmware variants provided with eGrabber 26.02.

- The **Firmware variant** column shows the name of the firmware variant.
- The **HCMAP** column shows the [Host Connection Map](#)².
- The **Features** column shows the main features of the firmware variant.
- The **Description** column shows a one-phrase description of the connection scheme.
- The **Rev.** column shows the revision number of the firmware delivered with this release.

PC1628 Grablink Duo

Firmware Variant	HCMAP	Features	Description	Rev.
1-camera	1D2_CL	LUT CFA-12	One 1- or 2-connection area-scan camera	505
1-camera, line-scan	1D2_CL	LUT MI PLANAR	One 1- or 2-connection line-scan camera	505
2-camera	2D11_CL	LUT CFA-12	One or two 1-connection area-scan cameras	505
2-camera, line-scan	2D11_CL	LUT MI PLANAR	One or two 1-connection line-scan cameras	505

PC1629 Coaxlink Duo PCIe/104-EMB

Firmware Variant	HCMAP	Features	Description	Rev.
1-camera	1D2	LUT	One 1- or 2-connection area-scan camera	506
1-camera, line-scan	1D2	LUT	One 1- or 2-connection line-scan camera	506
2-camera	2D11	LUT	One or two 1-connection area-scan cameras	506

PC1630 Coaxlink Mono

Firmware Variant	HCMAP	Features	Description	Rev.
1-camera	1D1	LUT	One 1-connection area-scan camera	506

PC1631 Coaxlink Duo

Firmware Variant	HCMAP	Features	Description	Rev.
1-camera	1D2	LUT	One 1- or 2-connection area-scan camera	506
1-camera, line-scan	1D2	LUT	One 1- or 2-connection line-scan camera	506
2-camera	2D11	LUT	One or two 1-connection area-scan cameras	506
2-camera, line-scan	2D11	LUT	One or two 1-connection line-scan cameras	506

¹ Excluding custom firmware variants

² Specific assignment of the Device connections to the Host connectors

PC1632 Coaxlink Quad

Firmware Variant	HCMAP	Features	Description	Rev.
1-camera	1D4	LUT	One 1- or 2- or 4-connection area-scan camera	506
1-camera, line-scan	1D4	LUT	One 1- or 2- or 4-connection line-scan camera	506
2-camera	2D22	LUT	One or two 1- or 2-connection area-scan cameras	506

PC1633 Coaxlink Quad G3 and PC1633-LH Coaxlink Quad G3 LH

Firmware Variant	HCMAP	Features	Description	Rev.
1-camera	1D4	FFC LUT CFA-12	One 1- or 2- or 4-connection area-scan camera	506
1-camera, 4-data-stream	1D4S4		One 1- or 2- or 4-connection area-scan camera, up to 4 data streams	506
1-camera, line-scan	1D4	FFC LUT FLIPX	One 1- or 2- or 4-connection line-scan camera	506
2-camera	2D22	LUT CFA-35-D0	One or two 1- or 2-connection area-scan cameras	506
2-camera, bayer	2D22	CFA-35	One or two 1- or 2-connection area-scan cameras	506
2-camera, line-scan	2D22	LUT FLIPX	One or two 1- or 2-connection line-scan cameras	506
3-camera	3D211	LUT	One 1- or 2-connection and one or two 1-connection area-scan cameras	506
4-camera	4D1111	LUT	One or two or three or four 1-connection area-scan cameras	506
4-camera, line-scan	4D1111	LUT	One or two or three or four 1-connection line-scan cameras	506

PC1635 Coaxlink Quad G3 DF

Firmware Variant	HCMAP	Features	Description	Rev.
1-camera	1D4	LUT CFA-123	One 1- or 2- or 4-connection area-scan camera	506
1-df-camera	1DF4	LUT CFA-123	One 1- or 2- or 4-connection area-scan data-forwarded camera	506
1-camera, line-scan	1D4	FFC LUT FLIPX	One 1- or 2- or 4-connection line-scan camera	506
1-df-camera, line-scan	1DF4	FFC LUT FLIPX	One 1- or 2- or 4-connection line-scan data-forwarded camera	506

PC1637 Coaxlink Quad 3D-LLE

Firmware Variant	HCMAP	Features	Description	Rev.
1-camera	1D4	LUT LLE	One 1- or 2- or 4-connection area-scan camera	506
2-camera	2D22	LUT LLE	One or two 1- or 2-connection area-scan cameras	506

PC3602 Coaxlink Octo

Firmware Variant	HCMAP	Features	Description	Rev.
1-camera	1D8	LUT CFA-123	One 1- or 2- or 4- or 8-connection area-scan camera	506
1-camera, line-scan	1D8	LUT MI	One 1- or 2- or 4- or 8-connection line-scan camera	506
2-camera	2D44	FFC LUT CFA-125	One or two 1- or 2- or 4-connection area-scan cameras	506
2-camera, line-scan	2D44	LUT FLIPX MI PLANAR	One or two 1- or 2- or 4-connection line-scan cameras	506
3-camera	3D422	LUT	One 1- or 2- or 4-connection and one or two 1- or 2-connection area-scan cameras	506
4-camera	4D2222	LUT	One or two or three or four 1- or 2-connection area-scan cameras	506
4-camera, line-scan	4D2222	LUT MI	One or two or three or four 1- or 2-connection line-scan cameras	506
5-camera	5D41111	LUT	One 1- or 2- or 4-connection and one or two or three or four 1-connection area-scan cameras	506
5-camera, 5D22211	5D22211	LUT	One or two or three 1- or 2-connection and one or two 1-connection area-scan cameras	506
8-camera	8D11111111	LUT	Up to eight 1-connection area-scan cameras	506
8-camera, line-scan	8D11111111	LUT MI	Up to eight 1-connection line-scan cameras	506

PC3603 Coaxlink Quad CXP-12 and PC3603-4 Coaxlink Quad CXP-12

Firmware Variant	HCMAP	Features	Description	Rev.
1-camera	1D4	FFC LUT CFA-12 BIN	One 1- or 2- or 4-connection area-scan camera	506
1-camera, line-scan	1D4	FFC LUT BIN MI LT	One 1- or 2- or 4-connection line-scan camera	506
2-camera	2D22	FFC LUT	One or two 1- or 2-connection area-scan cameras	506
2-camera, line-scan	2D22	LUT MI LT	One or two 1- or 2-connection line-scan cameras	506
3-camera	3D211	LUT	One 1- or 2-connection and one or two 1-connection area-scan cameras	506
3-camera, line-scan	3D211	LUT MI	One 1- or 2-connection and one or two 1-connection line-scan cameras	506
4-camera	4D1111	LUT	One or two or three or four 1-connection area-scan cameras	506
4-camera, line-scan	4D1111	LUT MI	One or two or three or four 1-connection line-scan cameras	506

PC3621 Coaxlink Mono CXP-12 and PC3621-LH Coaxlink Mono CXP-12 LH

Firmware Variant	HCMAP	Features	Description	Rev.
1-camera	1D1	LUT	One 1-connection area-scan camera	506
1-camera, line-scan	1D1	LUT	One 1-connection line-scan camera	506

PC3622 Coaxlink Duo CXP-12 and PC3622-LH Coaxlink Duo CXP-12 LH

Firmware Variant	HCMAP	Features	Description	Rev.
1-camera	1D2	LUT CFA-3	One 1- or 2-connection area-scan camera	506
1-camera, line-scan	1D2	LUT	One 1- or 2-connection line-scan camera	506
2-camera	2D11	LUT	One or two 1-connection area-scan cameras	506
2-camera, line-scan	2D11	LUT	One or two 1-connection line-scan cameras	506

PC3623 Coaxlink Quad CXP-12 Value

Firmware Variant	HCMAP	Features	Description	Rev.
1-camera	1D4	FFC LUT CFA-12 BIN	One 1- or 2- or 4-connection area-scan camera	506
1-camera, line-scan	1D4	FFC LUT BIN MI LT	One 1- or 2- or 4-connection line-scan camera	506
2-camera	2D22	LUT	One or two 1- or 2-connection area-scan cameras	506
2-camera, line-scan	2D22	LUT MI LT	One or two 1- or 2-connection line-scan cameras	506
3-camera	3D211	LUT	One 1- or 2-connection and one or two 1-connection area-scan cameras	506
4-camera	4D1111	LUT	One or two or three or four 1-connection area-scan cameras	506
4-camera, line-scan	4D1111	LUT MI	One or two or three or four 1-connection line-scan cameras	506

PC3624 Coaxlink Quad CXP-12 DF

Firmware Variant	HCMAP	Features	Description	Rev.
1-camera	1D4	FFC LUT CFA-12 BIN	One 1- or 2- or 4-connection area-scan camera	506
1-df-camera	1DF4	FFC LUT CFA-12 BIN	One 1- or 2- or 4-connection area-scan data-forwarded camera	506
1-camera, line-scan	1D4	LUT MI	One 1- or 2- or 4-connection line-scan camera	506
1-df-camera, line-scan	1DF4	LUT MI	One 1- or 2- or 4-connection line-scan data-forwarded camera	506

PC3625 Coaxlink QSFP+

Firmware Variant	HCMAP	Features	Description	Rev.
1-camera	1D4	LUT CFA-12	One 1- or 2- or 4-connection area-scan camera	507
1-camera, line-scan	1D4	LUT MI	One 1- or 2- or 4-connection line-scan camera	507
2-camera	2D22	FFC LUT	One or two 1- or 2-connection area-scan cameras	507
4-camera	4D1111	LUT	One or two or three or four 1-connection area-scan cameras	507
4-camera, line-scan	4D1111	LUT MI	One or two or three or four 1-connection line-scan cameras	507

PC3628 Coaxlink QSFP28

Firmware Variant	HCMAP	Features	Description	Rev.
1-camera	1D4	LUT CFA-12	One 1- or 2- or 4-connection area-scan camera	506
1-camera, line-scan	1D4	LUT	One 1- or 2- or 4-connection line-scan camera	506

PC3629 Coaxlink CXP-12 to QSFP+ Converter

Firmware Variant	HCMAP	Features	Description	Rev.
1-camera	1D1		One 1-connection area-scan camera	477
2-camera	2D22		One or two 1- or 2-connection area-scan cameras	477
4-camera	4D1111		One or two or three or four 1-connection area-scan cameras	477

PC3633 Coaxlink Quad CXP-12 3D-LLE

Firmware Variant	HCMAP	Features	Description	Rev.
1-camera	1D4	LLE	One 1- or 2- or 4-connection area-scan camera	506

Features abbreviations

- *BIN*: Pixel binning
- *CFA-12*: Bayer CFA decoding - Methods 1 and 2
- *CFA-123*: Bayer CFA decoding - Methods 1, 2, and 3
- *CFA-125*: Bayer CFA decoding - Methods 1, 2, and 5
- *CFA-2-S0*: Bayer CFA decoding - Method 2 on Stream0
- *CFA-3*: Bayer CFA decoding - Method 3
- *CFA-35*: Bayer CFA decoding - Methods 3 and Method 5
- *CFA-35-D0*: Bayer CFA decoding - Methods 3 and 5 on Device0
- *FLIPX*: Horizontal image flipping
- *FFC*: Flat-field correction
- *LLE*: Laser line extraction
- *LT*: Mapping of events from the I/O Toolbox to CoaXPress trigger messages LinkTrigger0 and LinkTrigger1
- *LUT*: Lookup table processing
- *MI*: Metadata insertion
- *PLANAR*: RGB to PLANAR_RGB or BGR to PLANAR_BGR conversions

2.3. Camera Interfaces Standard Compliance

CoaXPress

Coaxlink frame grabbers together with **eGrabber 26.02** comply with:

- *CoaXPress Standard 1.0*
- *CoaXPress Standard 1.1*
- *CoaXPress Standard 1.1.1*
- *CoaXPress Standard 2.0*
- *CoaXPress Standard 2.1¹*

CoaXPress-over-Fiber

PC3625 Coaxlink QSFP+, **PC3628 Coaxlink QSFP28** and the QSFP+ port of **PC3629 Coaxlink CXP-12 to QSFP+ Converter** comply with:

- *CoaXPress-over-Fiber Bridge Protocol 1.1*

Camera Link

Grablink Duo together with **eGrabber 26.02** comply with

- *Camera Link Standard 2.1²*

¹ GenICam GenDC (Generic Data Container) support is optional in CoaXPress 2.1 and is currently not included.

² Including PoCL

2.4. Supported Operating Systems

See also: ["Supported Operating Systems History "](#) on page 53

Windows

eGrabber driver, eGrabber Studio, eGrabber Gigelink, eGrabber Recorder and GenICam Browser (Deprecated) are designed to support all versions of **Windows 10** and **Windows 11**, including the **Server** and the **IoT Enterprise** versions on **x86-64 (64-bit)** platforms.



WARNING

eGrabber 25.12 was the last release supporting Windows 10 versions prior to 1809. Starting with **eGrabber 26.01**, the minimum Windows 10 version requirements is Windows 10 version 1809 or later.

Release validation

This release has been validated with the following Windows versions:

OS Name & Version	Platform	Notes
Microsoft Windows 10	x86-64 (64-bit)	IoT Enterprise LTSC 2019 - Version 1809
		Enterprise edition - Version 1809
		Enterprise edition - Version 22H2
Microsoft Windows 11	x86-64 (64-bit)	Enterprise edition - Version 22H2
		Enterprise edition - Version 23H2
		Enterprise edition - Version 24H2
Microsoft Windows Server 2025	x86-64 (64-bit)	Standard edition - Version 24H2



NOTE

- The driver is signed by Microsoft.
- Power saving modes of the operating systems (StandBy, Sleep, Suspend...) are not supported.
- Kernel DMA Protection is not supported.

See also: [Installing eGrabber on Windows in the Getting Started section of the Coaxlink series or Grablink Duo Handbooks](#)

Linux

eGrabber driver, eGrabber Studio, eGrabber Gigelink, eGrabber Recorder and GenICam Browser (Deprecated) are designed to be distribution-independent on **x86-64 (64-bit)**, and **AArch64 (64-bit)** platforms. They are expected to work with a wide range of distributions.

[Minimum kernel version requirements](#)

All tools and libraries require kernel version 4.4 or higher

[GNU C library \(glibc\) requirements](#)

All tools and libraries require glibc library version 2.23 (or higher)



WARNING

eGrabber 25.12 was the last release supporting Linux kernel versions prior to version 4.4 and GNU C library version prior to 2.23. Starting with **eGrabber 26.01**, the Minimum kernel version requirements is *Linux kernel version 4.4 or higher* and the GNU C library (glibc) requirements is *GLIBC 2.23 or higher*.

[Release validation](#)

This release has been validated with the following distribution(s):

OS Name & Version	Platform	Notes
Linux CachyOS 25.11	x86-64 (64-bit)	Kernel version 6.18.5-2
Linux Fedora 33	x86-64 (64-bit)	Kernel version 5.8.15
Linux OpenSUSE Leap 15.4	x86-64 (64-bit)	Kernel version 5.14
Linux Ubuntu 17.04	x86-64 (64-bit)	Kernel version 4.10
Linux Ubuntu 18.04	AArch64 (64-bit)	Kernel version 5.4.0-42
Linux Ubuntu 20.04 LTS	x86-64 (64-bit)	Kernel version 5.15
Linux Ubuntu 22.04 LTS	AArch64 (64-bit)	Kernel version 5.15
Linux Ubuntu 23.10	x86-64 (64-bit)	Kernel version 6.5
Linux Ubuntu 24.10	x86-64 (64-bit)	Kernel version 6.12.1-realtime



NOTE

Power saving modes of the operating systems (StandBy, Sleep, Suspend...) are not supported.

See also: [Installing eGrabber on Linux in the Getting Started section of the Coaxlink series or Grablink Duo Handbooks](#)

macOS

eGrabber driver, eGrabber Studio and GenICam Browser (Deprecated) are designed to support all macOS versions from version 10.14 on x86-64 (64-bit) platforms and all macOS versions from version 12.3 on AArch64 (64-bit) platforms.

[Minimum version requirements](#)

macOS 12.6.3 or higher

[Release validation](#)

This release has been validated with the following version(s):

OS Name & Version	Platform	Notes
macOS 12.6.3	AArch64 (64-bit)	A.k.a. Monterey
macOS 12.7.4	x86-64 (64-bit)	A.k.a. Monterey



NOTE

- The driver for macOS is signed by Euresys using a certificate that has been signed by Apple.
- Power saving modes of the operating systems (StandBy, Sleep, Suspend...) are not supported.



WARNING

eGrabber 25.12 was the last release providing macos-aarch64-kext and macos-x86_64-kext drivers for macOS.

See also: [Installing eGrabber on macOS in the Getting Started section of the Coaxlink series or Grablink Duo Handbooks](#)

2.5. Memento

Memento version 4.0 or later is required when using **Coaxlink driver** version 4.0 or later and any version of **eGrabber driver**.

Memento version 9.5 is required to use the **Memento Analyzer**.

2.6. Development Tools

eGrabber driver should be usable with any development tool that supports at least one of these interfaces:

C/C++

eGrabber driver provides four GenICam GenTL producers: `coaxlink.cti`, `grablink.cti`, `gigalink.cti` and `playlink.cti`.

[coaxlink.cti](#)

`coaxlink.cti` supports **Coaxlink frame grabbers**, it includes following libraries:

- An `x86_64` dynamic library designed to be used with ISO-compliant C/C++ compilers for the development of x86-64 (64-bit) applications.
- An `AArch64` dynamic library designed to be used with ISO-compliant C/C++ compilers for the development of `AArch64` (64-bit) applications.

[grablink.cti](#)

`grablink.cti` supports **PC1628 Grablink Duo**, it includes following libraries:

- An `x86_64` dynamic library designed to be used with ISO-compliant C/C++ compilers for the development of x86-64 (64-bit) applications.
- An `AArch64` dynamic library designed to be used with ISO-compliant C/C++ compilers for the development of `AArch64` (64-bit) applications.

[gigalink.cti](#)

`gigalink.cti` supports GigE Vision cameras, it includes following libraries:

- An `x86_64` dynamic library designed to be used with ISO-compliant C/C++ compilers for the development of x86-64 (64-bit) applications.
- An `AArch64` dynamic library designed to be used with ISO-compliant C/C++ compilers for the development of `AArch64` (64-bit) applications.

[playlink.cti](#)

`playlink.cti` allows acquiring images recorded in a **Recorder** container as if they were coming from a remote device, it includes following libraries:

- An `x86_64` dynamic library designed to be used with ISO-compliant C/C++ compilers for the development of x86-64 (64-bit) applications.
- An `AArch64` dynamic library designed to be used with ISO-compliant C/C++ compilers for the development of `AArch64` (64-bit) applications.

eGrabber

eGrabber driver also provides the eGrabber library, a library of C++ classes that provide a high-level interface.

- On Linux, the eGrabber library requires GLIBCXX_3.4.21/CXXABI_1.3.9 → libstdc++.so.6.0.21 or higher.

.NET

- EGrabber.NET assembly for Windows, Linux and macOS (Any CPU) targeting .NET 6.0 (previously called .NET Core)
- EGrabber.NETFramework.dll: a .NET assembly designed to be used with development environments compatible with .NET Framework 4.6 or higher.

NOTE: Updating an application to use EGrabber.NETFramework.dll or EGrabber.NET.dll instead of Coaxlink_NetApi.dll is easy and recommended.

Python

Python bindings for **eGrabber** allow users to call eGrabber functions and operate **eGrabber-driven frame grabbers** from Python scripts. They are compatible with Python 3.8 or higher under Windows, Linux and macOS.

On Windows, the eGrabber installer adds a shortcut in the Windows Start Menu to install the eGrabber Python bindings.

2.7. Software Adapters

[eGrabber adapter for Cognex VisionPro](#)



[Compatible GenTL producers](#)

- coaxlink.cti
All frame grabbers of the **Coaxlink series** (for CoaXPress and CoaXPress-over-fiber cameras)
- grablink.cti
Grablink Duo frame grabber (for Camera Link cameras)
- gigelink.cti
eGrabber Gigelink (for GigE Vision cameras)

2.8. Software Tools

Software tools delivered together with eGrabber 26.02

Name	Description
eGrabber Gigelink	Free-of-charge library providing a hardware-independent access to GigE Vision cameras.
eGrabber Recorder	Licensed library that enables image acquisition applications, such as eGrabber-based applications, to write acquired buffers to disk efficiently.
eGrabber Studio	GUI tool for testing the image acquisition with eGrabber from Camera Link, CoaXPress and GigE Vision cameras and upgrading the firmware of eGrabber-driven frame grabbers. StudioLink enables the new Open eVision Studio application to connect to an opened eGrabber Studio EGrabber source, control the acquisition and get images to process within Open eVision Studio.
Firmware Manager Console	Command-line tool for installing or upgrading the firmware embedded in eGrabber-driven frame grabbers.
GenICam Browser (Deprecated)	GUI tool giving access to all the GenApi features exposed by the GenTL Producer(s) in your system.
GenTL Console	Command-line tool giving access to all the functions and commands exposed by the Euresys GenTL Producer.
converter-firmware	Command line tool to perform firmware updates of the PC3629 Coaxlink CXP-12 to QSFP+ Converter



NOTE

- eGrabber Recorder requires the user to purchase and activate a license to be operated. They are compatible with Euresys' **Neo Licensing System**.
- It is allowed to use **Playlink** with no license for evaluation purposes on Windows 10 (x86_64) and Linux (x86_64 and aarch64) only.
- The **eGrabber driver**, **eGrabber Studio**, **eGrabber Gigelink**, the **Firmware Manager Console**, the **GenICam Browser (Deprecated)** and the **GenTL Console** can be used free of charge with other Euresys products.
- Starting from release 23.04, **eGrabber Studio** includes a **Firmware Manager**.
- **GenICam Browser** is deprecated and will be removed in a future release. It is still available as **GenICam Browser [Deprecated]** in this release.

2.9. Online Documentation

This release of eGrabber comes with a new edition of the *eGrabber documentation package*.

The package is published to the Internet at the following URL:

https://documentation.euresys.com/Products/eGrabber/eGrabber_26_02/Default.htm

A copy is also published to the Internet at the *Default eGrabber Documentation* URL:

<https://documentation.euresys.com/Products/eGrabber/eGrabber/Default.htm>



TIP

- The first URL (with a version number) gives access to a specific public edition. Its content is permanent.
- The *Default eGrabber Documentation* URL gives access to the latest public edition. Its content is updated every release.

See also: <https://documentation.euresys.com> Euresys Documentation Portal

3. Important Notices

Important notifications to be read before installing and/or using the product on your PC!

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3.1. Firmware Revisions



WARNING

eGrabber driver checks the compatibility of the firmware installed on every frame grabber. For those having an incompatible firmware, the GenTL driver exposes 0 (zero) Device.

If the requirement is not satisfied for all the **eGrabber-driven frame grabbers** in your system, it is *mandatory* to apply the Firmware Upgrade procedure prior to using this version of the driver.



NOTE

Starting with eGrabber 25.03, the firmware revision numbers are listed, for each firmware-variant in the [Firmware Variants table](#)

3.2. CPU Requirements

The image converter requires a CPU that has the Supplemental Streaming SIMD Extension 3 (SSSE3) instruction set.

3.3. Image Buffer Limits

Maximum buffer size

0xffffffff0 bytes (4 GiB - 16 B) for all operating systems

Number of buffers

The number of buffers is only limited by available system resources.

NOTE: when using very large numbers of buffers, `DSAnnounceBuffer` calls can take longer and longer to complete (or even fail with error code `GC_ERR_CUSTOM_IOCTL_BUFFER_ANNOUNCE_FAILED`). If this happens, the user should set `DmaEngineOptimization=LowMemoryUsage` in the data stream module.

3.4. Notice for Linux

Important notification to be read before installing and/or using the product on your Linux PC

- **Memento** must be installed prior to **eGrabber**.
- If the **eGrabber** package is already installed, proceed as follows:
 - Uninstall **eGrabber**.
 - Install **Memento**.
 - Re-install **eGrabber**.
- If NVIDIA RDMA is required, read "[Notice for NVIDIA RDMA](#)" on page 24

3.5. Notice for NVIDIA RDMA

NVIDIA RDMA is only supported on Linux.

NVIDIA RDMA samples require a NVIDIA GPU that supports RDMA.

The NVIDIA RDMA samples allocate memory on the GPU and announce this memory using `NvidiaRdmaMemory`.

See the following files in the eGrabber sample programs:

- `cpp/egrabber/samples/503-grabn-cuda-rdma-process.*`
- `cpp/nvidia/egrabber-cuda` with the command line argument `cudaRDMA`

Installation instructions:

- NVIDIA CUDA drivers:

- Follow the installation instructions from: https://developer.nvidia.com/cuda-downloads?target_os=Linux&target_arch=x86_64&Distribution=Ubuntu&target_version=20.04&target_type=deb_network
- NVIDIA driver sources:
 - These are needed to produce the `Module.symvers` file associated with the installed nvidia driver. This file will be required to install the eGrabber package
 - Select the appropriate driver from <https://www.nvidia.com/download/index.aspx?lang=en-us>
 - Make sure to download the version that matches the `nvidia-<version>` already installed in `/usr/src/`
 - Extract the archive with `-x` option
 - Change to directory `kernel` in the extracted archive
 - Run `make module`
 - The file `Module.symvers` should have been generated
- eGrabber package
 - Extract the `egrabber-linux-x86_64` archive
 - Install the package with the following command:
`sudo NVIDIA_KERNEL_PATH=<dir path containing Module.symvers> ./install.sh`

The line `Enabling NVIDIA RDMA build` should appear during the installation of the eGrabber package.

A successful build can be confirmed if the command `lsmod | grep coaxlink` (or `lsmod | grep grablink`) indicates that `coaxlink` (or `grablink`) module depends on `nvidia`.

3.6. Notices for macOS

Important notifications to be read before installing the driver on your Mac

Driver types

Install the **Memento** package corresponding to the **eGrabber** driver type:

eGrabber driver package	Memento package
<code>egrabber-macos-aarch64-dext-<MA.MI.RE.BU>.pkg</code>	<code>memento-macos-aarch64-dext-<MA.MI.RE.BU>.pkg</code>
<code>egrabber-macos-x86_64-dext-<MA.MI.RE.BU>.pkg</code>	<code>memento-macos-x86_64-dext-<MA.MI.RE.BU>.pkg</code>



TIP

dext drivers operate in user-mode using the default Full Security policy level.

**WARNING**

eGrabber 25.12 was the last release providing macos-aarch64-kext and macos-x86_64-kext drivers for macOS.

3.7. Notice for Early Coaxlink Drivers

**WARNING**

Important notification to be read before installing and/or using the product on your PC!

Several **Coaxlink frame grabbers** underwent a hardware change of the Flash EEPROM control logic.

**NOTE**

The Flash EEPROM is the memory that stores the contents of the on-board FPGA.

Affected products list

Product	S/N Prefix	First Serial Number of New Cards
PC1629 Coaxlink Duo PCIe/104-EMB	KDI	10,000
PC1633 Coaxlink Quad G3	KQG	10,000
PC1633-LH Coaxlink Quad G3 LH	KQH	10,000
PC1635 Coaxlink Quad G3 DF	KDF	10,000
PC1637 Coaxlink Quad 3D-LLE	KQE	10,000

Consequences

Existing applications using a **Coaxlink driver** prior to version 10.0.0 are required to use a new procedure to install or update the firmware on new boards.

The change has no impact for applications already using **Coaxlink driver 10.0.0** or higher.

With the exception of the firmware update, the change has strictly no impact on the product functionality, performance and specifications:

- The hardware design of these new cards, including the CoaXPress interface, PCI Express interface, the FPGA and the I/O, has not been changed.
- The functionality, performance and specification of the new cards is guaranteed to remain unchanged. Once programmed with the corresponding firmware, the new cards remain compatible with all previous versions of the **Coaxlink driver**.



TIP

For further information, read the *D207EN-Flash EEPROM Change Note* PDF document.

4. Release Details

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4.1. Firmware Variants Update

Added (or removed) firmware variants in eGrabber 26.02

Added firmware variants

PC3625 Coaxlink QSFP+

Firmware variant	HCMAP	Processing	Description
4-camera, line-scan	4D1111	LUT MI	One or two or three or four 1-connection line-scan cameras

4.2. Features Updates

Added and improved features in eGrabber 26.02

eGrabber

- Added support for Linux kernels built with Clang and LLVM utilities
- cti Added `DEVICE_INFO_CUSTOM_IS_REMOTE_READY` to indicate that the remote device is accessible or not (e.g. disconnected or no longer reachable)
- Added `DmaEngineMaxQueueSize[LowMemoryUsage]`
 - `DmaEngineMaxQueueSize` defines the maximum number of pending buffers (i.e., buffers queued for DMA operations)
 - Previously, `DmaEngineMaxQueueSize` was ignored when `DmaEngineOptimization` was set to `LowMemoryUsage`
 - The default value of `DmaEngineMaxQueueSize[Default]` is `100` (as before)
 - The default value of the new `DmaEngineMaxQueueSize[LowMemoryUsage]` is `1` (same behavior as before); higher values will use more system resources but will lead to lower latency and higher PCIe throughput
 - Increasing `DmaEngineMaxQueueSize[LowMemoryUsage]` after one or more buffers have been announced can take a long time when system resources are limited; similarly, announcing a buffer after `DmaEngineMaxQueueSize[LowMemoryUsage]` was set to a value larger than `1` can take a long time when system resources are limited; `DmaEngineQueueSetupTimeout` can be used to apply a time limit to these operations

Frame grabbers

- `Coaxlink` Further improved `ecamera` scripts to lower the amount of descriptors per buffer under specific conditions by adjusting the buffer allocation alignment (initially introduced in 26.01)

eGrabber Studio

- Added the possibility to open multiple sources at the same time from the **Welcome Tab** by holding down the **Ctrl** (**Cmd** on macOS) or **Shift** key when selecting entries, or by holding down the left mouse button and dragging
- Added multi-part display for buffers with **GenDC** payload type); the display of each **GenDC** part can be enabled or disabled from the **Buffer pane**
- Improved GenApi tree of the **Features Pane**
 - Added multi-bank support; the number of columns of the tree view adapts to the number of sub-grabbers, the feature values of all sub-grabbers are now displayed in a merged feature tree
 - For string-based selectors, the tree view can show the selected features as selector children; the option can be enabled/disabled individually per selector from the context menu option **Show All Selector Values**
 - The GenApi feature values indicate the status of the pending operations (i.e. whether a feature value is currently being updated, read or written)
 - The tooltips of GenApi feature values were improved (they also include the access mode or the current operation status when applicable)
 - Added **Copy/Paste** of tree item content (using the standard key sequences); this can help sub-grabber configurations by replicating values in multi-bank cases
- Improved handling of the remote device when it's no longer detected. **eGrabber Studio** queries `DEVICE_INFO_CUSTOM_IS_REMOTE_READY` on a regular basis (or when an error occurs) when accessing a feature from the **Features Pane**. If the remote device is no longer detected, the user interface adapts accordingly and the remote device cannot be further used unless the remote device is again detected. When the device is again detected (e.g. the CoaXPress device rebooted), the interface is refreshed to show "up to date" remote device feature/register values as well as selected feature values (if the view is enabled)
- The **Dump Selected features** view now keeps the previous selectors in a list for quicker access
- Improved consistency and behavior of toggle buttons icons in the **Features Pane**; they now behave like the sources and modules tabs

4.3. Solved Issues

Solved issues in eGrabber 26.02

eGrabber

- GenApi Improved selector syntax when the current selector value is not available; in this case, the selector value cannot be rolled back afterward
- GenApi: fixed parsing of `xs:float` elements starting with a `.`, for example `.25`
- Fixed handling of GenDC descriptors with components containing 0 parts

eGrabber Studio

- Fixed issues in the XML pane where the text could not be selected or was incorrectly highlighted in some situations
- Scrolling on the right side of the GenApi feature tree is now possible without interacting with the feature values

4.4. Changes

Other changes in eGrabber 26.02

eGrabber Studio

- Changes in GenApi tree of the **Features Pane**
 - The scope of the **Expand** and **Collapse** buttons is now limited to the selected item
 - The buttons **Dump Selected**, **File Access**, **Register** have been replaced by context menu items accessible from the feature name (left side of the feature tree); a context menu icon is shown on the nodes where the menu is available
 - To edit a feature, the user needs to click on the value if the cell is already selected or double-click on the value if not yet selected; to execute a command, the user needs to double-click on the **Execute** keyword (a tooltip appears to remind the user about this)
 - Compared to the previous releases, it is now possible to reissue the exact same value of a feature

4.5. Firmware Changes

Firmware revision 506

Applies to	Description
PC3622 Coaxlink Duo CXP-12 (1-camera) PC3622-LH Coaxlink Duo CXP-12 LH (1-camera)	Added support for 1X_2YE tap geometry
PC3628 Coaxlink QSFP28 (all firmware variants)	Fixed Device Link Trigger (trigger from camera to frame grabber) support

Firmware revision 507

Applies to	Description
PC3625 Coaxlink QSFP+ (4-camera, line-scan)	First release

4.6. Breaking Changes

Changes in the API that are not backward compatible

Since eGrabber 26.01

Moved built-in scripts `egrabber://save-state.js` and `egrabber://restore-state.js` into `egrabber://deprecated/`

Since eGrabber 25.09

- On Windows, `coaxlink.cti`, `grablink.cti`, `gigelink.cti`, and `playlink.cti` now look for their configuration files (`coaxlink.ini`, `grablink.ini`, `gigelink.ini`, and `playlink.cfg` respectively) in `%PUBLIC%\Documents\Euresys\eGrabber\` instead of `%PUBLIC%\Documents\Grabber\`
- Removed 2 member variables from `NewBufferData`; these member variables are for internal use only and should not be used:
 - `Python` `NewBufferData.dsh` and `NewBufferData.bh`
 - `.NET` `NewBufferData::DataStreamHandle` and `NewBufferData::BufferHandle`

Since eGrabber 25.07

Removed `BUFFER_INFO_CUSTOM_STREAM_LINE_WIDTH`, `BUFFER_INFO_CUSTOM_STREAM_LINE_PITCH`, `BUFFER_INFO_CUSTOM_STREAM_STRIPE_HEIGHT`, `BUFFER_INFO_CUSTOM_STREAM_STRIPE_PITCH`, `BUFFER_INFO_CUSTOM_STREAM_STRIPE_OFFSET`, and `BUFFER_INFO_CUSTOM_STREAM_BLOCK_HEIGHT`, which were deprecated since eGrabber 24.09



WARNING

- `BUFFER_INFO_CUSTOM_STREAM_STRIPE_ARRANGEMENT` is deprecated and will be removed in a future release
- `StripeArrangement=Geometry_1X_1YE` is deprecated and will be removed in a future release; `StripeArrangement=Geometry_1X_1Y` with `ReverseY=True` should be used instead

Since eGrabber 25.04

- `.NET` Fixed a typo in `EGrabberDiscovery`; the property `GenTL` has been renamed to `GenTL`; an application using `EGrabberDiscovery.GenTL` will no longer work starting from this release of eGrabber unless it's updated to use `EGrabberDiscovery.GenTL` instead
- Deprecation of `EGrabbers.h` is now enforced; `EGrabbers.h` was deprecated in **eGrabber 22.03**; two options to fix user code:
 - **recommended change** use `EGrabberDiscovery` instead of `EGrabbers`
 - add `#define EURESYS_USE_EGRABBERS_DEPRECATED_API` before `#include <EGrabbers.h>`

Since eGrabber 24.09

.NET Improved EGrabber .NET API to support buffers larger than 2GiB

Since eGrabber 24.06

cti configuration files locations

- coaxlink.cti, grablink.cti, and gigelink.cti now look for their configuration file (coaxlink.ini, grablink.ini, and gigelink.ini, respectively) in the eGrabber configuration directory:
 - on Windows: %PUBLIC%\Documents\Euresys\eGrabber\
 - on Linux: /etc/opt/euresys/egrabber/
 - on macOS: /usr/local/etc/opt/euresys/egrabber/

Since eGrabber 22.08

eGrabber Recorder : Removed asynchronous writes

- The eGrabber Recorder binary interface has not changed, however the arguments related to async handles are no longer functional; applications using this API need to be adapted (depending on the application architecture, a dedicated thread will be required to perform the writes in the background).
- The Recorder Python bindings have been adapted to remove the asynchronous writes as well as the Record flags (e.g. recorder.read() now returns a tuple with 2 elements instead of 3).

Since eGrabber 22.05

- Previously, enableEvent<NewBufferData> was implicitly performed in the constructor of EGrabber.
- Now, enableEvent<NewBufferData> is performed in start unless NewBufferData event has been disabled beforehand; any attempt to pop a NewBufferData structure before start and without explicitly enabling NewBufferData event will lead to an error.

Since eGrabber 19.0

The minimal GLIBC version required for x86-64 (64-bit) Linux binaries is now 2.14.

Since eGrabber 14.0

- BUFFER_INFO_SIZE_FILLED now reports the number of bytes transferred, excluding padding (if any)
- BUFFER_INFO_DATA_SIZE reports the value that was previously reported by BUFFER_INFO_SIZE_FILLED

Since Coaxlink 12.2

NeverWrite is the new default value of CxpLinkConfigurationOption.

NOTE: The recommended way to set the CoaXPress link configuration is by using the equivalent feature in the remote device module; this can be named ConnectionConfig, LinkConfig, or CxpLinkConfiguration depending on the camera.

NOTE: Alternatively, the previous behavior can be restored by setting CxpLinkConfigurationOption to AlwaysWrite. However, the GenApi cache for this register might become invalid!

Since Coaxlink 12.0

- **PC1637 Coaxlink Quad 3D-LLE:** STREAM_INFO_CUSTOM_WIDTH and BUFFER_INFO_WIDTH are now multiplied by two if two laser-lines are extracted
- The Coaxlink .NET assembly targets:
 - the .NET framework 2.0 in Coaxlink versions up to 11.x
 - the .NET framework 4.0 in Coaxlink versions 12.0 and higher

Since Coaxlink 11.1

Behavior of PC1637 Coaxlink Quad 3D-LLE from firmware revision 285:

- The line pitch alignment has been changed to 16 bytes (before firmware revision 285, the line pitch alignment of the card was 8 bytes); this means the Width of the camera must be a multiple of 16 (Mono8).
- When the extraction is disabled, the card behaves like an area-scan variant (and the data stream feature **BufferHeight** is not available); when the extraction is enabled, **BufferHeight** is available and determines the number of profiles to extract; when the extraction is disabled, applications no longer require extra care to make sure acquisitions always start with the first line of the acquired images.

CoaXPress

Ignore any remote device whose master connection is not connected to the first connector of a Coaxlink Device; the driver now requires a master connection to be connected to the first connector whereas the extension connections can be connected to the remaining Coaxlink Device connectors in any order.

See also: "Firmware Variants" on page 10 for the applicable connection schemes.

Image converter

Updated ImageConvertInput and ImageConvertOutput structures.
Subsequent potential build issues can be fixed by either:

- using IMAGE_CONVERT_INPUT and IMAGE_CONVERT_OUTPUT initialization macros (recommended approach) or
- adding the suffix Version0 to ImageConvertInput and ImageConvertOutput types.

NOTE: Users of EGrabber are not affected by this breaking change

Since Coaxlink 10.3

PayloadSize behavior: The feature PayloadSize is not available anymore when the remote device Width is not in line with the data stream Width.Inc

Since Coaxlink 10.2

Additional constructor parameter required: The grabber classes (based on EGrabber) instantiated by EGrabbers require the additional constructor parameter (bool remoteRequired).

See also: sample "213-egrabbers" for details

Since Coaxlink 10

Deprecated the functions `Features`, `RegexFeatures`, `GlobFeatures`, `EnumEntries`, `RegexEnumEntries`, `GlobEnumEntries` from namespace `Euresys`, which are still available by #defining `EURESYS_USE_NS_EURESYS_DEPRECATED_API`. Two options to fix user code:

1. *Recommended change* Replace all occurrences of:
 - `Euresys::Features()` by `Euresys::query::features()`
 - `Euresys::RegexFeatures(re)` by `Euresys::query::features().regex(re)`
 - `Euresys::GlobFeatures(g)` by `Euresys::query::features().glob(g)`
 - `Euresys::EnumEntries(f)` by `Euresys::query::enumEntries(f)`
 - `Euresys::RegexEnumEntries(f,re)` by `Euresys::query::enumEntries(f).regex(re)`
 - `Euresys::GlobEnumEntries(f,g)` by `Euresys::query::enumEntries(f).glob(g)`
2. Or add `#define EURESYS_USE_NS_EURESYS_DEPRECATED_API` before `#include <EGrabber.h>` (or `#include <EGenTL.h>`), a quick fix that doesn't require changing source code.

Since Coaxlink 9.3.1

Removed data stream event counts from the list of possible contexts of device event notifications: `StartOfCameraReadoutEventCount`, `EndOfCameraReadoutEventCount`, `StartOfScanEventCount`, `EndOfScanEventCount`, `RejectedFrameEventCount`, and `RejectedScanEventCount` are no longer valid values for `EventNotificationContext1`, `EventNotificationContext2`, and `EventNotificationContext3` in the device module.

Since Coaxlink 9.3

Data stream features `StartOfScanTriggerSource`, `EndOfScanTriggerSource` and `ScanLength` are now reset by the data stream feature `StreamReset`. Previously, they were reset by the device feature `DeviceReset`.

Since Coaxlink 9.2

GenApi Features Range Checking

Range checking will prevent applications from setting forbidden values to camera features. A meaningful error will be reported if such an event should happen.

Since Coaxlink 9.1.1

Camera Model - Exposure Time Range Boundaries

When `ExposureTimeMin` and/or `ExposureTimeMax` are/is set, the order in which the features `ExposureTimeMin`, `ExposureTimeMax` and `ExposureTime` are set is imposed by the constraints.

Since Coaxlink 7.1.1

[GenTL 1.5 header file](#)

Moved to standard GenTL 1.5 header file (was previously GenTL 1.4):

- GenTL 1.5 changed namespace from `GenICam::Client` to `GenTL`,
- Coaxlink custom GenTL definitions have been moved accordingly from the namespace `GenICam::Client::Euresys` to namespace `GenTL::EuresysCustomGenTL`,
- replaced header file `GenTL_v1_4.h` by `GenTL_v1_5.h`,
- replaced header file `GenTL_v1_4_EuresysCustom.h` by `GenTL_v1_5_EuresysCustom.h`.

[Euresys::GenTL class renaming](#)

Renamed the class `Euresys::GenTL` into `Euresys::EGenTL` to avoid name conflicts with the new standard GenTL 1.5 namespace `GenTL`. This will impact any code using the class `Euresys::GenTL`:

- renamed header file `EuresysGenTL.h` into `EGenTL.h`,
- renamed header file `EuresysGenTLErrors.h` into `EGenTLErrors.h`,
- `Euresys::EGenTL` is now declared in header file `EGenTL.h`.

[Deprecated Euresys::SharedGenTL Class](#)

Deprecated the class `Euresys::SharedGenTL`, which is still available by defining `EURESYS_USE_SHAREDGENTL_DEPRECATED_API`.

Two options to fix user code:

1. *Recommended change* Replace all occurrences of `Euresys::SharedGenTL` by `Euresys::EGenTL`,
2. Or add `#define EURESYS_USE_SHAREDGENTL_DEPRECATED_API` before `#include <EGrabber.h>`, a quick fix that doesn't require changing source code.

[GenTL 1.5 Changes](#)

Announcing or revoking buffers while acquiring returns the error code `GC_ERR_BUSY` (was `GC_ERR_RESOURCE_IN_USE` for GenTL 1.4)

Revoking a queued buffer returns the error code `GC_ERR_BUSY` (was `GC_ERR_RESOURCE_IN_USE` for GenTL 1.4)

New device access status values (defined by GenTL 1.5) returned by the GenTL functions `IFGetDeviceInfo` and `DevGetInfo` for the command `DEVICE_INFO_ACCESS_STATUS`:

- `DEVICE_ACCESS_STATUS_OPEN_READWRITE`: when the device is opened by the current producer with read/write access
- `DEVICE_ACCESS_STATUS_OPEN_READONLY`: when the device is opened by the current producer with read-only access

Since Coaxlink 7.0.0

Product Rename

Renamed **Coaxlink Duo PCIe/104** into **Coaxlink Duo PCIe/104-MIL**; this will impact the names of GenTL interfaces (i.e., `INTERFACE_INFO_ID`)

OemSafetyKey Length

The length of `ProgramOemSafetyKey` and `CheckOemSafetyKey` is now limited by a user-configurable `MaximumOemKeyLength` (4096 characters by default)

LUT Configuration Locking

LUT configuration features (datastream) are locked while grabbing.

CIC Features Availability

Features related to the CIC (device) are not available when `CameraControlMethod` is **NC** or **EXTERNAL**.

Since Coaxlink 4.6.1

EGrabber API

Deprecated EGrabber method `announceBuffer` (superseded by `announceAndQueue`).

Two options to fix user code:

1. *Recommended change* Replace all occurrences of `announceBuffer` by `announceAndQueue` (`GenTLMemory(...)`) or `announceAndQueue(UserMemory(...)`),
2. Or add `#define EURESYS_USE_EGRABBER_DEPRECATED_API` before `#include <EGrabber.h>`.

Since Coaxlink 4.5.1

Euresys Name Space for EGrabber Classes

EGrabber C++ classes now belong to Euresys namespace.

Two options to fix user code:

1. *Recommended change* Replace each occurrence of `EGrabber` by `Euresys::EGrabber`,
2. Or add `using namespace Euresys;` after `#include <EGrabber.h>`.

Since Coaxlink 4.4.1

EGrabber API

The API of EGrabber .NET classes have changed since Coaxlink 4.4.0 beta. GenTL class now behaves like SharedGenTL, which is what most users need

NOTE: The GenTL constructor accepts a new argument, named `shared`, which can be used to revert to the old behavior.

RGBConverter.h

Added `inplace1x2yeReordering` methods instead of `Inplace1x2yeReordering` class

NOTE: User code needs to be adapted to call `inplace1x2yeReordering` instead of creating an `Inplace1x2yeReordering` instance, please see `include/RGBConverter.h` for a code sample.

Since Coaxlink 4.4.0

.NET Assembly

Added new assembly exposing EGrabber classes, previous CoaxlinkGrabber classes are removed from the assembly.

EGrabber

Deprecated `getInfoString` methods (replaced by `getInfo`).

Two options to fix user code:

1. *Recommended change* Replace all occurrences of `getInfoString<module>` (and `getBufferInfoString`) by `getInfo<module, std::string>` (and `getBufferInfo<std::string>`)
2. Or add `#define EURESYS_USE_EGRABBER_DEPRECATED_API` before `#include <EGrabber.h>`.

GenTL C++ class

Deprecated `bayerConvert` function

Though the function `bayerConvert` is superseded by the image converter, it is still possible to use it, if required please add `#define EURESYS_USE_BAYER_DEPRECATED_API` before `#include <EuresysGenTL.h>` or `#include <EGrabber.h>`

Since Coaxlink 4.3

Data Stream Module GenApi feature

`UnpackingMode`: Changed default value to LSB (instead of MSB)

Since Coaxlink 4.1

Device Module features changes

- Merged `CycleTriggerSource` and `CycleHardwareTriggerSource` features.
- Renamed `CycleSoftwareTrigger` into `StartCycle`.
- Renamed `CyclePeriodTarget` into `CycleMinimumPeriod`.
- Renamed `ErrorCounter` into `ErrorCount`.
- Renamed `ErrorCounterReset` into `ErrorCountReset`.
- Removed backward compatibility for deprecated features: `TriggerSource`, `TargetFramePeriod`, `ExposureRecovery`.

5. Known Issues

Known issues of eGrabber 26.02

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5.1. PC1628 Grablink Duo Limitations

Unsupported device types and unavailable features of PC1628 Grablink Duo in eGrabber 26.02

Applies to:

Duo

Unsupported device types

Color RGB cameras (other than RGB8)

- RGB10, RGB12, RGB14, RGB16 color cameras
- RGBI color cameras
- Bayer CFA bilinear color line-scan cameras

Cameras with specific Camera Link requirements

- Camera Link Lite configuration
- Skipping Camera Link clocks at begin-of-line
- Skipping LVAL lines at begin-of-frame

Cameras with specific tap configurations and geometries

- Tap configurations for RGB10, RGB12, RGB14, RGB16 pixels (*T30, *T36, *T42, *T48)
- Tap configurations for all RGBI pixels (*T32, *T40, *T48, *T56, *T64)
- All geometries with more than 1-tap along the Y-direction (*_1Y2, *_1Y3 and *_2YE)
- 4X2E_1Y geometry with DECA_8T10 configuration

Unavailable features

Pixel processing

- White Balance Operator

Image processing

- Horizontal image flipping
- Image cropping

Other features

- Connect Camera Link enable signals of Channel Links Y and Z as general-purpose inputs
- C2C Synchronization QDC forwarding

5.2. Deviations from the GenTL Specification

EventKill

GenTL specification

The GenTL specification states that:

- In case of multiple pending wait operations EventKill causes one wait operation to return with a GC_ERR_ABORT error code.
- This means that if more than one thread waits for an event, the EventKill function terminates only one wait operation and other threads will continue execution.
- Therefore in order to cancel all pending wait operations EventKill must be called as many times as wait operations are pending.
- In case this function is called while no wait operation was pending the next call to EventGetData will return a GC_ERR_ABORT.



NOTE

- This implementation is prone to race conditions: calling EventKill N times in a row to kill exactly N waiting threads is not guaranteed to work as expected because signaling an event that is already in the signaled state has no effect. In other words, some of the EventKill calls could have no effect.
- EventKill as specified is not easy to use: How many EventKill calls are required? How many EventGetData calls should we expect to return GC_ERR_ABORT? Note that race conditions affect these questions.

Euresys GenTL implementation

The Euresys GenTL implementation solves these issues, but differs slightly:

- EventKill aborts all pending wait operations on the event handle.
- EventKill has no impact on subsequent wait operations.

DSSStopAcquisition

GenTL specification

The GenTL specification states that:

- Each call to `DSSstartAcquisition` must be accompanied by a call to `DSSstopAcquisition`.
- Argument `iNumToAcquire` passed to `DSSstartAcquisition` sets the number of filled delivered buffers after which the acquisition engine stops automatically.
- There must be a call to `DSSstopAcquisition` accompanying each call to `DSSstartAcquisition` even though the stream already stopped because the number of frames to acquire was reached.
- `DSSstopAcquisition` returns `GC_ERR_RESOURCE_IN_USE` when the acquisition engine has already been terminated or has not been started.

Euresys GenTL implementation

The Euresys GenTL implementation differs slightly:

- `DSSstopAcquisition` will not return `GC_ERR_RESOURCE_IN_USE` if the data stream hasn't been started.
- `DSSstopAcquisition` will not return `GC_ERR_RESOURCE_IN_USE` if the data stream has already been stopped by a prior call to `DSSstopAcquisition`.
- `DSSstopAcquisition` will not return `GC_ERR_RESOURCE_IN_USE` if the data stream has stopped automatically after `iNumToAcquire` images have been captured.

In other words, `DSSstopAcquisition` is idempotent: it can be applied multiple times without changing the result beyond the initial application.

With the Euresys implementation, it is not necessary to treat some errors as normal, and race conditions (between `DSSstopAcquisition` and the automatic stop of the data stream) are avoided. Furthermore, if the data stream has stopped automatically after acquiring `iNumToAcquire` images, `DSSstartAcquisition` can be called without first calling `DSSstopAcquisition`.

5.3. Deviations from the PCI Express Specification

Applies to **PC1633 Coaxlink Quad G3**, **PC1633-LH Coaxlink Quad G3 LH** and **PC1635 Coaxlink Quad G3 DF**.

QuadG3

QuadG3LH

QuadG3DF

PC1633 Coaxlink Quad G3, **PC1633-LH Coaxlink Quad G3 LH** and **PC1635 Coaxlink Quad G3 DF** operate only at PCIe 2.0 and PCIe 3.0 link speeds.

These products cannot be used when inserted in PCIe revision 1.x slots.

Applies to **PC3628 Coaxlink QSFP28**.

QSFP28

PC3628 Coaxlink QSFP28 operates only at PCIe 4.0 link speeds.

This product is not compatible with PCIe slots using revisions 1.x, 2.x, and 3.x.

NOTE: The support for PCIe 3.0 will be included in a future release.

5.4. GenICam Browser (Deprecated) and gentl view Limitations

Only images having a width aligned on a 4-bytes boundary can be displayed correctly.

6. Appendix

6.1. Firmware Variants History

This topic shows, for each product (group), the history of the firmware variants releases.

- The **Firmware variant** column shows the name of the firmware variant.
- The **First release** column shows the version of the first eGrabber (or Coaxlink driver) providing this firmware variant.
- The **Last release** column shows, when available, the version of the last Grabber (or Coaxlink driver) providing this firmware variant.
- The **Notes** column gives additional information.

PC1628 Grablink Duo

Firmware Variant	First release	Last release	Notes
1-camera	23.02		
1-camera, line-scan	23.02		
2-camera	23.02		
2-camera, line-scan	23.02		

PC1629 Coaxlink Duo PCIe/104-EMB and PC1634 Coaxlink Duo PCIe/104-MIL

Firmware Variant	First release	Last release	Notes
1-camera	6.0		
1-camera, line-scan	6.0		
2-camera	6.0		

PC1630 Coaxlink Mono

Firmware Variant	First release	Last release	Notes
1-camera	2.0		

PC1631 Coaxlink Duo

Firmware Variant	First release	Last release	Notes
1-camera	2.0		
1-camera, line-scan	9.1		
2-camera	3.2		
2-camera, line-scan	9.1		

PC1632 Coaxlink Quad

Firmware Variant	First release	Last release	Notes
1-camera	1.0		
1-camera, line-scan	4.1		
2-camera	4.2		

PC1633 Coaxlink Quad G3 and PC1633-LH Coaxlink Quad G3 LH

Firmware Variant	First release	Last release	Notes
1-camera	4.0		
1-camera, 4-data-stream	9.3		
1-camera, line-scan	4.1		
1-slm-camera	6.1	24.12	Retired firmware variant
1-sls-camera	6.1	24.12	Retired firmware variant
2-camera	4.2		
2-camera, bayer	22.1		
2-camera, line-scan	4.3		
3-camera	11.2		
4-camera	4.0		
4-camera, line-scan	7.1		

PC1635 Coaxlink Quad G3 DF

Firmware Variant	First release	Last release	Notes
1-camera	5.0		
1-df-camera	5.0		
1-camera, line-scan	5.0		
1-df-camera, line-scan	5.0		

PC1637 Coaxlink Quad 3D-LLE

Firmware Variant	First release	Last release	Notes
1-camera	9.0		
2-camera	24.07		

PC1638 Coaxlink Quad CXP-3

Firmware Variant	First release	Last release	Notes
4-camera	8.0	10.5	Retired product

PC3602 Coaxlink Octo

Firmware Variant	First release	Last release	Notes
1-camera	10.1		
1-camera, line-scan	10.1		
2-camera	10.0		
2-camera, line-scan	10.1		
3-camera	12.7		
4-camera	10.2		
4-camera, line-scan	10.5		
5-camera	10.2		
5-camera, 5D22211	16.1		
8-camera	10.0		
8-camera, line-scan	24.12		

PC3603 Coaxlink Quad CXP-12 and PC3603-4 Coaxlink Quad CXP-12

Firmware Variant	First release	Last release	Notes
1-camera	10.4		
1-camera, line-scan	11.0		
2-camera	12.5		
2-camera, line-scan	22.1		
3-camera	25.04		
3-camera, line-scan	25.12		
4-camera	10.4		
4-camera, line-scan	23.08		

PC3620 Coaxlink Quad CXP-12 JPEG and PC3620-4 Coaxlink Quad CXP-12 JPEG

Firmware Variant	First release	Last release	Notes
4-camera	11.0	25.12	Retired product

PC3621 Coaxlink Mono CXP-12 and PC3621-LH Coaxlink Mono CXP-12 LH

Firmware Variant	First release	Last release	Notes
1-camera	12.4		
1-camera, line-scan	19.0		

PC3622 Coaxlink Duo CXP-12 and PC3622-LH Coaxlink Duo CXP-12 LH

Firmware Variant	First release	Last release	Notes
1-camera	12.4		
1-camera, line-scan	18.0		
2-camera	12.4		
2-camera, line-scan	19.0		

PC3623 Coaxlink Quad CXP-12 Value

Firmware Variant	First release	Last release	Notes
1-camera	23.08		
1-camera, line-scan	23.08		
2-camera	23.08		
2-camera, line-scan	23.08		
3-camera	25.07		
4-camera	23.08		
4-camera, line-scan	23.08		

PC3624 Coaxlink Quad CXP-12 DF

Firmware Variant	First release	Last release	Notes
1-camera	24.03		
1-df-camera	24.03		
1-camera, line-scan	24.03		
1-df-camera, line-scan	24.03		

PC3625 Coaxlink QSFP+

Firmware Variant	First release	Last release	Notes
1-camera	17.0		
1-camera, line-scan	21.0		
2-camera	25.10		
4-camera	25.02		
4-camera, line-scan	26.02		

PC3628 Coaxlink QSFP28

Firmware Variant	First release	Last release	Notes
1-camera	25.10		
1-camera, line-scan	25.10		

PC3629 Coaxlink CXP-12 to QSFP+ Converter

Firmware Variant	First release	Last release	Notes
1-camera	24.10		
2-camera	25.10		
4-camera	25.10		

PC3633 Coaxlink Quad CXP-12 3D-LLE

Firmware Variant	First release	Last release	Notes
1-camera	24.12		

6.2. Supported Operating Systems History

This table shows the whole history of **eGrabber** driver (Previously named **Coaxlink**) regarding the supported operating systems.

- The **OS** column shows the Operating System name, possibly suffixed by its version number.
- The **PA** column shows the Processor Architecture.
- The **First release** column shows the name of the first eGrabber (or Coaxlink driver) supporting this OS/PA combination.
- The **Last release** column shows, when available, the name of the last eGrabber (or Coaxlink driver) supporting this OS/PA combination.
- The **Notes** column gives additional information about this OS/PA combination

OS	PA	First release	Last release	Notes
Windows 7 SP1	x86 (32-bit)	Coaxlink 1.0	eGrabber 21.0	
Windows 7 SP1	x86-64 (64-bit)	Coaxlink 1.0	eGrabber 24.12	Includes Windows Server 2008 R2
Windows 8	x86 (32-bit)	Coaxlink 1.0	Coaxlink 9.4	
Windows 8	x86-64 (64-bit)	Coaxlink 1.0	Coaxlink 9.4	
Windows 8.1	x86 (32-bit)	Coaxlink 4.5	eGrabber 21.0	
Windows 8.1	x86-64 (64-bit)	Coaxlink 4.5	eGrabber 24.12	Includes Windows Server 2012 R2
Windows 10	x86 (32-bit)	Coaxlink 4.5	eGrabber 21.0	
Windows 10	x86-64 (64-bit)	Coaxlink 4.5	eGrabber 25.12	Versions < 1809
Windows 10	x86-64 (64-bit)	Coaxlink 4.5		
Windows 11	x86-64 (64-bit)	eGrabber 22.03		
Linux	x86 (32-bit)	Coaxlink 3.0	eGrabber 17.0	
Linux	x86-64 (64-bit)	Coaxlink 3.0	eGrabber 25.12	Linux kernels < v4.4; GLIBC < 2.23
Linux	AArch64 (64-bit)	Coaxlink 7.0	eGrabber 25.12	Linux kernels < v4.4; GLIBC < 2.23
Linux	x86-64 (64-bit)	Coaxlink 3.0		
Linux	AArch64 (64-bit)	Coaxlink 7.0		
macOS 10.12	x86-64 (64-bit)	Coaxlink 10.0	eGrabber 22.12	(kext drivers) A.k.a. Sierra
macOS 10.13	x86-64 (64-bit)	Coaxlink 10.0	eGrabber 22.12	(kext drivers) A.k.a. High Sierra
macOS 12.3	AArch64 (64-bit)	eGrabber 22.08		Studio added in 23.04
macOS	AArch64 (64-bit)	eGrabber 22.08	eGrabber 25.12	kext drivers
macOS	x86-64 (64-bit)	eGrabber 22.08	eGrabber 25.12	kext drivers
macOS	AArch64 (64-bit)	eGrabber 23.04		dext drivers using Driver Kit extension
macOS	x86-64 (64-bit)	eGrabber 25.09		dext drivers using Driver Kit extension

NOTE: Linux OS: Gigelink and Recorder were added in eGrabber 22.08

6.3. About Icons

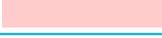
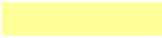
Icons are used everywhere in the eGrabber documentation to represent a specific product. They are particularly useful in "Applies to" elements to obtain a compact representation of a product list.

Applies to:

Duo	Duo104EMB ^{EOL}	Mono ^{EOL}	Duo ^{EOL}	Quad ^{EOL}	QuadG3	QuadG3LH
QuadG3DF	Quad3DLLE	Octo	Quad1z ^{EOL}	Quad12-4	Mono1z ^{REQ}	Mono12LH
Duo12	Duo12LH ^{REQ}	Value12	Quad12DF	QSFP+	QSFP28	QSFP+Conv
Quad12LLE	1625	1676	1636	3300 ^{EOL}	3301 ^{EOL}	3302 ^{EOL}
3303	3304	3610 ^{EOL}	3612 ^{EOL}	3613	3614	3618
6514	6516 ^{Prelim}	Gigalink	Recorder	RecorderEV	Studio	eGrabber

Icons used in this edition of the eGrabber documentation

Icons are composed of graphical elements characterizing the product:

Background	Description
	Analog product (Domino series)
	SDTV product (Picolo series)
	HDTV product (Picolo HD and Picolo.net series)
	Camera Link product (Grablink series)
	CoaXPress product (Coaxlink series)
	CoaXPress-over-Fiber product (Coaxlink series)
	Accessory product
	Software libraries
	Free software
Text	Description
Alphanumeric	Shortened product name (e.g. "Value12", "QSFP+") - Only for main products
Number	Product code w.o. prefix (e.g. 1625) - For accessories
Top border	Description
	Low performance camera interface (e.g. CXP-6, CL-85)
	High performance camera interface (e.g. CoF 10, CXP-12)
	Highest performance camera interface (e.g. CoF-25)
Badge	Description
	Preliminary
	Product on request
	Not recommended for new designs
	End-of-life product