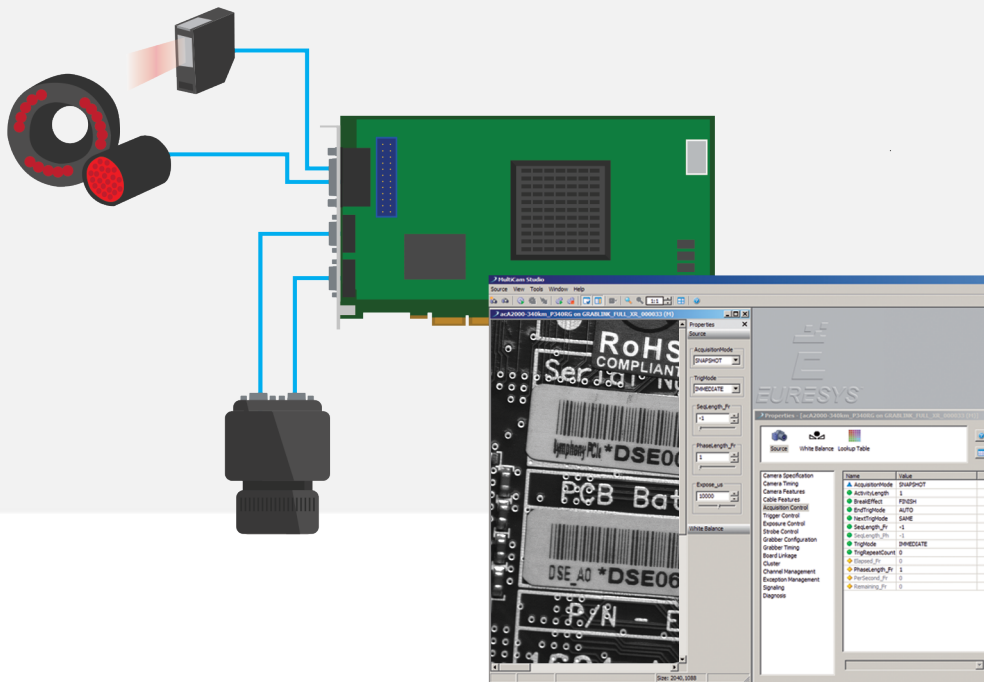


MultiCam

MultiCam Driver Version 6.13



EURESYS s.a. shall retain all property rights, title and interest of the documentation of the hardware and the software, and of the trademarks of EURESYS s.a. All the names of companies and products mentioned in the documentation may be the trademarks of their respective owners. The licensing, use, leasing, loaning, translation, reproduction, copying or modification of the hardware or the software, brands or documentation of EURESYS s.a. contained in this book, is not allowed without prior notice. EURESYS s.a. may modify the product specification or change the information given in this documentation at any time, at its discretion, and without prior notice. EURESYS s.a. shall not be liable for any loss of or damage to revenues, profits, goodwill, data, information systems or other special, incidental, indirect, consequential or punitive damages of any kind arising in connection with the use of the hardware or the software of EURESYS s.a. or resulting of omissions or errors in this documentation.

Contents

Release Benefits..... 4

Release Specification..... 5

MultiCam Products..... 5

Supported OS..... 6

Development Tools..... 7

Memento Versions..... 7

Important Notices..... 8

Driver Installation on Microsoft Windows..... 8

Driver Installation on Microsoft Windows 7..... 8

Driver Installation on Microsoft Windows 10..... 9

PCI Express Compatibility Issue..... 10

Turning-off Windows Fast Startup..... 10

Configuration Switches..... 10

PCI and PCI Express Compatibility Note..... 11

Low Camera Link Clock Rate..... 11

Camera and CamConfig Parameters..... 11

Buffer Size Limits..... 12

Memory Allocation..... 12

Release Details..... 13

Added/Improved Features..... 13

Solved Issues..... 15

Known Issues..... 17

Appendix..... 21

Reading Version Number..... 21

Release Benefits

Benefits of added or improved features of MultiCam Driver 6.13

NVIDIA CUDA Sample Program

This C++ sample program demonstrates how an application can off-load the CPU from display tasks by transferring image data directly to an NVIDIA Graphics card.

Double Mode Emulation

The new Interleaved Area-scan Acquisition feature allows to emulate the "Double Exposure Mode" of the Vieworks VA-29MC camera with any grabber-controlled exposure asynchronous reset camera.

HTML WebHelp MultiCam Documentation Package

The *MultiCam Documentation*, an HTML WebHelp documentation package, provides a unified access to all the legacy and recently renovated documentation components for both Windows and Linux users.

Grablink Parameters Reference

The *Grablink Parameters Reference* documentation component is an up-to-date edition of the MultiCam Parameters Reference dedicated to Grablink products.

Release Specification

Products, operating systems, development tools, etc



Notice: In this document, unless explicitly specified, 'MultiCam Driver 6.13' refers to the latest edition of the MultiCam Driver, namely: 6.13.0!

MultiCam Products

MultiCam products supported by MultiCam Driver 6.13

Piccolo series

Product	S/N Prefix	64-bit OS	64-bit DMA
1155 Piccolo	PIC	Yes	-
1685 Piccolo PCIe	PIE	Yes	-
1401 Piccolo Junior 4	JR4	Yes	-
1157 Piccolo Pro 2	PP2	Yes	-
1687 Piccolo Pro 2 PCIe	P2E	Yes	-
1303 Piccolo Tetra	PTE	Yes	-
1402 Piccolo Tymo	PTY	Yes	-
1305 Piccolo Alert	PAL	Yes	-
1641 Piccolo Alert PCIe	PAX	Yes	-
6006 Piccolo Alert RC	PAR	Yes	-
6003 Piccolo Alert Compact PCIe	PXR	Yes	-

Domino series

Product	S/N Prefix	64-bit OS	64-bit DMA
1161 Domino Alpha 2	DA2	-	-
1167 Domino Melody	DML	Yes	-
1168 Domino Harmony	DHM	Yes	-
1601 Domino Symphony PCIe	DSE	Yes	-

Grablink series

Product	S/N Prefix	64-bit OS	64-bit DMA
1191 Grablink Value	GLV	Yes	-
1198 Grablink Avenue	GLA	Yes	-
1621 Grablink Express	GEX	Yes	-
1622 Grablink Full	FM1	Yes	Yes
1623 Grablink DualBase	GDB	Yes	Yes
1624 Grablink Base	GBA	Yes	Yes
1626 Grablink Full XR	FXR	Yes	Yes

Supported OS

Operating systems supported by MultiCam Driver version 6.13

Windows

OS Name & Version	Additional Information	
Microsoft Windows 7	x86 (32-bit)	Service Pack 1 with KB3033929 and KB2921916 updates
	x86-64 (64-bit)	
Microsoft Windows Server 2008 R2	x86-64 (64-bit)	
Microsoft Windows 8	x86 (32-bit)	-
	x86-64 (64-bit)	
Microsoft Windows Server 2012	x86-64 (64-bit)	
Microsoft Windows 8.1	x86 (32-bit)	-
	x86-64 (64-bit)	
Microsoft Windows Server 2012 R2	x86-64 (64-bit)	
Microsoft Windows 10	x86 (32-bit)	-
	x86-64 (64-bit)	

Linux

The MultiCam Driver is designed to be distribution-independent on x86 and x64 platforms. It is expected to work with a wide range of distributions.

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

OS Name & Version	Additional Information	
Linux distribution Ubuntu 14.04	x86 (32-bit)	Kernel Version 3.13
	x86-64 (64-bit)	

Development Tools

Supported Programming Interfaces

MultiCam 6.13 is supplied as:

- A **32-bit binary library** (Windows and Linux) designed to be used with ISO-compliant C/C++ compilers for the development of 32-bit (x86) applications.
- A **64-bit binary library** (Windows and Linux) designed to be used with ISO-compliant C/C++ compilers for the development of 64-bit (x86-64) applications.
- A **.NET assembly**, based on the `MultiCam.cs` interface file provided with the C# sample programs, designed to be used with development environments compatible with .NET frameworks version 2.0 or higher. You can find more information on this API in the sample programs source code.
- **DirectShow 32-bit filters** (Windows only) designed to be used with 32-bit (x86) Microsoft Visual C++ compilers for the development of 32-bit (x86) applications.
- **DirectShow 64-bit filters** (Windows only) designed to be used with 64-bit (x86-64) Microsoft Visual C++ compilers for the development of 64-bit (x86-64) applications.

MultiCam 6.13 should be usable with any development tool that supports at least one of these interfaces.



Note: Please note that these programming interfaces also cover most of the available development tools used with other languages.



Note: The previously available **ActiveX controls library** and **.NET assembly** are now deprecated and have been removed from the MultiCam package. MultiCam can still be used with Microsoft Visual Basic 6 or a .NET language provided that the C API is called directly. Sample programs are available beside the driver in the MultiCam download area of the Euresys website.

Memento Versions

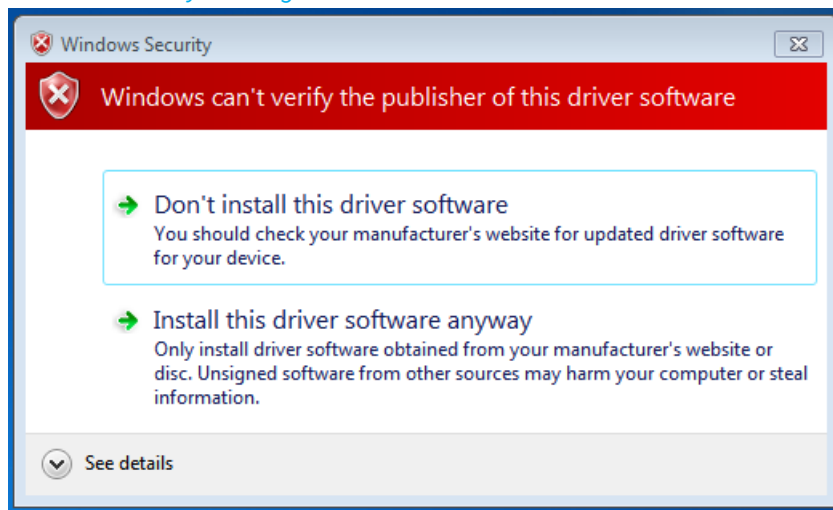
Memento 4.5 or later is required when using MultiCam 6.12 or later.

Important Notices

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

Driver Installation on Microsoft Windows

Windows Security warning at driver installation on Microsoft Windows when VeriSign Universal Root CA is missing



This warning occurs when the VeriSign Universal Root CA certificate is missing from the Windows certificate store, which can happen if the system is not connected to the Internet and thus does not receive root certificates updates.

This issue can be solved by installing this missing certificate, which is available in an archive that can be downloaded [here](#), on the Symantec website.

Driver Installation on Microsoft Windows 7

Renewal of the "Code Signing For Microsoft Authenticode" certificate for Euresys drivers and SHA-256 support

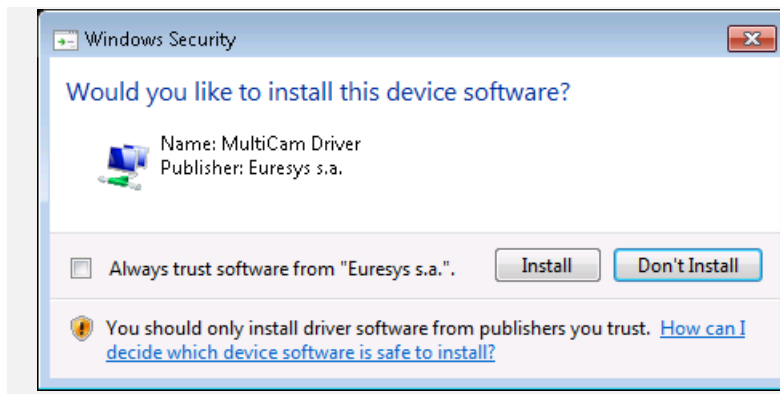
Since April 2016, Euresys drivers have been signed with a new SHA-256 code-signing certificate, which is required by Microsoft since January 2016 following its SHA-1 deprecation schedule.

Microsoft Windows 7 and Microsoft Windows Server 2008 R2 now require at least SP1 as well as some specific Windows updates in order to support SHA-256 certificates.



Caution: The following Windows updates are required and must be installed before using Euresys drivers on Microsoft Windows 7 and Microsoft Windows Server 2008 R2:

- [KB3033929](#) (provides support for SHA-256 certificates which are required by Microsoft): without this one, a "Windows cannot verify the digital signature for the drivers required for this device" (code 52) error will prevent the Euresys drivers from loading.
- [KB2921916](#): this hot-fix avoids the "Would you like to install this driver software?" dialog to pop up at each driver installation (see picture below), even if the user checked the "Always trust software from "Euresys s.a." check box.



Driver Installation on Microsoft Windows 10

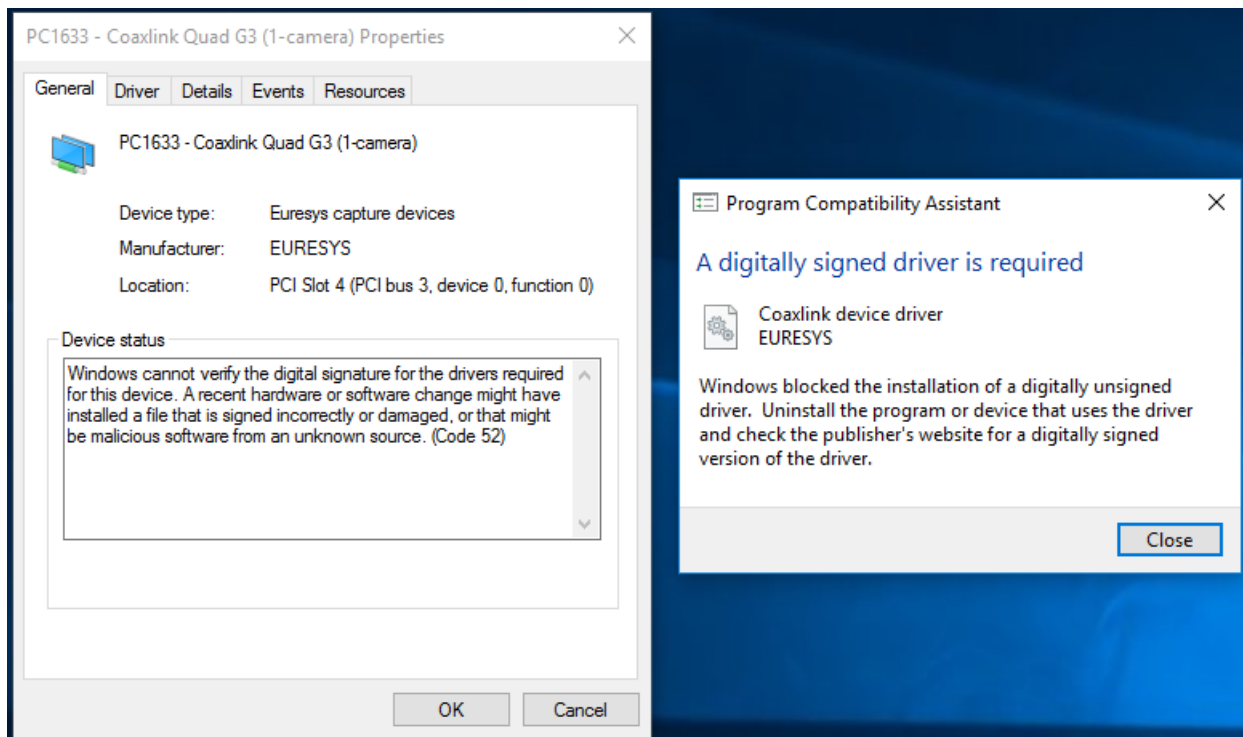
Configuration requirements for installing Euresys drivers on Windows 10 version 1607 (Anniversary Update)

This notice applies to the following Euresys drivers:

- Coaxlink Driver version 4.7 or later,
- Memento Driver version 4.7 or later,
- MultiCam Driver version 6.9.8 or later.

When installing Euresys drivers on a fresh install of Windows 10 version 1607 (Anniversary Update), the UEFI Secure Boot feature must be disabled in BIOS so that the Euresys drivers can be loaded by Windows when Secure Boot is enabled.

The screenshot below shows the error that is displayed in the Device Manager:



PCI Express Compatibility Issue

PCI Express Compatibility Issue for 1623 Grablink DualBase, 1622 Grablink Full and 1626 Grablink Full XR

Since version 138 (0x8A) of the PCI Express endpoint interface, 1623 Grablink DualBase, 1622 Grablink Full and 1626 Grablink Full XR support exclusively the x4 link width.

**Notice:** *The x1 link width is no longer supported!*

**Note:** *The version of the PCI Express endpoint interface is given by the `PCIeEndpointRevisionID` board parameter*

Turning-off Windows Fast Startup

Microsoft Windows Fast Startup feature turn-off procedure

**Important:** *The Microsoft Windows Fast Startup feature which is available since Windows 8 is not supported by the MultiCam Driver. Please make sure to turn it off before using MultiCam.*

To turn off the *Fast Startup* feature, perform the following few steps:

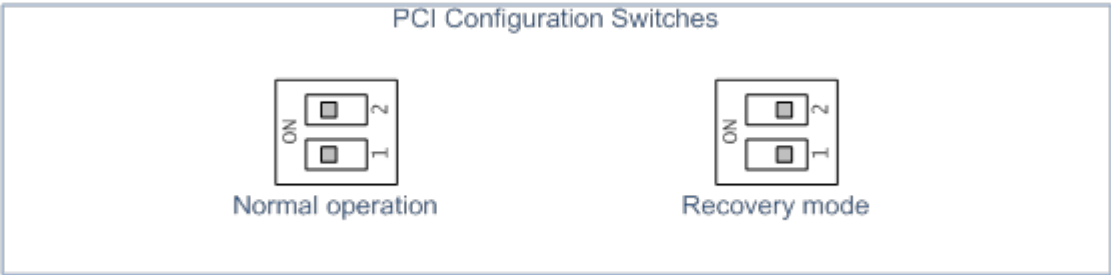
1. Go to the *Control Panel* then click on the *Power Options* icon.
2. Click on the “*Choose what the power buttons do*” link on the left side.
3. Click on the “*Change settings that are currently unavailable*” link at the top.
4. If prompted by UAC, then click on “*Yes*”.
5. Under *Shutdown settings*, uncheck the “*Turn on fast startup*” checkbox if it is listed, then click on the “*Save changes*” button.
6. The *Fast Startup* feature is now disabled.

Configuration Switches

Configuration switches on latest generation of Grablink products

This notice applies to the following Grablink products: 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full and 1626 Grablink Full XR.

These boards feature a set of configuration switches. For normal operation, both switches must be in the ON position.



Should recovery mode be enabled by error, the Grablink board appear respectively as "GRABLINK Base (Recovery)", "GRABLINK DualBase (Recovery)", "GRABLINK Full (Recovery)" and "GRABLINK Full XR (Recovery)" in Windows Device Manager and is not functional.

To restore normal operation, power off the PC, change the switches to normal position and then reboot.

PCI and PCI Express Compatibility Note

PCI and PCI Express bus requirements for Pico cards based on the Conexant Fusion 878a

This notice applies to all Pico cards based on the Conexant Fusion 878a chip, namely: 1155 Pico, 1685 Pico PCIe, 1401 Pico Junior 4, 1157 Pico Pro 2, 1687 Pico Pro 2 PCIe, 1303 Pico Tetra and 1402 Pico Tymo and their derivatives.

To ensure correct operation when using one of the above-listed Pico cards the response time (also called latency) of the PCI or PCIe bus on the motherboard where the card is plugged must be low enough. The latency of the PCI or PCIe bus depends on the architecture of the motherboard, and may also depend on the Operating System used and the BIOS version or settings.

If the latency of the bus is not low enough, randomly distributed black lines may appear in the image acquired. They are caused by the long response time of the PCI or PCIe bus, leading to a condition known as "FIFO overrun".

The requirements for correct operation depend on the color format and the buffer pitch used. Both are set by the application using the Pico through MultiCam parameters.

1. When the color format is RGB24 (this is default setting in MultiCam Studio), the allowed bus latency is 11 us. (*This is the least favorable case.*)
2. When the color format is RGB24 and the MultiCam buffer pitch is set to 4096, the allowed bus latency is 17 us.
3. When the color format is YUV422 (packed) or RGB16 and the MultiCam buffer pitch is set to 4096, the allowed bus latency is 29 us.
4. When the color format is YUV411 (packed) and the MultiCam buffer pitch is set to 4096, the allowed bus latency is 37 us. (*This is the most favorable case.*)

If you experience this problem, try changing the application parameters towards a more favorable case.

Low Camera Link Clock Rate

Operating latest generation of Grablink boards with a Camera Link clock rate lower than 30 MHz

This notice applies to the following Grablink products: 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full. Since MultiCam 6.7.2.1677, to be able to use cameras with a Camera Link clock rate lower than 30 MHz, an application must set the `BoardTopology` board parameter value to:

- `MONO_SLOW` for 1624 Grablink Base and 1622 Grablink Full.
- `DUO_SLOW` for 1623 Grablink DualBase.



Note: 1626 Grablink Full XR doesn't operate with a Camera Link clock rate lower than 30 MHz!



Note: On 1623 Grablink DualBase, both channels are configured for low speed operation. It is not possible to configure only one channel for low-speed operation.

Camera and CamConfig Parameters

Restriction on allowed values for the Camera and CamConfig parameters on latest generation of Grablink products

This notice applies to the following Grablink products: 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full and 1626 Grablink Full XR.

The allowed values for the `CamConfig` parameters are `PxxSC`, `PxxRC`, `PxxRG`, `LxxxxSC`, `LxxxxSP`, `LxxxxRC`, `LxxxxRP`, `LxxxxRG` and `LxxxxRG2`.

All CamFiles have been adapted accordingly and can be downloaded from the support pages of the Euresys website using the following URL: <http://www.euresys.com/support/>.

Other boards are not concerned but it is however recommended to use the latest available CamFiles in each case.

Buffer Size Limits

Buffer size limits for MultiCam surfaces

Under Windows, the maximum buffer size allowed per MultiCam surface is about 4GB.

If a MultiCam surface exceeds those limits, MultiCam returns *MC_IO_ERROR* at channel activation.

Memory Allocation

Allocating memory for MultiCam surfaces

The recommended method allocating memory to the surfaces of MultiCam is the "Automatic method" since this is the only method that is always applicable.

The usage of the "manual" memory allocation method" is restricted to the following cases:

- On "Windows 32-bit without PAE" systems, without any further restrictions
- On boards having 64-bit DMA addressing capability, without any further restrictions
- On Linux operating systems, without any further restrictions: The Linux kernel provides a buffering system ensuring that the DMA operates always in the lowest 4 GB of physical addressing space.

The "manual" method is prohibited when:

- The board has no 64-bit DMA capability and...
- The system has physical memory beyond the 4 GB address boundary and...
- The operating systems is "Windows x86 with PAE" or "Windows x86-64"

Since MultiCam 6.5.1, MultiCam returns the "MC_INVALID_SURFACE" error on channel activation if the manual memory allocation method is used in a prohibited case.

Release Details

[Detailed description of recent changes in MultiCam Driver](#)

Added/Improved Features

[List and description of recently added or improved features](#)

MultiCam Driver 6.13.0

NVIDIA CUDA Sample Program

Added `grablink-cuda` C++ sample program for Linux and Windows.

This program demonstrates the interoperability of MultiCam, OpenGL and NVIDIA CUDA to transfer image data directly to the graphics card.

This sample program is applicable to 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full and 1626 Grablink Full XR. boards.

Interleaved Area-scan Acquisition

Added the *Interleaved Area-scan Acquisition* feature.

The feature allows to capture sequences of two images with different exposure time, strobe duration, strobe position and strobe output settings from a grabber-controlled asynchronous reset area-scan camera.

This feature is available for 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full and 1626 Grablink Full XR.

Refer to *Interleaved Acquisition* section of *Grablink Documentation Update* for more information.

HTML WebHelp MultiCam Documentation

Added *MultiCam Documentation* HTML WebHelp package.

The *MultiCam Documentation* package provides a unified access to the following documentation components:

MultiCam 6.7 Documentation

Integrated documentation of MultiCam 6.7 for Pico, Domino and Grablink product series.

Grablink Documentation Update

Description of all the features that were introduced or enhanced after MultiCam 6.7 on Grablink products.

Grablink Parameters Reference

Reference documentation of MultiCam parameters for Grablink products only.

Memento Documentation

Reference documentation of Memento.

The *MultiCam Documentation* package is available for download as:

- `multicam-win-documentation-6.13.0.<xxx>.exe`: an executable installer for Windows users or,
- `multicam-linux-documentation-6.13.0.<xxx>.tar.gz`: a compressed archive for Linux users.

The *MultiCam Documentation* documentation can be viewed using a regular web browser:

- By clicking on the *MultiCam Documentation* icon for Windows users or,
- By opening the `multicam-linux-documentation\webhelp\index.html` page for Linux users.

Grablink Parameters Reference – HTML WebHelp & PDF

Added the *Grablink Parameters Reference* documentation component.

This documentation component provides the reference information for MultiCam parameters that are relevant for Grablink products.

This component is integrated as a main section of the HTML WebHelp Coaxlink Documentation. It is also available as a separate PDF file: `grablink-multicam-parameters-6.13.<xxx>.pdf`

Grablink Documentation Update – HTML WebHelp & PDF

Added the *Grablink Documentation Update* documentation component.

This documentation component describes all the features that were introduced or enhanced after MultiCam 6.7 on Grablink products.

This component is integrated as a main section of the HTML WebHelp Coaxlink Documentation. It is also available as a separate PDF file: `grablink-documentation-update-6.13.<xxx>.pdf`

Solved Issues

Solved issues in MultiCam Driver 6.13

MultiCam Driver 6.13

Acquisition failure or frame rate drop with 1623 Grablink DualBase

Affected boards

1623 Grablink DualBase

Symptoms

Acquisition stops (grabber-controlled camera) or frame rate drops (free-run camera).

Conditions of occurrence

- FVAL and LVAL must rise on the same clock edge
- High Camera Link clock frequencies (actual limit depends on FPGA signal path delays that are different for each connector and MultiCam release)

This malfunction is solved since MultiCam 6.13.

Random application crash or freeze when running a graph with the 64-bit Euresys Source Filter

Affected boards

All Pico boards

Symptoms

Application crash or freeze might randomly occur when the graph is run.

Conditions of occurrence

- DirectShow API
- 64-bit variant of the Euresys Source Filter
- A system with more than 4GB of RAM

This malfunction is solved since MultiCam 6.13.

Mismatch between maximum NTSC capture rate and VIDEOINFOHEADER's AvgTimePerFrame value using the Euresys Source Filter

Affected boards

1305 Pico Alert, 1641 Pico Alert PCIe, 6006 Pico Alert RC, 6003 Pico Alert Compact PCIe

Symptoms

When setting the NTSC capture rate to its maximum value, VIDEOINFOHEADER's AvgTimePerFrame value equals 333333 instead of 333667 for FRAME resolution and 166666 instead of 166833 for FIELD/CIF/QCIF resolutions.

Conditions of occurrence

- DirectShow API
- NTSC video standard
- Capture rate set to its maximum value

This malfunction is solved since MultiCam 6.13.

Capture Rate is truncated to an integer value when rendering a pin of a Euresys Source Filter

Affected boards

All Pico boards

Symptoms

When rendering the capture or preview pin of a Euresys Source Filter, the Capture Rate is rounded to an integer value. For instance, using a NTSC camera, if the Capture Rate was set to its maximum value, it will equal 29.0 instead of 29.97 after rendering the corresponding filter pin.

Conditions of occurrence

- DirectShow API

This malfunction is solved since MultiCam 6.13.

Known Issues

Know issues of MultiCam Driver

Acquisition failure may occur for first acquisition after hardware initialization with PxxRG mode

Affected boards: 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

On some systems, the first video acquisition after hardware initialization (i.e. after the first call to `McOpenDriver()` or after setting the `MC_BoardTopology` parameter) may fail with an `MC_SIG_ACQUISITION_FAILURE` signal when using an area-scan camera with asynchronous reset and grabber-controlled exposure. Subsequent acquisitions after channel reactivation will work normally.

As a workaround, if the problem occurs, enable the `MC_SIG_ACQUISITION_FAILURE` signal, grab a first image with reduced timeout (e.g. `MC_AcqTimeout_ms = 100`) then wait for the `MC_SIG_ACQUISITION_FAILURE` signal. The acquisition channel will then be ready for subsequent acquisitions.

Invalid images for `RedBlueSwap=DISABLE` and `ImageFlipX=ON` with `ColorFormat=RGB24` or `RGB32`

Affected boards: 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

When using an RGB color camera with `RedBlueSwap=DISABLE` and `ImageFlipX=ON`, images acquired with `ColorFormat=RGB24` or `ColorFormat=RGB32` are invalid for most image widths.

As a workaround, if the problem occurs, setting `Hactive_Px` to a multiple of 16 pixels will solve the issue.

Infrequent device start failure after cold boot

Affected boards: 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Some cards may infrequently fail to start properly after power up (PC cold boot) and are not detected by the PC. The card operates properly again, after a power down / power up cycle of the PC.

The cards with the following version numbers may exhibit this issue: v128 (0x80), v129 (0x81), v130 (0x82), v131 (0x83), v132 (0x84), v133 (0x85), v134 (0x86), v135 (0x87), v136 (0x88), v160 (0xA0), v161 (0xA1). Cards with other version numbers do not present this issue.

Refer to [Reading Version Number](#) on page 21.

<code>MC_SIG_END_ACQUISITION_SEQUENCE</code>	sometimes	occurs	before	last
<code>MC_SIG_SURFACE_PROCESSING</code>				

Affected boards: 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

When using `AcquisitionMode=LONGPAGE`, the `MC_SIG_END_ACQUISITION_SEQUENCE` signal is sometimes issued before the last `MC_SIG_SURFACE_PROCESSING` signal of a sequence.

Invalid image borders when using Cropping with a Bayer CFA camera

Affected boards: 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

When using a cropped window with a Bayer CFA camera, the 4 borders of acquired images (i.e. the first and last lines as well as the first and last columns) contain invalid data.

Line-scan acquisitions with `PageLength_Ln=1` may lead to segmentation fault or kernel panic under Linux

Affected boards: 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

When performing line-scan acquisitions with `PageLength_Ln` set to 1, some segmentation fault or kernel panic issues have been observed in rare cases, depending on the Linux distribution used.

As a workaround, if the problem occurs, setting `PageLength_Ln` to a value greater than 1 will make it disappear.

MC_SIG_END_ACQUISITION_SEQUENCE signal is generated twice when EndTrigEffect=FOLLOWINGLINE

Affected boards: 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

When using the LONGPAGE acquisition mode with EndTrigMode=HARD and EndTrigEffect=FOLLOWINGLINE, the MC_SIG_END_ACQUISITION_SEQUENCE signal is generated twice when enabled.

As a workaround, you can either use EndTrigEffect=PRECEDINGLINE or handle the MC_SIG_END_ACQUISITION_SEQUENCE signal twice.

Misbehaviour of the trigger decimation unit when using both software and hardware triggers together

Affected boards: 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

The trigger decimation unit does not take the occurrence of software triggers into account for the decimation counter. This may lead to misbehaviour especially when the first acquisition phase has been software triggered. In this case the trigger decimation unit is still continuing to consider the value of TrigDelay_Pls parameter instead of NextTrigDelay_Pls parameter. The NextTrigDelay_Pls parameter is only taken into account from the second hardware initiated trigger event.

As a workaround you can either avoid using software triggers with this feature or use the same value for both TrigDelay_Pls and NextTrigDelay_Pls parameters.

Synchronized acquisition broken on slave channels for AcquisitionMode=LONGPAGE, BreakEffect=FINISH and EndTrigMode=HARD when master channel is stopped before hardware end trigger

Affected boards: 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Synchronized acquisition using two or more line-scan cameras connected on several boards is broken on slaves when channels are restarted in the following conditions:

- AcquisitionMode = LONGPAGE;
- BreakEffect = FINISH;
- EndTrigMode = HARD;
- The master channel is set to the IDLE state before receiving the hardware end trigger and before setting the slave channels to the IDLE state.

As a workaround, this problem can be avoided by setting all slave channels to IDLE before setting the master channel to IDLE.

No acquisition failure event when LineCaptureMode is PICK or ADR

Affected boards: 1198 Grablink Avenue, 1621 Grablink Express 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

No acquisition failure event is issued when needed if LineCaptureMode is PICK. Moreover, on Grablink Avenue and Grablink Express, no acquisition failure event is issued when needed if LineCaptureMode is ADR.

LineTriggerViolation wrongly incremented at channel (de)activation when using the rate converter

Affected boards: 1198 Grablink Avenue, 1621 Grablink Express 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

The LineTriggerViolation parameter is wrongly incremented when a channel is activated or deactivated if LineRateMode is set to CONVERT.

The upper limit of Hactive_Px is 65504 instead of 65535

Affected boards: 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

The upper limit for the `Hactive_Px` parameter is currently 65504 instead of 65535 (this value depends on the `TapConfiguration` parameter value). When setting a value greater than 65504, MultiCam returns `MC_RANGE_ERROR`.

Cannot change connector for a camera without creating the channel again

Affected board: 1623 Grablink DualBase.

If a channel is first created on the A connector, no acquisition will be performed by just setting the `Connector` parameter to the B value when changing the camera from the A connector to the B connector. In that case, the channel must be created again using the B connector.

Inoperative timeout for `clSerialRead` and `clSerialWrite` functions of the Camera Link serial Linux library

Affected boards: all Grablink boards.

Under Linux, the `clSerialRead` and `clSerialWrite` functions of the `libclseremc.so` library do not take the timeout passed as fourth argument into account. These functions simply return `CL_ERR_NO_ERR` immediately instead of `CL_ERR_TIMEOUT` when no data could be read or written within the specified timeout.

Inoperative VIDEO acquisition mode when `ActivityLength` is not equal to 1

Affected boards: 1198 Grablink Avenue, 1621 Grablink Express.

If `ActivityLength` is not equal to 1 when `AcquisitionMode=VIDEO`, the frame grabber only acquires the first sequence of images (i.e. the number of images defined by the `SeqLength_Fr` parameter) then remains in the `ACTIVE` state without acquiring any additional image.

Bad behaviour of `WindowX_Px`

Affected boards: 1198 Grablink Avenue, 1621 Grablink Express.

When changing the `WindowX_Px` parameter more than once, the system has to be rebooted to be able to activate the channel.

As a workaround, don't change the `WindowX_Px` parameter more than once.

Wrong serial port ID returned by Camera Link serial library

Affected boards: 1621 Grablink Express.

The "Grablink Avenue" port ID is returned instead of "Grablink Express" when calling the `clGetSerialPortIdentifier` function of the Camera Link serial library with a Grablink Express.

There is no workaround.

Inoperative `StartExposure` signal for subsequent images in a sequence

Affected boards: all Grablink boards.

When acquiring a sequence of 2 or more images, the `MC_SIG_START_EXPOSURE` signal is only issued for the first acquired image.

There is no workaround.

Invalid strobe pulse when using `PreStrobe_us` parameter

Affected boards: 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe.

The pre-strobe function is not functional.

There is no workaround.

MULTIPLE_IRP_COMPLETE_REQUESTS Blue Screen occasionally occurs on some systems

Affected boards: 1155 Picolo, 1685 Picolo PCIe, 1157 Picolo Pro 2, 1687 Picolo Pro 2 PCIe, 1401 Picolo Junior 4, 1303 Picolo Tetra, 1402 Picolo Tymo.

On some systems a MULTIPLE_IRP_COMPLETE_REQUESTS Blue Screen might occasionally occur.

ImageSizeX is 702 instead of 704 when Standard=PAL and PixelTiming=BROADCAST

Affected boards: 1155 Picolo, 1685 Picolo PCIe, 1157 Picolo Pro 2, 1687 Picolo Pro 2 PCIe, 1401 Picolo Junior 4, 1303 Picolo Tetra, 1402 Picolo Tymo.

When Standard=PAL and PixelTiming=BROADCAST, ImageSizeX is wrongly set to 702 pixels instead of 704.

As a workaround, manually set ImageSizeX to the correct value.

Left-over binaries after uninstalling MultiCam from Windows 7

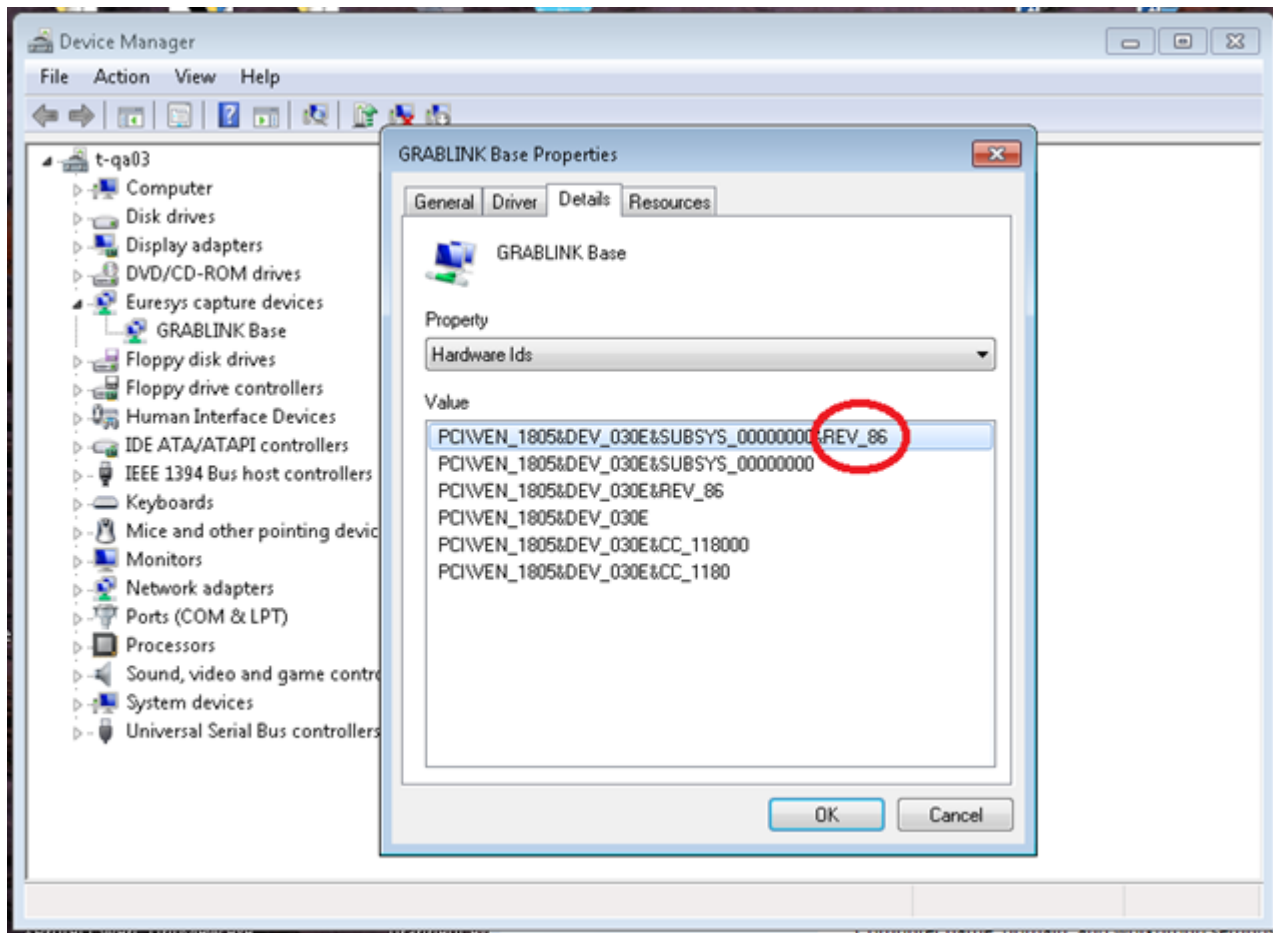
Since Windows 7, some MultiCam Driver binaries located in C:\Windows\system\euressys\multicam are left on the system after uninstalling MultiCam. Deleting them manually is allowed once MultiCam has been uninstalled.

Appendix

Reading Version Number

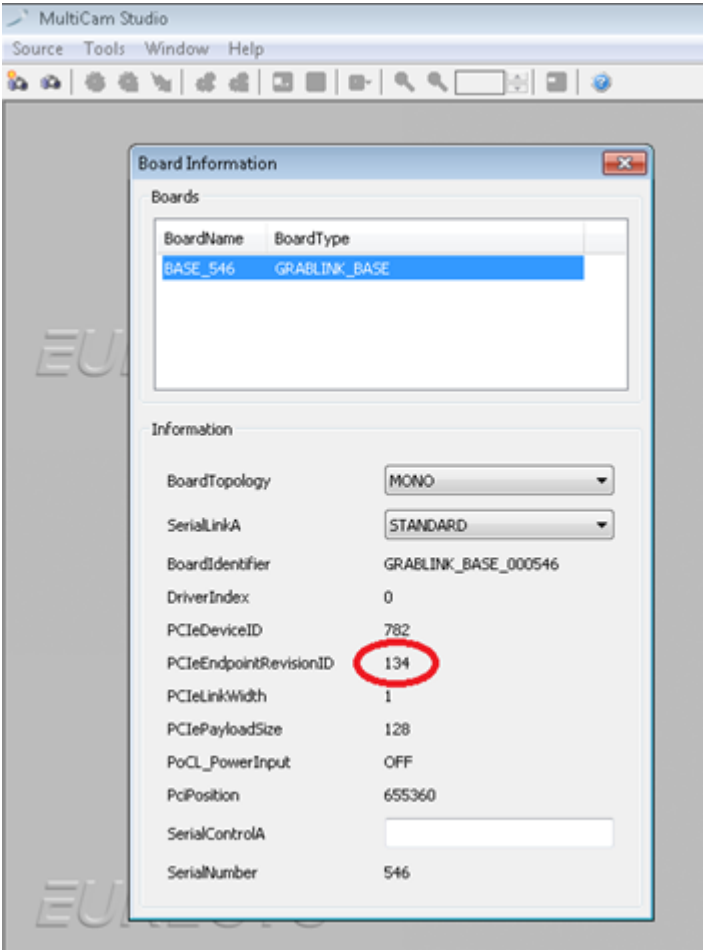
How to read the version number of a card?

Method1 – Using Windows Device Manager – Properties Dialog



Attention: The values are displayed in **hexadecimal** form.

Method 2 – Using MultiCam Studio – Board Information Dialog



 **Note:** The values are displayed in *decimal* form.