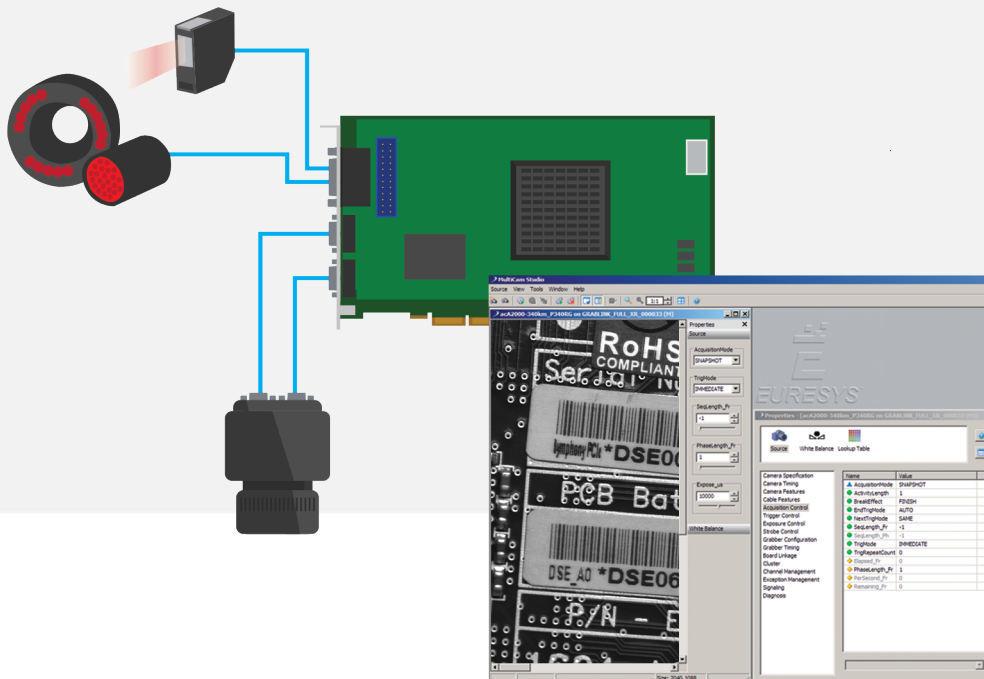


Grablink

MultiCam Parameters



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About This Document

Purpose & Summary

This document is a filtered edition of the MultiCam parameters reference manual for Grablink products.

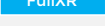
Parameters are grouped by MultiCam object class. Classes are listed in the top-down hierarchical order. Within each class parameters are listed in the natural order and grouped by categories.

The main sections of the document are:

1. [Configuration Class](#) on page 12: parameters of the MultiCam Configuration object.
2. [Board Class](#) on page 24: parameters of the MultiCam Board object.
3. [Channel Class](#) on page 88: parameters of the MultiCam Channel object.
4. [Surface Class](#) on page 442: parameters of the MultiCam Surface object.
5. [Appendix](#) on page 458: selection of topics of the MultiCam User Guide referenced in this document.

Products Scope

Grablink Products

Product	S/N Prefix	Icon
1191 Grablink Value	GLV	
1198 Grablink Avenue	GLA	
1621 Grablink Express	GEX	
1622 Grablink Full	FM1	
1623 Grablink DualBase	GDB	
1624 Grablink Base	GBA	
1626 Grablink Full XR	FXR	

Configuration Class

What Is the Configuration Object?

The Configuration object groups all MultiCam parameters dedicated to the **control of system wide features**.

The system should be basically understood as the set of Euresys boards installed inside a host computer. The configuration object also addresses any hardware or software element of the host computer requesting some degree of control for the MultiCam system operation.

The configuration object does not belong to a true class, as it is unique within the system. There is no need for the user to instantiate a Configuration class object using the `McCreate` or `McCreateNm` function. The Configuration object is natively made available to the application when the MultiCam driver is connected to it.

Categories

[Configuration Category](#) on page 13

[Parameters specifying system wide features](#)

Configuration Category

Parameters specifying system wide features

Parent Class

[Configuration Class](#) on page 12

MementoCritical

Sends Memento trace with a Critical level from user application

Parameter Info

Class	Category	Level	Type	Access
Configuration	Configuration	SELECT	String collection	Set Only

Num ID	String Identifier	C, C++ identifier
102 << 14	MementoCritical	MC_MementoCritical

Parameter Description

This string collection parameter of 16 elements enables the caller to send a Memento trace with "Critical" level from a user application.

Parameter Usage

The collection element index selects the Memento Kind from User0 to UserF.
For instance, to send a critical message with the User7 kind, the following call will be added in the C/C++ user application:

```
McSetParamStr(MC_CONFIGURATION, MC_MementoCritical + 7, "This is a critical message.");
```

MementoError

Sends Memento trace with an Error level from user application

Parameter Info

Class	Category	Level	Type	Access
Configuration	Configuration	SELECT	String collection	Set Only

Num ID	String Identifier	C, C++ identifier
103 << 14	MementoError	MC_MementoError

Parameter Description

This string collection parameter of 16 elements enables the caller to send a Memento trace with "Error" level from a user application.

Parameter Usage

The collection element index selects the Memento Kind from User0 to UserF.

For instance, to send an error message with the User7 kind, the following call will be added in the C/C++ user application:

```
McSetParamStr(MC_CONFIGURATION, MC_MementoError + 7, "This is an error message.");
```

MementoWarning

Sends Memento trace with a Warning level from user application

Parameter Info

Class	Category	Level	Type	Access
Configuration	Configuration	SELECT	String collection	Set Only

Num ID	String Identifier	C, C++ identifier
104 << 14	MementoWarning	MC_MementoWarning

Parameter Description

This string collection parameter of 16 elements enables the caller to send a Memento trace with "Warning" level from a user application.

Parameter Usage

The collection element index selects the Memento Kind from User0 to UserF.
For instance, to send a warning message with the User7 kind, the following call will be added in the C/C++ user application:

```
McSetParamStr(MC_CONFIGURATION, MC_MementoWarning + 7, "This is a warning message.");
```

MementoNotice

Sends Memento trace with a Notice level from user application

Parameter Info

Class	Category	Level	Type	Access
Configuration	Configuration	SELECT	String collection	Set Only

Num ID	String Identifier	C, C++ identifier
105 << 14	MementoNotice	MC_MementoNotice

Parameter Description

This string collection parameter of 16 elements enables the caller to send a Memento trace with "Notice" level from a user application.

Parameter Usage

The collection element index selects the Memento Kind from User0 to UserF.

For instance, to send a notice message with the User7 kind, the following call will be added in the C/C++ user application:

```
McSetParamStr(MC_CONFIGURATION, MC_MementoNotice + 7, "This is a notice message.");
```

MementoInfo

Sends Memento trace with an Info level from user application

Parameter Info

Class	Category	Level	Type	Access
Configuration	Configuration	SELECT	String collection	Set Only

Num ID	String Identifier	C, C++ identifier
106 << 14	MementoInfo	MC_MementoInfo

Parameter Description

This string collection parameter of 16 elements enables the caller to send a Memento trace with "Info" level from a user application.

Parameter Usage

The collection element index selects the Memento Kind from User0 to UserF.
For instance, to send an information message with the User7 kind, the following call will be added in the C/C++ user application:

```
McSetParamStr(MC_CONFIGURATION, MC_MementoInfo + 7, "This is an information message.");
```

MementoDebug

Sends Memento trace with a Debug level from user application

Parameter Info

Class	Category	Level	Type	Access
Configuration	Configuration	SELECT	String collection	Set Only

Num ID	String Identifier	C, C++ identifier
107 << 14	MementoDebug	MC_MementoDebug

Parameter Description

This string collection parameter of 16 elements enables the caller to send a Memento trace with "Debug" level from a user application.

Parameter Usage

The collection element index selects the Memento Kind from User0 to UserF.

For instance, to send a debug message with the User7 kind, the following call will be added in the C/C++ user application:

```
McSetParamStr(MC_CONFIGURATION, MC_MementoDebug + 7, "This is a debug message.");
```

MementoVerbose

Sends Memento trace with a Verbose level from user application

Parameter Info

Class	Category	Level	Type	Access
Configuration	Configuration	SELECT	String collection	Set Only

Num ID	String Identifier	C, C++ identifier
108 << 14	MementoVerbose	MC_MementoVerbose

Parameter Description

This string collection parameter of 16 elements enables the caller to send a Memento trace with "Verbose" level from a user application.

Parameter Usage

The collection element index selects the Memento Kind from User0 to UserF.
For instance, to send a verbose message with the User7 kind, the following call will be added in the C/C++ user application:

```
McSetParamStr(MC_CONFIGURATION, MC_MementoVerbose + 7, "This is a verbose message.");
```

BoardCount

Number of MultiCam boards in the system

Parameter Info

Class	Category	Level	Type	Access
Configuration	Configuration	ADJUST	Integer	Get Only

Num ID	String Identifier	C, C++ identifier
62 << 14	BoardCount	MC_BoardCount

Parameter Description

This parameter provides an immediate way for the application to be informed on the number of peripheral boards recognized as MultiCam compliant boards.

See also [Code Example: How to Gather Board Information?](#)

ErrorHandling

Error handling behavior definition

Parameter Info

Class	Category	Level	Type	Access
Configuration	Configuration	EXPERT	Enumerated	Set and Get

Num ID	String Identifier	C, C++ identifier
49 << 14	ErrorHandling	MC_ErrorHandling

Parameter Description

This parameter defines the error handling behavior. See also [Error Reporting Behaviors](#).

Parameter Values

Enumeration: NONE, MSGBOX, EXCEPTION, MSGEXCEPTION

NONE

MC_ErrorHandling_NONE

Description

On error, the MultiCam driver returns an error code.

Default value.

MSGBOX

MC_ErrorHandling_MSGBOX

Description

On error, the MultiCam driver displays an error dialog box then returns an error code.

EXCEPTION

MC_ErrorHandling_EXCEPTION

Description

On error, the MultiCam driver issues a Windows structured exception.

MSGEXCEPTION

MC_ErrorHandling_MSGEXCEPTION

Description

On error, the MultiCam driver displays an error dialog box then issues a Windows structured exception.

ErrorLog

Path and filename of the error log file

Parameter Info

Class	Category	Level	Type	Access
Configuration	Configuration	EXPERT	Enumerated	Set and Get

Num ID	String Identifier	C, C++ identifier
81 << 14	ErrorLog	MC_ErrorLog

Parameter Description

This parameter specifies the path and the filename of the error log file that is created when the application returns a MC_INVALID_PARAMETER_SETTING (-22) error code.

The incorrect parameters are reported in the log file, including the wrong value and the possible correct values.

When specified, the log file is created and filled during the consistency check.

When unspecified, the consistency check does not produce a log file.

Board Class

What Is the Board Object?

The Board object groups all MultiCam parameters dedicated to the **control of features specific to a board**.

The Board object MultiCam parameters also address the access of I/O lines from an application program, implementing the general-purpose I/O functionality.

The Board object does not belong to a true class, as it is **unique for each Euresys board** installed inside a host computer. There is no need for the user to instantiate a Board class object using the `McCreate` or `McCreateNm` function. The Board objects are natively made available to the application for each installed Euresys board when the MultiCam driver is opened.

Categories

[Board Information Category](#) on page 25

Parameters providing access to identification, structure or security features of the board

[Input/Output Control Category](#) on page 48

Parameters providing access to input and output digital lines featured by the board

Board Information Category

Parameters providing access to identification, structure or security features of the board

Parent Class

[Board Class](#) on page 24

BoardTopology

Arrangement of the cameras connected to the board

Parameter Info

Class	Category	Level	Type	Access
Board	Board Information	SELECT	Enumerated	Set and Get

Num ID	String Identifier	C, C++ identifier
59 << 14	BoardTopology	MC_BoardTopology

Parameter Description

This parameter defines the arrangement of cameras that can be potentially connected to the frame grabber. However, some of the camera positions declared by the topology may not be connected. The application must select and declare the topology before the first assignation of a MultiCam Channel to this board; the topology may not be modified while at least one channel is assigned to the board.

Parameter Values

Enumeration: 1_01_2, 1_11_0, 1_2_0, UNIFORM, 1, 1_1, 2_1, 2_2, 1_11, 2_11, 11_11, 1_1_1_1, 3_0, MONO, MONO_DECA, MONO_SLOW, DUO, DUO_SLOW

[MONO](#)

MC_BoardTopology_MONO

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1622 Grablink Full, 1626 Grablink Full XR.

Description for 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express
One Base configuration camera using the single connector.

Description for 1622 Grablink Full, 1626 Grablink Full XR
One camera with any one of the following Channel Link configurations:

- Base Camera Link configuration using one connector
- Medium Camera Link configuration using two connectors
- Full Camera Link configuration using two connectors

Default value.

Description for 1624 Grablink Base
One camera with any one of the following Channel Link configurations:

- Lite configuration using one connector
- Base Camera Link configuration using one connector

Default value.

MONO_DECA

MC_BoardTopology_MONO_DECA

Applicable product(s): 1622 Grablink Full, 1626 Grablink Full XR.

Description

One camera with the 10-tap Channel Link configuration using two connectors.

MONO_SLOW

MC_BoardTopology_MONO_SLOW

Applicable product(s): 1624 Grablink Base, 1622 Grablink Full, 1626 Grablink Full XR.

Description for 1622 Grablink Full, 1626 Grablink Full XR

One camera with any one of the following Channel Link configurations:

- Base Camera Link configuration using one connector
- Medium Camera Link configuration using two connectors
- Full Camera Link configuration using two connectors

The cable deskewing function of the camera interface is turned off.

The MONO_SLOW setting is mandatory for base, medium, or full cameras operating at clock frequencies below 30 MHz.

Description for 1624 Grablink Base

One camera with any one of the following Channel Link configurations:

- Lite configuration using one connector
- Base Camera Link configuration using one connector

Default value.

The MONO_SLOW setting is mandatory for base, medium, or full cameras operating at clock frequencies below 30 MHz.

DUO

MC_BoardTopology_DUO

Applicable product(s): 1623 Grablink DualBase.

Description

Two cameras with any one of the following Channel Link configurations:

- Lite configuration using one connector
- Base Camera Link configuration using one connector

Default value.

DUO_SLOW

MC_BoardTopology_DUO_SLOW
Applicable product(s): 1623 Grablink DualBase. Description Two cameras with any one of the following Channel Link configurations: • Lite configuration using one connector • Base Camera Link configuration using one connector The cable deskewing function of the camera interface is turned off. The DUO_SLOW setting is mandatory for cameras operating at clock frequencies below 30 MHz.

SerialLinkA

Serial COM receiver source of Camera connector A or M

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase.

Parameter Info

Class	Category	Level	Type	Access
Board	Board Information	SELECT	Enumerated	Set and Get

Num ID	String Identifier	C, C++ identifier
10565 << 14	SerialLinkA	MC_SerialLinkA

Parameter Description

Selects the receiver source of the serial COM of the first Camera connector.

Parameter Usage

Directive: Set `POCL_LITE` when attaching a PoCL-Lite camera.

Parameter Values

Enumeration: STANDARD, POCL_LITE

STANDARD

MC_SerialLinkA_STANDARD

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase.

Description

The camera-to-frame-grabber serial communication link uses a dedicated line of the standard Camera Link cable

Default value.

POCL_LITE

MC_SerialLinkA_POCL_LITE

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase.

Description

The camera-to-frame-grabber serial link is embedded in the Channel Link of PoCL-Lite Camera Link cables

SerialLinkB

Serial COM receiver source of Camera connector B

Applicable product(s): 1623 Grablink DualBase.

Parameter Info

Class	Category	Level	Type	Access
Board	Board Information	SELECT	Enumerated	Set and Get

Num ID	String Identifier	C, C++ identifier
10566 << 14	SerialLinkB	MC_SerialLinkB

Parameter Description

Selects the receiver source of the serial COM of the second Camera connector.

Parameter Usage

Directive: Set `POCL_LITE` when attaching a PoCL-Lite camera.

Parameter Values

Enumeration: STANDARD, POCL_LITE

STANDARD

MC_SerialLinkB_STANDARD

Applicable product(s): 1623 Grablink DualBase.

Description
The camera-to-frame-grabber serial communication link uses a dedicated line of the standard Camera Link cable

Default value.

POCL_LITE

MC_SerialLinkB_POCL_LITE

Applicable product(s): 1623 Grablink DualBase.

Description
The camera-to-frame-grabber serial link is embedded in the Channel Link of PoCL-Lite Camera Link cables

DriverIndex

Board index in the list of MultiCam compliant boards returned by the driver

Applicable product(s): 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Board	Board Information	ADJUST	Integer	Get Only

Num ID	String Identifier	C, C++ identifier
0 << 14	DriverIndex	MC_DriverIndex

Parameter Description

This parameter gives the index of a particular board in the list returned by the driver. This parameter is used to access the Board object parameters related to the board.

The MultiCam compliant boards are assigned consecutive integer numbers starting at 0. The indexing order is system dependent.

PCIPosition

Board index in the list of PCI slots

Parameter Info

Class	Category	Level	Type	Access
Board	Board Information	ADJUST	Integer	Get Only

Num ID	String Identifier	C, C++ identifier
1 << 14	PCIPosition	MC_PCIPosition

Parameter Description

This parameter gives the index of the PCI slot associated to a board.

This number is assigned by the operating system in a non-predictable way, but remains consistent for a given configuration in a given system.

BoardName

Name of the board

Parameter Info

Class	Category	Level	Type	Access
Board	Board Information	ADJUST	String	Set and Get

Num ID	String Identifier	C, C++ identifier
2 << 14	BoardName	MC_BoardName

Parameter Description

This parameter returns the name of the board. The name is a string of maximum 16 ASCII characters.

BoardIdentifier

Identifier of the board, made by the combination of its type and serial number

Parameter Info

Class	Category	Level	Type	Access
Board	Board Information	ADJUST	String	Get Only

Num ID	String Identifier	C, C++ identifier
3 << 14	BoardIdentifier	MC_BoardIdentifier

Parameter Description

This parameter gives the board type and its serial number, providing a unique way to designate a Euresys board.

The board identifier is an ASCII character string, resulting from the concatenation of the board type and the serial number, with an intervening underscore. The serial number is a 6-digit string made of characters 0 to 9 for instance, COLORSCAN_000123.

Refer to [BoardType](#) for available board types.

NameBoard

Naming of the selected board

Parameter Info

Class	Category	Level	Type	Access
Board	Board Information	ADJUST	String	Set Only

Num ID	String Identifier	C, C++ identifier
4 << 14	NameBoard	MC_NameBoard

Parameter Description

Setting this parameter writes the name to the selected board. This name is stored inside an on-board non-volatile memory.

The name is a string of maximum 16 ASCII characters.

SerialNumber

Unique serial number of the board

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Board	Board Information	ADJUST	Integer	Get Only

Num ID	String Identifier	C, C++ identifier
5 << 14	SerialNumber	MC_SerialNumber

Parameter Description

This parameter returns the serial number assigned to the selected board. This 6-digit number is unique for a board of a given type.

Parameter Values

Numeric values: 0, 999999

Minimum Range

0	Always applicable.
---	--------------------

Maximum Range

999999	Always applicable.
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BoardType

Type of the board

Parameter Info

Class	Category	Level	Type	Access
Board	Board Information	ADJUST	Enumerated	Get Only

Num ID	String Identifier	C, C++ identifier
6 << 14	BoardType	MC_BoardType

Parameter Values

Enumeration: PICOLO, PICOLO_PRO2, PICOLO_PRO3I, PICOLO_TETRA, PICOLO_TYMO, PICOLO_ALERT, PICOLO_ALERT_PCIE, PICOLO_ALERT_RC, PICOLO_ALERT_RC_PCIE, PICOLO_DILIGENT, PICOLO_DILIGENT_Plus_PCIE, JUNIOR_4, IOTA, ALPHA_2, DOMINO_MELODY, DOMINO_HARMONY, DOMINO_SYMPHONY_PCI, DOMINO_SYMPHONY_PCIE, VALUE, VALUE_CPCI, GRABLINK_AVENUE, GRABLINK_EXPRESS_PCIE, EXPERT_2, EXPERT_2_CPCI, COLORSCAN, QUICKPACK_CFA, Grablink_Quickpack_CFA_PCIE, GRABLINK_BASE, GRABLINK_DUALBASE, GRABLINK_FULL, GRABLINK_FULL_XR

VALUE

MC_BoardType_VALUE

Applicable product(s): 1191 Grablink Value.

Description

Grablink Value

GRABLINK_AVENUE

MC_BoardType_GRABLINK_AVENUE

Applicable product(s): 1198 Grablink Avenue.

Description

Grablink Avenue

GRABLINK_EXPRESS_PCIE

MC_BoardType_GRABLINK_EXPRESS_PCIE

Applicable product(s): 1621 Grablink Express.

Description

Grablink Express

GRABLINK_BASE

MC_BoardType_GRABLINK_BASE
Applicable product(s): 1624 Grablink Base.
Description Grablink Base

GRABLINK_DUALBASE

MC_BoardType_GRABLINK_DUALBASE
Applicable product(s): 1623 Grablink DualBase.
Description Grablink DualBase

GRABLINK_FULL

MC_BoardType_GRABLINK_FULL
Applicable product(s): 1622 Grablink Full.
Description Grablink Full

GRABLINK_FULL_XR

MC_BoardType_GRABLINK_FULL_XR
Applicable product(s): 1626 Grablink Full XR.
Description Grablink Full

SerialControlA

Creation of a serial link through a virtual COM port

Applicable product(s): 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Board	Board Information	ADJUST	String	Set and Get

Num ID	String Identifier	C, C++ identifier
70 << 14	SerialControlA	MC_SerialControlA

Parameter Description

This parameter declares which virtual COM port is associated with the serial link associated with camera connector M. This parameter requires the user who runs the application to have administrator privileges. Moreover, under Windows Vista and later, the application must be explicitly run as administrator.

```
Status = McSetParamStr(MC_BOARD+1, MC_SerialControlA, "COM4");
```

SerialControlB

Creation of a serial link through virtual COM port

Applicable product(s): 1601 Domino Symphony PCIe, 1623 Grablink DualBase.

Parameter Info

Class	Category	Level	Type	Access
Board	Board Information	ADJUST	String	Set and Get

Num ID	String Identifier	C, C++ identifier
71 << 14	SerialControlB	MC_SerialControlB

Parameter Description

This parameter declares which virtual COM port is associated with the serial link associated with camera connector B. This parameter requires the user who runs the application to have administrator privileges. Moreover, under Windows Vista and later, the application must be explicitly run as administrator.

```
Status = McSetParamStr(MC_BOARD+1, MC_SerialControlB, "COM5");
```

PCleDeviceID

Identification number assigned to the board on the PCI Express system

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Board	Board Information	ADJUST	Integer	Get Only

Num ID	String Identifier	C, C++ identifier
2911 << 14	PCleDeviceID	MC_PCLEDeviceID

Parameter Description

Getting this parameter returns the board ID on the PCI Express system (when the board is configured in normal mode).

Parameter Values

Numeric values: 782 or 783, 780 or 781, 778 or 779, 784 or 785

List of Values

782 or 783	Applicable product(s): 1624 Grablink Base.
780 or 781	Applicable product(s): 1623 Grablink DualBase.
778 or 779	Applicable product(s): 1622 Grablink Full.
784 or 785	Applicable product(s): 1626 Grablink Full XR.

PCleLinkWidth

Negotiated width of the PCI Express link

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Board	Board Information	ADJUST	Integer	Get Only

Num ID	String Identifier	C, C++ identifier
10310 << 14	PCleLinkWidth	MC_PCLELinkWidth

Parameter Values

Numeric values: 1, 4

[List of Values](#)

1	Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR. Description The negotiated width of the PCI Express link is 1 lane.
4	Applicable product(s): 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR. Description The negotiated width of the PCI Express link is 4 lanes.

PClePayloadSize

Negotiated payload size of the Transport Layer Packets (TLP)

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Board	Board Information	ADJUST	Integer	Get Only

Num ID	String Identifier	C, C++ identifier
10403 << 14	PClePayloadSize	MC_PCLEPayloadSize

Parameter Values

Numeric values: 128, 256, 512, 1024

List of Values

128	Description The negotiated TLP payload size is 128 bytes. Always applicable.
256	Description The negotiated TLP payload size is 256 bytes. Always applicable.
512	Description The negotiated TLP payload size is 512 bytes. Always applicable.
1024	Description The negotiated TLP payload size is 1024 bytes. Always applicable.

PCleEndPointRevisionId

Revision number of the PCI Express end point firmware

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Board	Board Information	ADJUST	Integer	Get Only

Num ID	String Identifier	C, C++ identifier
10311 << 14	PCleEndPointRevisionId	MC_PCLEEndPointRevisionId

PoCL_PowerInput

Status of the camera power input

Applicable product(s): 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Board	Board Information	EXPERT	Enumerated	Get Only

Num ID	String Identifier	C, C++ identifier
9943 << 14	PoCL_PowerInput	MC_PoCL_PowerInput

Parameter Values

Enumeration: ON, OFF

ON

MC_PoCL_PowerInput_ON

Applicable product(s): 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase.

Description

A 12V power supply is connected to the camera power connector.

OFF

MC_PoCL_PowerInput_OFF

Applicable product(s): 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase.

Description

No power supply is connected to the camera power connector.

OemSafetyLock

Control for locking and checking the board

Parameter Info

Class	Category	Level	Type	Access
Board	Board Information	EXPERT	String	Set and Get

Num ID	String Identifier	C, C++ identifier
8 << 14	OemSafetyLock	MC_OemSafetyLock

Parameter Description

This parameter, along with [OemSafetyKey](#) , provides a method to assign a safety key to the selected board. The key is an 8-byte string of ASCII characters. Any character is allowed. A null character acts as the termination character of the safety key.

The value when "set" is an 8-byte string of ASCII characters. The entered key is stored in the non-volatile memory of the board and cannot be read back. The "set" operation fails if the key is longer than 8 characters. In that case, the returned error code is MC_INVALID_VALUE.

The value when "get" is the string TRUE or FALSE, that is the validity of the key, which has been previously entered under [OemSafetyKey](#) .

See also [Board Security Feature](#).

OemSafetyKey

Safety key for key checking

Parameter Info

Class	Category	Level	Type	Access
Board	Board Information	EXPERT	String	Set Only

Num ID	String Identifier	C, C++ identifier
9 << 14	OemSafetyKey	MC_OemSafetyKey

Parameter Description

This parameter, along with [OemSafetyLock](#) , provides a method to assign a safety key to the selected board. The key is implemented as a an 8-byte string of ASCII characters. Any character is allowed. A null character acts as the termination character of the safety key.

The key is stored in the non-volatile memory of the board and cannot be read back.

The validity of the key is returned by [OemSafetyLock](#) .

A "set" operation on the [OemSafetyLock](#) parameter fails if the key is longer than 8 characters. The returned error code is MC_INVALID_VALUE.

See also [Board Security Feature](#).

Input/Output Control Category

Parameters providing access to input and output digital lines featured by the board

Parent Class

[Board Class](#) on page 24

InputConfig

Setting of the I/O lines used as inputs

Applicable product(s): 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Board	Input/Output Control	ADJUST	Enumerated collection	Set Only

Num ID	String Identifier	C, C++ identifier
1733 << 14	InputConfig	MC_InputConfig

Parameter Description

The item number of this collection parameter is used as an index to point the relevant input designator among the set of designators owned by selected board.

Parameter Values

Enumeration: SOFT, FREE

SOFT

MC_InputConfig_SOFT

Applicable product(s): 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

Declares that the I/O line is locked for general-purpose software input function.

FREE

MC_InputConfig_FREE

Applicable product(s): 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

Declares the I/O line to be used for any allowed function.

OutputConfig

Configuration of the I/O lines used as outputs

Applicable product(s): 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Board	Input/Output Control	ADJUST	Enumerated collection	Set Only

Num ID	String Identifier	C, C++ identifier
1740 << 14	OutputConfig	MC_OutputConfig

Parameter Description

The item number of this collection parameter is used as an index to point the relevant input designator among the set of designators owned by selected board.
See also [I/O Configuration](#) on page 459.

Parameter Values

Enumeration: SOFT, FREE, EVENT

[SOFT](#)

MC_OutputConfig_SOFT

Applicable product(s): 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description
Declares that the I/O line is locked for general-purpose software output function.

[FREE](#)

MC_OutputConfig_FREE

Applicable product(s): 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description
Declares the I/O line to be used for any allowed function.

EVENT

MC_OutputConfig_EVENT
Applicable product(s): 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR. Description Declares the I/O line to be used to report an event.

InputFunction

Report of the I/O lines used as inputs

Parameter Info

Class	Category	Level	Type	Access
Board	Input/Output Control	ADJUST	Enumerated collection	Get Only

Num ID	String Identifier	C, C++ identifier
1734 << 14	InputFunction	MC_InputFunction

Parameter Description

The item number of this collection parameter is used as an index to point the relevant input designator among the set of designators owned by selected board.

The values are specific to each collection member. For further information, refer to the handbooks.

Parameter Values

Enumeration: FREE, SOFT, NONE, UNKNOWN, OUTPUT, LVAL, FVAL, DVAL, SPARE, CK_PRESENT, POWERSTATE5V, POWERSTATE12V

FREE

MC_InputFunction_FREE

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR, 1402 Pico Tymo, 1305 Pico Alert.

Description

The input line is free from software and channel use.

Default value.

SOFT

MC_InputFunction_SOFT

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR, 1155 Pico, 1157 Pico Pro 2, 1303 Pico Tetra, 1402 Pico Tymo, 1305 Pico Alert.

Description for 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR, 1155 Pico, 1157 Pico Pro 2, 1303 Pico Tetra

The I/O line is used as a general-purpose software-controlled input.

NONE

MC_InputFunction_NONE

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR, 1155 Picolo, 1157 Picolo Pro 2, 1303 Picolo Tetra.

Description

The I/O line does not exist.

UNKNOWN

MC_InputFunction_UNKNOWN

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR, 1155 Picolo, 1157 Picolo Pro 2, 1303 Picolo Tetra.

Description

The functional input usage of the I/O line cannot be determined.

OUTPUT

MC_InputFunction_OUTPUT

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1155 Picolo, 1157 Picolo Pro 2, 1303 Picolo Tetra.

Description

The I/O line is presently used as an output.

LVAL

MC_InputFunction_LVAL

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

The I/O line is used to monitor a channel link LVAL.

FVAL

MC_InputFunction_FVAL

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

The I/O line is used to monitor a channel link FVAL.

DVAL

MC_InputFunction_DVAL

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

The I/O line is used to monitor a channel link DVAL.

SPARE

MC_InputFunction_SPARE
Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
Description The I/O line is used to monitor a channel link SPARE.

CK_PRESENT

MC_InputFunction_CK_PRESENT
Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
Description The I/O line is used for channel link clock presence indication.

POWERSTATE5V

MC_InputFunction_POWERSTATE5V
Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
Description The I/O line is used for 5V power presence indication.

POWERSTATE12V

MC_InputFunction_POWERSTATE12V
Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
Description The I/O line is used for 12V power presence indication.

OutputFunction

Report of the I/O lines used as outputs

Parameter Info

Class	Category	Level	Type	Access
Board	Input/Output Control	ADJUST	Enumerated collection	Get Only

Num ID	String Identifier	C, C++ identifier
1741 << 14	OutputFunction	MC_OutputFunction

Parameter Description

The item number of this collection parameter is used as an index to point the relevant input designator among the set of designators owned by selected board.

The values are specific to each collection member. For further information, refer to the handbooks.

Parameter Values

Enumeration: SOFT, FREE, NONE, UNKNOWN, INPUT, EVENT

SOFT

MC_OutputFunction_SOFT

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR, 1155 Picolo, 1157 Picolo Pro 2, 1303 Picolo Tetra, 1402 Picolo Tymo, 1305 Picolo Alert.

Description for 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR, 1155 Picolo, 1157 Picolo Pro 2, 1303 Picolo Tetra

The I/O line is used as a general-purpose software-controlled output.

FREE

MC_OutputFunction_FREE

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR, 1402 Picolo Tymo, 1305 Picolo Alert.

Description for 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR

The I/O line is free from software or channel use.

Default value.

NONE

MC_OutputFunction_NONE
Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR, 1155 Picolo, 1157 Picolo Pro 2, 1303 Picolo Tetra. Description The I/O line does not exist.

UNKNOWN

MC_OutputFunction_UNKNOWN
Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR, 1155 Picolo, 1157 Picolo Pro 2, 1303 Picolo Tetra. Description The functional output usage of the I/O line cannot be determined.

INPUT

MC_OutputFunction_INPUT
Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1155 Picolo, 1157 Picolo Pro 2, 1303 Picolo Tetra. Description The I/O line is presently used as an input.

EVENT

MC_OutputFunction_EVENT
Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express. Description

InputState

Report of the logic state of I/O lines used as inputs

Parameter Info

Class	Category	Level	Type	Access
Board	Input/Output Control	ADJUST	Enumerated collection	Get Only

Num ID	String Identifier	C, C++ identifier
1735 << 14	InputState	MC_InputState

Parameter Description

The item number of this collection parameter is used as an index to point the relevant input designator among the set of designators owned by selected board.

Getting the [InputState](#) enumerated parameter delivers the present status of the interrogated input line.

- The value NONE is reported when the corresponding [InputFunction](#) parameter is UNKNOWN.
- A MultiCam error is reported when the corresponding [InputFunction](#) parameter is NONE.

Parameter Values

Enumeration: LOW, HIGH, WENTLOW, WENTHIGH, OPEN, NONE

[LOW](#)

MC_InputState_LOW

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1624 Grablink Base, 1624 Grablink Base, 1623 Grablink DualBase, 1623 Grablink DualBase, 1623 Grablink DualBase, 1622 Grablink Full, 1622 Grablink Full, 1622 Grablink Full, 1626 Grablink Full XR, 1626 Grablink Full XR, 1626 Grablink Full XR, 1155 Pico, 1157 Pico Pro 2, 1303 Pico Tetra, 1402 Pico Tymo, 1305 Pico Alert.

Description for 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR, 1155 Pico, 1157 Pico Pro 2, 1303 Pico Tetra
Presently at the low logic state.

Description for 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR
For isolated current-sense inputs, input current < 1 mA, or unconnected input port

Description for 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR
For high-speed differential inputs, input voltage (VIN+ - VIN-) < VThreshold

HIGH

MC_InputState_HIGH
Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1624 Grablink Base, 1624 Grablink Base, 1623 Grablink DualBase, 1623 Grablink DualBase, 1623 Grablink DualBase, 1622 Grablink Full, 1622 Grablink Full, 1622 Grablink Full, 1626 Grablink Full XR, 1626 Grablink Full XR, 1626 Grablink Full XR, 1155 Picolo, 1157 Picolo Pro 2, 1303 Picolo Tetra, 1402 Picolo Tymo, 1305 Picolo Alert. Description for 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR, 1155 Picolo, 1157 Picolo Pro 2, 1303 Picolo Tetra Presently at the high logic state. Description for 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR For isolated current-sense inputs, input current > 1 mA Description for 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR For high-speed differential inputs, input voltage (VIN+ - VIN-) > VThreshold, or unconnected input port

WENTLOW

MC_InputState_WENTLOW
Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1155 Picolo, 1157 Picolo Pro 2, 1303 Picolo Tetra, 1402 Picolo Tymo, 1305 Picolo Alert. Description for 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1155 Picolo, 1157 Picolo Pro 2, 1303 Picolo Tetra Presently at the low logic state, but was high at the previous interrogation.

WENTHIGH

MC_InputState_WENTHIGH
Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1155 Picolo, 1157 Picolo Pro 2, 1303 Picolo Tetra, 1402 Picolo Tymo, 1305 Picolo Alert. Description for 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1155 Picolo, 1157 Picolo Pro 2, 1303 Picolo Tetra Presently at the high logic state, but was low at the previous interrogation.

NONE

MC_InputState_NONE
Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1155 Picolo, 1157 Picolo Pro 2, 1303 Picolo Tetra. Description The I/O line is not presently used as an input.

OutputState

Logic state of I/O lines used as outputs

Parameter Info

Class	Category	Level	Type	Access
Board	Input/Output Control	ADJUST	Enumerated collection	Set and Get

Num ID	String Identifier	C, C++ identifier
1742 << 14	OutputState	MC_OutputState

Parameter Description

The item number of this collection parameter is used as an index to point the relevant input designator among the set of designators owned by selected board.

Getting the [OutputState](#) parameter is only allowed when the corresponding [OutputFunction](#) parameter is SOFT.

The returned value is the one that has been previously set.

The value NONE is reported when the corresponding [OutputFunction](#) parameter is other than SOFT.

Parameter Values

Enumeration: LOW, HIGH, TOGGLE, NONE

[LOW](#)

MC_OutputState_LOW

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR, 1155 Picolo, 1157 Picolo Pro 2, 1303 Picolo Tetra, 1402 Picolo Tymo, 1305 Picolo Alert.

Description

A low logic state is issued or the solid-state relay is closed.

Description

Presently at the low logic state or a closed relay.

Description for 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR

The contact switch is open (OFF). Initial state after Power-On.

HIGH

MC_OutputState_HIGH
Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR, 1155 Picolo, 1157 Picolo Pro 2, 1303 Picolo Tetra, 1402 Picolo Tymo, 1305 Picolo Alert. Description A high logic state is issued or the solid-state relay is open. Description Presently at the high logic state or an open relay. Description for 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR The contact switch is closed (ON).

TOGGLE

MC_OutputState_TOGGLE
Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR, 1155 Picolo, 1157 Picolo Pro 2, 1303 Picolo Tetra, 1402 Picolo Tymo, 1305 Picolo Alert. Description A logic state opposite to the present one is issued.

NONE

MC_OutputState_NONE
Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR, 1155 Picolo, 1157 Picolo Pro 2, 1303 Picolo Tetra, 1402 Picolo Tymo, 1305 Picolo Alert. Description The I/O line is not presently used as an output.

SetSignal

Event source selection to set the EVENT register

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Board	Input/Output Control	ADJUST	Enumerated collection	Set and Get

Num ID	String Identifier	C, C++ identifier
10575 << 14	SetSignal	MC_SetSignal

Parameter Description

Selects an event source to set the EVENT register driving the EVENT signal of the selected output port.

Parameter Usage

Relevance condition(s):

- **Condition:** OutputConfig is set to EVENT.

Parameter Values

Enumeration: NONE, SCA, ECA, SAP, EAP, SAS, EAS, FVAL_GOHIGH, FVAL_GOLOW, LVAL_GOHIGH, LVAL_GOLOW, DVAL_GOHIGH, DVAL_GOLOW, CC1_GOHIGH, CC1_GOLOW, CC2_GOHIGH, CC2_GOLOW, CC3_GOHIGH, CC3_GOLOW, CC4_GOHIGH, CC4_GOLOW

NONE

MC_SetSignal_NONE

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

All event sources are disconnected.

Default value.

SCA

MC_SetSignal_SCA

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

The 'Start Channel Activity' event source is selected.

ECA

MC_SetSignal_ECA
Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
Description The 'End Channel Activity' event source is selected.

SAP

MC_SetSignal_SAP
Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
Description The 'Start Acquisition Phase' event source is selected.

EAP

MC_SetSignal_EAP
Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
Description The 'End Acquisition Phase' event source is selected.

SAS

MC_SetSignal_SAS
Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
Description The 'Start Acquisition Sequence' event source is selected.

EAS

MC_SetSignal_EAS
Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
Description The 'End Acquisition Sequence' event source is selected.

FVAL_GOHIGH

MC_SetSignal_FVAL_GOHIGH
Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
Description The 'FVAL Going High' event source is selected.

FVAL_GOLOW

MC_SetSignal_FVAL_GOLOW**Applicable product(s):** 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.**Description**

The 'FVAL Going Low' event source is selected.

LVAL_GOHIGH

MC_SetSignal_LVAL_GOHIGH**Applicable product(s):** 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.**Description**

The 'LVAL Going High' event source is selected.

LVAL_GOLOW

MC_SetSignal_LVAL_GOLOW**Applicable product(s):** 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.**Description**

The 'LVAL Going Low' event source is selected.

DVAL_GOHIGH

MC_SetSignal_DVAL_GOHIGH**Applicable product(s):** 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.**Description**

The 'DVAL Going High' event source is selected.

DVAL_GOLOW

MC_SetSignal_DVAL_GOLOW**Applicable product(s):** 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.**Description**

The 'DVAL Going Low' event source is selected.

CC1_GOHIGH

MC_SetSignal_CC1_GOHIGH**Applicable product(s):** 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.**Description**

The 'CC1 Going High' event source is selected.

CC1_GOLOW

MC_SetSignal_CC1_GOLOW
Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
Description The 'CC1 Going Low' event source is selected.

CC2_GOHIGH

MC_SetSignal_CC2_GOHIGH
Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
Description The 'CC2 Going High' event source is selected.

CC2_GOLOW

MC_SetSignal_CC2_GOLOW
Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
Description The 'CC2 Going Low' event source is selected.

CC3_GOHIGH

MC_SetSignal_CC3_GOHIGH
Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
Description The 'CC3 Going High' event source is selected.

CC3_GOLOW

MC_SetSignal_CC3_GOLOW
Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
Description The 'CC3 Going Low' event source is selected.

CC4_GOHIGH

MC_SetSignal_CC4_GOHIGH
Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
Description The 'CC4 Going High' event source is selected.

CC4_GOLOW

MC_SetSignal_CC4_GOLOW
Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR. Description The 'CC4 Going Low' event source is selected.

ResetSignal

Event source selection to reset the EVENT register

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Board	Input/Output Control	ADJUST	Enumerated collection	Set and Get

Num ID	String Identifier	C, C++ identifier
10576 << 14	ResetSignal	MC_ResetSignal

Parameter Description

Selects an event source to reset the EVENT register driving the EVENT signal of the selected output port.

Parameter Usage

Relevance condition(s):

- **Condition:** OutputConfig is set to EVENT.

Parameter Values

Enumeration: NONE, SCA, ECA, SAP, EAP, SAS, EAS, FVAL_GOHIGH, FVAL_GOLOW, LVAL_GOHIGH, LVAL_GOLOW, DVAL_GOHIGH, DVAL_GOLOW, CC1_GOHIGH, CC1_GOLOW, CC2_GOHIGH, CC2_GOLOW, CC3_GOHIGH, CC3_GOLOW, CC4_GOHIGH, CC4_GOLOW

NONE

MC_ResetSignal_NONE

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

All event sources are disconnected.

Default value.

SCA

MC_ResetSignal_SCA

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

The 'Start Channel Activity' event source is selected.

ECA

MC_ResetSignal_ECA**Applicable product(s):** 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.**Description**

The 'End Channel Activity' event source is selected.

SAP

MC_ResetSignal_SAP**Applicable product(s):** 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.**Description**

The 'Start Acquisition Phase' event source is selected.

EAP

MC_ResetSignal_EAP**Applicable product(s):** 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.**Description**

The 'End Acquisition Phase' event source is selected.

SAS

MC_ResetSignal_SAS**Applicable product(s):** 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.**Description**

The 'Start Acquisition Sequence' event source is selected.

EAS

MC_ResetSignal_EAS**Applicable product(s):** 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.**Description**

The 'End Acquisition Sequence' event source is selected.

FVAL_GOHIGH

MC_ResetSignal_FVAL_GOHIGH**Applicable product(s):** 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.**Description**

The 'FVAL Going High' event source is selected.

FVAL_GOLOW

MC_ResetSignal_FVAL_GOLOW
Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
Description The 'FVAL Going Low' event source is selected.

LVAL_GOHIGH

MC_ResetSignal_LVAL_GOHIGH
Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
Description The 'LVAL Going High' event source is selected.

LVAL_GOLOW

MC_ResetSignal_LVAL_GOLOW
Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
Description The 'LVAL Going Low' event source is selected.

DVAL_GOHIGH

MC_ResetSignal_DVAL_GOHIGH
Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
Description The 'DVAL Going High' event source is selected.

DVAL_GOLOW

MC_ResetSignal_DVAL_GOLOW
Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
Description The 'DVAL Going Low' event source is selected.

CC1_GOHIGH

MC_ResetSignal_CC1_GOHIGH
Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
Description The 'CC1 Going High' event source is selected.

CC1_GOLOW

MC_ResetSignal_CC1_GOLOW**Applicable product(s):** 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.**Description**

The 'CC1 Going Low' event source is selected.

CC2_GOHIGH

MC_ResetSignal_CC2_GOHIGH**Applicable product(s):** 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.**Description**

The 'CC2 Going High' event source is selected.

CC2_GOLOW

MC_ResetSignal_CC2_GOLOW**Applicable product(s):** 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.**Description**

The 'CC2 Going Low' event source is selected.

CC3_GOHIGH

MC_ResetSignal_CC3_GOHIGH**Applicable product(s):** 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.**Description**

The 'CC3 Going High' event source is selected.

CC3_GOLOW

MC_ResetSignal_CC3_GOLOW**Applicable product(s):** 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.**Description**

The 'CC3 Going Low' event source is selected.

CC4_GOHIGH

MC_ResetSignal_CC4_GOHIGH**Applicable product(s):** 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.**Description**

The 'CC4 Going High' event source is selected.

CC4_GOLOW

MC_ResetSignal_CC4_GOLOW
Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
Description The 'CC4 Going Low' event source is selected.

InputStyle

Electrical style of I/O lines used as inputs

Parameter Info

Class	Category	Level	Type	Access
Board	Input/Output Control	EXPERT	Enumerated collection	Set and Get

Num ID	String Identifier	C, C++ identifier
1736 << 14	InputStyle	MC_InputStyle

Parameter Description

The item number of this collection parameter is used as an index to point the relevant input designator among the set of designators owned by selected board.

Setting *InputStyle* to a precise value yields better electrical performance, such as better common mode rejection ratio.

The values are specific to each collection member. For further information, refer to the handbooks.

Parameter Values

Enumeration: AUTO, RELAY, 5V, 12V, TTL, LVDS, TTLPD, RS485, DTTL, ITTL, CHANNELLINK, CMOS, ISO, DIFF, POWERSTATE

12V

MC_InputStyle_12V

Applicable product(s): 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1402 Pico Tymo, 1305 Pico Alert.

Description for 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1402 Pico Tymo, 1305 Pico Alert
A CMOS driver is connected to the input lines.

TTL

MC_InputStyle_TTL

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1155 Pico, 1157 Pico Pro 2, 1303 Pico Tetra.

Description for 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1155 Pico, 1157 Pico Pro 2, 1303 Pico Tetra

The input line is TTL compliant with a pull-up resistor.

LVDS

MC_InputStyle_LVDS
Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1198 Grablink Avenue, 1621 Grablink Express. Description for 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1198 Grablink Avenue, 1621 Grablink Express The input line is differential LVDS, RS-422 or RS-485 compatible.

ITTL

MC_InputStyle_ITTL
Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express. Description The input line is isolated and TTL compliant.

CHANNELLINK

MC_InputStyle_CHANNELLINK
Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR. Description The input line is a signal embedded in Channel Link.

ISO

MC_InputStyle_ISO
Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR. Description

DIFF

MC_InputStyle_DIFF
Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR. Description

POWERSTATE

MC_InputStyle_POWERSTATE
Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR. Description

OutputStyle

Electrical style of I/O lines used as outputs

Parameter Info

Class	Category	Level	Type	Access
Board	Input/Output Control	EXPERT	Enumerated collection	Set and Get

Num ID	String Identifier	C, C++ identifier
1748 << 14	OutputStyle	MC_OutputStyle

Parameter Description

The item number of this collection parameter is used as an index to point the relevant input designator among the set of designators owned by selected board.

The values are specific to each collection member. For further information, refer to the handbooks.

Parameter Values

Enumeration: SSRLY, TTL, OPTO, ITTL, LVDS, OC, IOE, IOC

TTL

MC_OutputStyle_TTL

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1155 Picolo, 1157 Picolo Pro 2, 1303 Picolo Tetra.

Description

The output line issues a TTL compliant signal.

OPTO

MC_OutputStyle_OPTO

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description for 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR

The output line is an isolated photo transistor output.

ITTL

MC_OutputStyle_ITTL

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express.

Description

The output line issues an isolated TTL compliant signal actively tied to the high or low state.

LVDS

MC_OutputStyle_LVDS
Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
Description The output line is differential LVDS, RS-422 or RS-485 compatible.

IOE

MC_OutputStyle_IOE
Applicable product(s): 1198 Grablink Avenue, 1621 Grablink Express.
Description The output line is an isolated TTL compliant signal actively tied to the high state and passively tied to the low state through a 2000 Ω pull-down resistor.

IOC

MC_OutputStyle_IOC
Applicable product(s): 1198 Grablink Avenue, 1621 Grablink Express.
Description The output line is an isolated TTL compliant signal actively tied to the low state and passively tied to the high state through a 3000 Ω pull-up resistor.

InputPinName

Pin name of the I/O line used as input

Parameter Info

Class	Category	Level	Type	Access
Board	Input/Output Control	EXPERT	Enumerated collection	Get Only

Num ID	String Identifier	C, C++ identifier
1796 << 14	InputPinName	MC_InputPinName

Parameter Description

The item number of this collection parameter is used as an index to point the relevant input designator among the set of designators owned by selected board.

The values are specific to each collection member. For further information, refer to the handbooks.

Parameter Values

Enumeration: UNKNOWN, IO1, IO2, IO3, IO4, IO5, IO6, IO7, IO8, IO9, IO10, IO11, IO12, IO13, IO14, IO15, IO16, I1, I2, I3, I4, TRX, TRY, TRZ, CK, RST, HIO, GATE, VIO, EXP, TRA, TRB, TRC, TRD, ACC1, ACC2, ACC3, ACC4, ACC5, BCC1, BCC2, BCC3, BCC4, BCC5, CCC1, CCC2, CCC3, CCC4, CCC5, DCC1, DCC2, DCC3, DCC4, DCC5, IN1, IN2, IN3, IN4, TRG, A1, A2, FVAL, DVAL, LVAL, SPARE, CK, B1, B2, Enhanced_IO1, Enhanced_IO2, Enhanced_IO3, Enhanced_IO4, TRA1, TRA2, ISOA1, ISOA2, IIN1, IIN2, IIN3, IIN4, DIN1, DIN2, LVAL_X, FVAL_X, DVAL_X, SPARE_X, CK_PRESENT_X, LVAL_Y, FVAL_Y, DVAL_Y, SPARE_Y, CK_PRESENT_Y, LVAL_Z, FVAL_Z, DVAL_Z, SPARE_Z, CK_PRESENT_Z, POWER_5V, POWER_12V

UNKNOWN

MC_InputPinName_UNKNOWN

Applicable product(s): 1161 Domino Alpha 2, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1622 Grablink Full, 1303 Pico Tetra, 1402 Pico Tymo, 1305 Pico Alert.

Description

The I/O line does not exist.

CK

MC_InputPinName_CK

Applicable product(s): 1161 Domino Alpha 2, 1191 Grablink Value.

Description

TRG

MC_InputPinName_TRG

Applicable product(s): 1191 Grablink Value.

Description

A1

MC_InputPinName_A1
Applicable product(s): 1191 Grablink Value.
Description

A2

MC_InputPinName_A2
Applicable product(s): 1191 Grablink Value.
Description

FVAL

MC_InputPinName_FVAL
Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase.
Description

DVAL

MC_InputPinName_DVAL
Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase.
Description

LVAL

MC_InputPinName_LVAL
Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase.
Description

SPARE

MC_InputPinName_SPARE
Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase.
Description

CK

MC_InputPinName_CK
Applicable product(s): 1191 Grablink Value.
Description

Enhanced_IO1

MC_InputPinName_Enhanced_IO1**Applicable product(s):** 1198 Grablink Avenue, 1621 Grablink Express.**Description**

Enhanced_IO2

MC_InputPinName_Enhanced_IO2**Applicable product(s):** 1198 Grablink Avenue, 1621 Grablink Express.**Description**

Enhanced_IO3

MC_InputPinName_Enhanced_IO3**Applicable product(s):** 1198 Grablink Avenue, 1621 Grablink Express.**Description**

Enhanced_IO4

MC_InputPinName_Enhanced_IO4**Applicable product(s):** 1198 Grablink Avenue, 1621 Grablink Express.**Description**

TRA1

MC_InputPinName_TRA1**Applicable product(s):** 1198 Grablink Avenue, 1621 Grablink Express.**Description**

TRA2

MC_InputPinName_TRA2**Applicable product(s):** 1198 Grablink Avenue, 1621 Grablink Express.**Description**

ISOA1

MC_InputPinName_ISO1**Applicable product(s):** 1198 Grablink Avenue, 1621 Grablink Express.**Description**

ISOA2

MC_InputPinName_ISO A2
Applicable product(s): 1198 Grablink Avenue, 1621 Grablink Express.
Description

IIN1

MC_InputPinName_IIN1
Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
Description

IIN2

MC_InputPinName_IIN2
Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
Description

IIN3

MC_InputPinName_IIN3
Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
Description

IIN4

MC_InputPinName_IIN4
Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
Description

DIN1

MC_InputPinName_DIN1
Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
Description

DIN2

MC_InputPinName_DIN2
Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
Description

LVAL_X

MC_InputPinName_LVAL_X**Applicable product(s):** 1622 Grablink Full, 1626 Grablink Full XR.**Description**

FVAL_X

MC_InputPinName_FVAL_X**Applicable product(s):** 1622 Grablink Full, 1626 Grablink Full XR.**Description**

DVAL_X

MC_InputPinName_DVAL_X**Applicable product(s):** 1622 Grablink Full, 1626 Grablink Full XR.**Description**

SPARE_X

MC_InputPinName_SPARE_X**Applicable product(s):** 1622 Grablink Full, 1626 Grablink Full XR.**Description**

CK_PRESENT_X

MC_InputPinName_CK_PRESENT_X**Applicable product(s):** 1622 Grablink Full, 1626 Grablink Full XR.**Description**

LVAL_Y

MC_InputPinName_LVAL_Y**Applicable product(s):** 1622 Grablink Full, 1626 Grablink Full XR.**Description**

FVAL_Y

MC_InputPinName_FVAL_Y**Applicable product(s):** 1622 Grablink Full, 1626 Grablink Full XR.**Description**

DVAL_Y

MC_InputPinName_DVAL_Y
Applicable product(s): 1622 Grablink Full, 1626 Grablink Full XR.
Description

SPARE_Y

MC_InputPinName_SPARE_Y
Applicable product(s): 1622 Grablink Full, 1626 Grablink Full XR.
Description

CK_PRESENT_Y

MC_InputPinName_CK_PRESENT_Y
Applicable product(s): 1622 Grablink Full, 1626 Grablink Full XR.
Description

LVAL_Z

MC_InputPinName_LVAL_Z
Applicable product(s): 1622 Grablink Full, 1626 Grablink Full XR.
Description

FVAL_Z

MC_InputPinName_FVAL_Z
Applicable product(s): 1622 Grablink Full, 1626 Grablink Full XR.
Description

DVAL_Z

MC_InputPinName_DVAL_Z
Applicable product(s): 1622 Grablink Full, 1626 Grablink Full XR.
Description

SPARE_Z

MC_InputPinName_SPARE_Z
Applicable product(s): 1622 Grablink Full, 1626 Grablink Full XR.
Description

[CK_PRESENT_Z](#)**MC_InputPinName_CK_PRESENT_Z****Applicable product(s):** 1622 Grablink Full, 1626 Grablink Full XR.**Description**[POWER_5V](#)**MC_InputPinName_POWER_5V****Applicable product(s):** 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.**Description**[POWER_12V](#)**MC_InputPinName_POWER_12V****Applicable product(s):** 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.**Description**

OutputPinName

Pin name of the I/O line used as the output

Parameter Info

Class	Category	Level	Type	Access
Board	Input/Output Control	EXPERT	Enumerated collection	Get Only

Num ID	String Identifier	C, C++ identifier
1798 << 14	OutputPinName	MC_OutputPinName

Parameter Description

The item number of this collection parameter is used as an index to point the relevant output designator among the set of designators owned by selected board.

The values are specific to each collection member. For further information, refer to the handbooks.

Parameter Values

Enumeration: UNKNOWN, IO1, IO2, IO3, IO4, IO5, IO6, IO7, IO8, IO9, IO10, IO11, IO12, IO13, IO14, IO15, IO16, O1, O2, O3, O4, O5, STX, STY, STZ, STA, STB, STC, STD, ACC1, ACC2, ACC3, ACC4, ACC5, BCC1, BCC2, BCC3, BCC4, BCC5, CCC1, CCC2, CCC3, CCC4, CCC5, DCC1, DCC2, DCC3, DCC4, DCC5, OUT1, OUT2, OUT3, OUT4, OUT5, OUT6, OUT7, OUT8, OUT9, OUT10, OUT11, OUT12, STR, A1, A2, CC1, CC2, CC3, CC4, B1, B2, Enhanced_IO1, Enhanced_IO2, Enhanced_IO3, Enhanced_IO4, ISOA1, ISOA2, IOUT1, IOUT2, IOUT3, IOUT4

UNKNOWN

MC_OutputPinName_UNKNOWN
Applicable product(s): 1161 Domino Alpha 2, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1622 Grablink Full, 1303 Picolo Tetra.
Description The I/O line does not exist.

STA

MC_OutputPinName_STA
Applicable product(s): 1601 Domino Symphony PCIe, 1198 Grablink Avenue, 1621 Grablink Express.
Description

STR

MC_OutputPinName_STR
Applicable product(s): 1191 Grablink Value.
Description

A1

MC_OutputPinName_A1**Applicable product(s):** 1191 Grablink Value.**Description**

A2

MC_OutputPinName_A2**Applicable product(s):** 1191 Grablink Value.**Description**

CC1

MC_OutputPinName_CC1**Applicable product(s):** 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.**Description**

CC2

MC_OutputPinName_CC2**Applicable product(s):** 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.**Description**

CC3

MC_OutputPinName_CC3**Applicable product(s):** 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.**Description**

CC4

MC_OutputPinName_CC4**Applicable product(s):** 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.**Description**

Enhanced_IO1

MC_OutputPinName_Enhanced_IO1**Applicable product(s):** 1198 Grablink Avenue, 1621 Grablink Express.**Description**

Enhanced_IO2

MC_OutputPinName_Enhanced_IO2
Applicable product(s): 1198 Grablink Avenue, 1621 Grablink Express.
Description

Enhanced_IO3

MC_OutputPinName_Enhanced_IO3
Applicable product(s): 1198 Grablink Avenue, 1621 Grablink Express.
Description

Enhanced_IO4

MC_OutputPinName_Enhanced_IO4
Applicable product(s): 1198 Grablink Avenue, 1621 Grablink Express.
Description

ISOA1

MC_OutputPinName_ISO1
Applicable product(s): 1198 Grablink Avenue, 1621 Grablink Express.
Description

ISOA2

MC_OutputPinName_ISO2
Applicable product(s): 1198 Grablink Avenue, 1621 Grablink Express.
Description

IOUT1

MC_OutputPinName_IOUT1
Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
Description

IOUT2

MC_OutputPinName_IOUT2
Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
Description

IOUT3

MC_OutputPinName_IOUT3
Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR. Description

IOUT4

MC_OutputPinName_IOUT4
Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR. Description

ConnectorName

Connector name of the I/O lines used as input

Parameter Info

Class	Category	Level	Type	Access
Board	Input/Output Control	EXPERT	Enumerated collection	Get Only

Num ID	String Identifier	C, C++ identifier
1815 << 14	ConnectorName	MC_ConnectorName

Parameter Description

The item number of this collection parameter is used as an index to point the relevant input designator among the set of designators owned by selected board.

The values are specific to each collection member. For further information, refer to [General-Purpose Usage](#) in the Grablink Full Handbook.

The values are specific to each collection member. For further information, refer to [General-Purpose Usage](#) in the Grablink DualBase Handbook.

The values are specific to each collection member. For further information, refer to [General-Purpose Usage](#) in the Grablink Base Handbook.

Parameter Values

Enumeration: UNKNOWN, DB9, IO_LINES, IO_SCREW_ TERMINAL, IO, CTL, TR_ST, CAMX, CAMY, SYSTEM, CAMERA, CAMERAS, FACTORY, CAMERA_A, CAMERA_B, IO_A, IO_B

UNKNOWN

MC_ConnectorName_UNKNOWN
Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1622 Grablink Full, 1155 Picolo, 1157 Picolo Pro 2, 1303 Picolo Tetra.
Description The I/O lines do not exist.

IO

MC_ConnectorName_IO
Applicable product(s): 1624 Grablink Base, 1622 Grablink Full, 1626 Grablink Full XR, 1402 Picolo Tymo, 1305 Picolo Alert.
Description for 1624 Grablink Base, 1622 Grablink Full, 1626 Grablink Full XR The I/O lines are available on the connector named I/O.

SYSTEM

MC_ConnectorName_SYSTEM

Applicable product(s): 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express.

Description

The I/O lines are available on the connector named System.

CAMERA

MC_ConnectorName_CAMERA

Applicable product(s): 1167 Domino Melody, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1622 Grablink Full, 1626 Grablink Full XR.

Description

The I/O lines are available on the connector named Camera.

CAMERA_B

MC_ConnectorName_CAMERA_B

Applicable product(s): 1623 Grablink DualBase.

Description

The I/O lines are available on the connector named Camera B.

IO_A

MC_ConnectorName_IO_A

Applicable product(s): 1623 Grablink DualBase.

Description

The I/O lines are available on the connector named I/O A.

IO_B

MC_ConnectorName_IO_B

Applicable product(s): 1623 Grablink DualBase.

Description

The I/O lines are available on the connector named I/O B.

Channel Class

What Is a Channel?

The Channel class groups all MultiCam parameters dedicated to the **control of image acquisition related features**.

A Channel object is an instance of the Channel class, represented by a dedicated set of such parameters.

Typically, the following items are defined and controlled by the Channel object:

- The camera feeding the channel, including reset and exposure control
- The connector and cable linking the camera to the frame grabber
- The switching structures routing the analog or digital video signal inside the frame grabber
- In case of analog camera, the analog-to-digital converter and the associated signal conditioning devices
- In case of digital camera, the digital receiving or de-serializing devices
- The timing generator and controller associated to the camera, and the video signal conditioning
- All digital devices affecting the signal during acquisition, performing tasks such as lookup tables, byte alignment, data channel merging...
- The data buffer receiving the images
- The DMA devices extracting images out of the data buffer for transfer into host memory
- The destination cluster of host memory surfaces
- The hardware resources managing the external system trigger

The channel is the association of an individual grabber connected to a camera delivering data to a set of surfaces, called a *cluster*. The channel is able to transport an image from the camera towards a surface belonging to the cluster and usually located in the host memory.

Related Information

[Channel Creation](#) on page 458

Categories

[Camera Specification Category](#) on page 90

Parameters specifying the type and operational mode of the camera feeding the channel

[Camera Timing Category](#) on page 101

Parameters setting the video timing attributes of the camera feeding the channel

[Camera Features Category](#) on page 115

Parameters setting the hardware interface attributes of the camera feeding the channel

[Cable Features Category](#) on page 171

Parameters setting the hardware attributes of the cable linking the camera to the frame grabber

[Acquisition Control Category](#) on page 178

Parameters installing the acquisition modes of the channel

[Trigger Control Category](#) on page 212

Parameters controlling the triggering features associated to the channel

[Interleaved Acquisition Category](#) on page 242

Parameters controlling the interleaved acquisition feature

[Exposure Control Category](#) on page 270

Parameters controlling the camera exposure related features associated to the channel

[Strobe Control Category](#) on page 275

Parameters controlling the illumination features associated to the channel

Encoder Control Category on page 287

Parameters controlling the motion encoder rate conversion device embedded in the line-scan capable frame grabbers

Grabber Configuration Category on page 321

Parameters controlling the hardware resources specific to the grabber used by the channel

Grabber Timing Category on page 342

Parameters controlling the hardware resources specific to the grabber used by the channel

Grabber Conditioning Category on page 355

Parameters controlling the analog or digital conditioning features applied to the video signal processed by the grabber used by the channel

White Balance Operator Category on page 358

Parameters controlling the white balance operator used by the channel

Look-up Tables Category on page 371

Parameters controlling the look-up-table operator used by the channel

Board Linkage Category on page 391

Parameters providing several methods to designate one of the frame grabber inside the system as the channel host

Cluster Category on page 396

Parameters defining the destination surface cluster owned by the channel

Channel Management Category on page 423

Parameters controlling state information of the channel

Signaling Category on page 428

Parameters controlling signaling information of the channel

Exception Management Category on page 434

Parameters controlling the exception situations encountered by the channel

Camera Specification Category

Parameters specifying the type and operational mode of the camera feeding the channel

Parent Class

[Channel Class](#) on page 88

CamFile

Name of the CAM file

Parameter Info

Class	Category	Level	Type	Access
Channel	Camera Specification	SELECT	String	Set and Get

Num ID	String Identifier	C, C++ identifier
11 << 14	CamFile	MC_CamFile

Parameter Description

This parameter specifies a camera configuration file as a character string. The .cam extension may or may not be included. The maximum string length is 1024.

Getting this parameter returns the name of the lastly executed CAM file.

See CAM Files for CAM file syntax and location.

Camera

Camera model attached to the grabber

Parameter Info

Class	Category	Level	Type	Access
Channel	Camera Specification	SELECT	Enumerated	Set and Get

Num ID	String Identifier	C, C++ identifier
700 << 14	Camera	MC_Camera

Parameter Description

Together with CamConfig, this parameter defines a coherent set of camera properties.

Parameter Values

Enumeration: CameraExposeAR, GrabberExposeAR, InterlaceFR, ProgressiveFR, Std_BW_CCIR, Std_BW_EIA, Std_RGB_CCIR, Std_RGB_EIA, MyColorScanCameraLink, MyCameraLink, CAMERA_CCIR, CAMERA_EIA, CAMERA_NTSC, CAMERA_PAL

[MyCameraLink](#)

MC_Camera_MyCameraLink
Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
Description Generic Camera Link camera

CamConfig

Configuration of the camera model attached to the grabber

Parameter Info

Class	Category	Level	Type	Access
Channel	Camera Specification	SELECT	Enumerated	Set and Get

Num ID	String Identifier	C, C++ identifier
701 << 14	CamConfig	MC_CamConfig

Parameter Description

Together with Camera, this parameter defines a coherent set of camera properties.

Parameter Description

The parameter complies to the following syntax: <Scan>xx<CamMode><SyncMode>[_<VerticalSyncMode>] where:

- **Scan** designates the scanning method:
 - I: Interlaced scanning
 - P: Progressive scanning
- **CamMode** designates the main camera operating mode:
 - R: Asynchronous Reset operating mode. The camera initiates an exposure/readout sequence when it gets a "Reset" signal from the frame grabber
 - S: Synchronous operating mode. The camera is free-running and delivers permanently video data
- **SyncMode** designates the synchronization mode:
 - A: Analog Synchronization mode. The frame grabber uses the analog video signal to synchronize on the camera timing.
 - camera.
 - M: Master synchronization mode. The camera is synchronized on the frame grabber timing using HDrive (and eventually VDrive) signals delivered by the frame grabber.
- **VerticalSyncMode** designates the vertical synchronization mode, this field omitted when the vertical sync mode is identical to the horizontal sync mode:
 - A: Analog Vertical Synchronization mode. The frame grabber uses the analog video signal to synchronize vertically on the camera timing.
 - D: Digital Vertical Synchronization mode. The frame grabber is synchronized vertically on the camera timing using the Vsync digital signals delivered by the camera.

Parameter Description

The parameter complies to the following syntax: <Imaging>xx[xx]<CamMode><Exp>where:

- **Imaging** designates the type of imaging device:
 - L: Line-scan imaging device
 - P: Progressive area-scan imaging device
- **CamMode** designates the main camera operating mode:

- R: Asynchronous Reset operating mode. The camera initiates an exposure/readout sequence when it gets a "Reset" signal from the frame grabber
- S: Synchronous operating mode. The camera is free-running and delivers permanently video data
- **Exp** designates the exposure control method:
 - C: The exposure is controlled by the camera
 - G: The exposure is controlled by the frame grabber
 - P: The camera sensor has no exposure control .It is exposed permanently.

Parameter Values

Enumeration: I50SA, I60SA, IxxSA, IxxSM, PxxRA, PxxRA_D, PxxRD, PxxRM_A, PxxRM_D, PxxSA, PxxSA_D, PxxSD, PxxSM, LxxxxRC, LxxxxRG, LxxxxRP, LxxxxSC, LxxxxSP, PxxRC, PxxRG, PxxSC

[LxxxxRC](#)

MC_CamConfig_LxxxxRC

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description
Grabber-controlled rate, camera-controlled exposure time, line-scan camera. The exposure duration is set through camera switches or serial control. The camera cycles are triggered by a pulse over a "Reset" line issued by the frame grabber.

Applicability condition(s):

- **Condition for 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR:** Camera is set to MyCameraLink
- **Condition for :** Camera is set to MyColorScanCameraLink

[LxxxxRG](#)

MC_CamConfig_LxxxxRG

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description
Grabber-controlled line rate, grabber-controlled exposure, line-scan camera. The exposure duration is defined as the active duration of a pulse over a "Reset" line issued by the frame grabber.

Applicability condition(s):

- **Condition for 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR:** Camera is set to MyCameraLink
- **Condition for :** Camera is set to MyColorScanCameraLink

LxxxxRP

MC_CamConfig_LxxxxRP

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

Grabber-controlled rate, permanent exposure, line-scan camera. The camera has no exposure control capability, resulting in permanent exposure. The camera cycles are triggered by a pulse over a "Reset" line issued by the frame grabber.

Applicability condition(s):

- **Condition for 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR:** Camera is set to MyCameraLink
- **Condition for :** Camera is set to MyColorScanCameraLink

LxxxxSC

MC_CamConfig_LxxxxSC

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

Free-running, camera-controlled exposure time, line-scan camera. The exposure duration is set through camera switches or serial control. The camera cycles are free-running.

Applicability condition(s):

- **Condition for 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR:** Camera is set to MyCameraLink
- **Condition for :** Camera is set to MyColorScanCameraLink

LxxxxSP

MC_CamConfig_LxxxxSP

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

Free-running, permanent exposure, line-scan camera. The camera has no exposure control capability, resulting in permanent exposure. The camera cycles are free-running.

Applicability condition(s):

- **Condition for 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR:** Camera is set to MyCameraLink
- **Condition for :** Camera is set to MyColorScanCameraLink

PxxRC

MC_CamConfig_PxxRC

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description
Progressive, asynchronous reset operation, camera-controlled exposure, area-scan camera. The exposure duration is set through camera switches or serial control. The camera cycles are triggered by a pulse over a "Reset" line issued by the frame grabber.

Applicability condition(s):

- **Condition for 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR:** Camera is set to MyCameraLink

PxxRG

MC_CamConfig_PxxRG

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description
Progressive asynchronous reset operation, grabber-controlled exposure, area-scan camera. The exposure duration is defined as the active duration of a pulse over a "Reset" line issued by the frame grabber.

Applicability condition(s):

- **Condition for 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR:** Camera is set to MyCameraLink

PxxSC

MC_CamConfig_PxxSC

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description
Progressive-scan, synchronous operation, camera-controlled exposure, area-scan camera. The exposure duration is set through camera switches or serial control. The camera cycles are free-running.

Applicability condition(s):

- **Condition for 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR:** Camera is set to MyCameraLink

Imaging

Camera imaging basic geometry

Parameter Info

Class	Category	Level	Type	Access
Channel	Camera Specification	EXPERT	Enumerated	Set and Get

Num ID	String Identifier	C, C++ identifier
1007 << 14	Imaging	MC_Imaging

Parameter Description

This parameter is used to distinguish the basic kind of camera feeding the channel. See also [Camera Imaging Basic Geometry](#).

Parameter Values

Enumeration: AREA, LINE, TDI

AREA

MC_Imaging_AREA

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1155 Pico, 1401 Pico Junior 4, 1157 Pico Pro 2, 1303 Pico Tetra, 1402 Pico Tymo, 1305 Pico Alert.

Description

The currently selected camera is an area-scan model.

LINE

MC_Imaging_LINE

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

The currently selected camera is a line-scan model.

TDI

MC_Imaging_TDI

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

The currently selected camera is a TDI line-scan model.

Spectrum

imaging spectral sensitivity of the specified camera

Parameter Info

Class	Category	Level	Type	Access
Channel	Camera Specification	EXPERT	Enumerated	Set and Get

Num ID	String Identifier	C, C++ identifier
1008 << 14	Spectrum	MC_Spectrum

Parameter Description

This parameter is used to distinguish the basic kind of camera feeding the channel.

This information only makes sense for frame grabber able to indifferently interface to color or monochrome cameras. See also [Camera Spectral Sensitivity](#).

The way the color information is built at the camera's sensor is further described by the [ColorMethod](#) parameter belonging to the [Camera Features category](#).

Before assigning a value to this parameter, it is mandatory to set [Camera](#) and [CamConfig](#) .

Parameter Values

Enumeration: BW, COLOR, IR

BW

MC_Spectrum_BW

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR, 1155 Picolo, 1401 Picolo Junior 4, 1157 Picolo Pro 2, 1303 Picolo Tetra, 1402 Picolo Tymo, 1305 Picolo Alert.

Description

The selected camera delivers a monochrome image.

COLOR

MC_Spectrum_COLOR

Applicable product(s): 1168 Domino Harmony, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR, 1155 Picolo, 1401 Picolo Junior 4, 1157 Picolo Pro 2, 1303 Picolo Tetra, 1402 Picolo Tymo, 1305 Picolo Alert.

Description

The selected camera delivers a color image.

IR

MC_Spectrum_IR

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

The selected camera delivers a monochrome image issued by an infra-red sensor.

DataLink

Data transfer method of the current camera

Parameter Info

Class	Category	Level	Type	Access
Channel	Camera Specification	EXPERT	Enumerated	Set and Get

Num ID	String Identifier	C, C++ identifier
1009 <= 14	DataLink	MC_DataLink

Parameter Description

This parameter is used to return some information on the basic connection structure of the camera feeding the channel. See also [Camera Data Transfer Method](#).

Parameter Values

Enumeration: COMPOSITE, ANALOG, CAMERALINK

[CAMERALINK](#)

MC_DataLink_CAMERALINK

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description
The camera delivers a digital video signal complying with the Camera Link standard.

Camera Timing Category

Parameters setting the video timing attributes of the camera feeding the channel

Parent Class

[Channel Class](#) on page 88

PixelClkMode

Camera Link clock signal characteristics

Applicable product(s): 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Camera Timing	EXPERT	Enumerated	Set and Get

Num ID	String Identifier	C, C++ identifier
10574 << 14	PixelClkMode	MC_PixelClkMode

Parameter Description

Defines how the camera delivers the Camera Link clock signal.

Parameter Usage

Directive: Set to `INTERMITTENT` when the camera doesn't permanently deliver the Camera Link clock.

Parameter Values

Enumeration: PERMANENT, INTERMITTENT

[PERMANENT](#)

MC_PixelClkMode_PERMANENT

Applicable product(s): 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description
 The camera delivers permanently the Camera Link clock signal

Default value.

[INTERMITTENT](#)

MC_PixelClkMode_INTERMITTENT

Applicable product(s): 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description
 The camera delivers intermittently the Camera Link clock signal

PixelClk_Hz

Camera pixel clock frequency, expressed in Hertz

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1155 Picolo, 1401 Picolo Junior 4, 1157 Picolo Pro 2, 1303 Picolo Tetra, 1402 Picolo Tymo, 1305 Picolo Alert.

Parameter Info

Class	Category	Level	Type	Access
Channel	Camera Timing	EXPERT	Integer	Set and Get

Num ID	String Identifier	C, C++ identifier
704 << 14	PixelClk_Hz	MC_PixelClk_Hz

Parameter Description

This parameter declares the pixel clock frequency of the camera feeding the channel. When the camera's sensor is read out by means of several data channels (or taps), the frequency to be considered is the one associated to one channel. This parameter can be understood as the read-out frequency of the camera's CCD sensor.

The pixel clock is normally available at the camera's connector. The digital data channels are synchronously strobed with this clock.

In the special case of a camera receiving a clock signal from the frame grabber, this parameter indicates the recommended clock frequency to be applied to the camera.

If the clock frequency measured at the camera's connector is different from the read-out frequency of the camera's CCD sensor, the parameter [DataClk_Hz](#) is meaningful.

Parameter Values

Numeric values: 10000000, 20000000, 32000000, 40000000, 50000000, 60000000, 65000000, 85000000

Minimum Range

20000000	Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express.
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Maximum Range

60000000	Applicable product(s): 1191 Grablink Value.
85000000	Applicable product(s): 1198 Grablink Avenue, 1621 Grablink Express.

DataClk_Hz

Data transmission clock frequency, expressed in Hertz

Applicable product(s): 1191 Grablink Value.

Parameter Info

Class	Category	Level	Type	Access
Channel	Camera Timing	EXPERT	Integer	Set and Get

Num ID	String Identifier	C, C++ identifier
1020 << 14	DataClk_Hz	MC_DataClk_Hz

Parameter Description

This parameter declares the frequency of the clock signal strobing the digital data delivered by the camera. Usually, the value of [DataClk_Hz](#) equals the value of [PixelClk_Hz](#) .

When the data stream is serialized (Camera Link standard, for instance), the frequency to be considered is the rate of the parallel samples, before serialization or after deserialization.

Parameter Values

Numeric values: 60000000

[Maximum Range](#)

60000000	Applicable product(s): 1191 Grablink Value.
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LineRate_Hz

Camera line repetition rate, expressed in Hertz

Parameter Info

Class	Category	Level	Type	Access
Channel	Camera Timing	EXPERT	Integer	Set and Get

Num ID	String Identifier	C, C++ identifier
705 << 14	LineRate_Hz	MC_LineRate_Hz

Parameter Description

This parameter declares the line rate, which is the repetition frequency of the video lines scanned and delivered by the camera feeding the channel.

This value is a performance figure often stated as is by the camera manufacturer.

For area-scan cameras, the line rate is usually under control of the camera itself.

In the special case of an area-scan camera receiving horizontal drive information from the frame grabber, the [LineRate_Hz](#) parameter expresses the recommended horizontal frequency to be applied to the camera.

For line-scan cameras, the line rate is usually under control of the frame grabber. In that case, the [LineRate_Hz](#) parameter declares the maximum line frequency the camera can accept.

In the special case of a line-scan camera controlling its own line timing, the [LineRate_Hz](#) parameter expresses the actual horizontal frequency set by the camera.

Parameter Values

Numeric values: 10, 100000

Minimum Range

10	Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
----	--

Maximum Range

100000	Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
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FrameRate_mHz

Camera frame repetition rate, expressed in milliHertz

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Camera Timing	EXPERT	Integer	Set and Get

Num ID	String Identifier	C, C++ identifier
2222 <= 14	FrameRate_mHz	MC_FrameRate_mHz

Parameter Description

This parameter declares the frame rate, which is the repetition frequency of the video frames scanned and delivered by the camera feeding the channel.

This value is a performance figure often stated as is by the camera manufacturer.

Parameter Values

Numeric values: 1000, 127500000

Minimum Range

1000	Applicable product(s): 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
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Maximum Range

127500000	Applicable product(s): 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
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LineDur_ns

Total duration of the video line, expressed in nanoseconds

Parameter Info

Class	Category	Level	Type	Access
Channel	Camera Timing	EXPERT	Integer	Get Only

Num ID	String Identifier	C, C++ identifier
732 << 14	LineDur_ns	MC_LineDur_ns

Parameter Description

The total duration of the video line is the inverse value of the camera line repetition rate declared by the [LineRate_Hz](#) parameter.

For area-scan cameras, the line duration is the sum of the horizontal blanking period and the active part of the video line. This is a feature of the video standard the camera may comply to.

For line-scan cameras, the line duration is the minimum time to scan a single line. It is a practical way to characterize the top performance of the camera.

Parameter Values

Numeric values: 10000, 100000000

Minimum Range

10000	Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
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Maximum Range

100000000	Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
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Vactive_Ln

Number of active video lines in the frame

Parameter Info

Class	Category	Level	Type	Access
Channel	Camera Timing	EXPERT	Integer	Set and Get

Num ID	String Identifier	C, C++ identifier
710 << 14	Vactive_Ln	MC_Vactive_Ln

Parameter Description

An active line is, by definition, a video line where useful visual information can appear. Blanking lines take no part in the count of active lines.

In case of interlaced scanning, *Vactive_Ln* represents the number of active lines for both fields altogether. This is equivalent to the number of active half-lines per field.

In some cases of dual-tap structure, *Vactive_Ln* represents the number of active lines for both channels altogether.

This parameter is a measure of the height of the camera active window.

It is used to characterize area-scan cameras. It is meaningless for line-scan cameras.

Parameter Values

Numeric values: 1, 65535

Minimum Range

1	Always applicable.
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Maximum Range

65535	Always applicable.
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FrameDur_us

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Camera Timing	EXPERT	Integer	Get Only

Num ID	String Identifier	C, C++ identifier
2223 <= 14	FrameDur_us	MC_FrameDur_us

Parameter Description

This parameter is expressed in microseconds.

Parameter Values

Numeric values: 10000, 100000000

Minimum Range

10000	Always applicable.
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Maximum Range

100000000	Always applicable.
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Hactive_Px

Number of active pixels in the line, expressed as a number of camera sensor pixels

Applicable product(s): 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Camera Timing	EXPERT	Integer	Set and Get

Num ID	String Identifier	C, C++ identifier
1021 << 14	Hactive_Px	MC_Hactive_Px

Parameter Description

This parameter is used to characterize digital line-scan or area-scan cameras. It announces the number of horizontal pixels belonging to the sensor that are effectively available at the camera output. This is a measure of the width of the camera active window.

The allowed values are depending on several factors: board type, tap configuration and tap geometry. Refer to the Grablink User Guide for an extensive description of all cases.

VsyncAft_Ln

Vertical delay between vertical synchronization pulse and camera active window

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Camera Timing	EXPERT	Integer	Set and Get

Num ID	String Identifier	C, C++ identifier
712 << 14	VsyncAft_Ln	MC_VsyncAft_Ln

Parameter Description

The delay is expressed as a number of video lines when the scanning method is progressive. It is expressed in half-lines when the scanning method is interlaced.

This parameter applies to analog area-scan cameras delivering a separate vertical synchronization pulse used by the frame grabber to monitor the camera timing (digital synchronization mode). If this pulse is not available, the vertical synchronization embedded in the composite video signal is used instead (analog synchronization mode). In this case, the *VCsyncAft_Ln* parameter is significant. The delay is counted from the leading edge of the vertical synchronization pulse delivered by the camera.

This parameter applies to Camera Link area-scan cameras. In that case, the delay is counted from the leading edge of the FVAL pulse delivered by the camera.

Parameter Values

Numeric values: 0, 255

Minimum Range

0	Always applicable. Default value.
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Maximum Range

255	Applicable product(s): 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
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HsyncAft_Tk

Horizontal delay between horizontal synchronization pulse and camera active window, expressed in TCU (Timing Clock Unit) from the Camera Link clock

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Camera Timing	EXPERT	Integer	Set and Get

Num ID	String Identifier	C, C++ identifier
1111 << 14	HsyncAft_Tk	MC_HsyncAft_Tk

Parameter Description

This parameter applies to Camera Link compliant digital area-scan cameras that deliver a LVAL horizontal synchronization pulse used by the frame grabber to monitor the camera timing.
For line-scan cameras, the delay is counted from the leading edge of LVAL delivered by the camera to the beginning of the read-out period.

Parameter Values

Numeric values: -1, 1023

Minimum Range

-1	Applicable product(s): 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
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Maximum Range

1023	Applicable product(s): 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
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ExposeRecovery_us

Minimum delay between successive expose pulses, expressed in microseconds

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Camera Timing	EXPERT	Integer	Set and Get

Num ID	String Identifier	C, C++ identifier
1311 << 14	ExposeRecovery_us	MC_ExposeRecovery_us

Parameter Description

This parameter declares the minimum amount of time required by the camera between successive expose pulses. Its value is strictly positive.

Parameter Values

Numeric values: 1, 1000000

Minimum Range

1	Applicable product(s): 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
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Maximum Range

1000000	Applicable product(s): 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
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ReadoutRecovery_us

Minimum delay between successive read-out phases, expressed in microseconds

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Camera Timing	EXPERT	Integer	Set and Get

Num ID	String Identifier	C, C++ identifier
1312 << 14	ReadoutRecovery_us	MC_ReadoutRecovery_us

Parameter Description

This parameter declares the minimum amount of time required by the camera between successive read-out phases. This is applicable to area-scan cameras only. The value is strictly positive.

Parameter Values

Numeric values: 1, 1000000

Minimum Range

1	Applicable product(s): 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
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Maximum Range

1000000	Applicable product(s): 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
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Camera Features Category

Parameters setting the hardware interface attributes of the camera feeding the channel

Parent Class

[Channel Class](#) on page 88

TapConfiguration

[Camera Link tap configuration](#)

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Camera Features	ADJUST	Enumerated	Set and Get

Num ID	String Identifier	C, C++ identifier
4268 << 14	TapConfiguration	MC_TapConfiguration

Parameter Description

This parameter declares the Camera Link tap configuration used by the camera.

The naming conventions and the detailed description of all Camera Link tap configurations are explained in [Camera Link Tap Configuration](#).

Parameter Values

Enumeration: BASE_1T8, BASE_1T10, BASE_1T12, BASE_1T14, BASE_1T16, BASE_1T24, BASE_1T30B2, BASE_1T30B3, BASE_1T36B2, BASE_1T36B3, BASE_1T42B2, BASE_1T42B3, BASE_1T48B2, BASE_1T48B3, BASE_2T8, BASE_2T10, BASE_2T12, BASE_2T14B2, BASE_2T16B2, BASE_3T8, BASE_4T8B2, BASE_4T10B2, BASE_4T12B2, MEDIUM_1T30, MEDIUM_1T36, MEDIUM_2T24, MEDIUM_3T10, MEDIUM_3T12, MEDIUM_4T8, MEDIUM_4T10, MEDIUM_4T12, full fullxr_8T8, DECA_10T8, LITE_1T8, LITE_1T10, LITE_2T8, LITE_2T10

[BASE_1T8](#)

MC_TapConfiguration_BASE_1T8

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

The camera requires the Base-1T8 tap configuration.

[BASE_1T10](#)

MC_TapConfiguration_BASE_1T10

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

The camera requires the Base-1T10 tap configuration.

[BASE_1T12](#)**MC_TapConfiguration_BASE_1T12**

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

The camera requires the Base-1T12 tap configuration.

[BASE_1T14](#)**MC_TapConfiguration_BASE_1T14**

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

The camera requires the Base-1T14 tap configuration.

[BASE_1T16](#)**MC_TapConfiguration_BASE_1T16**

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

The camera requires the Base-1T16 tap configuration.

[BASE_1T24](#)**MC_TapConfiguration_BASE_1T24**

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

The camera requires the Base-1T24 tap configuration.

[BASE_1T30B2](#)**MC_TapConfiguration_BASE_1T30B2**

Applicable product(s): 1198 Grablink Avenue, 1621 Grablink Express.

Description

The camera requires the Base-1T30B2 tap configuration.

[BASE_1T30B3](#)**MC_TapConfiguration_BASE_1T30B3**

Applicable product(s): 1198 Grablink Avenue, 1621 Grablink Express.

Description

The camera requires the Base-1T30B3 tap configuration.

[BASE_1T36B2](#)

MC_TapConfiguration_BASE_1T36B2
Applicable product(s): 1198 Grablink Avenue, 1621 Grablink Express.
Description The camera requires the Base-1T36B2 tap configuration.

[BASE_1T36B3](#)

MC_TapConfiguration_BASE_1T36B3
Applicable product(s): 1198 Grablink Avenue, 1621 Grablink Express.
Description The camera requires the Base-1T36B3 tap configuration.

[BASE_1T42B2](#)

MC_TapConfiguration_BASE_1T42B2
Applicable product(s): 1198 Grablink Avenue, 1621 Grablink Express.
Description The camera requires the Base-1T42B2 tap configuration.

[BASE_1T42B3](#)

MC_TapConfiguration_BASE_1T42B3
Applicable product(s): 1198 Grablink Avenue, 1621 Grablink Express.
Description The camera requires the Base-1T42B3 tap configuration.

[BASE_1T48B2](#)

MC_TapConfiguration_BASE_1T48B2
Applicable product(s): 1198 Grablink Avenue, 1621 Grablink Express.
Description The camera requires the Base-1T48B2 tap configuration.

[BASE_1T48B3](#)

MC_TapConfiguration_BASE_1T48B3
Applicable product(s): 1198 Grablink Avenue, 1621 Grablink Express.
Description The camera requires the Base-1T48B3 tap configuration.

[BASE_2T8](#)**MC_TapConfiguration_BASE_2T8**

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

The camera requires the Base-2T8 tap configuration.

[BASE_2T10](#)**MC_TapConfiguration_BASE_2T10**

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

The camera requires the Base-2T10 tap configuration.

[BASE_2T12](#)**MC_TapConfiguration_BASE_2T12**

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

The camera requires the Base-2T12 tap configuration.

[BASE_2T14B2](#)**MC_TapConfiguration_BASE_2T14B2**

Applicable product(s): 1198 Grablink Avenue, 1621 Grablink Express.

Description

The camera requires the Base-2T14B2 tap configuration.

[BASE_2T16B2](#)**MC_TapConfiguration_BASE_2T16B2**

Applicable product(s): 1198 Grablink Avenue, 1621 Grablink Express.

Description

The camera requires the Base-2T16B2 tap configuration.

[BASE_3T8](#)**MC_TapConfiguration_BASE_3T8**

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

The camera requires the Base-3T8 tap configuration.

[BASE_4T8B2](#)

MC_TapConfiguration_BASE_4T8B2
Applicable product(s): 1198 Grablink Avenue, 1621 Grablink Express.
Description The camera requires the Base-4T8B2 tap configuration.

[BASE_4T10B2](#)

MC_TapConfiguration_BASE_4T10B2
Applicable product(s): 1198 Grablink Avenue, 1621 Grablink Express.
Description The camera requires the Base-4T10B2 tap configuration.

[BASE_4T12B2](#)

MC_TapConfiguration_BASE_4T12B2
Applicable product(s): 1198 Grablink Avenue, 1621 Grablink Express.
Description The camera requires the Base-4T12B2 tap configuration.

[MEDIUM_1T30](#)

MC_TapConfiguration_MEDIUM_1T30
Applicable product(s): 1622 Grablink Full, 1626 Grablink Full XR.
Description The camera requires the Medium_1T30 tap configuration.

[MEDIUM_1T36](#)

MC_TapConfiguration_MEDIUM_1T36
Applicable product(s): 1622 Grablink Full, 1626 Grablink Full XR.
Description The camera requires the Medium_1T36 tap configuration.

[MEDIUM_2T24](#)

MC_TapConfiguration_MEDIUM_2T24
Applicable product(s): 1622 Grablink Full, 1626 Grablink Full XR.
Description The camera requires the Medium_2T24 tap configuration.

[MEDIUM_3T10](#)**MC_TapConfiguration_MEDIUM_3T10****Applicable product(s):** 1622 Grablink Full, 1626 Grablink Full XR.**Description**[MEDIUM_3T12](#)**MC_TapConfiguration_MEDIUM_3T12****Applicable product(s):** 1622 Grablink Full, 1626 Grablink Full XR.**Description**[MEDIUM_4T8](#)**MC_TapConfiguration_MEDIUM_4T8****Applicable product(s):** 1622 Grablink Full, 1626 Grablink Full XR.**Description**

The camera requires the Medium_4T8 tap configuration.

[MEDIUM_4T10](#)**MC_TapConfiguration_MEDIUM_4T10****Applicable product(s):** 1622 Grablink Full, 1626 Grablink Full XR.**Description**

The camera requires the Medium_4T10 tap configuration.

[MEDIUM_4T12](#)**MC_TapConfiguration_MEDIUM_4T12****Applicable product(s):** 1622 Grablink Full, 1626 Grablink Full XR.**Description**

The camera requires the Medium_4T12 tap configuration.

[full fullxr_8T8](#)**MC_TapConfiguration_full fullxr_8T8****Applicable product(s):** 1622 Grablink Full, 1626 Grablink Full XR.**Description**

The camera requires the Full Camera Link configuration and delivers pixels of 8-bit on 8 taps.

DECA_10T8

MC_TapConfiguration_DECA_10T8
Applicable product(s): 1622 Grablink Full, 1626 Grablink Full XR.
Description The camera requires the 10-tap configuration and delivers pixels of 8-bit on 10 taps.

LITE_1T8

MC_TapConfiguration_LITE_1T8
Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
Description

LITE_1T10

MC_TapConfiguration_LITE_1T10
Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
Description

LITE_2T8

MC_TapConfiguration_LITE_2T8
Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
Description

LITE_2T10

MC_TapConfiguration_LITE_2T10
Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
Description

TapGeometry

Camera Link tap geometry

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Camera Features	EXPERT	Enumerated	Set and Get

Num ID	String Identifier	C, C++ identifier
4273 << 14	TapGeometry	MC_TapGeometry

Parameter Description

This parameter declares the Camera Link tap geometry used by the camera.

Based on this parameter together with [TapConfiguration](#), the frame grabber is able to re-arrange the data in the destination surface.

The naming conventions and the detailed description of all Camera Link tap configurations are explained in [Camera Link Tap Geometry](#).

Parameter Values

Enumeration: Line-scan cameras, 1X, 1X2, 1X4, 1X8, 1X10, 2X, 2XE, 2XM, 2XR, 2X2, 2X2E, 2X2M, 2X4, 4X, 4XE, 4XR, 4X2, 4X2E, 8X, 8XR, Area-scan cameras having only 1 tap along the vertical direction, 1X_1Y, 1X2_1Y, 1X4_1Y, 1X8_1Y, 1X10_1Y, 2X_1Y, 2XE_1Y, 2XM_1Y, 2XR_1Y, 2X2_1Y, 2X2E_1Y, 2X2M_1Y, 2X4_1Y, 4X_1Y, 4XE_1Y, 4XR_1Y, 4X2_1Y, 4X2E_1Y, 8X_1Y, 8XR_1Y, Area-scan cameras having 2 taps along the vertical direction, 1X_1Y2

1X

MC_TapGeometry_1X

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

The line-scan camera requires the 1X tap geometry.

1X2

MC_TapGeometry_1X2

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

The line-scan camera requires the 1X2 tap geometry.

1X4

MC_TapGeometry_1X4
Applicable product(s): 1198 Grablink Avenue, 1621 Grablink Express.
Description The line-scan camera requires the 1X4 tap geometry.

1X8

MC_TapGeometry_1X8
Applicable product(s): 1622 Grablink Full, 1626 Grablink Full XR.
Description The line-scan camera requires the 1X8 tap geometry.

1X10

MC_TapGeometry_1X10
Applicable product(s): 1622 Grablink Full, 1626 Grablink Full XR.
Description The line-scan camera requires the 1X10 tap geometry.

2X

MC_TapGeometry_2X
Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
Description The line-scan camera requires the 2X tap geometry.

2XE

MC_TapGeometry_2XE
Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
Description The line-scan camera requires the 2XE tap geometry.

2XM

MC_TapGeometry_2XM
Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
Description The line-scan camera requires the 2XM tap geometry.

2XR

MC_TapGeometry_2XR

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

The line-scan camera requires the 2XR tap geometry.

2X2

MC_TapGeometry_2X2

Applicable product(s): 1198 Grablink Avenue, 1621 Grablink Express, 1622 Grablink Full, 1626 Grablink Full XR.

Description

The line-scan camera requires the 2X2 tap geometry.

2X2E

MC_TapGeometry_2X2E

Applicable product(s): 1198 Grablink Avenue, 1621 Grablink Express, 1622 Grablink Full, 1626 Grablink Full XR.

Description

The line-scan camera requires the 2X2E tap geometry.

2X2M

MC_TapGeometry_2X2M

Applicable product(s): 1198 Grablink Avenue, 1621 Grablink Express, 1622 Grablink Full, 1626 Grablink Full XR.

Description

The line-scan camera requires the 2X2M tap geometry.

2X4

MC_TapGeometry_2X4

Applicable product(s): 1622 Grablink Full, 1626 Grablink Full XR.

Description

The line-scan camera requires the 2X4 tap geometry.

4X

MC_TapGeometry_4X

Applicable product(s): 1198 Grablink Avenue, 1621 Grablink Express, 1622 Grablink Full, 1626 Grablink Full XR.

Description

The line-scan camera requires the 4X tap geometry.

4XE

MC_TapGeometry_4XE
Applicable product(s): 1622 Grablink Full, 1626 Grablink Full XR.
Description The line-scan camera requires the 4XE tap geometry.

4XR

MC_TapGeometry_4XR
Applicable product(s): 1622 Grablink Full, 1626 Grablink Full XR.
Description The line-scan camera requires the 4XR tap geometry.

4X2

MC_TapGeometry_4X2
Applicable product(s): 1622 Grablink Full, 1626 Grablink Full XR.
Description The line-scan camera requires the 4X2 tap geometry.

4X2E

MC_TapGeometry_4X2E
Applicable product(s): 1622 Grablink Full, 1626 Grablink Full XR.
Description The line-scan camera requires the 4X2E tap geometry.

8X

MC_TapGeometry_8X
Applicable product(s): 1622 Grablink Full, 1626 Grablink Full XR.
Description The line-scan camera requires the 8X tap geometry.

8XR

MC_TapGeometry_8XR
Applicable product(s): 1622 Grablink Full, 1626 Grablink Full XR.
Description The line-scan camera requires the 8XR tap geometry.

[1X_1Y](#)**MC_TapGeometry_1X_1Y**

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

The area-scan camera requires the 1X-1Y tap geometry.

[1X2_1Y](#)**MC_TapGeometry_1X2_1Y**

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

The area-scan camera requires the 1X2-1Y tap geometry.

[1X4_1Y](#)**MC_TapGeometry_1X4_1Y**

Applicable product(s): 1198 Grablink Avenue, 1621 Grablink Express.

Description

The area-scan camera requires the 1X4-1Y tap geometry.

[1X8_1Y](#)**MC_TapGeometry_1X8_1Y**

Applicable product(s): 1622 Grablink Full, 1626 Grablink Full XR.

Description

The area-scan camera requires the 1X8-1Y tap geometry.

[1X10_1Y](#)**MC_TapGeometry_1X10_1Y**

Applicable product(s): 1622 Grablink Full, 1626 Grablink Full XR.

Description

The area-scan camera requires the 1X10-1Y tap geometry.

[2X_1Y](#)**MC_TapGeometry_2X_1Y**

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

The area-scan camera requires the 2X-1Y tap geometry.

2XE_1Y

MC_TapGeometry_2XE_1Y
Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
Description The area-scan camera requires the 2XE-1Y tap geometry.

2XM_1Y

MC_TapGeometry_2XM_1Y
Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
Description The area-scan camera requires the 2XM-1Y tap geometry.

2XR_1Y

MC_TapGeometry_2XR_1Y
Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
Description The area-scan camera requires the 2XR-1Y tap geometry.

2X2_1Y

MC_TapGeometry_2X2_1Y
Applicable product(s): 1198 Grablink Avenue, 1621 Grablink Express.
Description The area-scan camera requires the 2X2-1Y tap geometry.

2X2E_1Y

MC_TapGeometry_2X2E_1Y
Applicable product(s): 1198 Grablink Avenue, 1621 Grablink Express, 1622 Grablink Full, 1626 Grablink Full XR.
Description The area-scan camera requires the 2X2E-1Y tap geometry.

2X2M_1Y

MC_TapGeometry_2X2M_1Y
Applicable product(s): 1198 Grablink Avenue, 1621 Grablink Express, 1622 Grablink Full, 1626 Grablink Full XR.
Description The area-scan camera requires the 2X2M-1Y tap geometry.

2X4_1Y

MC_TapGeometry_2X4_1Y**Applicable product(s):** 1622 Grablink Full, 1626 Grablink Full XR.**Description**

The area-scan camera requires the 2X4-1Y tap geometry.

4X_1Y

MC_TapGeometry_4X_1Y**Applicable product(s):** 1198 Grablink Avenue, 1621 Grablink Express, 1622 Grablink Full, 1626 Grablink Full XR.**Description**

The area-scan camera requires the 4X-1Y tap geometry.

4XE_1Y

MC_TapGeometry_4XE_1Y**Applicable product(s):** 1198 Grablink Avenue, 1621 Grablink Express, 1622 Grablink Full, 1626 Grablink Full XR.**Description**

The area-scan camera requires the 4XE-1Y tap geometry.

4XR_1Y

MC_TapGeometry_4XR_1Y**Applicable product(s):** 1198 Grablink Avenue, 1621 Grablink Express, 1622 Grablink Full, 1626 Grablink Full XR.**Description**

The area-scan camera requires the 4XR-1Y tap geometry.

4X2_1Y

MC_TapGeometry_4X2_1Y**Applicable product(s):** 1622 Grablink Full, 1626 Grablink Full XR.**Description**

The area-scan camera requires the 4X2-1Y tap geometry.

4X2E_1Y

MC_TapGeometry_4X2E_1Y**Applicable product(s):** 1622 Grablink Full, 1626 Grablink Full XR.**Description**

The area-scan camera requires the 4X2E-1Y tap geometry.

8X_1Y

MC_TapGeometry_8X_1Y
Applicable product(s): 1622 Grablink Full, 1626 Grablink Full XR.
Description The area-scan camera requires the 8X-1Y tap geometry.

8XR_1Y

MC_TapGeometry_8XR_1Y
Applicable product(s): 1622 Grablink Full, 1626 Grablink Full XR.
Description The area-scan camera requires the 8XR-1Y tap geometry.

1X_1Y2

MC_TapGeometry_1X_1Y2
Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
Description The area-scan camera requires the 1X-1Y2 tap geometry.

ColorMethod

Method used at sensor level to build color information

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Camera Features	EXPERT	Enumerated	Set and Get

Num ID	String Identifier	C, C++ identifier
1010 << 14	ColorMethod	MC_ColorMethod

Parameter Description

This parameter returns the way the color information is built. See also [Camera Color Analysis Method](#).

Parameter Values

Enumeration: NONE, RGB, PRISM, TRILINEAR, BAYER

NONE

MC_ColorMethod_NONE

Applicable product(s): 1168 Domino Harmony, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

The camera is monochrome.

RGB

MC_ColorMethod_RGB

Applicable product(s): 1168 Domino Harmony, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

The camera uses a coated sensor and an internal processor to reconstruct the full color information. The color information is available as three R, G, B video data streams.

PRISM

MC_ColorMethod_PRISM

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

The camera uses a wavelength-separating prism to feed three distinct imaging sensors. The color information is available as three R, G, B video data streams.

TRILINEAR

MC_ColorMethod_TRILINEAR

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

The camera uses three parallel sensing linear arrays of pixels exhibiting different wavelength sensitivities. The color information is available as three R, G, B video data streams.

BAYER

MC_ColorMethod_BAYER

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

The camera uses a single imaging sensor coated with a special wavelength-separating patterned filter. The color information is available as a single video data stream embedding the RGB information.

ColorRegistration

Alignment of the color pattern filter over the camera window

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Camera Features	EXPERT	Enumerated	Set and Get

Num ID	String Identifier	C, C++ identifier
1273 << 14	ColorRegistration	MC_ColorRegistration

Parameter Description

When [ColorMethod](#) is BAYER, this parameter indicates how the Bayer pattern filter covers the camera active window.
Upper left corner of camera window

When [ColorMethod](#) is TRILINEAR, this parameter states the order the three sensing lines are arranged on the CCD chip.
This parameter is otherwise irrelevant.

See also [Camera Color Pattern Filter Alignment](#).

Parameter Values

Enumeration: GB, BG, RG, GR, RGB, GBR, BRG

[GB](#)

MC_ColorRegistration_GB

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

The first two pixels are green and blue.

Applicability condition(s):

- **Condition:** ColorMethod is set to BAYER

[BG](#)

MC_ColorRegistration_BG

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

The first two pixels are blue and green.

Applicability condition(s):

- **Condition:** ColorMethod is set to BAYER

RG

MC_ColorRegistration_RG

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description
The first two pixels are red and green.

Applicability condition(s):

- **Condition:** ColorMethod is set to BAYER

GR

MC_ColorRegistration_GR

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description
The first two pixels are green and red.

Applicability condition(s):

- **Condition:** ColorMethod is set to BAYER

RGB

MC_ColorRegistration_RGB

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description
The three sensing lines are ordered as red, green and blue.

Applicability condition(s):

- **Condition:** ColorMethod is set to TRILINEAR

GBR

MC_ColorRegistration_GBR

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description
The three sensing lines are ordered as green, blue and red.

Applicability condition(s):

- **Condition:** ColorMethod is set to TRILINEAR

BRG

MC_ColorRegistration_BRG
Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR. Description The three sensing lines are ordered as blue, red and green. Applicability condition(s): • Condition: ColorMethod is set to TRILINEAR

ColorRegistrationControl

Controls the color registration

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Camera Features	EXPERT	Enumerated	Set and Get

Num ID	String Identifier	C, C++ identifier
10850 << 14	ColorRegistrationControl	MC_ColorRegistrationControl

Parameter Description

This enumerated parameter controls the method used for ensuring the correct registration of the colors in the image.

Parameter Usage

For the particular case of Bayer CFA bilinear line-scan cameras such as the Basler Sprint color, it is necessary to start the acquisition of a new image at a 2-line boundary to ensure a correct color registration of the captured Bayer CFA image. This is achieved by using the FVAL signal to discriminate between the first and the second line of the Bayer CFA sensor.

Parameter Values

Enumeration: FVAL, NONE

FVAL

MC_ColorRegistrationControl_FVAL

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description
Use the FVAL signal as a qualifier for the first line of an image. The first line of an image always corresponds to the first LVAL after FVAL rising.

Applicability condition(s):

- Condition:** All BoardTopology values but MONO_SLOW and DUO_SLOW

NONE

MC_ColorRegistrationControl_NONE

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description
Ignore any signal for qualifying the first line of an image (in line-scan acquisition).

Default value.

ColorGap

Gap between adjacent sensing lines of the tri-linear sensor

Applicable product(s): 1191 Grablink Value.

Parameter Info

Class	Category	Level	Type	Access
Channel	Camera Features	EXPERT	Enumerated	Set and Get

Num ID	String Identifier	C, C++ identifier
2961 << 14	ColorGap	MC_ColorGap

Parameter Description

This parameter specifies the gap between adjacent sensing lines on the CCD chip.

This gap is expressed as a number of pixel pitches along the line. It is an unchangeable geometrical feature of the tri-linear sensor.

ExposeOverlap

Status of the expose to read-out relationship

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Camera Features	EXPERT	Enumerated	Set and Get

Num ID	String Identifier	C, C++ identifier
1001 << 14	ExposeOverlap	MC_ExposeOverlap

Parameter Description

This parameter indicates whether the expose condition is allowed to overlap the previous read-out condition. This applies to line-scan and area-scan cameras.

[ExposeOverlap](#) is always allowed for line-scan cameras.

Parameter Values

Enumeration: FORBID, ALLOW

[ALLOW](#)

MC_ExposeOverlap_ALLOW
Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
Description The expose condition is allowed to overlap the previous read-out condition.

Expose

Camera exposure principle

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Camera Features	EXPERT	Enumerated	Set and Get

Num ID	String Identifier	C, C++ identifier
1011 << 14	Expose	MC_Expose

Parameter Description

This parameter declares the exposure principle of the camera. The camera exposure principle is the way the light exposure function is handled inside the camera. This equally applies to area-scan and line-scan camera.

Parameter Values

Enumeration: PLSTRG, WIDTH, INTCTL, INTPRM

PLSTRG

MC_Expose_PLSTRG

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

The line or frame exposure condition starts upon receiving a pulse from the frame grabber.

WIDTH

MC_Expose_WIDTH

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

The duration of a pulse issued by the frame grabber determines the line or frame exposure condition.

INTCTL

MC_Expose_INTCTL
Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR. Description The line or frame exposure condition is totally controlled by the camera. The exposure duration is set through camera configuration settings.

INTPRM

MC_Expose_INTPRM
Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR. Description The exposure is permanent.

Readout

Camera read-out principle

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Camera Features	EXPERT	Enumerated	Set and Get

Num ID	String Identifier	C, C++ identifier
1012 << 14	Readout	MC_Readout

Parameter Description

This parameter declares the read-out principle of the camera. The camera read-out principle is the way the read-out function is handled inside the camera.

Parameter Values

Enumeration: PLSTRG, INTCTL

PLSTRG

MC_Readout_PLSTRG

Applicable product(s): 1161 Domino Alpha 2, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description for 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR

With line-scan cameras, the line read-out condition starts upon receiving a pulse from the frame grabber.

INTCTL

MC_Readout_INTCTL

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description for 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR

With line-scan cameras, the read-out duration is set through camera configuration settings. With area-scan cameras, the line read-out condition is totally controlled by the camera.

PixelClkCtl

Electrical style of pixel clock from camera

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express.

Parameter Info

Class	Category	Level	Type	Access
Channel	Camera Features	EXPERT	Enumerated	Set and Get

Num ID	String Identifier	C, C++ identifier
719 << 14	PixelClkCtl	MC_PixelClkCtl

Parameter Description

This parameter, along with [PixelClkEdge](#) , declares the attributes of the pixel clock signal sensed from the camera feeding the channel.

It is applicable to area-scan analog cameras making the pixel clock available at their connector.

Digital cameras (area-scan or line-scan) are inherently required to provide a pixel clock.

Parameter Values

Enumeration: NONE, TTL, BUILTIN

[BUILTIN](#)

MC_PixelClkCtl_BUILTIN
Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express.
Description The pixel clock style is implicitly defined in the data link provided by the camera.

PixelClkEdge

Significant edge of pixel clock from camera

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express.

Parameter Info

Class	Category	Level	Type	Access
Channel	Camera Features	EXPERT	Enumerated	Set and Get

Num ID	String Identifier	C, C++ identifier
720 << 14	PixelClkEdge	MC_PixelClkEdge

Parameter Description

This parameter, along with [PixelClkCtl](#), declares the attributes of the pixel clock signal sensed from the camera feeding the channel.

It is applicable to area-scan analog cameras making the pixel clock available at their connector.

Digital cameras (area-scan or line-scan) are inherently required to provide a pixel clock.

The PixelClkEdge parameter indicates which clock transition should be used to adequately sample the camera output data busses and the synchronization signals.

Parameter Values

Enumeration: GOHIGH, GOLOW, BUILTIN

BUILTIN

MC_PixelClkEdge_BUILTIN

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express.

Description

The adequate transition is implicitly defined in the data link provided by the camera.

HsyncCtl

Significant edge of pixel clock from camera

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value.

Parameter Info

Class	Category	Level	Type	Access
Channel	Camera Features	EXPERT	Enumerated	Set and Get

Num ID	String Identifier	C, C++ identifier
722 << 14	HsyncCtl	MC_HsyncCtl

Parameter Description

This parameter, along with [HsyncEdge](#) , declares the attributes of the line synchronization signal sensed from the camera feeding the channel.

It applies to analog area-scan cameras that deliver a separate horizontal synchronization pulse used by the frame grabber to monitor the camera timing (digital synchronization mode).

It also applies to digital area-scan cameras that always deliver a separate horizontal synchronization pulse used by the frame grabber to monitor the camera timing.

For line-scan cameras, the parameter characterizes the signal validating the read-out of the line data.

In the case of digital cameras (line-scan or area-scan), the signal described by [HsyncCtl](#) is often called "Line Valid" or LVAL.

Parameter Values

Enumeration: NONE, TTL, DIFF

HsyncEdge

Significant edge of line synchronization from camera

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value.

Parameter Info

Class	Category	Level	Type	Access
Channel	Camera Features	EXPERT	Enumerated	Set and Get

Num ID	String Identifier	C, C++ identifier
723 << 14	HsyncEdge	MC_HsyncEdge

Parameter Description

This parameter, along with [HsyncCtl](#), declares the attributes of the line synchronization signal sensed from the camera feeding the channel.

The parameter indicates which voltage level transition should be used by the frame grabber. It is irrelevant when [HsyncCtl](#) = NONE.

In the case of Camera Link digital cameras, the rising edge of LVAL, the line synchronization signal, is exclusively used. Therefore, [HsyncEdge](#) is read-only and its value is always GOHIGH.

Parameter Values

Enumeration: GOHIGH, GOLOW

[GOHIGH](#)

MC_HsyncEdge_GOHIGH

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value.

Description

The positive going transition of the line synchronization signal from the camera is adequate.

ParityDetection

Method to detect parity of fields issued by an interlaced camera

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express.

Parameter Info

Class	Category	Level	Type	Access
Channel	Camera Features	EXPERT	Enumerated	Set and Get

Num ID	String Identifier	C, C++ identifier
1721 << 14	ParityDetection	MC_ParityDetection

Parameter Description

Set ParityDetection to FIXEDFRAME if camera has previous timingSet ParityDetection to FIXEDFRAME_INV if camera has previous timingSet ParityDetection to FI_SPARE, FI_LVAL or FI_DVAL if camera has previous timing. Frame grabber detects logic level at rising edge of FVAL.Set ParityDetection to FI_SPARE_INV, FI_LVAL_INV or FI_DVAL_INV if camera has previous timing. Frame grabber detects logic level at rising edge of FVAL.

Parameter Values

Enumeration: NONE, FIXEDFRAME, FIXEDFRAME_INV, FI_SPARE, FI_SPARE_INV, FI_LVAL, FI_LVAL_INV, FI_DVAL, FI_DVAL_INV

NONE

MC_ParityDetection_NONE

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express.

Description
For progressive camera, field parity is irrelevant.

FIXEDFRAME

MC_ParityDetection_FIXEDFRAME

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express.

Description
The camera sends the two fields while FVAL is high: up field, then down field.

FIXEDFRAME_INV

MC_ParityDetection_FIXEDFRAME_INV

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express.

Description
The camera sends the two fields while FVAL is high: down field, then up field.

FI_SPARE

MC_ParityDetection_FI_SPARE**Applicable product(s):** 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express.**Description**

The camera gives the parity of fields using SPARE signal.

FI_SPARE_INV

MC_ParityDetection_FI_SPARE_INV**Applicable product(s):** 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express.**Description**

The camera gives the parity of fields using SPARE active low signal.

FI_LVAL

MC_ParityDetection_FI_LVAL**Applicable product(s):** 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express.**Description**

The camera gives the parity of fields using LVAL signal.

FI_LVAL_INV

MC_ParityDetection_FI_LVAL_INV**Applicable product(s):** 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express.**Description**

The camera gives the parity of fields using LVAL active low signal.

FI_DVAL

MC_ParityDetection_FI_DVAL**Applicable product(s):** 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express.**Description**

The camera gives the parity of fields using DVAL signal.

FI_DVAL_INV

MC_ParityDetection_FI_DVAL_INV**Applicable product(s):** 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express.**Description**

The camera gives the parity of fields using DVAL active low signal.

ResetCtl

Electrical style of main reset control line to camera

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Camera Features	EXPERT	Enumerated	Set and Get

Num ID	String Identifier	C, C++ identifier
1027 << 14	ResetCtl	MC_ResetCtl

Parameter Description

This parameter, along with [ResetEdge](#) , declares the attributes of the main reset signal applied to the camera feeding the channel.

In case of area-scan cameras, the main reset signal implements the asynchronous frame reset function, which usually triggers the frame exposure condition inside the camera.

In case of line-scan cameras, the main reset signal implements the line reset function, which usually triggers the line exposure condition inside the camera.

Some cameras use an additional reset control line to independently control the expose and read-out functions. Refer to [AuxResetCtl](#) .

Parameter Values

Enumeration: NONE, TTL, DIFF

NONE

MC_ResetCtl_NONE

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description
The camera has no reset control line.

DIFF

MC_ResetCtl_DIFF

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description
The camera reset control line requires a signal at RS-422 or LVDS differential levels.

ResetEdge

Significant edge of main reset control line to camera

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Camera Features	EXPERT	Enumerated	Set and Get

Num ID	String Identifier	C, C++ identifier
1028 << 14	ResetEdge	MC_ResetEdge

Parameter Description

This parameter, along with [ResetCtl](#), declares the attributes of the main reset signal applied to the camera feeding the channel.

In case of area-scan cameras, the main reset signal implements the asynchronous frame reset function, which usually triggers the frame exposure condition inside the camera.

In case of line-scan cameras, the main reset signal implements the line reset function, which usually triggers the line exposure condition inside the camera.

Some cameras use an additional reset control line to independently control the expose and read-out functions. Refer to the [AuxResetEdge](#) parameter.

The parameter indicates the logic polarity delivered through the main reset line the camera obeys to.

Parameter Values

Enumeration: GOHIGH, GOLOW

[GOHIGH](#)

MC_ResetEdge_GOHIGH

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

The camera reacts to a positive going pulse over the main reset control line.

GOLOW

MC_ResetEdge_GOLOW
Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR. Description The camera reacts to a negative going pulse over the main reset control line.

AuxResetCtl

Electrical style of auxiliary reset control line to camera

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Camera Features	EXPERT	Enumerated	Set and Get

Num ID	String Identifier	C, C++ identifier
1029 << 14	AuxResetCtl	MC_AuxResetCtl

Parameter Description

This parameter, along with [AuxResetEdge](#), declares the attributes of the auxiliary reset signal applied to the camera feeding the channel.

Some cameras (area-scan or line-scan) use two reset control lines to independently control the expose and read-out functions. Refer to the [ResetCtl](#) parameter.

Parameter Values

Enumeration: NONE, TTL, DIFF

[NONE](#)

MC_AuxResetCtl_NONE

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

The camera has no auxiliary reset control line.

[DIFF](#)

MC_AuxResetCtl_DIFF

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

The camera auxiliary reset control line requires a signal at RS-422 or LVDS differential levels.

AuxResetEdge

Significant edge of auxiliary reset control line to camera

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Camera Features	EXPERT	Enumerated	Set and Get

Num ID	String Identifier	C, C++ identifier
1030 << 14	AuxResetEdge	MC_AuxResetEdge

Parameter Description

This parameter, along with [AuxResetCtl](#) , declares the attributes of the auxiliary reset signal applied to the camera feeding the channel.

Some cameras (area-scan or line-scan) use two reset control lines to independently control the expose and read-out functions. Refer to the [ResetCtl](#) parameter.

The parameter indicates the logic polarity delivered through the auxiliary reset line the camera obeys to.

Parameter Values

Enumeration: GOHIGH, GOLOW

[GOHIGH](#)

MC_AuxResetEdge_GOHIGH

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

The camera reacts to a positive going pulse over the auxiliary reset control line.

[GOLOW](#)

MC_AuxResetEdge_GOLOW

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

The camera reacts to a negative going pulse over the auxiliary reset control line.

ResetDur

Required duration of pulse sent through reset control line to camera

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Camera Features	EXPERT	Integer	Set and Get

Num ID	String Identifier	C, C++ identifier
1031 << 14	ResetDur	MC_ResetDur

Parameter Description

This parameter declares the minimum pulse width to be applied to the reset control line for the camera to assume the proper reaction.

It characterizes both the main (RESET) and auxiliary reset (AUXRESET) control lines when it exists.

With area-scan cameras, [ResetDur](#) is expressed as a number of video lines.

With line-scan cameras, [ResetDur](#) is expressed in nanoseconds.

ResetPos

Required offset position of pulse sent through reset control line to camera

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express.

Parameter Info

Class	Category	Level	Type	Access
Channel	Camera Features	EXPERT	Integer	Set and Get

Num ID	String Identifier	C, C++ identifier
1032 << 14	ResetPos	MC_ResetPos

Parameter Description

This parameter, along with [ResetDur](#) , declares the timing attributes of the reset signal applied to the camera feeding the channel.

When applicable, it declares the exact timing the reset pulse is due to obey for the camera to assume the proper reaction.

The starting and ending positions of the reset pulse are positioned within the video line. They are expressed as a percentage of a full video line.

It characterizes both the main and auxiliary reset control line when it exists.

It is meaningless for line-scan cameras.

ExposeMin_us

Minimum duration of grabber-controlled exposure allowed by camera, expressed in microseconds

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Camera Features	EXPERT	Integer	Set and Get

Num ID	String Identifier	C, C++ identifier
1033 << 14	ExposeMin_us	MC_ExposeMin_us

Parameter Description

This parameter applies to area-scan camera operated in CTL mode, stating the minimum tolerated duration of the frame exposure duration as specified by the camera manufacturer.

It also applies to most the line-scan cameras, stating the minimum tolerated duration of the line exposure duration as specified by the camera manufacturer.

Parameter Values

Numeric values: 1, 5000000

Minimum Range

1	Applicable product(s): 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
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Maximum Range

5000000	Applicable product(s): 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
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ExposeMax_us

Maximum duration of grabber-controlled exposure allowed by camera, expressed in microseconds

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Camera Features	EXPERT	Integer	Set and Get

Num ID	String Identifier	C, C++ identifier
1034 << 14	ExposeMax_us	MC_ExposeMax_us

Parameter Description

This parameter applies to area-scan camera operated in CTL mode, stating the maximum tolerated duration of the frame exposure duration as specified by the camera manufacturer.

It also applies to most the line-scan cameras, stating the maximum tolerated duration of the line exposure duration as specified by the camera manufacturer.

Parameter Values

Numeric values: 1, 5000000

Minimum Range

1	Applicable product(s): 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
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Maximum Range

5000000	Applicable product(s): 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
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FvalMode

Usage of downstream signal FVAL

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Camera Features	EXPERT	Enumerated	Set and Get

Num ID	String Identifier	C, C++ identifier
1035 << 14	FvalMode	MC_FvalMode

Parameter Description

The Camera Link standard specifies a downstream signal aimed at signaling the validity of a video frame issued by the camera. This signal is called FVAL.

This parameter expresses the timing rules associated to FVAL.

Refer to the [MultiCam User Guide](#).

Parameter Values

Enumeration: FN, FA, FC

FN

MC_FvalMode_FN

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

Frame None.

FA

MC_FvalMode_FA

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

Frame Ante.

FC

MC_FvalMode_FC
Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
Description Frame Cover.

LvalMode

Usage of downstream signal LVAL

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Camera Features	EXPERT	Enumerated	Set and Get

Num ID	String Identifier	C, C++ identifier
1036 << 14	LvalMode	MC_LvalMode

Parameter Description

The Camera Link standard specifies a downstream signal aimed at signaling the validity of a video line issued by the camera. This signal is called LVAL.

This parameter expresses the timing rules associated to LVAL.

Refer to the [MultiCam User Guide](#).

Parameter Values

Enumeration: LA, LN

LA

MC_LvalMode_LA

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

Line Ante.

LN

MC_LvalMode_LN

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

Line None.

DvalMode

Usage of downstream signal DVAL

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Camera Features	EXPERT	Enumerated	Set and Get

Num ID	String Identifier	C, C++ identifier
1037 << 14	DvalMode	MC_DvalMode

Parameter Description

This parameter expresses the timing rules associated to DVAL.
Refer to the [MultiCam User Guide](#).

Parameter Values

Enumeration: DN, DG

[DN](#)

MC_DvalMode_DN

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description
Data None.

[DG](#)

MC_DvalMode_DG

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description
Data Gate.

CC1Usage

Usage of upstream signal CC1

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Camera Features	EXPERT	Enumerated	Set and Get

Num ID	String Identifier	C, C++ identifier
1216 << 14	CC1Usage	MC_CC1Usage

Parameter Values

Enumeration: LOW, HIGH, RESET, AUXRESET, SOFT, DIN1, IIN1

LOW

MC_CC1Usage_LOW

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

The control line is tied to the low logic state.

HIGH

MC_CC1Usage_HIGH

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

The control line is tied to the high logic state.

RESET

MC_CC1Usage_RESET

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

The control line implements the reset function.

AUXRESET

MC_CC1Usage_AUXRESET
Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
Description The control line implements the auxiliary reset function.

SOFT

MC_CC1Usage_SOFT
Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
Description The control line is controlled through the I/O API.

DIN1

MC_CC1Usage_DIN1
Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
Description The control line is tied to the DIN1 input port.

IIN1

MC_CC1Usage_IIN1
Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
Description The control line is tied to the IIN1 input port.

CC2Usage

Usage of upstream signal CC2

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Camera Features	EXPERT	Enumerated	Set and Get

Num ID	String Identifier	C, C++ identifier
1218 << 14	CC2Usage	MC_CC2Usage

Parameter Values

Enumeration: LOW, HIGH, RESET, AUXRESET, SOFT, DIN2

LOW

MC_CC2Usage_LOW

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

The control line is tied to the low logic state.

HIGH

MC_CC2Usage_HIGH

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

The control line is tied to the high logic state.

RESET

MC_CC2Usage_RESET

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

The control line implements the reset function.

AUXRESET

MC_CC2Usage_AUXRESET
Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
Description The control line implements the auxiliary reset function.

SOFT

MC_CC2Usage_SOFT
Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
Description The control line is controlled through the I/O API.

DIN2

MC_CC2Usage_DIN2
Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
Description The control line is tied to the DIN2 input port.

CC3Usage

Usage of upstream signal CC3

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Camera Features	EXPERT	Enumerated	Set and Get

Num ID	String Identifier	C, C++ identifier
1219 << 14	CC3Usage	MC_CC3Usage

Parameter Values

Enumeration: LOW, HIGH, RESET, AUXRESET, SOFT, DIN2

LOW

MC_CC3Usage_LOW

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

The control line is tied to the low logic state.

HIGH

MC_CC3Usage_HIGH

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

The control line is tied to the high logic state.

RESET

MC_CC3Usage_RESET

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

The control line implements the reset function.

AUXRESET

MC_CC3Usage_AUXRESET
Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
Description The control line implements the auxiliary reset function.

SOFT

MC_CC3Usage_SOFT
Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
Description The control line is controlled through the I/O API.

DIN2

MC_CC3Usage_DIN2
Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
Description The control line is tied to the DIN2 input port.

CC4Usage

Usage of upstream signal CC4

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Camera Features	EXPERT	Enumerated	Set and Get

Num ID	String Identifier	C, C++ identifier
1220 << 14	CC4Usage	MC_CC4Usage

Parameter Values

Enumeration: LOW, HIGH, RESET, AUXRESET, SOFT

LOW

MC_CC4Usage_LOW

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

The control line is tied to the low logic state.

HIGH

MC_CC4Usage_HIGH

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

The control line is tied to the high logic state.

RESET

MC_CC4Usage_RESET

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

The control line implements the reset function.

AUXRESET

MC_CC4Usage_AUXRESET
Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
Description The control line implements the auxiliary reset function.

SOFT

MC_CC4Usage_SOFT
Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
Description The control line is controlled through the I/O API.

TwoLineSynchronization

Controls the two-line synchronization mode

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Camera Features	EXPERT	Enumerated	Set and Get

Num ID	String Identifier	C, C++ identifier
11049 << 14	TwoLineSynchronization	MC_TwoLineSynchronization

Parameter Description

This enumerated parameter controls the 2-line mode of the synchronized line-scan acquisition.

Parameter Usage

Relevance condition(s):

- **Condition:** Basler Sprint Bilinear line-scan camera (or similar product).

Set this parameter to ENABLE to allow synchronized line-scan acquisition with bilinear linescan cameras such as the Basler Sprint.

Parameter Values

Enumeration: ENABLE, DISABLE

ENABLE

MC_TwoLineSynchronization_ENABLE

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

The 2-line synchronization mode is enabled.

DISABLE

MC_TwoLineSynchronization_DISABLE

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

The 2-line synchronization mode is disabled.

Default value.

TwoLineSynchronizationParity

Controls the two-line synchronization parity

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Camera Features	EXPERT	Enumerated	Set and Get

Num ID	String Identifier	C, C++ identifier
11050 << 14	TwoLineSynchronizationParity	MC_TwoLineSynchronizationParity

Parameter Description

This enumerated parameter selects the line parity of individual cameras in a 2-line synchronized acquisition system.

Parameter Usage

Relevance condition(s):

- **Condition:** TwoLineSynchronization = ENABLE

Parameter Values

Enumeration: ODD, EVEN

ODD

MC_TwoLineSynchronizationParity_ODD

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description
The camera cycle begins at an odd line trigger count boundary.

EVEN

MC_TwoLineSynchronizationParity_EVEN

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description
The camera cycle begins at an even line trigger count boundary.

Default value.

Cable Features Category

Parameters setting the hardware attributes of the cable linking the camera to the frame grabber

Parent Class

[Channel Class](#) on page 88

Cable

Identifier of the recommended cable to connect the camera feeding the channel

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value.

Parameter Info

Class	Category	Level	Type	Access
Channel	Cable Features	SELECT	Enumerated	Set and Get

Num ID	String Identifier	C, C++ identifier
729 << 14	Cable	MC_Cable

Parameter Description

The camera should be connected to the frame grabber with a cable complying with a specification provided in the relevant documentation.

This parameter designates the proper cable type.

Parameter Values

Enumeration: A15_C00, A15_C01, A15_C03, A15_C05, A15_C06, A15_C07, A15_C08, A15_C09, A15_C11, A15_C12, A15_C13, A15_C14, A15_C15, A15_C16, A15_C17, A15-C19

CableName

Recommended cable to connect the camera feeding the channel

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value.

Parameter Info

Class	Category	Level	Type	Access
Channel	Cable Features	SELECT	Enumerated	Get Only

Num ID	String Identifier	C, C++ identifier
1156 << 14	CableName	MC_CableName

Parameter Description

The camera should be connected to the frame grabber with a cable complying with a specification provided in the relevant documentation.

This parameter declares the name of the proper cable.

Parameter Values

Enumeration: Generic Cable, Single_Channel_R, Single_Channel_R_B, Single_Channel_R_C, Single_Channel_RC, Single_Channel_RG, Single_Channel_RGC, Single_Channel_RGC_A, Single_Channel_RGC_wo_PxCk, Single_Channel_RGC_2, Dual_Channel, Dual_Channel_RG, Dual_Channel_RG_2, Dual_Channel_RG_2_A, Triple_Channel_R, Triple_Channel_RG_2, Triple_Channel_RG_3

ResetLine

Designation of line chosen for transporting main reset to camera

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Cable Features	EXPERT	Enumerated	Set and Get

Num ID	String Identifier	C, C++ identifier
1158 << 14	ResetLine	MC_ResetLine

Parameter Description

This parameter declares which line is used inside the camera cable to connect the main reset signal from the frame grabber to the camera.

Some cameras use an additional reset control line to independently control the expose and read-out functions. Refer to the [AuxResetLine](#) parameter.

Parameter Values

Enumeration: RST, VIO, CC1, CC2, CC3, CC4, CC5, NC

CC1

MC_ResetLine_CC1
Applicable product(s): 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
Description The main reset uses the CC1 camera control line.

CC2

MC_ResetLine_CC2
Applicable product(s): 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
Description The main reset uses the CC2 camera control line.

CC3

MC_ResetLine_CC3

Applicable product(s): 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description for 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR

The main reset uses the CC3 camera control line.

CC4

MC_ResetLine_CC4

Applicable product(s): 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

The main reset uses the CC4 camera control line.

NC

MC_ResetLine_NC

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

The main reset is not used and not connected.

AuxResetLine

Designation of line chosen for transporting auxiliary reset to camera

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Cable Features	EXPERT	Enumerated	Set and Get

Num ID	String Identifier	C, C++ identifier
1159 << 14	AuxResetLine	MC_AuxResetLine

Parameter Description

This parameter declares which line is used inside the camera cable to connect the auxiliary reset signal from the frame grabber to the camera.

Some cameras (area-scan or line-scan) use two reset control lines to independently control the expose and read-out functions. Refer to the [ResetCtl](#) parameter.

Parameter Values

Enumeration: NC, RST, VIO, CC1, CC2, CC3, CC4, CC5

NC

MC_AuxResetLine_NC

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description
No auxiliary reset line to connect.

CC1

MC_AuxResetLine_CC1

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description
The auxiliary reset uses the CC1 camera control line.

CC2

MC_AuxResetLine_CC2

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

The auxiliary reset uses the CC2 camera control line.

CC3

MC_AuxResetLine_CC3

Applicable product(s): 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

The auxiliary reset uses the CC3 camera control line.

CC4

MC_AuxResetLine_CC4

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

The auxiliary reset uses the CC4 camera control line.

Acquisition Control Category

Parameters installing the acquisition modes of the channel

Parent Class

[Channel Class](#) on page 88

AcquisitionMode

Fundamental acquisition mode

Parameter Info

Class	Category	Level	Type	Access
Channel	Acquisition Control	SELECT	Enumerated	Set and Get

Num ID	String Identifier	C, C++ identifier
3396 << 14	AcquisitionMode	MC_AcquisitionMode

Parameter Description

Refer to the [MultiCam Acquisition Principles](#) on page 458 application note.

Parameter Values

Enumeration: WEB, PAGE, LONGPAGE, HFR, SNAPSHOT, VIDEO

WEB

MC_AcquisitionMode_WEB

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

This mode is intended for image acquisition of a continuous object, like a web, from a line-scan camera.

A single sequence acquiring [SeqLength_Ln](#) contiguous lines is available within the channel activity period. The sequence is divided in contiguous phases, each phase acquiring [PageLength_Ln](#) lines.

In the case [SeqLength_Ln](#) is not a multiple of [PageLength_Ln](#) , the surface is partially filled during the last phase.

The sequence and the first acquisition phase are initiated according to [TrigMode](#) . Subsequent acquisition phases are automatically initiated **without any line loss**.

[BreakEffect](#) specifies the behavior in case of a user break.

Default value.

PAGE

MC_AcquisitionMode_PAGE

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

This mode is intended for image acquisition of discrete objects from a line-scan camera.

Each page is constituted of contiguous lines; the page length, expressed in lines, is specified by [PageLength_Ln](#) .

A single sequence is capable to acquire [SeqLength_Pg](#) pages within the channel activity period.

LONGPAGE

MC_AcquisitionMode_LONGPAGE
Applicable product(s): 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR. Description This mode is intended for image acquisition of long or variable size discrete objects from a line-scan camera. The parameter ActivityLength specifies the number of sequences within the channel activity period. Each sequence is capable to acquire SeqLength_Ln contiguous lines. A sequence is divided in phases, each phase acquiring PageLength_Ln lines.

HFR

MC_AcquisitionMode_HFR
Applicable product(s): 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR. Description This mode is intended for acquisition of snapshot images from high frame rate area-scan cameras. A single sequence is capable to acquire SeqLength_Fr frames within the channel activity period. The sequence is divided into phases, each phase acquiring PhaseLength_Fr frames into a single destination surface.

SNAPSHOT

MC_AcquisitionMode_SNAPSHOT
Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR. Description This mode is intended for acquisition of snapshot images from area-scan cameras. The unique sequence is capable to acquire SeqLength_Fr frames within the channel activity period.

SynchronizedAcquisition

Inter-Channel synchronization mode

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Acquisition Control	SELECT	Enumerated	Set and Get

Num ID	String Identifier	C, C++ identifier
10571 << 14	SynchronizedAcquisition	MC_SynchronizedAcquisition

Parameter Description

Main control of the inter-channel synchronization through the SyncBus.

Parameter Usage

Directive: Set to `MASTER` for one SyncBus contributor and set to `SLAVE` for all other contributors.

Directive: Alternatively, when all contributors belong to the same card, set to `LOCAL_MASTER` for one SyncBus contributor and set to `SLAVE` for all other contributors.

Directive: Set to `LOCAL_SLAVE` for only one SyncBus contributor when all contributors belong to the same card.

Parameter Values

Enumeration: OFF, MASTER, SLAVE, LOCAL_MASTER, LOCAL_SLAVE

OFF

MC_SynchronizedAcquisition_OFF

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

The inter-channel synchronized acquisition feature is disabled. The MultiCam channel is operating independently from other MultiCam channels.

Default value.

MASTER

MC_SynchronizedAcquisition_MASTER

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

The MultiCam channel is configured as the SyncBus master agent. Two synchronization signals are delivered on the IOUT3 and IOUT4 output ports of the channel for distribution to all the SyncBus agents using the appropriate wiring. The acquisition controller gets synchronization signals from the SyncBus through the IIN3 and IIN4 input ports of the channel.

SLAVE

MC_SynchronizedAcquisition_SLAVE
Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR. Description The MultiCam channel is configured as a SyncBus slave agent. The acquisition controller gets synchronization signals from the SyncBus through the IIN3 and IIN4 input ports of the channel.

LOCAL_MASTER

MC_SynchronizedAcquisition_LOCAL_MASTER
Applicable product(s): 1623 Grablink DualBase. Description The MultiCam channel is configured as the local SyncBus master agent. Two synchronization signals are delivered on a local SyncBus for distribution to all the local SyncBus agents using an internal wiring. The acquisition controller gets synchronization signals from the local SyncBus.

LOCAL_SLAVE

MC_SynchronizedAcquisition_LOCAL_SLAVE
Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR. Description The MultiCam channel is configured as a local SyncBus master agent. The acquisition controller gets synchronization signals from the local SyncBus.

TrigMode

Grabber acquisition sequence triggering mode

Parameter Info

Class	Category	Level	Type	Access
Channel	Acquisition Control	ADJUST	Enumerated	Set and Get

Num ID	String Identifier	C, C++ identifier
512 << 14	TrigMode	MC_TrigMode

Parameter Description

The *TrigMode* parameter establishes the starting conditions of an acquisition sequence.

Refer to the *MultiCam Acquisition Principles* on page 458 application note.

Parameter Values

Enumeration: IMMEDIATE, HARD, SOFT, COMBINED, SLAVE

IMMEDIATE

MC_TrigMode_IMMEDIATE

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR, 1155 Picolo, 1401 Picolo Junior 4, 1157 Picolo Pro 2, 1303 Picolo Tetra, 1402 Picolo Tymo, 1305 Picolo Alert.

Description

The acquisition sequence starts immediately without waiting for a trigger.

HARD

MC_TrigMode_HARD

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR, 1155 Picolo, 1401 Picolo Junior 4, 1157 Picolo Pro 2, 1303 Picolo Tetra, 1402 Picolo Tymo, 1305 Picolo Alert.

Description

The start of the acquisition sequence is delayed until the hardware trigger line senses a valid transition.

Parameters *TrigLine* or *TrigLineIndex* specify the location of a hardware trigger input line.

Parameters *TrigCtl*, *TrigEdge* and *TrigFilter* specify the configuration of the hardware trigger input line.

A programmable delay can be inserted with parameter *PageDelay_Ln*.

SOFT

MC_TrigMode_SOFT
Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR, 1155 Picolo, 1401 Picolo Junior 4, 1157 Picolo Pro 2, 1303 Picolo Tetra, 1402 Picolo Tymo, 1305 Picolo Alert. Description The start of the acquisition sequence is delayed until the software sets parameter <i>ForceTrig</i> to TRIG.

COMBINED

MC_TrigMode_COMBINED
Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR, 1155 Picolo, 1401 Picolo Junior 4, 1157 Picolo Pro 2, 1303 Picolo Tetra, 1402 Picolo Tymo, 1305 Picolo Alert. Description The start of the acquisition sequence is delayed until detection of hardware or software trigger.

SLAVE

MC_TrigMode_SLAVE
Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR, 1155 Picolo, 1401 Picolo Junior 4, 1157 Picolo Pro 2, 1303 Picolo Tetra, 1402 Picolo Tymo, 1305 Picolo Alert. Description

NextTrigMode

Grabber subsequent acquisition phases or slices triggering mode

Parameter Info

Class	Category	Level	Type	Access
Channel	Acquisition Control	ADJUST	Enumerated	Set and Get

Num ID	String Identifier	C, C++ identifier
663 << 14	NextTrigMode	MC_NextTrigMode

Parameter Description

This parameter establishes the starting conditions of the subsequent acquisition phases or slices.

Refer to the [MultiCam Acquisition Principles](#) on page 458 application note.

On Domino boards, the default value is SAME.

On Grablink boards, the default value depends on the selected [AcquisitionMode](#) :

- When WEB or LONGPAGE, the default value is REPEAT.
- When SNAPSHOT, HFR or PAGE, the default value is SAME.

Parameter Values

Enumeration: COMBINED, HARD, PERIODIC, REPEAT, SAME, SOFT

COMBINED

MC_NextTrigMode_COMBINED

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR, 1155 Picolo, 1401 Picolo Junior 4, 1157 Picolo Pro 2, 1303 Picolo Tetra, 1402 Picolo Tymo, 1305 Picolo Alert.

Description

Any subsequent acquisition phase or slice is delayed until detection of hardware or software trigger.

HARD

MC_NextTrigMode_HARD

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR, 1155 Picolo, 1401 Picolo Junior 4, 1157 Picolo Pro 2, 1303 Picolo Tetra, 1402 Picolo Tymo, 1305 Picolo Alert.

Description

Any subsequent acquisition phase or slice is delayed until the hardware trigger line senses a valid transition.

Parameters [TrigLine](#) or [TrigLineIndex](#) specifies the location of a hardware trigger input line.

Parameters [TrigCtl](#) , [TrigEdge](#) and [TrigFilter](#) specify the configuration of the hardware trigger input line.

A programmable delay can be inserted with parameter [PageDelay_Ln](#) .

PERIODIC

MC_NextTrigMode_PERIODIC

Applicable product(s): 1198 Grablink Avenue, 1621 Grablink Express, 1155 Picolo, 1401 Picolo Junior 4, 1157 Picolo Pro 2, 1303 Picolo Tetra, 1402 Picolo Tymo, 1305 Picolo Alert.

Description

Any subsequent acquisition phase is periodically triggered according to [TargetFrameRate_Hz](#) .

REPEAT

MC_NextTrigMode_REPEAT

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR, 1155 Picolo, 1401 Picolo Junior 4, 1157 Picolo Pro 2, 1303 Picolo Tetra, 1402 Picolo Tymo, 1305 Picolo Alert.

Description

Any subsequent acquisition phase or slice occurs immediately after the preceding one.

SAME

MC_NextTrigMode_SAME

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR, 1155 Picolo, 1401 Picolo Junior 4, 1157 Picolo Pro 2, 1303 Picolo Tetra, 1402 Picolo Tymo, 1305 Picolo Alert.

Description

Any subsequent acquisition phase or slice occurs similarly to the conditions defined by [TrigMode](#) .

SOFT

MC_NextTrigMode_SOFT

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR, 1155 Picolo, 1401 Picolo Junior 4, 1157 Picolo Pro 2, 1303 Picolo Tetra, 1402 Picolo Tymo, 1305 Picolo Alert.

Description

Any subsequent acquisition phase or slice is delayed until the software sets parameter *ForceTrig* to TRIG.

EndTrigMode

Grabber end triggering mode

Parameter Info

Class	Category	Level	Type	Access
Channel	Acquisition Control	ADJUST	Enumerated	Set and Get

Num ID	String Identifier	C, C++ identifier
2916 << 14	EndTrigMode	MC_EndTrigMode

Parameter Description

The [EndTrigMode](#) parameter establishes the conditions of a sequence termination. Refer to the [MultiCam Acquisition Principles](#) on page 458 application note.

Parameter Values

Enumeration: AUTO, HARD

[AUTO](#)

MC_EndTrigMode_AUTO

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR, 1155 Picolo, 1401 Picolo Junior 4, 1157 Picolo Pro 2, 1303 Picolo Tetra, 1402 Picolo Tymo, 1305 Picolo Alert.

Description
The acquisition sequence terminates automatically upon expiration of a frame, page or line counter. See **Automatic completion conditions vs. AcquisitionMode** below.

Applicability condition(s):

- Condition:**

HARD

MC_EndTrigMode_HARD

Applicable product(s): 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR, 1155 Picolo.

Description

The acquisition sequence terminates upon the detection of a valid transition of the hardware end-trigger line.

Parameters [EndTrigCtl](#) , [EndTrigEdge](#) , [EndTrigFilter](#) and [EndTrigLine](#) specify the location and the configuration of the hardware end-trigger input line.

A programmable delay can be inserted with parameter [EndPageDelay_Ln](#) .

Applicability condition(s):

- **Condition for 1155 Picolo:** AcquisitionMode is set to VIDEO or LONGPAGE.
- **Condition for 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR:** AcquisitionMode is set to LONGPAGE.

BreakEffect

Grabber break effect on the acquisition phase

Parameter Info

Class	Category	Level	Type	Access
Channel	Acquisition Control	ADJUST	Enumerated	Set and Get

Num ID	String Identifier	C, C++ identifier
2011 << 14	BreakEffect	MC_BreakEffect

Parameter Description

The *BreakEffect* parameter establishes the effect of a user break on the channel.
Refer to the *MultiCam Acquisition Principles* on page 458 application note.

Parameter Values

Enumeration: FINISH, ABORT

FINISH

MC_BreakEffect_FINISH

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR, 1155 Picolo, 1401 Picolo Junior 4, 1157 Picolo Pro 2, 1303 Picolo Tetra, 1402 Picolo Tymo, 1305 Picolo Alert.

Description

The effect of the user break is postponed until the acquisition sequence reaches a specific boundary. The effect is immediate only when no acquisition has been triggered.

Applicability condition(s):

- **Condition:** EndTrigMode is set to AUTO
- **Condition:** AcquisitionMode is set to VIDEO, SNAPSHOT, or HFR: the channel activity and the sequence terminate at a frame boundary.
- **Condition:** AcquisitionMode is set to WEB, PAGE, or LONGPAGE: the channel activity and the sequence terminate at a page boundary.

ABORT

MC_BreakEffect_ABORT

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

The effect of the user break is immediate. The current acquisition is incomplete. The portion of image already acquired is available.

This value is only available for line-scan acquisition modes, not for HFR.

ActivityLength

Acquisition sequences count

Parameter Info

Class	Category	Level	Type	Access
Channel	Acquisition Control	ADJUST	Integer	Set and Get

Num ID	String Identifier	C, C++ identifier
3406 << 14	ActivityLength	MC_ActivityLength

Parameter Description

An activity period of a channel is made of one or several acquisition sequences. The `ActivityLength` parameter establishes the number of acquisition sequences constituting a channel activity period.

MultiCam sets this parameter to 1 when [AcquisitionMode](#) is SNAPSHOT, WEB, PAGE or HFR.

Setting [ActivityLength](#) to MC_INDETERMINATE results in indefinitely repeated acquisition sequences. A user break is required to stop the channel activity.

Refer to the [MultiCam Acquisition Principles](#) on page 458 application note.

Parameter Values

Numeric values: 1, MC_INDETERMINATE, [2..2^(31)-1]

Minimum Range

1	Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR, 1155 Picolo, 1401 Picolo Junior 4, 1157 Picolo Pro 2, 1303 Picolo Tetra, 1402 Picolo Tymo, 1305 Picolo Alert. Condition(s): Condition for 1155 Picolo, 1401 Picolo Junior 4, 1157 Picolo Pro 2, 1303 Picolo Tetra, 1402 Picolo Tymo, 1305 Picolo Alert: AcquisitionMode = VIDEO Condition for 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR: AcquisitionMode = SNAPSHOT Condition for 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR: AcquisitionMode = HFR Condition for 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR: AcquisitionMode = WEB Condition for 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR: AcquisitionMode = PAGE
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List of Values

MC_INDETERMINATE	Applicable product(s): 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR, 1155 Picolo, 1401 Picolo Junior 4, 1157 Picolo Pro 2, 1303 Picolo Tetra, 1402 Picolo Tymo, 1305 Picolo Alert. Condition(s): • Condition for 1155 Picolo, 1401 Picolo Junior 4, 1157 Picolo Pro 2, 1303 Picolo Tetra, 1402 Picolo Tymo, 1305 Picolo Alert: AcquisitionMode = VIDEO • Condition for 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR: AcquisitionMode = LONGPAGE
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PageLength_Ln

Length of page acquisition, expressed as a number of lines

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Acquisition Control	ADJUST	Integer	Set and Get

Num ID	String Identifier	C, C++ identifier
1039 << 14	PageLength_Ln	MC_PageLength_Ln

Parameter Description

This parameter is applicable to line-scan acquisition, and declares the number of scanned lines stored into a surface. The user is invited to set this parameter when *AcquisitionMode* = PAGE, WEB or LONGPAGE. The user is invited to read back the parameter since MultiCam may trim its value to fulfill specific grabber requirements. Refer to the *MultiCam Acquisition Principles* on page 458 application note.

Parameter Values

Numeric values: 1, 65535, Multiple of 4

Minimum Range

1	Always applicable.
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Maximum Range

65535	Always applicable.
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SeqLength_Fr

Number of frames in a sequence

Parameter Info

Class	Category	Level	Type	Access
Channel	Acquisition Control	ADJUST	Integer	Set and Get

Num ID	String Identifier	C, C++ identifier
3407 << 14	SeqLength_Fr	MC_SeqLength_Fr

Parameter Description

This parameter establishes the number of frames constituting a sequence.

The user is invited to set this parameter when *EndTrigMode* is AUTO and *AcquisitionMode* has one of the following values: VIDEO, SNAPSHOT or HFR.

Refer to the *MultiCam Acquisition Principles* on page 458 application note.

Parameter Values

Numeric values: 1, 2^31 - 1, 65534, 16, 776, 703, MC_INDETERMINATE

Minimum Range

1	Condition(s): Condition for 1155 Picolo, 1401 Picolo Junior 4, 1157 Picolo Pro 2, 1303 Picolo Tetra, 1402 Picolo Tymo, 1305 Picolo Alert: AcquisitionMode is set to VIDEO Condition for 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR: AcquisitionMode is set to SNAPSHOT Condition for 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR: AcquisitionMode is set to HFR
---	---

Maximum Range

65534	Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR. Condition(s): Condition: AcquisitionMode is set to SNAPSHOT
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16	Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR. Condition(s): • Condition: AcquisitionMode is set to HFR
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List of Values

776	Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR. Condition(s): • Condition: AcquisitionMode is set to HFR
703	Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR. Condition(s): • Condition: AcquisitionMode is set to HFR
MC_INDETERMINATE	Description The frame acquisition is repeated indefinitely. A user break is required to terminate a sequence. Condition(s): • Condition for : With compressed streams, this parameter is irrelevant, and MC_INDETERMINATE is the only authorized value.

SeqLength_Pg

Number of pages in a sequence

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Acquisition Control	ADJUST	Integer	Set and Get

Num ID	String Identifier	C, C++ identifier
3408 << 14	SeqLength_Pg	MC_SeqLength_Pg

Parameter Description

The *SeqLength_Pg* parameter establishes the number of pages constituting a sequence.

The user is invited to set this parameter when *EndTrigMode* is AUTO and *AcquisitionMode* is PAGE.

Setting *SeqLength_Pg* to MC_INDETERMINATE results in indefinitely repeated pages acquisition. A user break is required to terminate the sequence.

Refer to the *MultiCam Acquisition Principles* on page 458 application note.

Parameter Values

Numeric values: 1, 65534, MC_INDETERMINATE

Minimum Range

1	Condition(s): Condition: AcquisitionMode is set to PAGE
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Maximum Range

65534	Condition(s): Condition: AcquisitionMode is set to PAGE
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List of Values

MC_INDETERMINATE	Condition(s): Condition: AcquisitionMode is set to PAGE
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SeqLength_Ln

Number of acquired lines in a sequence

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Acquisition Control	ADJUST	Integer	Set and Get

Num ID	String Identifier	C, C++ identifier
3401 << 14	SeqLength_Ln	MC_SeqLength_Ln

Parameter Description

The [SeqLength_Ln](#) parameter establishes the number of lines to be acquired in a sequence.

The user is invited to set this parameter when [EndTrigMode](#) is AUTO and [AcquisitionMode](#) has one of the following values: WEB or LONGPAGE.

Setting [SeqLength_Ln](#) to MC_INDETERMINATE results in indefinitely repeated page acquisition. A user break is required to terminate the sequence.

Refer to the [MultiCam Acquisition Principles](#) on page 458 application note.

Parameter Values

Numeric values: 1, PageLength_Ln 65535, MC_INDETERMINATE

Minimum Range

1	Condition(s): Condition: AcquisitionMode is set to WEB or LONGPAGE
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Maximum Range

PageLength_Ln 65535	Condition(s): Condition: AcquisitionMode is set to WEB or LONGPAGE
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List of Values

MC_INDETERMINATE	Condition(s): Condition: AcquisitionMode is set to WEB
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SeqLength_Ph

Number of acquisition phases constituting a sequence

Parameter Info

Class	Category	Level	Type	Access
Channel	Acquisition Control	ADJUST	Integer	Get Only

Num ID	String Identifier	C, C++ identifier
3399 << 14	SeqLength_Ph	MC_SeqLength_Ph

Parameter Description

The user is invited to get the value of this parameter when [EndTrigMode](#) is set to AUTO.
Refer to the [MultiCam Acquisition Principles](#) on page 458 application note.

GrabField

Definition of image parity for initial acquisition phase

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1155 Picolo, 1401 Picolo Junior 4, 1157 Picolo Pro 2, 1303 Picolo Tetra, 1402 Picolo Tymo, 1305 Picolo Alert.

Parameter Info

Class	Category	Level	Type	Access
Channel	Acquisition Control	ADJUST	Enumerated	Set and Get

Num ID	String Identifier	C, C++ identifier
1387 << 14	GrabField	MC_GrabField

Parameter Description

This parameter declares which field or which pair of fields is to be acquired during the initial acquisition phase.

Parameter Values

Enumeration: FLD, UP, DOWN, FRAME, UPDW, DWUP

[FLD](#)

MC_GrabField_FLD

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1155 Picolo, 1401 Picolo Junior 4, 1157 Picolo Pro 2, 1303 Picolo Tetra, 1402 Picolo Tymo, 1305 Picolo Alert.

Description

Captures the next field irrespective of parity.

[UP](#)

MC_GrabField_UP

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1155 Picolo, 1401 Picolo Junior 4, 1157 Picolo Pro 2, 1303 Picolo Tetra, 1402 Picolo Tymo, 1305 Picolo Alert.

Description

Captures the next up field.

DOWN

MC_GrabField_DOWN

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1155 Picolo, 1401 Picolo Junior 4, 1157 Picolo Pro 2, 1303 Picolo Tetra, 1402 Picolo Tymo, 1305 Picolo Alert.

Description

Captures the next down field.

FRAME

MC_GrabField_FRAME

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1155 Picolo, 1401 Picolo Junior 4, 1157 Picolo Pro 2, 1303 Picolo Tetra, 1402 Picolo Tymo, 1305 Picolo Alert.

Description

Captures the next full-frame image irrespective of parity.

UPDW

MC_GrabField_UPDW

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express.

Description

Captures the next full-frame image starting with the up field.

DWUP

MC_GrabField_DWUP

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express.

Description

Captures the next full-frame image starting with the down field.

NextGrabField

Definition of image parity for subsequent acquisition phase

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1155 Picolo, 1401 Picolo Junior 4, 1157 Picolo Pro 2, 1303 Picolo Tetra, 1402 Picolo Tymo, 1305 Picolo Alert.

Parameter Info

Class	Category	Level	Type	Access
Channel	Acquisition Control	ADJUST	Enumerated	Set and Get

Num ID	String Identifier	C, C++ identifier
1388 << 14	NextGrabField	MC_NextGrabField

Parameter Description

This parameter declares which field or which pair of fields is to be acquired during the subsequent acquisition phases.

Parameter Values

Enumeration: FLD, UP, DOWN, FRAME, SAME, UPDW, DWUP, KEEP, CHANGE

[SAME](#)

MC_NextGrabField_SAME

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1155 Picolo, 1401 Picolo Junior 4, 1157 Picolo Pro 2, 1303 Picolo Tetra, 1402 Picolo Tymo, 1305 Picolo Alert.

Description
Reproduces the option set with [GrabField](#) .

PhaseLength_Fr

Number of frames constituting a phase

Parameter Info

Class	Category	Level	Type	Access
Channel	Acquisition Control	EXPERT	Integer	Set and Get

Num ID	String Identifier	C, C++ identifier
3409 << 14	PhaseLength_Fr	MC_PhaseLength_Fr

Parameter Description

The parameter establishes the total number of frames acquired within an acquisition phase.

Refer to the [MultiCam Acquisition Principles](#) on page 458 application note.

Parameter Values

Numeric values: 1, 255

Minimum Range

1	Condition(s): Condition for 1155 Picolo, 1401 Picolo Junior 4, 1157 Picolo Pro 2, 1303 Picolo Tetra, 1402 Picolo Tymo, 1305 Picolo Alert: AcquisitionMode is set to VIDEO. Condition for 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR: AcquisitionMode is set to SNAPSHOT.
---	--

Maximum Range

255	Condition(s): Condition for 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR: AcquisitionMode is set to HFR.
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PhaseLength_Pg

Number of pages constituting a phase

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Acquisition Control	EXPERT	Integer	Get Only

Num ID	String Identifier	C, C++ identifier
3418 << 14	PhaseLength_Pg	MC_PhaseLength_Pg

Parameter Description

This parameter establishes the total number of pages acquired within an acquisition phase.
Refer to the [MultiCam Acquisition Principles](#) on page 458 application note.

Elapsed_Fr

Elapsed number of acquired frames

Parameter Info

Class	Category	Level	Type	Access
Channel	Acquisition Control	EXPERT	Integer	Get Only

Num ID	String Identifier	C, C++ identifier
3453 << 14	Elapsed_Fr	MC_Elapsed_Fr

Parameter Description

This parameter gives information about the acquisition sequence progress, by reporting the number of completed frame acquisitions in a sequence.

Remaining_Fr

Number of remaining frames to acquire

Parameter Info

Class	Category	Level	Type	Access
Channel	Acquisition Control	EXPERT	Integer	Get Only

Num ID	String Identifier	C, C++ identifier
3454 << 14	Remaining_Fr	MC_Remaining_Fr

Parameter Description

This parameter gives information about the acquisition sequence progress, by reporting the number of remaining frames to acquire in a sequence.

Parameter Values

Numeric values: 0

Minimum Range

0	Condition(s): Condition: SeqLength_Fr is indeterminate.
---	---

PerSecond_Fr

Number of frames acquired during a second

Parameter Info

Class	Category	Level	Type	Access
Channel	Acquisition Control	EXPERT	Integer	Get Only

Num ID	String Identifier	C, C++ identifier
3452 << 14	PerSecond_Fr	MC_PerSecond_Fr

Elapsed_Pg

Elapsed number of acquired pages

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Acquisition Control	EXPERT	Integer	Get Only

Num ID	String Identifier	C, C++ identifier
3455 << 14	Elapsed_Pg	MC_Elapsed_Pg

Parameter Description

This parameter gives information about the acquisition sequence progress, by reporting the number of completed page acquisitions in a sequence.

Remaining_Pg

Number of remaining pages to acquire

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Acquisition Control	EXPERT	Integer	Get Only

Num ID	String Identifier	C, C++ identifier
3457 << 14	Remaining_Pg	MC_Remaining_Pg

Parameter Description

This parameter gives information about the acquisition sequence progress, by reporting the number of remaining pages to acquire in a sequence.

Parameter Values

Numeric values: 0

Minimum Range

0	Condition(s): Condition: SeqLength_Pg is indeterminate.
---	---

Elapsed_Ln

Elapsed number of acquired lines

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Acquisition Control	EXPERT	Integer	Get Only

Num ID	String Identifier	C, C++ identifier
3456 << 14	Elapsed_Ln	MC_Elapsed_Ln

Parameter Description

This parameter gives information about the acquisition sequence progress, by reporting the number of completed line acquisitions in a sequence.

Remaining_Ln

Number of remaining lines to acquire

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Acquisition Control	EXPERT	Integer	Get Only

Num ID	String Identifier	C, C++ identifier
3458 << 14	Remaining_Ln	MC_Remaining_Ln

Parameter Description

This parameter gives information about the acquisition sequence progress, by reporting the number of remaining lines to acquire in a sequence.

Parameter Values

Numeric values: 0

Minimum Range

0	Condition(s): Condition: SeqLength_Ln is indeterminate.
---	---

Trigger Control Category

Parameters controlling the triggering features associated to the channel

Parent Class

[Channel Class](#) on page 88

TrigCtl

Electrical style of the trigger hardware line

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR, 1155 Picolo, 1401 Picolo Junior 4, 1157 Picolo Pro 2, 1303 Picolo Tetra, 1402 Picolo Tymo, 1305 Picolo Alert.

Parameter Info

Class	Category	Level	Type	Access
Channel	Trigger Control	ADJUST	Enumerated	Set and Get

Num ID	String Identifier	C, C++ identifier
513 << 14	TrigCtl	MC_TrigCtl

Parameter Description

This parameter specifies the electrical style of the GPIO line used as trigger input.

Along with `TrigEdge` and `TrigFilter`, it declares the grabber attributes of the trigger line sensed by the channel and aimed at generating the trigger event.

Parameter Usage

Relevance condition(s):

- **Condition:** A hardware line is used as trigger input. `TrigMode` or `NextTrigMode` are set to `HARD` or `COMBINED`.

Parameter Values

Enumeration: AUTO, RELAY, 5V, 12V, TTL, LVDS, TTLPD, RS485, DTTL, ITTL, I12V, DIFF, ISO, CAMERA

TTL

MC_TrigCtl_TTL

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1155 Picolo, 1157 Picolo Pro 2, 1303 Picolo Tetra.

Description for 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1155 Picolo, 1157 Picolo Pro 2, 1303 Picolo Tetra

The trigger line is TTL compliant with a 4700 Ω pull-up resistor.

LVDS

MC_TrigCtl_LVDS

Applicable product(s): 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1198 Grablink Avenue, 1621 Grablink Express.

Description for 1167 Domino Melody, 1168 Domino Harmony, 1198 Grablink Avenue, 1621 Grablink Express

The trigger line is differential LVDS, RS-422 or RS-485 compatible.

ITTL

MC_TrigCtl_ITTL
Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express.
Description The trigger line is isolated and TTL compliant with a 3000 Ω pull-up resistor.

I12V

MC_TrigCtl_I12V
Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express.
Description The trigger line is isolated and 12 V-logic compliant with a 2000 Ω pull-down resistor.

DIFF

MC_TrigCtl_DIFF
Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
Description Differential high-speed input compatible with EIA/TIA-422 signaling.

ISO

MC_TrigCtl_ISO
Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
Description Isolated current loop input compatible with TTL, +12V, +24V signaling.
Default value.

CAMERA

MC_TrigCtl_CAMERA
Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
Description Camera Link downstream signaling.
Applicability condition(s): • Condition: BoardTopology $\neq$ MONO_SLOW • Condition: BoardTopology $\neq$ DUO_SLOW

TrigEdge

Significant edge of designated trigger hardware line from outside system

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR, 1155 Picolo, 1401 Picolo Junior 4, 1157 Picolo Pro 2, 1303 Picolo Tetra, 1402 Picolo Tymo, 1305 Picolo Alert.

Parameter Info

Class	Category	Level	Type	Access
Channel	Trigger Control	ADJUST	Enumerated	Set and Get

Num ID	String Identifier	C, C++ identifier
664 << 14	TrigEdge	MC_TrigEdge

Parameter Description

This parameter applies to the hardware line designated by [TrigLine](#) or [TrigLineIndex](#).

Along with [TrigCtl](#) and [TrigFilter](#), it declares the grabber attributes of the trigger line sensed by the channel and aimed at generating the trigger event.

Parameter Values

Enumeration: GOHIGH, GOLOW, GOOPEN

GOHIGH

MC_TrigEdge_GOHIGH

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR, 1155 Picolo, 1157 Picolo Pro 2, 1303 Picolo Tetra, 1402 Picolo Tymo, 1305 Picolo Alert.

Description

The trigger event is generated at each positive-going transition of the trigger line.

GOLOW

MC_TrigEdge_GOLOW

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR, 1155 Picolo, 1157 Picolo Pro 2, 1303 Picolo Tetra, 1402 Picolo Tymo, 1305 Picolo Alert.

Description

The trigger event is generated at each negative-going transition of the trigger line.

TrigFilter

Noise removal on designated trigger hardware line from outside system

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR, 1155 Picolo, 1401 Picolo Junior 4, 1157 Picolo Pro 2, 1303 Picolo Tetra, 1402 Picolo Tymo, 1305 Picolo Alert.

Parameter Info

Class	Category	Level	Type	Access
Channel	Trigger Control	ADJUST	Enumerated	Set and Get

Num ID	String Identifier	C, C++ identifier
665 << 14	TrigFilter	MC_TrigFilter

Parameter Description

This parameter applies to the hardware line designated by [TrigLine](#) or [TrigLineIndex](#) .

Along with [TrigCtl](#) and [TrigEdge](#) , it declares the grabber attributes of the trigger line sensed by the channel and aimed at generating the trigger event.

The [TrigFilter](#) parameter specifies the time constant of the noise reduction filter of the designated hardware line.

The time constant of the filter is the amount of time the line should be detected at the same logic state before a logic transition be considered.

When insulated I/Os are used, [TrigFilter](#) is MEDIUM or STRONG. The value OFF is not allowed.

Parameter Values

Enumeration: OFF, FILTER_10ms, FILTER_100ms, ON, MEDIUM, STRONG

OFF

MC_TrigFilter_OFF

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR, 1402 Picolo Tymo, 1305 Picolo Alert.

Description

The noise removal filter is turned off.

Description for 1161 Domino Alpha 2, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR

Time constant = 100 ns

ON

MC_TrigFilter_ON

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

The noise removal filter is turned on.

Description for 1161 Domino Alpha 2, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR

Time constant = 500 ns

MEDIUM

MC_TrigFilter_MEDIUM

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

The noise removal filter is turned on with a moderate filtering effect.

Description for 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR

Time constant = 500 ns

STRONG

MC_TrigFilter_STRONG

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

The noise removal filter is turned on with a strong filtering effect.

Description for 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR

Time constant = 2500 ns

TrigDelay_us

Trigger delay before the reset pulse is sent to the camera, expressed in microseconds

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR, 1155 Picolo, 1401 Picolo Junior 4, 1157 Picolo Pro 2, 1303 Picolo Tetra, 1402 Picolo Tymo, 1305 Picolo Alert.

Parameter Info

Class	Category	Level	Type	Access
Channel	Trigger Control	ADJUST	Integer	Set and Get

Num ID	String Identifier	C, C++ identifier
2153 << 14	TrigDelay_us	MC_TrigDelay_us

Parameter Description

This parameter can be used to insert a delay between the hardware trigger and the reset pulse sent to the camera.

 **Note:** This parameter does not affect so software triggers, use a software timer to manage the image acquisition.

 **Note:** This parameter is applicable exclusively for area-scan cameras. For line-scan cameras, use instead [PageDelay_Ln](#).

Parameter Values

Numeric values: 0, 2000000

Minimum Range

0	Always applicable.
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Maximum Range

2000000	Always applicable.
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PageDelay_Ln

Delay from trigger to start the page acquisition, expressed as a number of scanned lines

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Trigger Control	ADJUST	Integer	Set and Get

Num ID	String Identifier	C, C++ identifier
1038 << 14	PageDelay_Ln	MC_PageDelay_Ln

Parameter Description

This parameter can be used to insert a programmable delay between the trigger (coming from software or hardware) and the start of the acquisition.

The waiting phase corresponding to the countdown of the page delay can overlap the previous page acquisition phase.

This parameter applies exclusively to line-scan cameras. For area-scan cameras, use instead [TrigDelay_us](#).

Parameter Values

Numeric values: 65534

Maximum Range

65534	Always applicable.
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TrigDelay_Pls

Number of hardware trigger pulses to ignore after the start of sequence event

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Trigger Control	ADJUST	Integer	Set and Get

Num ID	String Identifier	C, C++ identifier
10080 << 14	TrigDelay_Pls	MC_TrigDelay_Pls

Parameter Description

This parameter specifies the number of detected pulses on the hardware trigger line to be skipped after the acquisition sequence begins.

The trigger decimation feature applies to the hardware trigger input when the acquisition controller operates in the SNAPSHOT or HFR modes.

Parameter Values

Numeric values: 0, 65536, TRIG

Minimum Range

0	Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR. Default value.
---	---

Maximum Range

65536	Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
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NextTrigDelay_Pls

Number of hardware trigger pulses to skip between successive acquisition phases

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Trigger Control	ADJUST	Integer	Set and Get

Num ID	String Identifier	C, C++ identifier
10081 << 14	NextTrigDelay_Pls	MC_NextTrigDelay_Pls

Parameter Description

This parameter specifies the number of detected pulses on the hardware trigger line to be skipped between successive acquisition phases.

The trigger decimation feature applies to the hardware trigger input when the acquisition controller operates in the SNAPSHOT or HFR modes.

Parameter Values

Numeric values: 0, 65536, TRIG

Minimum Range

0	Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR. Default value.
---	---

Maximum Range

65536	Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
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TargetFrameRate_Hz

Trigger repetition rate, expressed in hertz

Applicable product(s): 1198 Grablink Avenue, 1621 Grablink Express, 1155 Pico, 1401 Pico Junior 4, 1157 Pico Pro 2, 1303 Pico Tetra, 1402 Pico Tymo, 1305 Pico Alert.

Parameter Info

Class	Category	Level	Type	Access
Channel	Trigger Control	ADJUST	Float	Set and Get

Num ID	String Identifier	C, C++ identifier
3444 << 14	TargetFrameRate_Hz	MC_TargetFrameRate_Hz

Parameter Description

Parameter Values

Numeric values: 0.05, 500

Minimum Range

0.05	Applicable product(s): 1198 Grablink Avenue, 1621 Grablink Express.
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Maximum Range

500	Applicable product(s): 1198 Grablink Avenue, 1621 Grablink Express.
-----	--

EndTrigCtl

Electrical style of designated end trigger hardware line

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR, 1155 Picolo, 1401 Picolo Junior 4, 1157 Picolo Pro 2, 1303 Picolo Tetra, 1402 Picolo Tymo, 1305 Picolo Alert.

Parameter Info

Class	Category	Level	Type	Access
Channel	Trigger Control	ADJUST	Enumerated	Set and Get

Num ID	String Identifier	C, C++ identifier
3447 << 14	EndTrigCtl	MC_EndTrigCtl

Parameter Description

This parameter specifies the electrical style of the GPIO line used as endtrigger input.

Along with `EndTrigEdge` and `EndTrigFilter`, it declares the grabber attributes of the trigger line sensed by the channel and aimed at generating the end trigger event.

Parameter Usage

Prerequisite action(s):

- **Condition:** `AcquisitionMode = LONGPAGE`
- **Condition:** `EndTrigMode = HARD`

Parameter Values

Enumeration: AUTO, RELAY, 5V, 12V, TTL, ITTL, I12V, LVDS, DIFF, ISO, CAMERA

TTL

MC_EndTrigCtl_TTL

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1155 Picolo, 1157 Picolo Pro 2, 1303 Picolo Tetra.

Description

The end trigger line is TTL compliant with a 4700Ω pull-up resistor.

ITTL

MC_EndTrigCtl_ITTL

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express.

Description

The end trigger line is isolated and TTL compliant with a 3000Ω pull-up resistor.

I12V

MC_EndTrigCtl_I12V
Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express.
Description The end trigger line is isolated and 12V-logic compliant with a 2000Ω pull-down resistor.

LVDS

MC_EndTrigCtl_LVDS
Applicable product(s): 1198 Grablink Avenue, 1621 Grablink Express.
Description The end trigger line is differential LVDS, RS-422 or RS-485 compatible.

DIFF

MC_EndTrigCtl_DIFF
Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
Description Differential high-speed input compatible with EIA/TIA-422 signaling.

ISO

MC_EndTrigCtl_ISO
Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
Description Isolated current loop input compatible with TTL, +12V, +24V signaling.
Default value.

CAMERA

MC_EndTrigCtl_CAMERA
Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
Description Isolated current loop input compatible with TTL, +12V, +24V signaling.
Default value.
Applicability condition(s): • Condition: BoardTopology ≠ MONO_SLOW • Condition: BoardTopology ≠ DUO_SLOW

EndTrigEdge

Significant edge of designated end trigger hardware line from outside system

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR, 1155 Picolo, 1401 Picolo Junior 4, 1157 Picolo Pro 2, 1303 Picolo Tetra, 1402 Picolo Tymo, 1305 Picolo Alert.

Parameter Info

Class	Category	Level	Type	Access
Channel	Trigger Control	ADJUST	Enumerated	Set and Get

Num ID	String Identifier	C, C++ identifier
2905 << 14	EndTrigEdge	MC_EndTrigEdge

Parameter Description

This parameter applies to the hardware line designated by [EndTrigLine](#) or [EndTrigLineIndex](#).

Along with [EndTrigCtl](#) and [EndTrigFilter](#), it declares the grabber attributes of the end trigger line sensed by the channel and aimed at generating the end trigger event.

[EndTrigEdge](#) determines the significant edge of the end trigger pulse.

Parameter Values

Enumeration: GOHIGH, GOLOW, GOOPEN

GOHIGH

MC_EndTrigEdge_GOHIGH

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR, 1155 Picolo, 1157 Picolo Pro 2, 1303 Picolo Tetra, 1402 Picolo Tymo, 1305 Picolo Alert.

Description

The trigger event is generated at each positive-going transition of the trigger line.

GOLOW

MC_EndTrigEdge_GOLOW

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR, 1155 Picolo, 1157 Picolo Pro 2, 1303 Picolo Tetra, 1402 Picolo Tymo, 1305 Picolo Alert.

Description

The trigger event is generated at each negative-going transition of the trigger line.

EndTrigFilter

Noise removal on designated end trigger hardware line from outside system

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR, 1155 Picolo, 1401 Picolo Junior 4, 1157 Picolo Pro 2, 1303 Picolo Tetra, 1402 Picolo Tymo, 1305 Picolo Alert.

Parameter Info

Class	Category	Level	Type	Access
Channel	Trigger Control	ADJUST	Enumerated	Set and Get

Num ID	String Identifier	C, C++ identifier
3639 << 14	EndTrigFilter	MC_EndTrigFilter

Parameter Description

This parameter applies to the hardware line designated by [EndTrigLine](#) or [EndTrigLineIndex](#) .

Along with [EndTrigCtl](#) , [EndTrigFilter](#) declares the grabber attributes of the end trigger line sensed by the channel and aimed at generating the end trigger event.

[EndTrigFilter](#) specifies the time constant of the noise reduction filter of the designated hardware line.

The time constant of the filter is the amount of time the line should be detected at the same logic state before a logic transition be considered.

When insulated I/O are used, [EndTrigFilter](#) is MEDIUM or STRONG. The value OFF is not allowed.

Parameter Values

Enumeration: OFF, FILTER_10ms, FILTER_100ms, ON, MEDIUM, STRONG

OFF

MC_EndTrigFilter_OFF

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR, 1155 Picolo, 1157 Picolo Pro 2, 1303 Picolo Tetra, 1402 Picolo Tymo, 1305 Picolo Alert.

Description for 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR, 1155 Picolo, 1157 Picolo Pro 2, 1303 Picolo Tetra

The filter time constant is approximately 100 ns.

Applicability condition(s):

- Condition:** This value is not allowed when EndTrigFilter is set to RELAY.

ON

MC_EndTrigFilter_ON

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR, 1155 Picolo, 1157 Picolo Pro 2, 1303 Picolo Tetra.

Description

The filter time constant is approximately 500 ns.

MEDIUM

MC_EndTrigFilter_MEDIUM

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR, 1155 Picolo, 1157 Picolo Pro 2, 1303 Picolo Tetra.

Description

The filter time constant is approximately 500 ns.

STRONG

MC_EndTrigFilter_STRONG

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR, 1155 Picolo, 1157 Picolo Pro 2, 1303 Picolo Tetra.

Description

The filter time constant is approximately 2500 ns.

Default value.

EndTrigEffect

Effect of the "End Trigger" event

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Trigger Control	ADJUST	Enumerated	Set and Get

Num ID	String Identifier	C, C++ identifier
10672 << 14	EndTrigEffect	MC_EndTrigEffect

Parameter Description

Selects the effect of an "End Trigger" event on the end of the acquisition phase.

Parameter Usage

Relevance condition(s):

- **Condition:** AcquisitionMode = LONGPAGE
- **Condition:** EndTrigMode = HARD

Parameter Values

Enumeration: FOLLOWINGLINE, PRECEDINGLINE

[FOLLOWINGLINE](#)

MC_EndTrigEffect_FOLLOWINGLINE

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

On reception of an "End Trigger" event, the MultiCam Acquisition Controller acquires the line following the "End Trigger" event then terminates the acquisition phase.

Default value.

[PRECEDINGLINE](#)

MC_EndTrigEffect_PRECEDINGLINE

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

On reception of an "End Trigger" event, the MultiCam Acquisition Controller acquires the line preceding the "End Trigger" event and terminates the acquisition phase immediately.

 **Note:** The PRECEDINGLINE value is not allowed for Bayer bi-linear line-scan cameras.

EndPageDelay_Ln

Delay from end trigger to end of page acquisition, expressed as a number of scanned lines

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Trigger Control	ADJUST	Integer	Set and Get

Num ID	String Identifier	C, C++ identifier
3723 << 14	EndPageDelay_Ln	MC_EndPageDelay_Ln

Parameter Description

This parameter applies to the hardware line designated by [EndTrigLine](#) or [EndTrigLineIndex](#).

This parameter is expressed as a number of scanned lines, which is an amount of time that can vary from line to line.

The programmable end page delay compensates an advanced end trigger issued by a position detector placed away from the camera field of view.

Refer to [Using Line-Scan Acquisitions](#).

Parameter Values

Numeric values: 0, 65534

Minimum Range

0	Always applicable.
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Maximum Range

65534	Always applicable.
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ForceTrig

Forces an event trigger from the application

Parameter Info

Class	Category	Level	Type	Access
Channel	Trigger Control	ADJUST	Enumerated	Set and Get

Num ID	String Identifier	C, C++ identifier
50 << 14	ForceTrig	MC_ForceTrig

Parameter Description

Refer to the [MultiCam Acquisition Principles](#) on page 458 application note.

Parameter Values

Enumeration: TRIG, ENDTRIG

TRIG

MC_ForceTrig_TRIG
Description Forces a soft trigger event.

ENDTRIG

MC_ForceTrig_ENDTRIG
Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
Description Forces a soft end trigger event.
Applicability condition(s): Condition: AcquisitionMode is set to LONGPAGE.

TrigLine

Designation of the trigger hardware line

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Trigger Control	EXPERT	Enumerated	Set and Get

Num ID	String Identifier	C, C++ identifier
666 << 14	TrigLine	MC_TrigLine

Parameter Description

This parameter designates the GPIO line sensed by the channel and aimed at generating the trigger event.

Along with `TrigCtl` and `TrigFilter`, it declares the grabber attributes of the trigger line sensed by the channel and aimed at generating the trigger event.

Parameter Usage

Relevance condition(s):

- **Condition:** A hardware line is used as trigger input. `TrigMode` or `NextTrigMode` are set to `HARD` or `COMBINED`.

Prerequisite action(s):

- **Condition:** `TrigCtl` is set according to the desired electrical style.

Parameter Values

Enumeration: `NOM`, `IO1`, `IO2`, `IO3`, `IO4`, `TR`, `TRA`, `TRB`, `TRC`, `TRD`, `TRX`, `TRY`, `TRZ`, `TRG`, `ALT1`, `ALT2`, `ISOA1`, `ISOA2`, `TRA1`, `TRA2`, `DIN1`, `DIN2`, `IIN1`, `IIN2`, `IIN3`, `IIN4`

NOM

MC_TrigLine_NOM
Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR. Description for 1191 Grablink Value The channel trigger line is found on the System connector at the nominal terminal pin, according to the TrigCtl value. When TrigCtl = TTL, the relevant trigger line is TRG. When TrigCtl = ITTL or I12V, the relevant trigger line is A2. Description for 1198 Grablink Avenue, 1621 Grablink Express The channel trigger line is found on the System connector at the nominal terminal pin, according to the TrigCtl value. When TrigCtl = LVDS, the relevant trigger line is the differential input pair TRA1. When TrigCtl = TTL, the relevant trigger line is Enhanced IO1. When TrigCtl = ITTL or I12V, the relevant trigger line is ISOA1. Description for 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR Selects the nominal line corresponding to the pre-selected TrigCtl value: • DIN2 when TrigCtl = DIFF • IIN2 when TrigCtl = ISO • CAMERA xhen TrigCtl = CAMERA Default value.

IO1

MC_TrigLine_IO1
Applicable product(s): 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1198 Grablink Avenue, 1621 Grablink Express. Description for 1198 Grablink Avenue, 1621 Grablink Express The channel trigger line is found on the System connector at the terminal pin Enhanced IO1. This value is applicable only when TrigCtl = TTL.

IO2

MC_TrigLine_IO2
Applicable product(s): 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1198 Grablink Avenue, 1621 Grablink Express. Description for 1198 Grablink Avenue, 1621 Grablink Express The channel trigger line is found on the System connector at the terminal pin Enhanced IO2. This value is applicable only when TrigCtl = TTL.

IO3

MC_TrigLine_IO3

Applicable product(s): 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1198 Grablink Avenue, 1621 Grablink Express.

Description for 1198 Grablink Avenue, 1621 Grablink Express

The channel trigger line is found on the System connector at the terminal pin Enhanced IO3. This value is applicable only when *TrigCtl* = TTL.

IO4

MC_TrigLine_IO4

Applicable product(s): 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1198 Grablink Avenue, 1621 Grablink Express.

Description for 1198 Grablink Avenue, 1621 Grablink Express

The channel trigger line is found on the System connector at the terminal pin Enhanced IO4. This value is applicable only when *TrigCtl* = TTL.

TRG

MC_TrigLine_TRG

Applicable product(s): 1191 Grablink Value.

Description

The channel trigger line is found on the System connector at the terminal TRG/pin 8. This value is applicable only when *TrigCtl* = TTL.

ALT1

MC_TrigLine_ALT1

Applicable product(s): 1191 Grablink Value.

Description for 1191 Grablink Value

The channel trigger line is found on the System connector at the terminal A1/pin 6. This value is applicable only when *TrigCtl* = ITTL or I12V.

ALT2

MC_TrigLine_ALT2

Applicable product(s): 1191 Grablink Value.

Description for 1191 Grablink Value

The channel trigger line is found on the System connector at the terminal A2/pin 7. This value is applicable only when *TrigCtl* = ITTL or I12V.

ISOA1

MC_TrigLine_ISOA1
Applicable product(s): 1198 Grablink Avenue, 1621 Grablink Express.
Description The channel trigger line is found on the System connector at the terminal pin ISOA1. This value is applicable only when <i>TrigCtl</i> = ITTL or I12V.

ISOA2

MC_TrigLine_ISOA2
Applicable product(s): 1198 Grablink Avenue, 1621 Grablink Express.
Description The channel trigger line is found on the System connector at the terminal pin ISOA2. This value is applicable only when <i>TrigCtl</i> = ITTL or I12V.

TRA1

MC_TrigLine_TRA1
Applicable product(s): 1198 Grablink Avenue, 1621 Grablink Express.
Description The channel trigger line is found on the System connector at the terminal pin pair TRA1.This value is applicable only when <i>TrigCtl</i> = LVDS.

TRA2

MC_TrigLine_TRA2
Applicable product(s): 1198 Grablink Avenue, 1621 Grablink Express.
Description The channel trigger line is found on the System connector at the terminal pin pair TRA2.This value is applicable only when <i>TrigCtl</i> = LVDS.

DIN1

MC_TrigLine_DIN1
Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
Description Differential high-speed input lines pair #1.
Applicability condition(s): Condition: TrigCtl = DIFF

DIN2

MC_TrigLine_DIN2

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

Differential high-speed input lines pair #2.

Applicability condition(s):

- **Condition:** TrigCtl = DIFF

IIN1

MC_TrigLine_IIN1

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

Isolated current loop input line #1.

Applicability condition(s):

- **Condition:** TrigCtl = ISO

IIN2

MC_TrigLine_IIN2

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

Isolated current loop input line #2.

Applicability condition(s):

- **Condition:** TrigCtl = ISO

IIN3

MC_TrigLine_IIN3

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

Isolated current loop input line #3.

Applicability condition(s):

- **Condition:** TrigCtl = ISO

IIN4

MC_TrigLine_IIN4
Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR. Description Isolated current loop input line #4. Applicability condition(s): • Condition: TrigCtl = ISO

TrigLine

Designation of the end trigger hardware line

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Trigger Control	EXPERT	Enumerated	Set and Get

Num ID	String Identifier	C, C++ identifier
666 << 14	TrigLine	MC_TrigLine

Parameter Description

This parameter designates the GPIO line sensed by the channel and aimed at generating the end trigger event.

Along with `EndTrigCtl` and `EndTrigFilter`, it declares the grabber attributes of the trigger line sensed by the channel and aimed at generating the end trigger event.

Parameter Usage

Prerequisite action(s):

- **Condition:** `AcquisitionMode = LONGPAGE`
- **Condition:** `EndTrigMode = HARD`

Parameter Values

Enumeration: NOM, IO1, IO2, IO3, IO4, ISOA1, ISOA2, TRA1, TRA2, ALT1, ALT2, TRX, TRY, TRZ, DIN1, DIN2, IIN1, IIN2, IIN3, IIN4

NOM

MC_TrigLine_NOM
Applicable product(s): 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
Description The channel end trigger line is found on the System connector at the nominal terminal pin, according to the EndTrigCtl value. When EndTrigCtl = LVDS, the relevant end trigger line is the differential input pair TRA1. When EndTrigCtl = TTL, the relevant end trigger line is Enhanced IO1. When EndTrigCtl = ITTL or I12V, the relevant end trigger line is ISOA1.
Description for 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR Selects the nominal line corresponding to the pre-selected EndTrigCtl value: - DIN2 when EndTrigCtl = DIFF - IIN2 when EndTrigCtl = ISO - FVAL when TrigCtl = CAMERA
Default value.

IO1

MC_TrigLine_IO1
Applicable product(s): 1198 Grablink Avenue, 1621 Grablink Express.
Description The channel end trigger line is found on the System connector at the terminal pin Enhanced IO1.
Applicability condition(s): Condition: EndTrigCtl is set to TTL.

IO2

MC_TrigLine_IO2
Applicable product(s): 1198 Grablink Avenue, 1621 Grablink Express.
Description The channel end trigger line is found on the System connector at the terminal pin Enhanced IO2.
Applicability condition(s): Condition: EndTrigCtl is set to TTL.

IO3

MC_TrigLine_IO3
Applicable product(s): 1198 Grablink Avenue, 1621 Grablink Express.
Description The channel end trigger line is found on the System connector at the terminal pin Enhanced IO3.
Applicability condition(s): Condition: EndTrigCtl is set to TTL.

IO4

MC_TrigLine_IO4

Applicable product(s): 1198 Grablink Avenue, 1621 Grablink Express.

Description

The channel end trigger line is found on the System connector at the terminal pin Enhanced IO4.

Applicability condition(s):

- **Condition:** EndTrigCtl is set to TTL.

ISOA1

MC_TrigLine_ISO1

Applicable product(s): 1198 Grablink Avenue, 1621 Grablink Express.

Description

The channel end trigger line is found on the System connector at the terminal pin ISOA1.

Applicability condition(s):

- **Condition:** EndTrigCtl is set to ITTL or I12V.

ISOA2

MC_TrigLine_ISO2

Applicable product(s): 1198 Grablink Avenue, 1621 Grablink Express.

Description

The channel end trigger line is found on the System connector at the terminal pin ISOA2.

Applicability condition(s):

- **Condition:** EndTrigCtl is set to ITTL or I12V.

TRA1

MC_TrigLine_TRA1

Applicable product(s): 1198 Grablink Avenue, 1621 Grablink Express.

Description

The channel end trigger line is found on the System connector at the terminal pin pair TRA1.

Applicability condition(s):

- **Condition:** EndTrigCtl is set to LVDS.

TRA2

MC_TrigLine_TRA2
Applicable product(s): 1198 Grablink Avenue, 1621 Grablink Express.
Description The channel end trigger line is found on the System connector at the terminal pin pair TRA2.
Applicability condition(s): Condition: EndTrigCtl is set to LVDS.

DIN1

MC_TrigLine_DIN1
Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
Description Differential high-speed input lines pair #1.
Applicability condition(s): Condition: EndTrigCtl = DIFF

DIN2

MC_TrigLine_DIN2
Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
Description Differential high-speed input lines pair #2.
Applicability condition(s): Condition: EndTrigCtl = DIFF

IIN1

MC_TrigLine_IIN1
Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
Description Isolated current loop input line #1.
Applicability condition(s): Condition: EndTrigCtl = ISO

IIN2

MC_TrigLine_IIN2

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

Isolated current loop input line #2.

Applicability condition(s):

- **Condition:** EndTrigCtl = ISO

IIN3

MC_TrigLine_IIN3

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

Isolated current loop input line #3.

Applicability condition(s):

- **Condition:** EndTrigCtl = ISO

IIN4

MC_TrigLine_IIN4

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

Isolated current loop input line #4.

Applicability condition(s):

- **Condition:** EndTrigCtl = ISO

Interleaved Acquisition Category

Parameters controlling the interleaved acquisition feature

Parent Class

[Channel Class](#) on page 88

InterleavedAcquisition

Master control switch of the interleaved acquisition feature

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Interleaved Acquisition	SELECT	Enumerated	Set and Get

Num ID	String Identifier	C, C++ identifier
10936 << 14	InterleavedAcquisition	MC_InterleavedAcquisition

Parameter Description

This parameter allows to switch ON or OFF the interleaved acquisition feature.

When Interleaved Acquisition is turned ON, the Camera and Illumination Controller is configured with two different programs named P1 and P2. The programs are executed alternatively, starting with P1.

For more information, refer to the Interleaved Acquisition section of the Grablink Documentation.

Parameter Usage

Relevance condition(s):

- **Condition:** Available only for grabber-controlled exposure line-scan and area-scan cameras: `CamConfig` must be set to `PxxRG` or `LxxxRG`

Parameter Values

Enumeration: OFF, ON

OFF

MC_InterleavedAcquisition_OFF

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

Interleaved acquisition is disabled.

Default value.

ON

MC_InterleavedAcquisition_ON

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

Interleaved acquisition is enabled.

ExposureTime_P1_us

Exposure time setting for P1 program cycles

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Interleaved Acquisition	ADJUST	Float	Set and Get

Num ID	String Identifier	C, C++ identifier
10940 << 14	ExposureTime_P1_us	MC_ExposureTime_P1_us

Parameter Description

This parameter allows to specify the time interval between the Start of Exposure (ResetON) and the End of Exposure (ResetOFF) events of a P1 program cycle.

MultiCam calculates a default value that is equal to the largest exposure time allowed by the camera when operating at the maximum cycle rate. The maximum cycle rate is defined by `LineRate_Hz` for line-scan cameras and `FrameRate_mHz` for area-scan cameras.

The effective exposure time is reported by `ExposureTime_P1_Effective_us`.

Parameter Usage

- Prerequisite action(s):**
- **Condition:** `InterleavedAcquisition` must be set to ON.
- Directive:** The user must set the exposure time according to the application needs within the range of values allowed by the camera. The camera exposure time range is defined by `ExposeMin_us` and `ExposeMax_us` camera parameters.

Parameter Values

Numeric values: 0.16, 5000000

Minimum Range

0.16	Always applicable.
------	--------------------

Maximum Range

5000000	Always applicable.
---------	--------------------

ExposureTime_P1_Effective_us

Effective exposure time for P1

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Interleaved Acquisition	EXPERT	Float	Get Only

Num ID	String Identifier	C, C++ identifier
11005 << 14	ExposureTime_P1_Effective_us	MC_ExposureTime_P1_Effective_us

Parameter Description

This parameter reports the effective time interval between the Start of Exposure (ResetON) and the End of Exposure (ResetOFF) events of a P1 program cycle.

Parameter Usage

Prerequisite action(s):

- **Condition:** InterleavedAcquisition must be set to ON.

ExposureTime_P2_us

Exposure time setting for P2 program cycles

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Interleaved Acquisition	ADJUST	Float	Set and Get

Num ID	String Identifier	C, C++ identifier
10941 << 14	ExposureTime_P2_us	MC_ExposureTime_P2_us

Parameter Description

This parameter allows to specify the time interval between the Start of Exposure (ResetON) and the End of Exposure (ResetOFF) events of a P2 program cycle.

MultiCam calculates a default value that is equal to the largest exposure time allowed by the camera when operating at the maximum cycle rate. The maximum cycle rate is defined by `LineRate_Hz` for line-scan cameras and `FrameRate_mHz` for area-scan cameras.

The effective exposure time is reported by `ExposureTime_P2_Effective_us`.

Parameter Usage

- Prerequisite action(s):**
- **Condition:** `InterleavedAcquisition` must be set to ON.
- Directive:** The user must set the exposure time according to the application needs within the range of values allowed by the camera. The camera exposure time range is defined by `ExposeMin_us` and `ExposeMax_us` camera parameters.

Parameter Values

Numeric values: 0.16, 5000000

Minimum Range

0.16	Always applicable.
------	--------------------

Maximum Range

5000000	Always applicable.
---------	--------------------

ExposureTime_P2_Effective_us

Effective exposure time for P2

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Interleaved Acquisition	EXPERT	Float	Get Only

Num ID	String Identifier	C, C++ identifier
11006 << 14	ExposureTime_P2_Effective_us	MC_ExposureTime_P2_Effective_us

Parameter Description

This parameter reports the effective time interval between the Start of Exposure (ResetON) and the End of Exposure (ResetOFF) events of a P2 program cycle.

Parameter Usage

Prerequisite action(s):

- **Condition:** InterleavedAcquisition must be set to ON.

ExposureDelayControl

Control method of the exposure delay

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Interleaved Acquisition	EXPERT	Float	Set and Get

Num ID	String Identifier	C, C++ identifier
11045 << 14	ExposureDelayControl	MC_ExposureDelayControl

Parameter Description

This parameter allows to select the method used by MultiCam to calculate the Exposure Delay value for P1 and P2 programs.

By default, MultiCam configures P1 and P2 with the smallest possible Exposure Delay value. This setting is satisfactory for the use cases where the exposure time is shorter than the readout time.

Optionally, keeping `ExposureDelayControl` set to `MAN`, allows to change the minimum exposure delay value of P1 and/or P2 using the `ExposureDelay_MAN_P1_us` and `ExposureDelay_MAN_P2_us` parameters.

Alternatively, you may also change `ExposureDelayControl` to one of the automatic control methods: `SAME_START_EXPOSURE` or `SAME_END_EXPOSURE`.

With `SAME_START_EXPOSURE`, the start of exposure is delayed by the same amount of time for both programs: both exposure delay values are equal.

With `SAME_END_EXPOSURE` the end of exposure is delayed by the same amount of time for both programs.

The effective exposure delay values, calculated by MultiCam are reported by `ExposureDelay_P1_Effective_us` and `ExposureDelay_P2_Effective_us` parameters.

Parameter Usage

- Prerequisite action(s):**
- **Condition:** `InterleavedAcquisition` must be set to `ON`.

Parameter Values

Enumeration: `MAN`, `SAME_START_EXPOSURE`, `SAME_END_EXPOSURE`

MAN

MC_ExposureDelayControl_MAN

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

Manual control method.

The user may specify the minimum exposure delay value of P1 and/or P2 using the ExposureDelay_MAN_P1_us and ExposureDelay_MAN_P2_us parameters respectively.

Default value.

SAME_START_EXPOSURE

MC_ExposureDelayControl_SAME_START_EXPOSURE

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

Automatic control method 1.

The time interval from the cycle trigger to the start of exposure is identical for both programs.

SAME_START_EXPOSURE

MC_ExposureDelayControl_SAME_START_EXPOSURE

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

Automatic control method 2.

The time interval from the cycle trigger to the end of exposure is identical for both programs.

ExposureDelay_MAN_P1_us

Minimum exposure delay value for P1

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Interleaved Acquisition	EXPERT	Float	Set and Get

Num ID	String Identifier	C, C++ identifier
11039 << 14	ExposureDelay_MAN_P1_us	MC_ExposureDelay_MAN_P1_us

Parameter Description

When `InterleavedAcquisition` is set to `ON`, this parameter allows to specify the minimum time interval to be inserted before the Start of Exposure (ResetON) of P1 program cycles.

The effective time interval is reported by `ExposureDelay_P1_Effective_us`.

Parameter Usage

Prerequisite action(s):

- **Condition:** `InterleavedAcquisition` must be set to `ON`.
- **Condition:** `ExposureDelayControl` must be set to `MAN`.

Parameter Values

Numeric values: 0, 5000000

[Minimum Range](#)

0	Always applicable. Default value.
---	---

[Maximum Range](#)

5000000	Always applicable.
---------	--------------------

ExposureDelay_P1_Effective_us

Effective exposure delay value for P1 program

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Interleaved Acquisition	EXPERT	Float	Get Only

Num ID	String Identifier	C, C++ identifier
11011 << 14	ExposureDelay_P1_Effective_us	MC_ExposureDelay_P1_Effective_us

Parameter Description

This parameter reports the effective time delay inserted before the Start of Exposure (ResetON) event of P1 program cycles.

Parameter Usage

Prerequisite action(s):

- **Condition:** InterleavedAcquisition must be set to ON.

ExposureDelay_MAN_P2_us

Minimum exposure delay value for P2

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Interleaved Acquisition	EXPERT	Float	Set and Get

Num ID	String Identifier	C, C++ identifier
11040 << 14	ExposureDelay_MAN_P2_us	MC_ExposureDelay_MAN_P2_us

Parameter Description

When `InterleavedAcquisition` is set to `ON`, this parameter allows to specify the minimum time interval to be inserted before the Start of Exposure (ResetON) of P2 program cycles.

The effective time interval is reported by `ExposureDelay_P2_Effective_us`.

Parameter Usage

Prerequisite action(s):

- **Condition:** `InterleavedAcquisition` must be set to `ON`.
- **Condition:** `ExposureDelayControl` must be set to `MAN`.

Parameter Values

Numeric values: 0, 5000000

[Minimum Range](#)

0	Always applicable. Default value.
---	---

[Maximum Range](#)

5000000	Always applicable.
---------	--------------------

ExposureDelay_P2_Effective_us

Effective exposure delay value for P2 program

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Interleaved Acquisition	EXPERT	Float	Get Only

Num ID	String Identifier	C, C++ identifier
11012 << 14	ExposureDelay_P2_Effective_us	MC_ExposureDelay_P2_Effective_us

Parameter Description

This parameter reports the effective time delay inserted before the Start of Exposure (ResetON) event of P2 program cycles.

Parameter Usage

Prerequisite action(s):

- **Condition:** InterleavedAcquisition must be set to ON.

StrobeDuration_P1_us

Strobe duration setting for P1 program cycles

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Interleaved Acquisition	ADJUST	Float	Set and Get

Num ID	String Identifier	C, C++ identifier
10950 << 14	StrobeDuration_P1_us	MC_StrobeDuration_P1_us

Parameter Description

This parameter allows to specify the time interval between the Start of Illumination (StrobeON) and the End of Illumination (StrobeOFF) events of a P1 program cycle.

MultiCam calculates a default value that is equal to 50% of the default exposure time.

The effective strobe duration is reported by `StrobeDuration_P1_Effective_us`.

Parameter Usage

- Prerequisite action(s):**
- **Condition:** `InterleavedAcquisition` must be set to ON.
- Directive:** The user must set the strobe duration according to the application needs. Values larger than the exposure time are allowed.

Parameter Values

Numeric values: 0.16, 5000000

Minimum Range

0.16	Always applicable.
------	--------------------

Maximum Range

5000000	Always applicable.
---------	--------------------

StrobeDuration_P1_Effective_us

Effective strobe duration for P1

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Interleaved Acquisition	EXPERT	Float	Get Only

Num ID	String Identifier	C, C++ identifier
11007 << 14	StrobeDuration_P1_Effective_us	MC_StrobeDuration_P1_Effective_us

Parameter Description

This parameter reports the effective time interval between the Start of Illumination (StrobeON) and the End of Illumination (StrobeOFF) events of a P1 program cycle.

Parameter Usage

Prerequisite action(s):

- **Condition:** InterleavedAcquisition must be set to ON.

StrobeDuration_P2_us

Strobe duration setting for P2 program cycles

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Interleaved Acquisition	ADJUST	Float	Set and Get

Num ID	String Identifier	C, C++ identifier
10951 << 14	StrobeDuration_P2_us	MC_StrobeDuration_P2_us

Parameter Description

This parameter allows to specify the time interval between the Start of Illumination (StrobeON) and the End of Illumination (StrobeOFF) events of a P2 program cycle.

MultiCam calculates a default value that is equal to 50% of the default exposure time.

The effective strobe duration is reported by `StrobeDuration_P2_Effective_us`.

Parameter Usage

- Prerequisite action(s):**
- **Condition:** `InterleavedAcquisition` must be set to ON.
- Directive:** The user must set the strobe duration according to the application needs. Values larger than the exposure time are allowed.

Parameter Values

Numeric values: 0.16, 5000000

Minimum Range

0.16	Always applicable.
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Maximum Range

5000000	Always applicable.
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StrobeDuration_P2_Effective_us

Effective strobe duration for P2

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Interleaved Acquisition	EXPERT	Float	Get Only

Num ID	String Identifier	C, C++ identifier
11008 << 14	StrobeDuration_P2_Effective_us	MC_StrobeDuration_P2_Effective_us

Parameter Description

This parameter reports the effective time interval between the Start of Illumination (StrobeON) and the End of Illumination (StrobeOFF) events of a P2 program cycle.

Parameter Usage

Prerequisite action(s):

- **Condition:** InterleavedAcquisition must be set to ON.

StrobeDelay_P1_us

Strobe delay setting for P1

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Interleaved Acquisition	ADJUST	Float	Set and Get

Num ID	String Identifier	C, C++ identifier
10953 << 14	StrobeDelay_P1_us	MC_StrobeDelay_P1_us

Parameter Description

This parameter allows to specify the time interval from the Start of Exposure (ResetON) to the Start of Illumination (StrobeON) events of P1 program cycles.

The default value is 0.

The effective delay is reported by `StrobeDelay_P1_Effective_us`.

Parameter Usage

- Prerequisite action(s):**
- **Condition:** `InterleavedAcquisition` must be set to ON.
- Directive:** The user must set the strobe delay according to the application needs. Set a positive values to retard the Start of Illumination (StrobeON) event. Set a negative values to advance the Start of Illumination (StrobeON) event.

Parameter Values

Numeric values: -10000, 5000000

Minimum Range

-10000	Always applicable.
--------	--------------------

Maximum Range

5000000	Always applicable.
---------	--------------------

StrobeDelay_P1_Effective_us

Effective strobe delay value for P1 program

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Interleaved Acquisition	EXPERT	Float	Get Only

Num ID	String Identifier	C, C++ identifier
11009 << 14	StrobeDelay_P1_Effective_us	MC_StrobeDelay_P1_Effective_us

Parameter Description

This parameter reports the effective time interval from the Start of Exposure (ResetON) to the Start of Illumination (StrobeON) events of P1 program cycles.

Parameter Usage

Prerequisite action(s):

- **Condition:** InterleavedAcquisition must be set to ON.

StrobeDelay_P2_us

Strobe delay setting for P2

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Interleaved Acquisition	ADJUST	Float	Set and Get

Num ID	String Identifier	C, C++ identifier
10954 << 14	StrobeDelay_P2_us	MC_StrobeDelay_P2_us

Parameter Description

This parameter allows to specify the time interval from the Start of Exposure (ResetON) to the Start of Illumination (StrobeON) events of P2 program cycles.

The default value is 0.

The effective delay is reported by `StrobeDelay_P2_Effective_us`.

Parameter Usage

- Prerequisite action(s):**
- **Condition:** `InterleavedAcquisition` must be set to ON.
- Directive:** The user must set the strobe delay according to the application needs. Set a positive values to retard the Start of Illumination (StrobeON) event. Set a negative values to advance the Start of Illumination (StrobeON) event.

Parameter Values

Numeric values: -10000, 5000000

Minimum Range

-10000	Always applicable.
--------	--------------------

Maximum Range

5000000	Always applicable.
---------	--------------------

StrobeDelay_P2_Effective_us

Effective strobe delay value for P2 program

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Interleaved Acquisition	EXPERT	Float	Get Only

Num ID	String Identifier	C, C++ identifier
11010 << 14	StrobeDelay_P2_Effective_us	MC_StrobeDelay_P2_Effective_us

Parameter Description

This parameter reports the effective time interval from the Start of Exposure (ResetON) to the Start of Illumination (StrobeON) events of P2 program cycles.

Parameter Usage

Prerequisite action(s):

- **Condition:** InterleavedAcquisition must be set to ON.

MinTriggerPeriod_P1_Effective_us

Minimum time interval between cycle triggers for P1

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Interleaved Acquisition	EXPERT	Float	Get Only

Num ID	String Identifier	C, C++ identifier
11035 << 14	MinTriggerPeriod_P1_Effective_us	MC_MinTriggerPeriod_P1_Effective_us

Parameter Description

This parameter reports the effective time interval between a P1 Cycle start trigger and the next cycle start trigger.

Parameter Usage

Prerequisite action(s):

- **Condition:** InterleavedAcquisition must be set to ON.

MinTriggerPeriod_P2_Effective_us

Minimum time interval between cycle triggers for P2

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Interleaved Acquisition	EXPERT	Float	Get Only

Num ID	String Identifier	C, C++ identifier
11036 << 14	MinTriggerPeriod_P2_Effective_us	MC_MinTriggerPeriod_P2_Effective_us

Parameter Description

This parameter reports the effective time interval between a P2 Cycle start trigger and the next cycle start trigger.

Parameter Usage

Prerequisite action(s):

- **Condition:** InterleavedAcquisition must be set to ON.

StrobeLine_P1

Strobe output line of P1 program

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Interleaved Acquisition	EXPERT	Enumerated	Set and Get

Num ID	String Identifier	C, C++ identifier
10955 << 14	StrobeLine_P1	MC_StrobeLine_P1

Parameter Description

This parameter allows to designate the output line delivering the strobe output of the P1 program.
By default, MultiCam assigns the strobe output of the P1 program to the IOUT1 output port.

 **Note:** When the P1 and P2 programs are assigned to the same strobe output line, the strobe signals are logically OR-ed.

Parameter Usage

Prerequisite action(s):

- **Condition:** InterleavedAcquisition must be set to ON.

Directive: The user may select the alternate strobe line by selecting IOUT2 or disable the strobe output of the P1 program by selecting NONE.

Parameter Values

Enumeration: IOUT1, IOUT2, NONE

[IOUT1](#)

MC_StrobeLine_P1_IOUT1

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description
The strobe signal of P1 program is assigned to the IOUT 1 output port.

Default value.

[IOUT2](#)

MC_StrobeLine_P1_IOUT2

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description
The strobe signal of P1 program is assigned to the IOUT 2 output port.

NONE

MC_StrobeLine_P1_NONE**Applicable product(s):** 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.**Description**

The strobe signal of P1 program is not assigned to any output port.

StrobeLine_P2

Strobe output line of P2 program

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Interleaved Acquisition	EXPERT	Enumerated	Set and Get

Num ID	String Identifier	C, C++ identifier
10956 << 14	StrobeLine_P2	MC_StrobeLine_P2

Parameter Description

This parameter allows to designate the output line delivering the strobe output of the P2 program.

By default, MultiCam assigns the strobe output of the P2 program to the IOUT2 output port.



Note: When the P1 and P2 programs are assigned to the same strobe output line, the strobe signals are logically OR-ed.

Parameter Usage

Prerequisite action(s):

- **Condition:** InterleavedAcquisition must be set to ON.

Directive: The user may select the alternate strobe line by selecting IOUT2 or disable the strobe output of the P2 program by selecting NONE.

Parameter Values

Enumeration: IOUT1, IOUT2, NONE

IOUT1

MC_StrobeLine_P2_IOUT1

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

The strobe signal of P2 program is assigned to the IOUT 1 output port.

IOUT2

MC_StrobeLine_P2_IOUT2

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

The strobe signal of P2 program is assigned to the IOUT 2 output port.

Default value.

NONE

MC_StrobeLine_P2_NONE**Applicable product(s):** 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.**Description**

The strobe signal of P2 program is not assigned to any output port.

StrobeOutput_P1

Strobe output control for P1

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Interleaved Acquisition	EXPERT	Enumerated	Set and Get

Num ID	String Identifier	C, C++ identifier
11020 << 14	StrobeOutput_P1	MC_StrobeOutput_P1

Parameter Description

This parameter allows to enable or disable immediately the strobe output of the P1 program.
MultiCam enables automatically the strobe output of P1 program providing that:

- `InterleavedAcquisition` is set to `ON`,
- `StrobeLine_P1` is set to `IOUT1` or `IOUT2`.

MultiCam disables automatically the output when one of the above condition becomes false.

Parameter Usage

Prerequisite action(s):

- **Condition:** `InterleavedAcquisition` must be set to `ON`.

Directive: If required, the user may override the parameter value at any time.

Parameter Values

Enumeration: `ENABLE`, `DISABLE`

[ENABLE](#)

MC_StrobeOutput_P1_ENABLE

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

The Strobe output of P1 program is enabled.

Default value.

[DISABLE](#)

MC_StrobeOutput_P1_DISABLE

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

The Strobe output of P1 program is disabled.

StrobeOutput_P2

Strobe output control for P2

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Interleaved Acquisition	EXPERT	Enumerated	Set and Get

Num ID	String Identifier	C, C++ identifier
11021 << 14	StrobeOutput_P2	MC_StrobeOutput_P2

Parameter Description

This parameter allows to enable or disable immediately the strobe output of the P2 program.

MultiCam enables automatically the strobe output of P2 program providing that:

- `InterleavedAcquisition` is set to ON,
- `StrobeLine_P2` is set to IOUT1 or IOUT2.

MultiCam disables automatically the output when one of the above condition becomes false.

Parameter Usage

Prerequisite action(s):

- **Condition:** `InterleavedAcquisition` must be set to ON.

Directive: If required, the user may override the parameter value at any time.

Parameter Values

Enumeration: ENABLE, DISABLE

ENABLE

MC_StrobeOutput_P2_ENABLE

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

The Strobe output of P2 program is enabled.

Default value.

DISABLE

MC_StrobeOutput_P2_DISABLE

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

The Strobe output of P2 program is disabled.

Exposure Control Category

Parameters controlling the camera exposure related features associated to the channel

Parent Class

[Channel Class](#) on page 88

Expose_us

Line or frame exposure duration, expressed in microseconds

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Exposure Control	ADJUST	Integer	Set and Get

Num ID	String Identifier	C, C++ identifier
830 << 14	Expose_us	MC_Expose_us

Parameter Description

For area-scan cameras, the [Expose_us](#) parameter relates to the duration of the frame exposure period.

For line-scan cameras, the [Expose_us](#) parameter relates to the duration of the line exposure period.

Specifically, several controllable cameras make possible for the frame grabber to take control on the exposure period within the camera. This equally applies to the line exposure (line-scan) or frame exposure (area-scan). If an area-scan camera has this exposure control capability, and if it is configured in such a way that this capability is exercised, the camera is said to assume the grabber-controlled exposure mode.

This parameter applies only when camera operates in grabber-controlled exposure mode.

Refer to the expert-level parameters of the Camera Features Category [Expose](#) and [Readout](#).

Parameter Values

Numeric values: 1, 5000000

Minimum Range

1	Applicable product(s): 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
---	---

Maximum Range

5000000	Applicable product(s): 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
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ExposeTrim

Amending value for exposure duration, expressed in decibels

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Exposure Control	EXPERT	Enumerated	Set and Get

Num ID	String Identifier	C, C++ identifier
831 << 14	ExposeTrim	MC_ExposeTrim

Parameter Description

This parameter can be used to refine the value programmed by the [Expose_us](#) parameter.
 The following chart helps to understand this logarithmic control process.

Parameter Values

Numeric values: -6, -3, 0, +3, +6, +9, +12

Minimum Range

	Description
-6	The effective trimmed exposure is Expose_us x 0.5 Always applicable.

Maximum Range

	Description
+12	The effective trimmed exposure is Expose_us x 4 Always applicable.

List of Values

	Description
-3	The effective trimmed exposure is Expose_us x 0.7 Always applicable.
0	The effective trimmed exposure is Expose_us Always applicable.
+3	The effective trimmed exposure is Expose_us x 1.4 Always applicable.

+6	Description The effective trimmed exposure is Expose_us x 2 Always applicable.
+9	Description The effective trimmed exposure is Expose_us x 2.8 Always applicable.

TrueExp_us

Exact exposure duration, expressed in microseconds

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Exposure Control	EXPERT	Integer	Set and Get

Num ID	String Identifier	C, C++ identifier
832 << 14	TrueExp_us	MC_TrueExp_us

Parameter Description

This parameter returns the effective duration of the exposure period, merging the values of [Expose_us](#) and [ExposeTrim](#) . Some camera and/or frame grabber limitation can be such that the effective exposure duration may slightly differ from the requested exposure duration.

Setting this parameter is required when the strobe function is involved while the grabber does not positively control the exposure function. See [StrobeMode](#) .

Parameter Values

Numeric values: 1, 5000000, 20000000

Minimum Range

1	Applicable product(s): 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
---	---

Maximum Range

5000000	Applicable product(s): 1198 Grablink Avenue, 1621 Grablink Express.
20000000	Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Strobe Control Category

Parameters controlling the illumination features associated to the channel

Parent Class

[Channel Class](#) on page 88

StrobeMode

Method for generating strobe pulse to illumination system

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR, 1155 Picolo, 1401 Picolo Junior 4, 1157 Picolo Pro 2, 1303 Picolo Tetra, 1402 Picolo Tymo, 1305 Picolo Alert.

Parameter Info

Class	Category	Level	Type	Access
Channel	Strobe Control	ADJUST	Enumerated	Set and Get

Num ID	String Identifier	C, C++ identifier
1197 << 14	StrobeMode	MC_StrobeMode

Parameter Description

This parameter establishes the method according to which the illumination control pulse is generated. For area-scan cameras, the *StrobeMode* parameter relates to the illumination during the frame exposure period. The default value is set automatically to MAN or AUTO by the exposure controller of MultiCam. Equivalent features apply to line-scan cameras.

Parameter Values

Enumeration: NONE, AUTO, MAN, OFF

NONE

MC_StrobeMode_NONE

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR, 1305 Picolo Alert.

Description

The strobe function is disabled. No strobe line is allocated to the channel. The hardware line dedicated to issuing the strobe pulse is available for general-purpose usage.

AUTO

MC_StrobeMode_AUTO

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR, 1305 Pico Alert.

Description

The strobe function is enabled with an automatic timing control feature. The camera exposure and read-out principles, as declared by [Expose](#) and [Readout](#), are involved. Two cases are to be considered:

- The grabber positively controls the camera exposure function, as reflected by [Expose](#) = WIDTH for area-scan camera. This is the **grabber controlled exposure** case. In the grabber controlled exposure case, the parameters [StrobeDur](#) and [StrobePos](#) are used as specified to define the strobe pulse, using the [TrueExp_us](#) duration reported by the grabber.
- The exposure function depends on camera settings, as reflected by [Expose](#) = PLSTRG for area-scan camera. This is the **camera controlled exposure** case. In the camera controlled exposure case, the strobe pulse starts upon sending the asynchronous reset pulse to the camera, and ends upon receiving the first vertical validation pulse from the camera that indicates beginning of read-out.

MAN

MC_StrobeMode_MAN

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR, 1305 Pico Alert.

Description

The strobe function is enabled with a manual timing control feature. [StrobeDur](#) and [StrobePos](#) are used as specified to define the strobe pulse, using the [TrueExp_us](#) duration. However, the application is requested to write the exposure duration into [TrueExp_us](#) beforehand.

OFF

MC_StrobeMode_OFF

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

The designed [StrobeLine](#) is set to the inactive level; no more strobe pulses are issued.

StrobeDur

Duration of strobe pulse to illumination system

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR, 1155 Picolo, 1401 Picolo Junior 4, 1157 Picolo Pro 2, 1303 Picolo Tetra, 1402 Picolo Tymo, 1305 Picolo Alert.

Parameter Info

Class	Category	Level	Type	Access
Channel	Strobe Control	ADJUST	Integer	Set and Get

Num ID	String Identifier	C, C++ identifier
834 << 14	StrobeDur	MC_StrobeDur

Parameter Description

This parameter is expressed as a percentage of the current exposure duration as returned by [TrueExp_us](#) .
A value of 50 % means that the duration of the strobe pulse is half the duration of the exposure period.

- For area-scan cameras, the [StrobeDur](#) parameter relates to the illumination during the frame exposure period.
- For line-scan cameras, the [StrobeDur](#) parameter relates to the illumination during the line exposure period.

StrobePos

Position of strobe pulse to illumination system

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR, 1155 Picolo, 1401 Picolo Junior 4, 1157 Picolo Pro 2, 1303 Picolo Tetra, 1402 Picolo Tymo, 1305 Picolo Alert.

Parameter Info

Class	Category	Level	Type	Access
Channel	Strobe Control	ADJUST	Integer	Set and Get

Num ID	String Identifier	C, C++ identifier
835 << 14	StrobePos	MC_StrobePos

Parameter Description

This parameter is expressed as a percentage of the allowed position range of the strobe pulse for its current duration. A value of 0 % establishes the earliest position. A value of 100 % establishes the latest position.

A value of 50 % means that the strobe pulse is located in the middle of the exposure period.

- For area-scan cameras, the [StrobePos](#) parameter relates to the illumination during the frame exposure period.
- For line-scan cameras, the [StrobePos](#) parameter relates to the illumination during the line exposure period.

The [StrobePos](#) refers to the middle of the strobe pulse.

StrobeCtl

Electrical style of designated strobe pulse to illumination system

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR, 1155 Picolo, 1401 Picolo Junior 4, 1157 Picolo Pro 2, 1303 Picolo Tetra, 1402 Picolo Tymo, 1305 Picolo Alert.

Parameter Info

Class	Category	Level	Type	Access
Channel	Strobe Control	ADJUST	Enumerated	Set and Get

Num ID	String Identifier	C, C++ identifier
836 << 14	StrobeCtl	MC_StrobeCtl

Parameter Description

This parameter declares the attributes of the strobe line designated by *StrobeLine* sent by the channel and aimed at generating an illumination pulse.

Parameter Values

Enumeration: TTL, OPTO, ITTL, IOC, IOE

TTL

MC_StrobeCtl_TTL

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express.

Description

The strobe line is a TTL compliant signal.

OPTO

MC_StrobeCtl_OPTO

Applicable product(s): 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

The strobe line is issued on an opto-isolated pair of pins. The + pin is the collector and the - pin is the emitter of an uncommitted photo-transistor driven by LED-emitted light.

ITTL

MC_StrobeCtl_ITTL

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express.

Description

The strobe line is an isolated TTL compliant signal actively tied to the high or low state.

IOC

MC_StrobeCtl_IOC

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express.

Description

The strobe line is an isolated TTL compliant signal actively tied to the low state and passively tied to the high state through a 3000 Ω pull-up resistor.

IOE

MC_StrobeCtl_IOE

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express.

Description

The strobe line is an isolated TTL compliant signal actively tied to the high state and passively tied to the low state through a 2000 Ω pull-down resistor.

StrobeLevel

Control of logic state for strobe pulse to illumination system

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1155 Picolo, 1401 Picolo Junior 4, 1157 Picolo Pro 2, 1303 Picolo Tetra, 1402 Picolo Tymo, 1305 Picolo Alert.

Parameter Info

Class	Category	Level	Type	Access
Channel	Strobe Control	ADJUST	Enumerated	Set and Get

Num ID	String Identifier	C, C++ identifier
833 << 14	StrobeLevel	MC_StrobeLevel

Parameter Description

This parameter, along with [StrobeCtl](#) and [StrobeLine](#) , declares the usage made of the strobe line sent by the channel and aimed at generating an illumination pulse.

[StrobeLevel](#) is irrelevant when [StrobeCtl](#) = OPTO.

Parameter Values

Enumeration: PLSHIGH, PLSLOW

[PLSHIGH](#)

MC_StrobeLevel_PLSHIGH

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express.

Description

The strobe line issues a logic low-high-low pulse.

[PLSLOW](#)

MC_StrobeLevel_PLSLOW

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express.

Description

The strobe line issues a logic high-low-high pulse.

StrobeLine

Designation of hardware strobe line to illumination system

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1155 Picolo, 1401 Picolo Junior 4, 1157 Picolo Pro 2, 1303 Picolo Tetra, 1402 Picolo Tymo, 1305 Picolo Alert.

Parameter Info

Class	Category	Level	Type	Access
Channel	Strobe Control	EXPERT	Enumerated	Set and Get

Num ID	String Identifier	C, C++ identifier
837 << 14	StrobeLine	MC_StrobeLine

Parameter Description

It designates the hardware line driven by the channel and aimed at generating an illumination pulse.

The selection of the electrical style of the hardware line, by means of parameter [StrobeCtl](#), is a prerequisite.

If the strobe signal was previously issued on another I/O line, reset [OutputConfig](#) to FREE for that line. Otherwise, the strobe signal will be issued on both I/O lines, the previously selected one and the new one.

The designated [StrobeLine](#) is set to its inactive state when the channel goes inactive.

Parameter Values

Enumeration: NOM, IO1, IO2, IO3, IO4, ST, STX, STY, STZ, STA, STB, STC, STD, STR, ALT1, ALT2, ISOA1, ISOA2

NOM

MC_StrobeLine_NOM

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express.

Description for 1191 Grablink Value

The channel strobe line is found on the System connector at the nominal terminal pin, according to the [StrobeCtl](#) value.

When [StrobeCtl](#) =TTL, the relevant strobe line is STR/pin 9.

When [StrobeCtl](#) =ITTL, IOC or IOE, the relevant strobe line is A1/pin 6.

Description for 1198 Grablink Avenue, 1621 Grablink Express

The channel strobe line is found on the System connector at the nominal terminal pin, according to the [StrobeCtl](#) value.

When [StrobeCtl](#) =OPTO, the relevant strobe line is STA.

When [StrobeCtl](#) =TTL, the relevant strobe line is Enhanced IO2.

When [StrobeCtl](#) =ITTL, IOC or IOE, the relevant strobe line is ISOA2.

IO1

MC_StrobeLine_IO1
Applicable product(s): 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1198 Grablink Avenue, 1621 Grablink Express.
Description for 1198 Grablink Avenue, 1621 Grablink Express The channel strobe line is found on the System connector at the terminal pin Enhanced IO1. This value is applicable only when <i>StrobeCtl</i> =TTL.

IO2

MC_StrobeLine_IO2
Applicable product(s): 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1198 Grablink Avenue, 1621 Grablink Express.
Description for 1198 Grablink Avenue, 1621 Grablink Express The channel strobe line is found on the System connector at the terminal pin Enhanced IO2. This value is applicable only when <i>StrobeCtl</i> =TTL.

IO3

MC_StrobeLine_IO3
Applicable product(s): 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1198 Grablink Avenue, 1621 Grablink Express.
Description for 1198 Grablink Avenue, 1621 Grablink Express The channel strobe line is found on the System connector at the terminal pin Enhanced IO3. This value is applicable only when <i>StrobeCtl</i> =TTL.

IO4

MC_StrobeLine_IO4
Applicable product(s): 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1198 Grablink Avenue, 1621 Grablink Express.
Description for 1198 Grablink Avenue, 1621 Grablink Express The channel strobe line is found on the System connector at the terminal pin Enhanced IO4. This value is applicable only when <i>StrobeCtl</i> =TTL.

STA

MC_StrobeLine_STA
Applicable product(s): 1601 Domino Symphony PCIe, 1198 Grablink Avenue, 1621 Grablink Express.
Description for 1198 Grablink Avenue, 1621 Grablink Express The channel strobe line is found on the System connector at the terminal pin pair STA. This value is applicable only when <i>StrobeCtl</i> =OPTO.

STR

MC_StrobeLine_STR**Applicable product(s):** 1191 Grablink Value.**Description**

The channel strobe line is found on the System connector at the terminal STR/pin 9. This value is applicable only when *StrobeCtl* = TTL.

ALT1

MC_StrobeLine_ALT1**Applicable product(s):** 1191 Grablink Value.**Description for 1191 Grablink Value**

The channel strobe line is found on the System connector at the terminal A1/pin 6. This value is applicable only when *StrobeCtl* = ITTL, IOC or IOE.

ALT2

MC_StrobeLine_ALT2**Applicable product(s):** 1191 Grablink Value.**Description for 1191 Grablink Value**

The channel strobe line is found on the System connector at the terminal A2/pin 7. This value is applicable only when *StrobeCtl* = ITTL, IOC or IOE.

ISOA1

MC_StrobeLine_ISO1**Applicable product(s):** 1198 Grablink Avenue, 1621 Grablink Express.**Description**

The channel strobe line is found on the System connector at the terminal pin ISOA1. This value is applicable only when *StrobeCtl* = ITTL, IOC or IOE.

ISOA2

MC_StrobeLine_ISO2**Applicable product(s):** 1198 Grablink Avenue, 1621 Grablink Express.**Description**

The channel strobe line is found on the System connector at the terminal pin ISOA2. This value is applicable only when *StrobeCtl* = ITTL, IOC or IOE.

PreStrobe_us

Time delay, expressed in microseconds, before the pulse defined by StrobePos

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Strobe Control	EXPERT	Integer	Set and Get

Num ID	String Identifier	C, C++ identifier
2190 << 14	PreStrobe_us	MC_PreStrobe_us

Parameter Description

This parameter declares the delay of the beginning of the strobe pulse before the normal beginning defined by [StrobePos](#). If long enough, it creates a "pre-exposure" phase before actual "start of exposure phase" (SAP).

- For area-scan cameras, this parameter relates to the illumination during the frame exposure period.
- For line-scan cameras, this parameter is irrelevant.

Parameter Values

Numeric values: 0, 10000

Minimum Range

0	Always applicable.
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Maximum Range

10000	Always applicable.
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Encoder Control Category

Parameters controlling the motion encoder rate conversion device embedded in the line-scan capable frame grabbers

Parent Class

[Channel Class](#) on page 88

LineCaptureMode

Fundamental line capturing mode

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Encoder Control	ADJUST	Enumerated	Set and Get

Num ID	String Identifier	C, C++ identifier
3001 << 14	LineCaptureMode	MC_LineCaptureMode

Parameter Description

In line-scan system, this parameter declares the **fundamental line capturing mode**.

Parameter Usage

Relevance condition(s):

- **Condition:** Any line-scan acquisition mode.

Parameter Values

Enumeration: ADR, PICK, ALL, TAG

[ADR](#)

MC_LineCaptureMode_ADR

Applicable product(s): 1198 Grablink Avenue, 1621 Grablink Express.

Description

Advanced Downweb Resampling line capture mode.

The line-scanning process of the camera is running at a constant rate. Each pulse occurring at the down-web line rate determines the computation of a line from a set of presently recorded lines delivered by the camera.

Default value.

[PICK](#)

MC_LineCaptureMode_PICK

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

Pick-a-line line capture mode. The line-scanning process of the camera is running at a constant rate. Each pulse occurring at the down-web line rate determines the acquisition of the next line delivered by the camera.

ALL

MC_LineCaptureMode_ALL

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

Take-all-lines capture mode. Each delivered camera line results into a line acquisition. This is the traditional operating mode. If the down-web motion speed is varying, the line-scanning process of the camera should be rate-controlled accordingly

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TAG

MC_LineCaptureMode_TAG

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

Tag-A-Line capture mode. The line-scanning process of the camera is running at a constant rate determined by `Period_us`. The down-web line rate is determined by the pulse rate of A/B signals delivered by an external encoder and processed by the quadrature decoder and the rate divider.

The frame grabber captures all lines delivered by the camera after having replaced the first pixel data by a **tag** indicating that the line was preceded or not by an hardware event on the divider output.

LineRateMode

Line rate generation method

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Encoder Control	ADJUST	Enumerated	Set and Get

Num ID	String Identifier	C, C++ identifier
1328 << 14	LineRateMode	MC_LineRateMode

Parameter Description

In line-scan system, this parameter declares the device responsible for line rate generation.

For more information, refer to [Line rate modes](#).

When [LineRateMode](#) is set to PERIOD, the downweb line rate is controlled by the [Period_us](#) parameter.

When [LineRateMode](#) is set to EXPOSE, the downweb line rate is controlled by the [Expose_us](#) parameter.

When [LineRateMode](#) is set to PULSE or CONVERT, the downweb line rate is directed by a pulse signal applied to line trigger hardware line selected by the [LineTrigLine](#) parameter.

The applicable line rate modes are depending on the selected [LineCaptureMode](#) and on the camera line-scanning mode. The camera line-scanning mode is determined by the [Expose](#) and [Readout](#) parameters ([Camera Features category](#)). Two classes of camera line-scanning mode are considered in this case:

- Free-running cameras
- Controlled line rate cameras

Parameter Values

Enumeration: CONVERT, PULSE, PERIOD, CAMERA, EXPOSE, SLAVE

CONVERT

MC_LineRateMode_CONVERT
Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
Description
Rate Converter. The downweb line rate is derived from a train of trigger pulses processed by a rate converter belonging to the grabber.

PULSE

MC_LineRateMode_PULSE

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

Trigger Pulse. The downweb line rate is directly derived from trigger pulses applied to the grabber.

PERIOD

MC_LineRateMode_PERIOD

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

Periodic. The downweb line rate is internally generated by a periodic generator.

CAMERA

MC_LineRateMode_CAMERA

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

Camera. The downweb line rate is originated by the camera.

EXPOSE

MC_LineRateMode_EXPOSE

Applicable product(s): 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

Exposure Time The downweb line rate is identical to the camera line rate, and established by the exposure time settings.

SLAVE

MC_LineRateMode_SLAVE

Applicable product(s): 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

Period_us

Programmable line-scan period, expressed in microseconds

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Encoder Control	ADJUST	Integer	Set and Get

Num ID	String Identifier	C, C++ identifier
1329 << 14	Period_us	MC_Period_us

Parameter Description

This parameter allows for programming the periodic generator issuing the downweb line rate in line-scan systems.

Parameter Values

Numeric values: 1, 1000000

Minimum Range

1	Applicable product(s): 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
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Maximum Range

1000000	Applicable product(s): 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
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PeriodTrim

Amending value for line-scan period duration

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Encoder Control	ADJUST	Enumerated	Set and Get

Num ID	String Identifier	C, C++ identifier
1330 << 14	PeriodTrim	MC_PeriodTrim

Parameter Description

This parameter is expressed in decibels:

It can be used to refine the value programmed by the [Period_us](#) parameter.

Parameter Values

Numeric values: -6, -3, 0, +3, +6, +9, +12

List of Values

-6	Description The effective trimmed exposure is Period_us x 0.5 Always applicable.
-3	Description The effective trimmed exposure is Period_us x 0.7 Always applicable.
0	Description The effective trimmed exposure is Period_us Always applicable.
+3	Description The effective trimmed exposure is Period_us x 1.4 Always applicable.
+6	Description The effective trimmed exposure is Period_us x 2 Always applicable.
+9	Description The effective trimmed exposure is Period_us x 2.8 Always applicable.

+12	Description The effective trimmed exposure is $\text{Period_us} \times 4$ Always applicable.
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LinePitch

Line pitch for rate converter programming

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Encoder Control	ADJUST	Integer	Set and Get

Num ID	String Identifier	C, C++ identifier
595 << 14	LinePitch	MC_LinePitch

Parameter Description

This parameter applies when the motion encoder is in use with rate conversion.

The parameter declares in an arbitrary length unit the distance between two successively scanned lines on the observed moving web.

Along with [EncoderPitch](#), it allows for programming the rate converter issuing the line rate in line-scan systems. The [EncoderPitch](#) parameter should be expressed in the same length unit.

The programmed rate conversion ratio is: $\text{RateConversionRatio} = \text{EncoderPitch} / \text{LinePitch}$.

The resulting downweb line rate is: $\text{DownwebLineRate} = \text{EncoderRate} \times \text{RateConversionRatio}$

The encoder rate at a given time is the frequency of the pulses delivered by the motion encoder while the observed web is moving.

Parameter Values

Numeric values: 1, 10000

Minimum Range

1	Always applicable.
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Maximum Range

10000	Always applicable.
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EncoderPitch

Encoder pitch for rate converter programming

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Encoder Control	ADJUST	Integer	Set and Get

Num ID	String Identifier	C, C++ identifier
592 << 14	EncoderPitch	MC_EncoderPitch

Parameter Description

This parameter applies when the motion encoder is in use with rate conversion.

The parameter declares in an arbitrary length unit the distance traveled between two successive pulses issued by the motion encoder.

Along with [LinePitch](#), it allows for programming the rate converter issuing the line rate in line-scan systems. The [LinePitch](#) parameter should be expressed in the same length unit.

The programmed rate conversion ratio is: $\text{RateConversionRatio} = \text{EncoderPitch} / \text{LinePitch}$.

The resulting downweb line rate is: $\text{DownwebLineRate} = \text{EncoderRate} \times \text{RateConversionRatio}$

The encoder rate at a given time is the frequency of the pulses delivered by the motion encoder while the observed web is moving.

Parameter Values

Numeric values: 1, 10000

Minimum Range

1	Always applicable.
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Maximum Range

10000	Always applicable.
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ScanDirection

Scanning direction of the web

Applicable product(s): 1191 Grablink Value.

Parameter Info

Class	Category	Level	Type	Access
Channel	Encoder Control	ADJUST	Enumerated	Set and Get

Num ID	String Identifier	C, C++ identifier
2985 << 14	ScanDirection	MC_ScanDirection

Parameter Description

The value set to this parameter depends on the way the integrator chooses to mount the camera over the web.

Parameter Values

Enumeration: FORWARD, REVERSE

LineTrigCtl

Electrical style of designated line trigger hardware line from outside system

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Encoder Control	ADJUST	Enumerated	Set and Get

Num ID	String Identifier	C, C++ identifier
1331 << 14	LineTrigCtl	MC_LineTrigCtl

Parameter Description

This parameter applies to the hardware line designated by [LineTrigLine](#) when [LineRateMode](#) is set to PULSE or CONVERT. Along with [LineTrigEdge](#) and [LineTrigFilter](#) , it declares the grabber attributes of the terminal sensing the line trigger pulse. The line trigger pulse is processed by the grabber and transferred to the camera as the line reset pulse. The [LineTrigCtl](#) parameter determines the electrical style of the line trigger pulse usually issued by a motion encoder.

Parameter Values

Enumeration: TTL, ITTL, I12V, LVDS, DIFF, DIFF_PAURED, ISO, ISO_PAURED

TTL

MC_LineTrigCtl_TTL
Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express.
Description The trigger line is TTL compliant with a 4700 Ω pull-up resistor.

ITTL

MC_LineTrigCtl_ITTL
Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express.
Description The trigger line is isolated and TTL compliant with a 3000 Ω pull-up resistor.

I12V

MC_LineTrigCtl_I12V
Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express.
Description The trigger line is isolated and 12 V-logic compliant with a 2000 Ω pull-down resistor.

LVDS

MC_LineTrigCtl_LVDS**Applicable product(s):** 1198 Grablink Avenue, 1621 Grablink Express.**Description**

The trigger line is differential LVDS, RS-422 or RS-485 compatible.

DIFF

MC_LineTrigCtl_DIFF**Applicable product(s):** 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.**Description**

Differential high-speed input compatible with EIA/TIA-422 signaling.

DIFF_PAURED

MC_LineTrigCtl_DIFF_PAURED**Applicable product(s):** 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.**Description**

Dual differential high-speed input compatible with EIA/TIA-422 signaling.

Default value.

ISO

MC_LineTrigCtl_ISO**Applicable product(s):** 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.**Description**

Isolated current loop input compatible with TTL, +12V, +24V signaling.

ISO_PAURED

MC_LineTrigCtl_ISO_PAURED**Applicable product(s):** 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.**Description**

Dual isolated current loop input compatible with TTL, +12V, +24V signaling.

LineTrigEdge

Significant edge of designated line trigger hardware line from outside system

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Encoder Control	ADJUST	Enumerated	Set and Get

Num ID	String Identifier	C, C++ identifier
1332 << 14	LineTrigEdge	MC_LineTrigEdge

Parameter Description

This parameter applies to the hardware line designated by [LineTrigLine](#) when [LineRateMode](#) is set to PULSE or CONVERT. Along with [LineTrigCtl](#) and [LineTrigFilter](#), it declares the grabber attributes of the terminal sensing the line trigger pulse. The line trigger pulse is processed by the grabber and transferred to the camera as the line reset pulse. The [LineTrigEdge](#) parameter determines the significant edge of the line trigger pulse usually issued by a motion encoder.

Parameter Values

Enumeration: GOHIGH, GOLOW, RISING_A, FALLING_A, ALL_A, ALL_A_B

GOHIGH

MC_LineTrigEdge_GOHIGH

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description for 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR
Value equivalent to RISING_A.

Description for 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express
The encoder trigger line is sensed for positive-going transitions.

GOLOW

MC_LineTrigEdge_GOLOW

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description for 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR
Value equivalent to FALLING_A.

Description for 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express
The encoder trigger line is sensed for negative-going transitions.

RISING_A

MC_LineTrigEdge_RISING_A

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

An output pulse is generated for every rising edge of the A signal. The falling edge on the A signal and both edges on the B-signal are ignored.

FALLING_A

MC_LineTrigEdge_FALLING_A

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

An output pulse is generated for every falling edge of the A signal. The rising edge on the A signal and both edges on the B-signal are ignored.

ALL_A

MC_LineTrigEdge_ALL_A

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

An output pulse is generated for every rising and falling edges of the A signal. The B-signal is ignored.

Applicability condition(s):

- **Condition:** LineTrigCtl is set to DIFF or ISO.

ALL_A_B

MC_LineTrigEdge_ALL_A_B

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

An output pulse is generated for every rising and falling edges of the A and B signals.

Applicability condition(s):

- **Condition:** LineTrigCtl is set to DIFF2 or ISO2.

LineTrigFilter

Noise removal on designated line trigger hardware line from outside system

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Encoder Control	ADJUST	Enumerated	Set and Get

Num ID	String Identifier	C, C++ identifier
1333 <= 14	LineTrigFilter	MC_LineTrigFilter

Parameter Description

This parameter applies to the hardware line designated by [LineTrigLine](#) when [LineRateMode](#) is set to PULSE or CONVERT. Along with [LineTrigCtl](#) and [LineTrigEdge](#) , it declares the grabber attributes of the terminal sensing the line trigger pulse. The line trigger pulse is processed by the grabber and transferred to the camera as the line reset pulse. The [LineTrigFilter](#) parameter reduces the noise sensitivity over the line trigger pulse usually issued by a motion encoder. The time constant of the filter is the amount of time the line should be detected at the same logic state before a logic transition be considered. When [LineTrigLine](#) is an insulated I/O, [LineTrigFilter](#) is forced to STRONG.

Parameter Values

Enumeration: OFF, MEDIUM, STRONG, Filter_40ns, Filter_100ns, Filter_200ns, Filter_500ns, Filter_1us, Filter_5us, Filter_10us

OFF

MC_LineTrigFilter_OFF

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description for 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR

The filter time constant is approximately 40 ns.

Description for 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express

The filter time constant is approximately 100 ns.

MEDIUM

MC_LineTrigFilter_MEDIUM

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description for 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR

The filter time constant is approximately 100 ns.

Description for 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express

The filter time constant is approximately 500 ns.

Default value.

STRONG

MC_LineTrigFilter_STRONG

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description for 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR

The filter time constant is approximately 5 μ s.

Description for 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express

The filter time constant is approximately 2500 ns.

Filter_40ns

MC_LineTrigFilter_Filter_40ns

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

The filter time constant is approximately 40 ns.

Filter_100ns

MC_LineTrigFilter_Filter_100ns

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

The filter time constant is approximately 100 ns.

Filter_200ns

MC_LineTrigFilter_Filter_200ns

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

The filter time constant is approximately 200 ns.

[Filter_500ns](#)

MC_LineTrigFilter_Filter_500ns
Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
Description The filter time constant is approximately 500 ns.

[Filter_1us](#)

MC_LineTrigFilter_Filter_1us
Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
Description The filter time constant is approximately 1 us.

[Filter_5us](#)

MC_LineTrigFilter_Filter_5us
Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
Description The filter time constant is approximately 5 us.

[Filter_10us](#)

MC_LineTrigFilter_Filter_10us
Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
Description The filter time constant is approximately 10 us.

BackwardMotionCancellationMode

Operational mode of the Backward Motion Cancellation circuit

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Encoder Control	ADJUST	Enumerated	Set and Get

Num ID	String Identifier	C, C++ identifier
10352 << 14	BackwardMotionCancellationMode	MC_BackwardMotionCancellationMode

Parameter Description

The backward cancellation circuit stops sending line trigger pulses as soon as a backward motion is detected. If such an event occurs, the acquisition is stopped.

When the backward cancellation control is configured in the FILTER mode (F-mode), the line acquisition resumes as soon as the motion is again in the forward direction. Therefore, the cancellation circuit filters out all the pulses corresponding to the backward direction.

When the backward cancellation control is configured in the COMPENSATE mode (C-mode), the line acquisition resumes when the motion is again in the forward direction at the place it was interrupted. Therefore, the cancellation circuit filters out not only the pulses corresponding to the backward direction, but a number of forward pulses equal to the number of skipped backward pulses.

In C-Mode, the cancellation circuit uses a "backward pulse counter" that:

- Increments by 1 every clock in the backward direction
- Decrements by 1 every clock in the forward direction until it reaches 0
- Resets at the beginning of each MultiCam acquisition sequence, more precisely, at the first trigger event of the sequence. This trigger is considered as the reference for the position along the web for the whole acquisition sequence.

In C-Mode, all pulses occurring when the counter value is different of zero are blocked.

The counter has a 16-bit span; backward displacement up to 65535 pulses can be compensated.

Parameter Usage

Relevance condition(s):

- **Condition:** The line trigger originates from a quadrature motion encoder.
- **Condition:** The rate converter circuit is unused.

Parameter Values

Enumeration: OFF, FILTERED, COMPENSATE

OFF

MC_BackwardMotionCancellationMode_OFF
Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
Description The backward motion cancellation circuit is disabled.
Default value.

FILTERED

MC_BackwardMotionCancellationMode_FILTERED
Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
Description The backward motion cancellation circuit is enabled and configured for the filter mode.
Applicability condition(s): • Condition: LineRateMode is set to PULSE • Condition: LineTrigCtl is set to DIFF2

COMPENSATE

MC_BackwardMotionCancellationMode_COMPENSATE
Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
Description The backward motion cancellation circuit is enabled and configured for the compensation mode.
Applicability condition(s): • Condition: LineRateMode is set to PULSE • Condition: LineTrigCtl is set to DIFF2

ForwardDirection

Motion direction, determined by the phase relationship of the A and B signals

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Encoder Control	ADJUST	Enumerated	Set and Get

Num ID	String Identifier	C, C++ identifier
10350 << 14	ForwardDirection	MC_ForwardDirection

Parameter Description

The motion direction is determined by the phase relationship of the A and B signals.

By construction, the dual-output phase quadrature incremental motion encoder maintains a phase relationship of about 90 degrees between the two signals. For motion in one direction, the A signal leads the B signal by about 90 degrees; for a motion in the other direction, the B signal leads the A signal by about 90 degrees.

The direction selector provides the capability to define which one of the phase relationships is considered as the forward direction for the application.

Parameter Values

Enumeration: A_LEADS_B, B_LEADS_A

[A_LEADS_B](#)

MC_ForwardDirection_A_LEADS_B

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

The A signal leads the B signal by about 90 degrees.

Default value.

[B_LEADS_A](#)

MC_ForwardDirection_B_LEADS_A

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

The B signal leads the A signal by about 90 degrees.

RateDivisionFactor

Division factor of the line trigger rate divider

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Encoder Control	ADJUST	Integer	Set and Get

Num ID	String Identifier	C, C++ identifier
10553 << 14	RateDivisionFactor	MC_RateDivisionFactor

Parameter Description

The rate divider circuit generates a line trigger signal at a frequency that is an integer fraction 1/N of the frequency of the pulses delivered by the quadrature decoder circuit.

For N consecutive incoming pulses issued by the quadrature decoder circuit, the 1/N rate divider:

- Generates one output pulse (one line trigger)
- Skips N-1 input pulse

The rate divider is initialized at the beginning of every MultiCam acquisition sequence. The first output pulse is produced from the first clock input pulse occurring after the sequence trigger event.

Notice that:

- The output frequency is lower than (N > 1) or equal to (N = 1) the input frequency. It cannot be higher.
- The output pulse is generated with a small fixed delay after a non-skipped input pulse. The line trigger pulses are phase-locked to the quadrature decoder output.
- The rate divider settings may not be modified while acquisition is in progress.

Parameter Values

Numeric values: 1, 512

Minimum Range

1	Always applicable. Default value.
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Maximum Range

512	Always applicable.
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LineTrigLine

Designation of line trigger hardware line from outside system

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Encoder Control	EXPERT	Enumerated	Set and Get

Num ID	String Identifier	C, C++ identifier
1334 << 14	LineTrigLine	MC_LineTrigLine

Parameter Description

This parameter designates the terminal sensing the line trigger pulse. The line trigger pulse is processed by the grabber and transferred to the camera as the line reset pulse. Usually, this line trigger signal is generated by a motion encoder.

The [LineTrigLine](#) parameter designates where the line trigger pulse usually issued by a motion encoder should be applied.

Parameter Values

Enumeration: NOM, TRG, CAM, IO1, IO2, IO3, IO4, ISOA1, ISOA2, TRA1, TRA2, TRX, TRY, TRZ, CAM, DIN1, DIN2, DIN1_DIN2, IIN1, IIN2, IIN3, IIN4, IIN1_IIN2, IIN3_IIN4

NOM

MC_LineTrigLine_NOM
Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR. Description for 1191 Grablink Value The encoder trigger line is found on the System connector at the nominal terminal pin, according to the LineTrigCtl value. When LineTrigCtl = TTL, the relevant trigger line is TRG. When LineTrigCtl = ITTL or I12V, the relevant trigger line is A1. Description for 1198 Grablink Avenue, 1621 Grablink Express The encoder trigger line is found on the System connector at the nominal terminal pin, according to the LineTrigCtl value. When LineTrigCtl = LVDS, the relevant trigger line is the differential input pair TRA2. When LineTrigCtl = TTL, the relevant trigger line is Enhanced IO2. When LineTrigCtl = ITTL or I12V, the relevant trigger line is ISOA2. Description for 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR t designates the DIN1 line when LineTrigCtl =DIFF, the DIN1 and DIN2 pair of differential lines when LineTrigCtl =DIFF2, the IIN1 line when LineTrigCtl =ISO, the IIN1 and IIN2 pair of differential lines when LineTrigCtl =ISO2. Default value. Applicability condition(s): • Condition for 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR: LineTrigCtl is set to DIFF, DIFF2, ISO, or ISO2.

TRG

MC_LineTrigLine_TRG
Applicable product(s): 1191 Grablink Value. Description The encoder trigger line is found on the System connector at the terminal TRG. Applicability condition(s): • Condition: LineTrigCtl is set to TTL.

CAM

MC_LineTrigLine_CAM
Applicable product(s): 1191 Grablink Value. Description The encoder trigger line is applied to the camera and transported through the SPARE downstream signal.

IO1

MC_LineTrigLine_IO1

Applicable product(s): 1198 Grablink Avenue, 1621 Grablink Express.

Description

The encoder trigger line is found on the System connector at the terminal pin Enhanced IO1.

Applicability condition(s):

- **Condition:** LineTrigCtl is set to TTL.

IO2

MC_LineTrigLine_IO2

Applicable product(s): 1198 Grablink Avenue, 1621 Grablink Express.

Description

The encoder trigger line is found on the System connector at the terminal pin Enhanced IO2.

Applicability condition(s):

- **Condition:** LineTrigCtl is set to TTL.

IO3

MC_LineTrigLine_IO3

Applicable product(s): 1198 Grablink Avenue, 1621 Grablink Express.

Description

The encoder trigger line is found on the System connector at the terminal pin Enhanced IO3.

Applicability condition(s):

- **Condition:** LineTrigCtl is set to TTL.

IO4

MC_LineTrigLine_IO4

Applicable product(s): 1198 Grablink Avenue, 1621 Grablink Express.

Description

The encoder trigger line is found on the System connector at the terminal pin Enhanced IO4.

Applicability condition(s):

- **Condition:** LineTrigCtl is set to TTL.

ISOA1

MC_LineTrigLine_ISO1
Applicable product(s): 1198 Grablink Avenue, 1621 Grablink Express.
Description The encoder trigger line is found on the System connector at the terminal pin ISOA1.
Applicability condition(s): • Condition: LineTrigCtl is set to ITTL or I12V.

ISOA2

MC_LineTrigLine_ISO2
Applicable product(s): 1198 Grablink Avenue, 1621 Grablink Express.
Description The encoder trigger line is found on the System connector at the terminal pin ISOA2.
Applicability condition(s): • Condition: LineTrigCtl is set to ITTL or I12V.

TRA1

MC_LineTrigLine_TRA1
Applicable product(s): 1198 Grablink Avenue, 1621 Grablink Express.
Description The encoder trigger line is found on the System connector at the terminal pin pair TRA1.
Applicability condition(s): • Condition: LineTrigCtl is set to LVDS.

TRA2

MC_LineTrigLine_TRA2
Applicable product(s): 1198 Grablink Avenue, 1621 Grablink Express.
Description The encoder trigger line is found on the System connector at the terminal pin pair TRA2.
Applicability condition(s): • Condition: LineTrigCtl is set to LVDS.

DIN1

MC_LineTrigLine_DIN1
Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
Description
Applicability condition(s): • Condition: LineTrigCtl is set to DIFF.

DIN2

MC_LineTrigLine_DIN2

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description**Applicability condition(s):**

- **Condition:** LineTrigCtl is set to DIFF.

DIN1_DIN2

MC_LineTrigLine_DIN1_DIN2

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

The pair of differential input lines DIN1 and DIN2.

Applicability condition(s):

- **Condition:** LineTrigCtl is set to DIFF2.

IIN1

MC_LineTrigLine_IIN1

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description**Applicability condition(s):**

- **Condition:** LineTrigCtl is set to ISO.

IIN2

MC_LineTrigLine_IIN2

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description**Applicability condition(s):**

- **Condition:** LineTrigCtl is set to ISO.

IIN3

MC_LineTrigLine_IIN3

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description**Applicability condition(s):**

- **Condition:** LineTrigCtl is set to ISO.

IIN4

MC_LineTrigLine_IIN4
Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
Description
Applicability condition(s):
• Condition: LineTrigCtl is set to ISO.

IIN1_IIN2

MC_LineTrigLine_IIN1_IIN2
Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
Description
The pair of differential input lines IIN1 and IIN2.
Applicability condition(s):
• Condition: LineTrigCtl is set to ISO2.

IIN3_IIN4

MC_LineTrigLine_IIN3_IIN4
Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
Description
The pair of differential input lines IIN3 and IIN4.
Applicability condition(s):
• Condition: LineTrigCtl is set to ISO2.

ConverterTrim

Trimming of rate conversion ratio

Applicable product(s): 1191 Grablink Value.

Parameter Info

Class	Category	Level	Type	Access
Channel	Encoder Control	EXPERT	Integer	Set and Get

Num ID	String Identifier	C, C++ identifier
1335 << 14	ConverterTrim	MC_ConverterTrim

Parameter Description

This parameter applies when the motion encoder is in use with rate conversion. Refer to the [MultiCam User Guide](#).

The rate conversion ratio is defined by:

The encoder rate at a given time is the frequency of the pulses delivered by the motion encoder while the observed web is moving.

The rate conversion ratio is normally adjusted by using the two adjust-level parameters [LinePitch](#) and [EncoderPitch](#).

[ConverterTrim](#) can be used to purposely alter the rate conversion ratio as follows:

It applies a corrective factor expressed as finest possible conversion trimming step as offered by the hardware.

Parameter Values

Numeric values: -1000, 1000

Minimum Range

-1000	Always applicable.
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Maximum Range

1000	Always applicable.
------	--------------------

MaxSpeed

Maximum operating speed of the line-scan system, expressed in Hertz

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Encoder Control	EXPERT	Integer	Set and Get

Num ID	String Identifier	C, C++ identifier
1336 << 14	MaxSpeed	MC_MaxSpeed

Parameter Description

This parameter applies when the motion encoder is in use with rate conversion. Refer to the [MultiCam User Guide](#).
The [MaxSpeed](#) parameter declares the maximum speed at which the line-scan system will be used, that is the upper limit of the rate converter operating range.
The downweb line rate has been chosen as a measurement of the system operating speed.
After programming the rate converter, this parameter is automatically set to the highest possible downweb line rate.
If desired, the parameter can be set to a lower value to reflect the actual maximum operating speed.
When [LineCaptureMode](#) = ADR, the highest possible downweb line rate can exceed the highest possible camera rate.
When [LineCaptureMode](#) = PICK or ALL, the highest possible downweb line rate is determined by the highest possible camera line rate, as indicated by [LineRate_Hz](#) .
The lower limit of the rate converter operating range is returned by the get-only [MinSpeed](#) parameter.

Parameter Values

Numeric values: 10, 100000

Minimum Range

10	Applicable product(s): 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
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Maximum Range

100000	Applicable product(s): 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
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MaxSpeedEffective

Effective upper limit of the rate converter output frequency, expressed in Hertz.

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Encoder Control	EXPERT	Integer	Get Only

Num ID	String Identifier	C, C++ identifier
1421 << 14	MaxSpeedEffective	MC_MaxSpeedEffective

MinSpeed

Minimum operating speed of the line-scan system, expressed in Hertz

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Encoder Control	EXPERT	Integer	Get Only

Num ID	String Identifier	C, C++ identifier
1337 << 14	MinSpeed	MC_MinSpeed

Parameter Description

This parameter applies when the motion encoder is in use with rate conversion. Refer to the [MultiCam User Guide](#).
This parameter returns the lower limit of the line-scan system operating range.
The downweb line rate has been chosen as a measurement of the system operating speed.
The [MinSpeed](#) parameter declares the minimum downweb line rate the converter is able to support. The [OnMinSpeed](#) parameter declares the behavior of the rate converter when it reaches the bottom speed limit.
The maximum speed at which the line-scan camera will be used has to be previously declared with [MaxSpeed](#) , that sets the upper limit of the rate converter operating range.

OnMinSpeed

Rate converter behavior below minimum speed limit

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Encoder Control	EXPERT	Enumerated	Set and Get

Num ID	String Identifier	C, C++ identifier
3374 << 14	OnMinSpeed	MC_OnMinSpeed

Parameter Description

This parameter declares the behavior of the rate converter when it reaches the bottom speed limit of the incoming line trigger rate.

Parameter Values

Enumeration: IDLING, MUTING

IDLING

MC_OnMinSpeed_IDLING

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

The rate converter outputs trigger pulse at a frequency specified by *MinSpeed* when the incoming line trigger rate is below the input range.

Default value.

MUTING

MC_OnMinSpeed_MUTING

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

The rate converter does not output trigger pulse when the incoming line trigger rate is below the input range.

CrossPitch

Distance between two locations focusing on adjacent pixels on the CCD sensor

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Encoder Control	EXPERT	Integer	Set and Get

Num ID	String Identifier	C, C++ identifier
3004 << 14	CrossPitch	MC_CrossPitch

Parameter Description

This parameter states the crossweb resolution.

The [LinePitch](#) parameter expresses the downweb resolution in arbitrary length units. The "cross pitch" is defined as the crossweb resolution in the same units. This is the distance between two locations focusing on adjacent pixels on the CCD sensor.

The ratio of [LinePitch](#) and [CrossPitch](#) is nothing else than the pixel aspect ratio of the rendered image.

Each time the [LinePitch](#) parameter is set, the [CrossPitch](#) parameter will be set to the same value. This will encourage the 1-to-1 aspect ratio.

If the user expects non-square pixels, he will adjust the cross pitch after [LinePitch](#) has been set.

Grabber Configuration Category

Parameters controlling the hardware resources specific to the grabber used by the channel

Parent Class

[Channel Class](#) on page 88

Connector

Connector used by the channel

Parameter Info

Class	Category	Level	Type	Access
Channel	Grabber Configuration	SELECT	Enumerated	Set and Get

Num ID	String Identifier	C, C++ identifier
682 << 14	Connector	MC_Connector

Parameter Description

The value of this parameter is entered at the [channel creation](#) by means of the [Connector](#) argument. The consistency of this parameter should be maintained channel-wide.

Parameter Values

Enumeration: VID1, VID2, VID3, VID4, VID5, VID6, VID7, VID8, VID9, VID10, VID11, VID12, VID13, VID14, VID15, VID16, YC, YC1, YC2, YC3, YC4, X, Y, XBIS, YBIS, A, B, C, D, M

A

MC_Connector_A

Applicable product(s): 1601 Domino Symphony PCIe, 1623 Grablink DualBase.

Description for 1623 Grablink DualBase

B

MC_Connector_B

Applicable product(s): 1601 Domino Symphony PCIe, 1623 Grablink DualBase.

Description for 1623 Grablink DualBase

M

MC_Connector_M

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1622 Grablink Full, 1626 Grablink Full XR.

Description for 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express

The channel is linked to a Camera Link Base configuration camera at the Camera Link A connector.

Description for 1624 Grablink Base, 1622 Grablink Full, 1626 Grablink Full XR

The channel is linked to a Camera Link Medium, Full, or 10-tap configuration camera at both the Camera connector #1 and #2 or to a Camera Link Base configuration camera at the Camera connector #1.

ConnectLoc

Connector location on the bracket where the relevant camera is connected

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Grabber Configuration	SELECT	Enumerated	Get Only

Num ID	String Identifier	C, C++ identifier
694 << 14	ConnectLoc	MC_ConnectLoc

Parameter Description

[ConnectLoc](#) is an informational parameter reflecting the argument entered by the application at the channel creation.

Parameter Values

Enumeration: CENTER, UPPER, LOWER, BOTH

UPPER

MC_ConnectLoc_UPPER

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

The channel uses a camera connected to the upper bracket connector.

LOWER

MC_ConnectLoc_LOWER

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase.

Description

The channel uses a camera connected to the connector at the lower bracket position.

BOTH

MC_ConnectLoc_BOTH

Applicable product(s): 1161 Domino Alpha 2, 1622 Grablink Full, 1626 Grablink Full XR.

Description

The channel uses a camera connected to both (upper and lower) bracket connectors.

EqualizationLevel

Channel link equalizer(s) level settings

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Grabber Configuration	ADJUST	Enumerated	Set and Get

Num ID	String Identifier	C, C++ identifier
10667 << 14	EqualizationLevel	MC_EqualizationLevel

Parameter Description

The boards featuring ECCO+ are equipped with cable equalizers on the Camera Linl receivers.
The equalizers compensate for the attenuation of the highest frequencies of the signal along the data lines of the Camera Link cable.

The equalizers provide four selectable equalization levels:

- OFF: 0 dB - The equalizers are turned off.
- LOW: The equalizers compensate for a cable attenuation of 4 dB at 1 GHz.
- MEDIUM: The equalizers compensate for a cable attenuation of 8 dB at 1 GHz.
- HIGH: The equalizers compensate for a cable attenuation of 16 dB at 1 GHz.

The cable attenuation is proportional to the cable length and to the cable attenuation characteristic. It can be estimated as follows:

$$\text{attenuation [dB]} = \text{cable_length [m]} \times \text{cable_attenuation_characteristic [dB/m]}$$

 **Note:** An AWG28 twisted pair, commonly found in Camera Link cable assemblies exhibits a typical cable_attenuation_characteristic of 1.4 dB/m

Parameter Usage

Relevance condition(s):

- **Condition:** ECCO+ feature is available
- Directive:** Select the equalization level according to the actual cable attenuation.
- Directive:** For AWG28 cables of up to 1 meter, select OFF.
- Directive:** For AWG28 cables of 1 up to 4 meters, select LOW.
- Directive:** For AWG28 cables of 4 up to 8 meters, select MEDIUM.
- Directive:** For AWG28 cables of 8 up to 20 meters, select HIGH.

Parameter Values

Enumeration: OFF, LOW, MEDIUM, HIGH

OFF

MC_EqualizationLevel_OFF**Applicable product(s):** 1626 Grablink Full XR.**Description**

Equalizers are turned OFF

LOW

MC_EqualizationLevel_LOW**Applicable product(s):** 1626 Grablink Full XR.**Description**

Equalizers are turned ON with a low gain

MEDIUM

MC_EqualizationLevel_MEDIUM**Applicable product(s):** 1626 Grablink Full XR.**Description**

Equalizers are turned ON with a medium gain

HIGH

MC_EqualizationLevel_HIGH**Applicable product(s):** 1626 Grablink Full XR.**Description**

Equalizers are turned ON with a high gain

Default value.

PoCL_Mode

PoCL control

Applicable product(s): 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Grabber Configuration	ADJUST	Enumerated	Set and Get

Num ID	String Identifier	C, C++ identifier
9784 << 14	PoCL_Mode	MC_PoCL_Mode

Parameter Description

Enables/inhibits the PoCL controller to automatically detect a PoCL camera and activate the powering of the camera through the Camera Link cable.

Parameter Usage

Directive: Set to OFF to avoid unexpected activation of PoCL when the camera is not powered trough the Camera Link cable.

Parameter Values

Enumeration: AUTO, OFF

AUTO

MC_PoCL_Mode_AUTO

Applicable product(s): 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1626 Grablink Full XR.

Description
The PoCL controller(s) identifie(s) automatically the type of camera, and configures the camera power distribution accordingly.

Default value.

OFF

MC_PoCL_Mode_OFF

Applicable product(s): 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1626 Grablink Full XR.

Description
The camera detection is inhibited, and, if power is already applied, the PoCL controller turns off the power.

Hmode

Horizontal synchronization mode of the downstream process

Applicable product(s): 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express.

Parameter Info

Class	Category	Level	Type	Access
Channel	Grabber Configuration	EXPERT	Enumerated	Get Only

Num ID	String Identifier	C, C++ identifier
3429 << 14	Hmode	MC_Hmode

Parameter Description

This parameter indicates the origin of the signal used by the downstream process of the grabber to establish the horizontal synchronization.

MultiCam assigns automatically the most appropriate value to [Hmode](#), in conformity with the camera properties.

Parameter Values

Enumeration: ANALOG_LANE1, DIGITAL_PULSED, LOCAL, DIGITAL_MIXED

[DIGITAL_PULSED](#)

MC_Hmode_DIGITAL_PULSED

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express.

Description

The downstream process is slaved to the horizontal camera scanning timing by sensing a digital synchronizing signal provided by the camera through the line designated by [HsyncLine](#). The digital signal embeds the horizontal synchronization only.

Vmode

Vertical synchronization mode of the downstream process

Applicable product(s): 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express.

Parameter Info

Class	Category	Level	Type	Access
Channel	Grabber Configuration	EXPERT	Enumerated	Get Only

Num ID	String Identifier	C, C++ identifier
3430 << 14	Vmode	MC_Vmode

Parameter Description

This parameter indicates the origin of the signal used by the downstream process of the grabber to establish the vertical synchronization.

MultiCam assigns automatically the most appropriate value to *Vmode* , in conformity with the camera properties.

Parameter Values

Enumeration: ANALOG_LANE1, DIGITAL_PULSED, LOCAL, DIGITAL_MIXED

[DIGITAL_PULSED](#)

MC_Vmode_DIGITAL_PULSED

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express.

Description

The downstream process is slaved to the vertical camera scanning timing by sensing a digital synchronizing signal provided by the camera through the line designated by *VsyncLine* . The digital signal embeds the vertical synchronization only.

Hreference

Reference of the horizontal scanning timing

Applicable product(s): 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express.

Parameter Info

Class	Category	Level	Type	Access
Channel	Grabber Configuration	EXPERT	Enumerated	Get Only

Num ID	String Identifier	C, C++ identifier
3431 << 14	Hreference	MC_Hreference

Parameter Description

This parameter locates the reference of the horizontal synchronization.

MultiCam assigns automatically the most appropriate value to [Hreference](#) in conformity with [HVDriveCtl](#).

Parameter Values

Enumeration: CAMERA, LOCAL

[CAMERA](#)

MC_Hreference_CAMERA

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express.

Description

The horizontal scanning timing reference is the internally generated scanning timing of the camera.

Vreference

Reference of the vertical scanning timing

Applicable product(s): 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express.

Parameter Info

Class	Category	Level	Type	Access
Channel	Grabber Configuration	EXPERT	Enumerated	Get Only

Num ID	String Identifier	C, C++ identifier
3432 << 14	Vreference	MC_Vreference

Parameter Description

This parameter locates the reference of the vertical synchronization.
MultiCam assigns automatically the most appropriate value to [Vreference](#) in conformity with the [Camera Features category](#) parameter [HVDriveCtl](#) .

Parameter Values

Enumeration: CAMERA, LOCAL

[CAMERA](#)

MC_Vreference_CAMERA
Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express.
Description The vertical scanning timing reference is the internally generated scanning timing of the camera.

ECCO_PLLResetControl

ECCO PLL reset control

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Grabber Configuration	EXPERT	Enumerated	Set and Get

Num ID	String Identifier	C, C++ identifier
10570 << 14	ECCO_PLLResetControl	MC_ECCO_PLLResetControl

Parameter Description

Selects the method to reset the Phase Locked Loop (PLL) of the ECCO Camera Link receivers owned by the channel.

Parameter Usage

Relevance condition(s):

- **Condition:** The ECCO feature is used. Namely, when `BoardTopology` is not equal to `MONO_SLOW` nor `DUO_SLOW`.

Directive: Euresys recommends the `AUTOMATIC` setting.

Parameter Values

Enumeration: `AUTOMATIC`, `CHANNEL_ACTIVATION`

AUTOMATIC

MC_ECCO_PLLResetControl_AUTOMATIC

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

The reset of the PLL is automatically managed by the ECCO circuit.

Default value.

CHANNEL_ACTIVATION

MC_ECCO_PLLResetControl_CHANNEL_ACTIVATION

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

The reset of the PLL is enforced at every channel activation.

Applicability condition(s):

- **Condition:** `BoardTopology` is not equal to `MONO_SLOW` nor `DUO_SLOW`

ECCO_SkewCompensation

ECCO skew compensation control

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Grabber Configuration	EXPERT	Enumerated	Set and Get

Num ID	String Identifier	C, C++ identifier
10568 << 14	ECCO_SkewCompensation	MC_ECCO_SkewCompensation

Parameter Description

Enable/disable the skew compensation function of the ECCO Camera Link receivers owned by the channel.

Parameter Usage

- Relevance condition(s):**
- Condition:** The ECCO feature is used. Namely, when BoardTopology is not equal to MONO_SLOW nor DUO_SLOW.
- Directive:** Euresys recommends to keep the de-skew function enabled. Disabling the de-skew function should be used for test purpose exclusively.

Parameter Values

Enumeration: ECCO_SkewCompensation_ON, ECCO_SkewCompensation_OFF

[ECCO_SkewCompensation_ON](#)

MC_ECCO_SkewCompensation_ECCO_SkewCompensation_ON

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description
The skew compensation function is enabled

Default value.

[ECCO_SkewCompensation_OFF](#)

MC_ECCO_SkewCompensation_ECCO_SkewCompensation_OFF

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description
The skew compensation function is disabled

Applicability condition(s):

- Condition:** BoardTopology is not equal to MONO_SLOW nor DUO_SLOW

FvalMin_Tk

Camera Link FVAL digital filter configuration

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Grabber Configuration	EXPERT	Integer	Set and Get

Num ID	String Identifier	C, C++ identifier
10628 << 14	FvalMin_Tk	MC_FvalMin_Tk

Parameter Description

Configures the digital filter of the Camera Link FVAL input signal owned by the channel.

Parameter Usage

Directive: Euresys recommends keeping the filter setting to its default value.

Parameter Values

Enumeration: 1, 3

1

MC_FvalMin_Tk_1

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

Does not filter FVAL high pulses; FVAL pulses as narrow as 1 clock period are considered as valid

3

MC_FvalMin_Tk_3

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

Filter out FVAL high pulses narrower than 3 clock periods

Default value.

LvalMin_Tk

LVAL digital filter configuration

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Grabber Configuration	EXPERT	Integer	Set and Get

Num ID	String Identifier	C, C++ identifier
10629 << 14	LvalMin_Tk	MC_LvalMin_Tk

Parameter Description

Configures the digital filter of the Camera Link LVAL input signal(s) owned by the channel.

Parameter Usage

Directive: Euresys recommends keeping the filter setting to its default value.

Parameter Values

Enumeration: 1, 2

1

MC_LvalMin_Tk_1

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description
Does not filter LVAL high pulses; LVAL pulses as narrow as 1 clock period are considered as valid

2

MC_LvalMin_Tk_2

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description
Filter out LVAL high pulses narrower than 2 clock periods

Default value.

PoCL_GroundJumper

Connection of the Camera Link cable outer shield with the GND

Applicable product(s): 1198 Grablink Avenue, 1621 Grablink Express.

Parameter Info

Class	Category	Level	Type	Access
Channel	Grabber Configuration	EXPERT	Enumerated	Set and Get

Num ID	String Identifier	C, C++ identifier
9802 << 14	PoCL_GroundJumper	MC_PoCL_GroundJumper

Parameter Description

This parameter offers the additional capability to reduce the voltage drop across the camera cable by connecting the Camera Link cable outer shield with the GND line.

Parameter Values

Enumeration: OPEN, CLOSE

OPEN

MC_PoCL_GroundJumper_OPEN

Applicable product(s): 1621 Grablink Express.

Description

The Camera Link cable outer shield is disconnected from the GND line.

Default value.

CLOSE

MC_PoCL_GroundJumper_CLOSE

Applicable product(s): 1621 Grablink Express.

Description

The Camera Link cable outer shield is connected to the GND line.

PoCL_Status

PoCL controller status

Applicable product(s): 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Grabber Configuration	EXPERT	Enumerated	Set and Get

Num ID	String Identifier	C, C++ identifier
9941 << 14	PoCL_Status	MC_PoCL_Status

Parameter Description

Reports the status of the PoCL controller.

Parameter Usage

Directive: Check the status to troubleshoot inoperative PoCL.

Camera presence detection

To be detected, the attached camera must deliver a clock signal on Channel_Link_X.

Conventional camera detection

Possible causes explaining why the detected camera is identified as a non_PoCL camera are:

- The camera is not PoCL compliant
- The cable is not PoCL compliant

PoCL camera detection

To be detected as a PoCL camera, the camera and the cable must be PoCL compliant. For dual cable configurations (MEDIUM, FULL, 80-bit), the camera is declared PoCL compliant if at least one of the two PoCL controllers identifies a PoCL-compliant camera/cable combination.

Parameter Values

Enumeration: NO_CAMERA, CONVENTIONAL_CAMERA, PoCL_CAMERA

[NO_CAMERA](#)

MC_PoCL_Status_NO_CAMERA
Applicable product(s): 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1626 Grablink Full XR.
Description
No camera detected.

CONVENTIONAL_CAMERA

MC_PoCL_Status_CONVENTIONAL_CAMERA
Applicable product(s): 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1626 Grablink Full XR.
Description Conventional non-PoCL camera detected.

PoCL_CAMERA

MC_PoCL_Status_PoCL_CAMERA
Applicable product(s): 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1626 Grablink Full XR.
Description PoCL camera detected.

MetadataInsertion

Controls metadata insertion into the image

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Grabber Configuration	EXPERT	Enumerated	Set and Get

Num ID	String Identifier	C, C++ identifier
10842 << 14	MetadataInsertion	MC_MetadataInsertion

Parameter Description

This enumerated parameter controls the insertion of metadata into the image.

Parameter Usage

The setting takes effect at the first channel activation.

Parameter Values

Enumeration: ENABLE, DISABLE

ENABLE

MC_MetadataInsertion_ENABLE

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description
Enable insertion of metadata into the image.

DISABLE

MC_MetadataInsertion_DISABLE

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description
Disable insertion of metadata into the image.

Default value.

MetadataContent

Reports the metadata content configuration

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Grabber Configuration	EXPERT	Enumerated	Get Only

Num ID	String Identifier	C, C++ identifier
10849 << 14	MetadataContent	MC_MetadataContent

Parameter Description

This enumerated parameter reports the configuration of the metadata content.

Parameter Usage

The setting takes effect at the first channel activation.

Parameter Values

Enumeration: NONE, ONE_FIELD, TWO_FIELD, THREE_FIELD

NONE

MC_MetadataContent_NONE

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

There are no metadata content.

This occurs when `MetadataInsertion=DISABLE` or when the camera interface configuration doesn't allow metadata insertion.

ONE_FIELD

MC_MetadataContent_ONE_FIELD

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

The metadata content includes one single field: the I/O state.

TWO_FIELD

MC_MetadataContent_TWO_FIELD
Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
Description The metadata content includes two fields: the I/O state and the LVAL count.

THREE_FIELD

MC_MetadataContent_THREE_FIELD
Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
Description The metadata content includes three fields: I/O state, LVAL count, and encoder pulse count.

MetadataLocation

Defines metadata location in the Camera Link data stream

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Grabber Configuration	EXPERT	Enumerated	Set and Get

Num ID	String Identifier	C, C++ identifier
11055 << 14	MetadataLocation	MC_MetadataLocation

Parameter Description

Parameter Usage

Relevance condition(s):

- **Condition:** The parameter is relevant only when the insertion of metadata is enabled: `MetadataInsertion=ENABLE`.

Parameter Values

Enumeration: LVALRISE, TAP10

LVALRISE

MC_MetadataLocation_LVALRISE

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

The metadata content is located into all taps of the first Camera Link time slot following the rising edge of the Camera Link LVAL signal.

TAP10

MC_MetadataLocation_TAP10

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

The metadata content is inserted into the 10th tap during 10 consecutive Camera Link time slots following the rising edge of the Camera Link LVAL signal.

Applicability condition(s):

- **Condition:** `Imaging=LINE` or `TDI`: The camera is a line-scan or line-scan TDI camera.
- **Condition:** `TapConfiguration=DECA_10T8`: The camera uses an 80-bit (10 taps of 8-bit) Camera Link configuration.
- **Condition:** `TapGeometry=1X10`: The camera uses a single X-region tap geometry.

Grabber Timing Category

Parameters controlling the hardware resources specific to the grabber used by the channel

Parent Class

[Channel Class](#) on page 88

GrabWindow

Method to define the grabbing window area

Parameter Info

Class	Category	Level	Type	Access
Channel	Grabber Timing	ADJUST	Enumerated	Set and Get

Num ID	String Identifier	C, C++ identifier
683 << 14	GrabWindow	MC_GrabWindow

Parameter Description

This enumerated parameter selects the method defining the grabbing window area within the camera active area. For area-scan cameras, the grabbing window area is inferred from the camera active rectangular window. For line-scan cameras, the width of the grabbing window area is inferred from the camera active linear window.

Parameter Usage

By default, the grabbing window is the largest area achievable by the camera sensor. Alternatively, using the MAN setting, the grabbing window can be reduced to a single rectangular area located anywhere in the camera active area.

Parameter Values

Enumeration: NOBLACK, MAN

NOBLACK

MC_GrabWindow_NOBLACK

Applicable product(s): 1155 Pico.

Description for

For digital area-scan cameras, the grabbing window area matches exactly the Camera Active Area:

- Grabbing window width is defined by `Hactive_Px`.
- Grabbing window height is defined by `Vactive_In`.
- Grabbing window X-position offset is 0.
- Grabbing window Y-position offset is 0.

For digital line-scan cameras, the grabbing window width matches exactly the Camera Active Area:

- Grabbing window width is defined by `Hactive_Px`.
- Grabbing window X-position offset = 0.

Default value.

MAN

MC_GrabWindow_MAN
Description For area-scan cameras, the grabbing window area and location are defined by separate parameters: - Grabbing window width is defined by <code>WindowX_Px</code>. - Grabbing window height is defined by <code>WindowY_Ln</code>. - Grabbing window X-position offset is defined by <code>OffsetX_Px</code>. - Grabbing window Y-position offset is defined by <code>OffsetY_Ln</code>. For digital line-scan cameras, the grabbing window width and position are defined by separate parameters: - Grabbing window width is defined by <code>WindowX_Px</code>. - Grabbing window X-position offset is defined by <code>OffsetX_Px</code>. Applicability condition(s): Condition: Line-scan or TDI line-scan cameras Condition: Area-scan cameras having a single region along the Y direction. For instance, the value is not applicable to cameras having a <code>TapGeometry</code> value suffixed <code>_2YE</code>.

WindowX_Px

Width of the grabbing window area

Parameter Info

Class	Category	Level	Type	Access
Channel	Grabber Timing	ADJUST	Integer	Set and Get

Num ID	String Identifier	C, C++ identifier
826 << 14	WindowX_Px	MC_WindowX_Px

Parameter Description

This integer parameter reflects the width of the grabbing window area, expressed as a number of digitized pixels. The "get" value exactly reflects the actual window width. It may differ from the "set" value established by the user since MultiCam automatically corrects invalid values.

Parameter Usage

Relevance condition(s):

- **Condition:** Manually defined grabbing window area (GrabWindow=MAN)

Prerequisite action(s):

- **Condition:** Grabbing window definition method already selected through GrabWindow

Directive: Assigning a value smaller than Hactive_Px enables the image cropping feature.

Directive: The grabbing window area must be included entirely within the camera active area.

Parameter Values

Numeric values: 8, 32,

Minimum Range

8	Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR. Description The minimal width of the grabbing pixel area is 8 pixels.
32	Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express. Description The minimal width of the grabbing pixel area is 32 pixels.

Maximum Range

	Description The upper limit of the range is context dependent. The maximal width of the grabbing pixel area is equal to Hactive_Px. Always applicable. Default value.
--	---

WindowY_Ln

Height of the grabbing window area

Parameter Info

Class	Category	Level	Type	Access
Channel	Grabber Timing	ADJUST	Integer	Set and Get

Num ID	String Identifier	C, C++ identifier
827 << 14	WindowY_Ln	MC_WindowY_Ln

Parameter Description

This integer parameter reflects the height of the grabbing window area, expressed as a number of lines.

The "get" value exactly reflects the actual window height. It may differ from the "set" value established by the user since MultiCam automatically corrects invalid values.

The parameter is available on all MultiCam products supporting area-scan cameras.

The parameter can be set when GrabWindow is set to MAN.

Parameter Usage

Relevance condition(s):

- **Condition:** Manually defined grabbing window area (GrabWindow=MAN)
- **Condition:** Area-scan camera (Imaging = AREA) having a single region along the Y direction (TapGeometry ≠ *_2YE)

Prerequisite action(s):

- **Condition:** Grabbing window definition method already selected through GrabWindow

Directive: Assigning a value smaller than Vactive_Ln enables the image cropping feature.

Directive: The grabbing window area must be included entirely within the camera active area.

Parameter Values

Numeric values: 1, 32,

Minimum Range

1	Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR. Description The minimal height of the grabbing pixel area is 1 line.
32	Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express. Description The minimal height of the grabbing pixel area is 32 lines.

Maximum Range

	Description The upper limit of the range is context dependent. The maximal width of the grabbing pixel area is equal to Vactive_Ln. Always applicable. Default value.
--	---

OffsetX_Px

Horizontal position offset of the grabbing window area in the camera active area

Parameter Info

Class	Category	Level	Type	Access
Channel	Grabber Timing	ADJUST	Integer	Set and Get

Num ID	String Identifier	C, C++ identifier
825 << 14	OffsetX_Px	MC_OffsetX_Px

Parameter Description

This integer parameter reflects the horizontal position offset of the center of the grabbing window area relative to the center of the camera active area.

The "get" value exactly reflects the shifted amount. It may differ from the "set" value established by the user since MultiCam automatically corrects invalid values.

Parameter Usage

Relevance condition(s):

- **Condition:** Manually defined grabbing window area (GrabWindow=MAN)

Prerequisite action(s):

- **Condition:** Grabbing window definition method already selected through GrabWindow
- **Condition:** Grabbing window height already set through WindowY_Ln

Directive: A value of zero means that the grabbing window area is horizontally centered on the Camera Active Area. Increasing the value shifts the grabbing window area in the right direction. Decreasing the value shifts the grabbing window area in the left direction.

Directive: The grabbing window area must be included entirely within the camera active area.

Parameter Values

Numeric values: , , 0

Minimum Range

Description
The grabbing window is at the leftmost position within the camera active area. The lower limit of the range is context dependent. The lowest value is equal to $[-(Hactive_Px - WindowX_Px) / 2]$.
Always applicable.

Maximum Range

	Description The grabbing window is at the rightmost position within the camera active area. The upper limit of the range is context dependent. The upper value is equal to $[(Hactive_Px - WindowX_Px + 1) / 2]$. Always applicable.
--	---

List of Values

0	Description The grabbing window area is horizontally centered on the grabbing window area. Always applicable. Default value.
---	--

OffsetY_Ln

Vertical position offset of the grabbing window area in the camera active area.

Parameter Info

Class	Category	Level	Type	Access
Channel	Grabber Timing	ADJUST	Integer	Set and Get

Num ID	String Identifier	C, C++ identifier
686 << 14	OffsetY_Ln	MC_OffsetY_Ln

Parameter Description

This integer parameter reflects the vertical position offset of the center of the Window Area relative to the center of the camera active area.

The "get" value exactly reflects the shifted amount. It may differ from the "set" value established by the user since MultiCam automatically corrects invalid values.

Parameter Usage

Relevance condition(s):

- **Condition:** Manually defined grabbing window area (GrabWindow=MAN)
- **Condition:** Area-scan camera (Imaging = AREA) having a single region along the Y direction (TapGeometry ≠ *_2YE)

Prerequisite action(s):

- **Condition:** Grabbing window definition method already selected through GrabWindow
- **Condition:** Grabbing window height already set through WindowY_Ln

Directive: Assigning a value of zero means that the grabbing window area is vertically centered on the Camera Active Area. Increasing the value shifts the grabbing window area in the downward direction. Decreasing the value shifts the grabbing window area in the upward direction.

Directive: The grabbing window area must be included entirely within the camera active area.

Parameter Values

Numeric values: , , 0

Minimum Range

Description
The grabbing window is at the uppermost position within the camera active area. The lower limit of the range is context dependent. The lowest value is equal to $[- (Vactive_Ln - WindowY_Ln) / 2]$.
Always applicable.

Maximum Range

	Description The grabbing window is at the lowermost position within the camera active area. The upper limit of the range is context dependent. The upper value is equal to $[(Vactive_Ln - WindowY_Ln + 1) / 2]$. Always applicable.
--	---

List of Values

0	Description The grabbing window area is vertically centered on the grabbing window area. Always applicable. Default value.
---	--

WindowOrgX_Px

X-coordinate of the upper-left corner of the grabbing window area

Applicable product(s): 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Grabber Timing	EXPERT	Integer	Get Only

Num ID	String Identifier	C, C++ identifier
8761 << 14	WindowOrgX_Px	MC_WindowOrgX_Px

Parameter Description

This integer parameter reports the X-coordinate, expressed as a number of pixels, of the upper left corner of the grabbing window area.

Parameter Usage

Relevance condition(s):

- **Condition:** Manually defined grabbing window area (GrabWindow=MAN)

Parameter Values

Numeric values: 0,

Minimum Range

0	Description The X-coordinate of the upper left corner of the grabbing window area is 0 Always applicable.
---	--

Maximum Range

	Description The upper limit of the range is context dependent. The upper value is equal to [Hactive_Px - WindowX_Px]. Always applicable.
--	---

WindowOrgY_Ln

Y-coordinate of the upper-left corner of the grabbing window area

Applicable product(s): 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Grabber Timing	EXPERT	Integer	Get Only

Num ID	String Identifier	C, C++ identifier
8765 << 14	WindowOrgY_Ln	MC_WindowOrgY_Ln

Parameter Description

This integer parameter reports the Y-coordinate, expressed as a number of lines, of the upper left corner of the grabbing window area.

Parameter Usage

Relevance condition(s):

- **Condition:** Manually defined grabbing window area (GrabWindow=MAN)
- **Condition:** Area-scan camera (Imaging = AREA) having a single region along the Y direction (TapGeometry ≠ *_2YE)

Parameter Values

Numeric values: 0,

[Minimum Range](#)

0	Description The Y-coordinate of the upper left corner of the grabbing window area is 0 Always applicable.
---	--

[Maximum Range](#)

	Description The upper limit of the range is context dependent. Always applicable.
--	--

Grabber Conditioning Category

Parameters controlling the analog or digital conditioning features applied to the video signal processed by the grabber used by the channel

Parent Class

[Channel Class](#) on page 88

CFD_Mode

Bayer decoding algorithm

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Grabber Conditioning	ADJUST	Enumerated	Set and Get

Num ID	String Identifier	C, C++ identifier
4645 << 14	CFD_Mode	MC_CFD_Mode

Parameter Values

Enumeration: ADVANCED, LEGACY

ADVANCED

MC_CFD_Mode_ADVANCED
Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
Description Bayer decoding algorithm using a 3x3 interpolation and a median filter.

LEGACY

MC_CFD_Mode_LEGACY
Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
Description Bayer decoding algorithm using a 3x3 interpolation identical to eVision Bayer decoding function.

CalPat

Video control of calibrator and test pattern generator

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1305 Pico Alert.

Parameter Info

Class	Category	Level	Type	Access
Channel	Grabber Conditioning	EXPERT	Enumerated	Set and Get

Num ID	String Identifier	C, C++ identifier
690 << 14	CalPat	MC_CalPat

Parameter Description

This parameter allows for enabling some test feature.

Parameter Values

Enumeration: NONE, TPG

NONE

MC_CalPat_NONE

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1305 Pico Alert.

Description

The camera channels are applied to their respective digitizing units.

TPG

MC_CalPat_TPG

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1305 Pico Alert.

Description

A digital test pattern video signal is applied to the relevant digitizing units.

White Balance Operator Category

Parameters controlling the white balance operator used by the channel

Parent Class

[Channel Class](#) on page 88

WBO_Mode

Operating mode of the white balance operator

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	White Balance Operator	ADJUST	Enumerated	Set and Get

Num ID	String Identifier	C, C++ identifier
4715 << 14	WBO_Mode	MC_WBO_Mode

Parameter Description

This enumerated parameter determines the operating mode of the White Balance Operator within a MultiCam acquisition sequence.

Parameter Usage

Relevance condition(s):

- **Condition:** The camera is a color camera (Spectrum=COLOR).
- **Condition:** The acquisition channel delivers Y and/or RGB pixel data (ColorFormat ≠ BAYER*)

Parameter Values

Enumeration: NONE, ONCE, CONTINUOUS, MANUAL

NONE

MC_WBO_Mode_NONE

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

When WBO_Mode is set to NONE, the White Balance Operator is disabled; the gain corrections are not applied.

Default value.

ONCE

MC_WBO_Mode_ONCE
Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR. Description When WBO_Mode is set to ONCE, the image color balancing gains are automatically computed during the initial acquisition phase of every MultiCam acquisition sequence within the AWB_AREA defined by parameters WBO_OrgX, WBO_OrgY, WBO_Width, and WBO_Height. The parameters WBO_GainR, WBO_GainG, and WBO_GainB are automatically set to the respective computed gain values. Description for 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR The White Balance Operator is disabled at the begin of the sequence and remains disabled until the occurrence of the first MC_SIG_SURFACE_PROCESSING signal. The first delivered image is never color balanced; subsequent images remain partially or entirely unbalance until the White Balance Operator is configured.

MANUAL

MC_WBO_Mode_MANUAL
Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR. Description When WBO_Mode is set to MANUAL, the image color balance is performed with gains specified by parameters WBO_GainR, WBO_GainG and WBO_GainB.

WBO_GainR

White balance correction factor for the red color component

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	White Balance Operator	EXPERT	Integer	Set and Get

Num ID	String Identifier	C, C++ identifier
4717 << 14	WBO_GainR	MC_WBO_GainR

Parameter Description

This integer parameter represents the correction factor applied by the White Balance Operator to the red color component.

The parameter values are expressed in 1/1000th. For instance a value of 1234 corresponds to a correction factor of 1.234.

Parameter Usage

Relevance condition(s):

- **Condition:** Manually defined WBO gains (WBO_Mode = MANUAL)

Prerequisite action(s):

- **Condition:** The WBO operation mode is already selected through WBO_Mode

Parameter Values

Numeric values: 1000, 10000

Minimum Range

1000	Description The gain correction factor is 1.000 Always applicable. Default value.
------	--

Maximum Range

10000	Description The gain correction factor is 10.00 Always applicable.
-------	---

WBO_GainG

White balance correction factor for the green color component

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	White Balance Operator	EXPERT	Integer	Set and Get

Num ID	String Identifier	C, C++ identifier
4719 << 14	WBO_GainG	MC_WBO_GainG

Parameter Description

This integer parameter represents the correction factor applied by the White Balance Operator to the green color component.

The parameter values are expressed in 1/1000th. For instance a value of 1234 corresponds to a correction factor of 1.234.

Parameter Usage

- Relevance condition(s):**
- Condition:** Manually defined WBO gains (WBO_Mode = MANUAL)
- Prerequisite action(s):**
- Condition:** The WBO operation mode is already selected through WBO_Mode

Parameter Values

Numeric values: 1000, 10000

Minimum Range

1000	Description The gain correction factor is 1.000 Always applicable. Default value.
------	--

Maximum Range

10000	Description The gain correction factor is 10.00 Always applicable.
-------	---

WBO_GainB

White balance correction factor for the blue color component

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	White Balance Operator	EXPERT	Integer	Set and Get

Num ID	String Identifier	C, C++ identifier
4720 <= 14	WBO_GainB	MC_WBO_GainB

Parameter Description

This integer parameter represents the correction factor applied by the White Balance Operator to the blue color component.

The parameter values are expressed in 1/1000th. For instance a value of 1234 corresponds to a correction factor of 1.234.

Parameter Usage

Relevance condition(s):

- **Condition:** Manually defined WBO gains (WBO_Mode = MANUAL)

Prerequisite action(s):

- **Condition:** The WBO operation mode is already selected through WBO_Mode

Parameter Values

Numeric values: 1000, 10000

Minimum Range

1000	Description The gain correction factor is 1.000 Always applicable. Default value.
------	--

Maximum Range

10000	Description The gain correction factor is 10.00 Always applicable.
-------	---

WBO_Width

Width of the Automatic White Balance Area

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	White Balance Operator	EXPERT	Integer	Set and Get

Num ID	String Identifier	C, C++ identifier
5456 << 14	WBO_Width	MC_WBO_Width

Parameter Description

This integer parameter represents the width, expressed as a number of pixels, of the rectangular region within the camera active area that is used by the Automatic White Balance feature to compute the white balance correction factors.

Parameter Usage

- Relevance condition(s):**
- **Condition:** Automatically defined WBO gains (WBO_Mode = ONCE or CONTINUOUS)
- Prerequisite action(s):**
- **Condition:** The WBO operation mode is already selected through WBO_Mode
- Directive:** The AWB_AREA must include at least 256 pixels.
- Directive:** The AWB_AREA must include at least 32 columns of pixels.
- Directive:** The AWB_AREA must be included entirely within the camera active area.
- Directive:** The AWB_AREA must be included entirely within the grabbing window area.

Parameter Values

Numeric values: 32, 4096,

[Minimum Range](#)

	Description
32	The minimal width of the AWB_AREA is 32 pixels. Always applicable.

Maximum Range

	Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR. Description The upper limit of the range is context dependent. Default value.
--	---

WBO_Height

Height of the Automatic White Balance Area

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	White Balance Operator	EXPERT	Integer	Set and Get

Num ID	String Identifier	C, C++ identifier
5459 << 14	WBO_Height	MC_WBO_Height

Parameter Description

This integer parameter represents the height, expressed as a number of lines, of the rectangular region within the camera active area that is used by the Automatic White Balance feature to compute the white balance correction factors.

Parameter Usage

- Relevance condition(s):**
- **Condition:** Automatically defined WBO gains (WBO_Mode = ONCE or CONTINUOUS)
- Prerequisite action(s):**
- **Condition:** The WBO operation mode is already selected through WBO_Mode
- Directive:** The AWB_AREA must include at least 256 pixels.
- Directive:** The AWB_AREA must include at least 1 line of pixels.
- Directive:** The AWB_AREA must be included entirely within the camera active area.
- Directive:** The AWB_AREA must be included entirely within the grabbing window area.

Parameter Values

Numeric values: 1, 4096,

[Minimum Range](#)

	Description
1	The minimal height of the AWB_AREA is 1 line. Always applicable.

Maximum Range

	Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR. Description The upper limit of the range is context dependent. Default value.
--	---

WBO_OrgX

X-coordinate of the upper-left corner of the AWB_AREA

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	White Balance Operator	EXPERT	Integer	Set and Get

Num ID	String Identifier	C, C++ identifier
5449 << 14	WBO_OrgX	MC_WBO_OrgX

Parameter Description

This integer parameter represents the X-coordinate, expressed as a number of pixels, of the upper left corner of arectangular region within the camera active area that is used by the Automatic White Balance feature to compute the white balance correction factors.

Parameter Usage

- Relevance condition(s):**
- **Condition:** Automatically defined WBO gains (WBO_Mode = ONCE or CONTINUOUS)
- Prerequisite action(s):**
- **Condition:** The WBO operation mode is already selected through WBO_Mode
- Directive:** The AWB_AREA must include at least 256 pixels.
- Directive:** The AWB_AREA must include at least 32 columns of pixels.
- Directive:** The AWB_AREA must be included entirely within the camera active area.
- Directive:** The AWB_AREA must be included entirely within the grabbing window area.

Parameter Values

Numeric values: 0,

Minimum Range

	Description
0	The X-coordinate of the upper-left corner of the AWB_AREA is 0 Always applicable.

Maximum Range

	Description
	The upper limit of the range is context dependent. Always applicable.

WBO_OrgY

Y-coordinate of the upper-left corner of the AWB_AREA

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	White Balance Operator	EXPERT	Integer	Set and Get

Num ID	String Identifier	C, C++ identifier
5452 << 14	WBO_OrgY	MC_WBO_OrgY

Parameter Description

This integer parameter represents the Y-coordinate, expressed as a number of lines, of the upper left corner of a rectangular region within the camera active area that is used by the Automatic White Balance feature to compute the white balance correction factors.

Parameter Usage

Relevance condition(s):

- **Condition:** Automatically defined WBO gains (WBO_Mode = ONCE or CONTINUOUS)

Prerequisite action(s):

- **Condition:** The WBO operation mode is already selected through WBO_Mode

Directive: The AWB_AREA must include at least 256 pixels.

Directive: The AWB_AREA must include at least 1 line of pixels.

Directive: The AWB_AREA must be included entirely within the camera active area.

Directive: The AWB_AREA must be included entirely within the grabbing window area.

Parameter Values

Numeric values: 0,

Minimum Range

0	Description The Y-coordinate of the upper-left corner of the AWB_AREA is 0 Always applicable. Default value.
---	---

Maximum Range

	Description The upper limit of the range is context dependent. Always applicable.
--	--

WBO_Status

Status of the automatic white balance learning block

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	White Balance Operator	EXPERT	Enumerated	Get Only

Num ID	String Identifier	C, C++ identifier
8940 << 14	WBO_Status	MC_WBO_Status

Parameter Description

This enumerated parameter shows the result status of the automatic white balance computation.

Parameter Usage

Relevance condition(s):

- **Condition:** Automatically defined WBO gains (WBO_Mode = ONCE or CONTINUOUS)

Prerequisite action(s):

- **Condition:** The WBO operation mode is already selected through WBO_Mode
- **Condition:** At least one acquisition phase already completed.

Parameter Values

Enumeration: OK, NOT_OK

[OK](#)

MC_WBO_Status_OK

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

The automatic white balance learning block succeeds to balance the color. The white balance color gain settings are updated.

[NOT_OK](#)

MC_WBO_Status_NOT_OK

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

The automatic white balance learning block fails to balance the color. The white balance color gain settings are not updated.

Look-up Tables Category

Parameters controlling the look-up-table operator used by the channel

Parent Class

[Channel Class](#) on page 88

LUT_Method

[LUT construction method](#)

Applicable product(s): 1167 Domino Melody, 1601 Domino Symphony PCIe, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Look-up Tables	ADJUST	Enumerated	Set and Get

Num ID	String Identifier	C, C++ identifier
4969 << 14	LUT_Method	MC_LUT_Method

Parameter Description

Once the LUT has been defined through any of the construction methods, the values table can not be read back.

Parameter Values

Enumeration: RESPONSE_CONTROL, EMPHASIS, THRESHOLD, TABLE, LEGACY

[RESPONSE_CONTROL](#)

MC_LUT_Method_RESPONSE_CONTROL
Applicable product(s): 1167 Domino Melody, 1601 Domino Symphony PCIe, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
Description The LUT relevant control parameters are LUT_Contrast , LUT_Visibility , LUT_Brightness and LUT_Negative .

[EMPHASIS](#)

MC_LUT_Method_EMPHASIS
Applicable product(s): 1167 Domino Melody, 1601 Domino Symphony PCIe, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
Description The LUT relevant control parameters are LUT_Emphasis and LUT_Negative .

[THRESHOLD](#)

MC_LUT_Method_THRESHOLD
Applicable product(s): 1167 Domino Melody, 1601 Domino Symphony PCIe, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
Description The LUT relevant control parameters are LUT_SlicingLevel , LUT_SlicingBand , LUT_LightResponse , LUT_BandResponse and LUT_DarkResponse .

TABLE

MC_LUT_Method_TABLE
Applicable product(s): 1167 Domino Melody, 1601 Domino Symphony PCIe, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR. Description The LUT table is defined through the LUT_Table parameter.

LUT_StoreIndex

Index in the board memory of the LUT to store.

Applicable product(s): 1167 Domino Melody, 1601 Domino Symphony PCIe, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Look-up Tables	ADJUST	Integer	Set and Get

Num ID	String Identifier	C, C++ identifier
2957 << 14	LUT_StoreIndex	MC_LUT_StoreIndex

Parameter Description

Setting this parameter stores a pre-defined LUT in the board memory. Multiple LUTs can be stored together, and the index defines the LUT place inside the memory.

LUT_UseIndex

Index in the board memory of the LUT to activate.

Applicable product(s): 1167 Domino Melody, 1601 Domino Symphony PCIe, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Look-up Tables	ADJUST	Integer	Set and Get

Num ID	String Identifier	C, C++ identifier
2956 << 14	LUT_UseIndex	MC_LUT_UseIndex

Parameter Description

Setting this parameter activates immediately the defined LUT stored in the board memory.

LUT_Contrast

Contrast factor for a LUT defined through the Response Control method.

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Look-up Tables	ADJUST	Float collection	Set and Get

Num ID	String Identifier	C, C++ identifier
2952 << 14	LUT_Contrast	MC_LUT_Contrast

Parameter Description

If the application is managing **monochrome formats**, this parameter is a collection of 4 elements with:

- Element 0 not relevant.
- Element 1 not relevant.
- Element 2 not relevant.
- Element 3 associated with the image.

If the application is managing **planar** or **packed color formats**, this parameter is a collection of 4 elements with:

- Element 0 associated with the R or red component of the image.
- Element 1 associated with the G or green component of the image.
- Element 2 associated with the B or blue component of the image.
- Element 3 not relevant.

If the application is managing **combined planar color formats**, this parameter is a collection of 4 elements with:

- Element 0 associated with the R or red component of the image.
- Element 1 associated with the G or green component of the image.
- Element 2 associated with the B or blue component of the image.
- Element 3 associated with the Y or luminance (gray level) component of the image.

LUT_Brightness

Brightness factor for a LUT defined through the Response Control method.

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Look-up Tables	ADJUST	Float collection	Set and Get

Num ID	String Identifier	C, C++ identifier
2953 << 14	LUT_Brightness	MC_LUT_Brightness

Parameter Description

If the application is managing **monochrome formats**, this parameter is a collection of 4 elements with:

- Element 0 not relevant.
- Element 1 not relevant.
- Element 2 not relevant.
- Element 3 associated with the image.

If the application is managing **planar** or **packed color formats**, this parameter is a collection of 4 elements with:

- Element 0 associated with the R or red component of the image.
- Element 1 associated with the G or green component of the image.
- Element 2 associated with the B or blue component of the image.
- Element 3 not relevant.

If the application is managing **combined planar color formats**, this parameter is a collection of 4 elements with:

- Element 0 associated with the R or red component of the image.
- Element 1 associated with the G or green component of the image.
- Element 2 associated with the B or blue component of the image.
- Element 3 associated with the Y or luminance (gray level) component of the image.

LUT_Visibility

Visibility factor for a LUT defined through the Response Control method.

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Look-up Tables	ADJUST	Float collection	Set and Get

Num ID	String Identifier	C, C++ identifier
2954 << 14	LUT_Visibility	MC_LUT_Visibility

Parameter Description

If the application is managing **monochrome formats**, this parameter is a collection of 4 elements with:

- Element 0 not relevant.
- Element 1 not relevant.
- Element 2 not relevant.
- Element 3 associated with the image.

If the application is managing **planar** or **packed color formats**, this parameter is a collection of 4 elements with:

- Element 0 associated with the R or red component of the image.
- Element 1 associated with the G or green component of the image.
- Element 2 associated with the B or blue component of the image.
- Element 3 not relevant.

If the application is managing **combined planar color formats**, this parameter is a collection of 4 elements with:

- Element 0 associated with the R or red component of the image.
- Element 1 associated with the G or green component of the image.
- Element 2 associated with the B or blue component of the image.
- Element 3 associated with the Y or luminance (gray level) component of the image.

LUT_Negative

Visibility factor for a LUT defined through the Response Control or the Emphasis method.

Applicable product(s): 1167 Domino Melody, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Look-up Tables	ADJUST	Enumerated collection	Set and Get

Num ID	String Identifier	C, C++ identifier
2955 << 14	LUT_Negative	MC_LUT_Negative

Parameter Description

If the application is managing **monochrome formats**, this parameter is a collection of 4 elements with:

- Element 0 not relevant.
- Element 1 not relevant.
- Element 2 not relevant.
- Element 3 associated with the image.

If the application is managing **planar** or **packed color formats**, this parameter is a collection of 4 elements with:

- Element 0 associated with the R or red component of the image.
- Element 1 associated with the G or green component of the image.
- Element 2 associated with the B or blue component of the image.
- Element 3 not relevant.

If the application is managing **combined planar color formats**, this parameter is a collection of 4 elements with:

- Element 0 associated with the R or red component of the image.
- Element 1 associated with the G or green component of the image.
- Element 2 associated with the B or blue component of the image.
- Element 3 associated with the Y or luminance (gray level) component of the image.

Parameter Values

Enumeration:

LUT_Emphasis

Emphasis factor for a LUT defined through the Emphasis method.

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Look-up Tables	ADJUST	Float collection	Set and Get

Num ID	String Identifier	C, C++ identifier
4970 << 14	LUT_Emphasis	MC_LUT_Emphasis

Parameter Description

If the application is managing **monochrome formats**, this parameter is a collection of 4 elements with:

- Element 0 not relevant.
- Element 1 not relevant.
- Element 2 not relevant.
- Element 3 associated with the image.

If the application is managing **planar** or **packed color formats**, this parameter is a collection of 4 elements with:

- Element 0 associated with the R or red component of the image.
- Element 1 associated with the G or green component of the image.
- Element 2 associated with the B or blue component of the image.
- Element 3 not relevant.

If the application is managing **combined planar color formats**, this parameter is a collection of 4 elements with:

- Element 0 associated with the R or red component of the image.
- Element 1 associated with the G or green component of the image.
- Element 2 associated with the B or blue component of the image.
- Element 3 associated with the Y or luminance (gray level) component of the image.

LUT_SlicingLevel

Chooses the level of slicing for a LUT defined through the Threshold method.

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Look-up Tables	ADJUST	Float collection	Set and Get

Num ID	String Identifier	C, C++ identifier
4971 << 14	LUT_SlicingLevel	MC_LUT_SlicingLevel

Parameter Description

If the application is managing **monochrome formats**, this parameter is a collection of 4 elements with:

- Element 0 not relevant.
- Element 1 not relevant.
- Element 2 not relevant.
- Element 3 associated with the image.

If the application is managing **planar** or **packed color formats**, this parameter is a collection of 4 elements with:

- Element 0 associated with the R or red component of the image.
- Element 1 associated with the G or green component of the image.
- Element 2 associated with the B or blue component of the image.
- Element 3 not relevant.

If the application is managing **combined planar color formats**, this parameter is a collection of 4 elements with:

- Element 0 associated with the R or red component of the image.
- Element 1 associated with the G or green component of the image.
- Element 2 associated with the B or blue component of the image.
- Element 3 associated with the Y or luminance (gray level) component of the image.

LUT_SlicingBand

Band width of slicing for a LUT defined through the Threshold method.

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Look-up Tables	ADJUST	Float collection	Set and Get

Num ID	String Identifier	C, C++ identifier
4972 << 14	LUT_SlicingBand	MC_LUT_SlicingBand

Parameter Description

If the application is managing **monochrome formats**, this parameter is a collection of 4 elements with:

- Element 0 not relevant.
- Element 1 not relevant.
- Element 2 not relevant.
- Element 3 associated with the image.

If the application is managing **planar** or **packed color formats**, this parameter is a collection of 4 elements with:

- Element 0 associated with the R or red component of the image.
- Element 1 associated with the G or green component of the image.
- Element 2 associated with the B or blue component of the image.
- Element 3 not relevant.

If the application is managing **combined planar color formats**, this parameter is a collection of 4 elements with:

- Element 0 associated with the R or red component of the image.
- Element 1 associated with the G or green component of the image.
- Element 2 associated with the B or blue component of the image.
- Element 3 associated with the Y or luminance (gray level) component of the image.

LUT_LightResponse

Response in the light part for a LUT defined through the Threshold method.

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Look-up Tables	ADJUST	Float collection	Set and Get

Num ID	String Identifier	C, C++ identifier
4973 << 14	LUT_LightResponse	MC_LUT_LightResponse

Parameter Description

If the application is managing **monochrome formats**, this parameter is a collection of 4 elements with:

- Element 0 not relevant.
- Element 1 not relevant.
- Element 2 not relevant.
- Element 3 associated with the image.

If the application is managing **planar** or **packed color formats**, this parameter is a collection of 4 elements with:

- Element 0 associated with the R or red component of the image.
- Element 1 associated with the G or green component of the image.
- Element 2 associated with the B or blue component of the image.
- Element 3 not relevant.

If the application is managing **combined planar color formats**, this parameter is a collection of 4 elements with:

- Element 0 associated with the R or red component of the image.
- Element 1 associated with the G or green component of the image.
- Element 2 associated with the B or blue component of the image.
- Element 3 associated with the Y or luminance (gray level) component of the image.

LUT_BandResponse

Response in the middle part for a LUT defined through the Threshold method.

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Look-up Tables	ADJUST	Float collection	Set and Get

Num ID	String Identifier	C, C++ identifier
4974 << 14	LUT_BandResponse	MC_LUT_BandResponse

Parameter Description

If the application is managing **monochrome formats**, this parameter is a collection of 4 elements with:

- Element 0 not relevant.
- Element 1 not relevant.
- Element 2 not relevant.
- Element 3 associated with the image.

If the application is managing **planar** or **packed color formats**, this parameter is a collection of 4 elements with:

- Element 0 associated with the R or red component of the image.
- Element 1 associated with the G or green component of the image.
- Element 2 associated with the B or blue component of the image.
- Element 3 not relevant.

If the application is managing **combined planar color formats**, this parameter is a collection of 4 elements with:

- Element 0 associated with the R or red component of the image.
- Element 1 associated with the G or green component of the image.
- Element 2 associated with the B or blue component of the image.
- Element 3 associated with the Y or luminance (gray level) component of the image.

LUT_DarkResponse

Response in the dark part for a LUT defined through the Threshold method.

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Look-up Tables	ADJUST	Float collection	Set and Get

Num ID	String Identifier	C, C++ identifier
4975 << 14	LUT_DarkResponse	MC_LUT_DarkResponse

Parameter Description

If the application is managing **monochrome formats**, this parameter is a collection of 4 elements with:

- Element 0 not relevant.
- Element 1 not relevant.
- Element 2 not relevant.
- Element 3 associated with the image.

If the application is managing **planar** or **packed color formats**, this parameter is a collection of 4 elements with:

- Element 0 associated with the R or red component of the image.
- Element 1 associated with the G or green component of the image.
- Element 2 associated with the B or blue component of the image.
- Element 3 not relevant.

If the application is managing **combined planar color formats**, this parameter is a collection of 4 elements with:

- Element 0 associated with the R or red component of the image.
- Element 1 associated with the G or green component of the image.
- Element 2 associated with the B or blue component of the image.
- Element 3 associated with the Y or luminance (gray level) component of the image.

LUT_InDataWidth

Digital data width of the LUT input

Applicable product(s): 1167 Domino Melody, 1601 Domino Symphony PCIe, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Look-up Tables	ADJUST	Integer	Set and Get

Num ID	String Identifier	C, C++ identifier
3017 << 14	LUT_InDataWidth	MC_LUT_InDataWidth

Parameter Description

Getting this parameter returns the number of significant data bits applied at the input of every LUT transformer.

Parameter Values

Numeric values: 8, 10, 16

[List of Values](#)

16	Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
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LUT_OutDataWidth

Digital data width of the LUT output

Applicable product(s): 1167 Domino Melody, 1601 Domino Symphony PCIe, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Look-up Tables	ADJUST	Integer	Set and Get

Num ID	String Identifier	C, C++ identifier
3018 << 14	LUT_OutDataWidth	MC_LUT_OutDataWidth

Parameter Description

Getting this parameter returns the number of significant data bits delivered by every LUT transformer.

Parameter Values

Numeric values: 8, 10, 16

[List of Values](#)

16	Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
----	--

LUT_Table

Manually specifies a LUT defined through the Table method.

Applicable product(s): 1167 Domino Melody, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Look-up Tables	EXPERT	Instance	Set and Get

Num ID	String Identifier	C, C++ identifier
2951 << 14	LUT_Table	MC_LUT_Table

Parameter Description

Once the LUT has been defined through any method, the values table can not be read back.

InputLut

Surface implementing a temporary buffer for input look-up table programming

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1601 Domino Symphony PCIe, 1191 Grablink Value.

Parameter Info

Class	Category	Level	Type	Access
Channel	Look-up Tables	ADJUST	Integer	Set Only

Num ID	String Identifier	C, C++ identifier
67 << 14	InputLut	MC_InputLut

Parameter Description

A special-purpose MultiCam surface has to be created beforehand. This surface is intended for containing an image of the data to be transferred into the input look-up table implemented in hardware.

This temporary buffer, located in the host memory, is downloaded into the grabber upon setting the InputLut parameter to the handle of the surface. The destination input look-up table is designated by the present value of [LutIndex](#), in the range 1 to 32.

Refer to [Using Look-Up Tables](#).

LutIndex

Index of the active look-up table

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1601 Domino Symphony PCIe, 1191 Grablink Value.

Parameter Info

Class	Category	Level	Type	Access
Channel	Look-up Tables	ADJUST	Integer	Set Only

Num ID	String Identifier	C, C++ identifier
66 << 14	LutIndex	MC_LutIndex

Parameter Description

The frame grabber owns a set of look-up tables that can be freely assigned to a channel. Each look-up table is designated by a specific number, in the range 1 to 32.

In order for an index value to represent a valid input look-up table, it should have been previously used as the designator of the hardware destination with a setting action of the [InputLut](#) parameter.

Thereafter, setting a valid value to LutIndex enables the corresponding look-up table for the next acquisition sequence. The look-up table selection becomes active at the next start-of-sequence event.

Refer to [Using Look-Up Tables](#).

Parameter Values

Numeric values: 0

[List of Values](#)

	Description
0	Setting this value cancels the usage of the look-up table for the channel. Always applicable.

Board Linkage Category

Parameters providing several methods to designate one of the frame grabber inside the system as the channel host

Parent Class

[Channel Class](#) on page 88

BoardName

Name of the board linked to the channel

Parameter Info

Class	Category	Level	Type	Access
Channel	Board Linkage	SELECT	String	Set and Get

Num ID	String Identifier	C, C++ identifier
2 << 14	BoardName	MC_BoardName

Parameter Description

This parameter provides a method to designate a particular board where the channel should find its grabber resources. The designation is based on the name given to a board. The name is a string of maximum 16 ASCII characters.

DriverIndex

Board locator in the list returned by the driver

Parameter Info

Class	Category	Level	Type	Access
Channel	Board Linkage	SELECT	Integer	Set and Get

Num ID	String Identifier	C, C++ identifier
0 << 14	DriverIndex	MC_DriverIndex

Parameter Description

This parameter provides a method to designate a particular board where the channel should find its grabber resources. The designation is based on the board location in the list returned by the driver. The set of MultiCam compliant boards are assigned a set of consecutive integer numbers starting at 0. The indexing order is system dependent.

Setting this parameter links the board having the specified driver index to the channel.

Setting the parameter to an index larger than or equal to the number of MultiCam boards results in the MC_NO_BOARD_FOUND error.

PCIPosition

Board locator in the list of PCI slots

Parameter Info

Class	Category	Level	Type	Access
Channel	Board Linkage	SELECT	Integer	Set and Get

Num ID	String Identifier	C, C++ identifier
1 << 14	PCIPosition	MC_PCIPosition

Parameter Description

This parameter provides a method to designate a particular board where the channel should find its grabber resources. Setting this parameter links the board inserted in the specified PCI slot to the channel

The designation is based on the number associated to a PCI slot. This number is assigned by the operating system in a non-predictable way, but remains consistent for a given configuration in a given system.

BoardIdentifier

Identifier of the board linked to the channel, made by the combination of its type and serial number

Parameter Info

Class	Category	Level	Type	Access
Channel	Board Linkage	SELECT	String	Set and Get

Num ID	String Identifier	C, C++ identifier
3 << 14	BoardIdentifier	MC_BoardIdentifier

Parameter Description

This parameter provides a method to designate a particular board where the channel should find its grabber resources. The designation is based on the board type and its serial number, providing a unique way to designate a Euresys product.

The board identifier is an ASCII character string resulting from the concatenation of the board type and the serial number with an intervening underscore. The serial number is a 6-digit string made of characters 0 to 9.

Cluster Category

Parameters defining the destination surface cluster owned by the channel

Parent Class

[Channel Class](#) on page 88

Cluster

Set of surfaces associated to a channel

Parameter Info

Class	Category	Level	Type	Access
Channel	Cluster	SELECT	Instance collection	Set and Get

Num ID	String Identifier	C, C++ identifier
12 << 14	Cluster	MC_Cluster

Parameter Description

This parameter gives access to the list of handles of the surfaces belonging to the destination cluster.

A cluster is a set of surfaces having compatible characteristics, but different locations. All surfaces belonging to a cluster should be able to accept images coming from the same source through a given channel.

The idea behind the clusters is the capability to easily implement advanced destination structures such as double, triple or rotating image buffers.

Surface to Cluster Assignment

A surface can be assigned to several clusters provided that:

- The clusters belong to channels defined within the same application.
- The channels address the same board.

The maximum number of surfaces assigned to a channel is 4096, and the maximum number of surfaces instantiated within an application is 4096.

Currently, the number of surfaces that can be handled by a board may be less than the maximum, depending on the hardware capabilities and characteristics of the acquisition surface.

ImageSizeX

Horizontal size of the transferred images, expressed as a number of columns

Parameter Info

Class	Category	Level	Type	Access
Channel	Cluster	ADJUST	Integer	Set and Get

Num ID	String Identifier	C, C++ identifier
523 << 14	ImageSizeX	MC_ImageSizeX

Parameter Description

This parameter can be set only with Pico boards.

It exposes the result of any condition adjustment that could affect the image width during the acquisition process.

The surface in the destination cluster will receive an image, the width of which is that number of columns.

In case of area-scan cameras, the size of the destination surface matches the size of the acquired frame.

In case of line-scan cameras, the size of the destination surface matches the size of the acquired page.

The horizontal size of the image is scaled to the defined *ImageSizeX* number of pixels per line.

ImageSizeY

Vertical size of the transferred images, expressed as a number of lines

Parameter Info

Class	Category	Level	Type	Access
Channel	Cluster	ADJUST	Integer	Get Only

Num ID	String Identifier	C, C++ identifier
524 << 14	ImageSizeY	MC_ImageSizeY

Parameter Description

This parameter can be set only with Pico boards.

It exposes the result of any condition adjustment that could affect the image height during the acquisition process.

The surface in the destination cluster will receive an image the height of which is that number of lines.

In case of area-scan cameras, the size of the destination surface matches the size of the acquired frame.

In case of line-scan cameras, the size of the destination surface matches the size of the acquired page.

The vertical size of the image is scaled to the defined [ImageSizeY](#) number of lines.

ImageFlipX

Horizontal mirroring effect

Parameter Info

Class	Category	Level	Type	Access
Channel	Cluster	ADJUST	Enumerated	Set and Get

Num ID	String Identifier	C, C++ identifier
1340 << 14	ImageFlipX	MC_ImageFlipX

Parameter Description

The horizontal mirroring effect can be thought as turning the image around a vertical axis (first column becomes last column).

Parameter Usage

Parameter Values

Enumeration: OFF, ON

OFF

MC_ImageFlipX_OFF
Description No horizontal mirroring effect.

ON

MC_ImageFlipX_ON
Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR, 1305 Pico Alert. Description Horizontal mirror applied.

ImageFlipY

Vertical mirroring effect

Parameter Info

Class	Category	Level	Type	Access
Channel	Cluster	ADJUST	Enumerated	Set and Get

Num ID	String Identifier	C, C++ identifier
525 << 14	ImageFlipY	MC_ImageFlipY

Parameter Description

The vertical mirroring effect can be thought as turning the image around a horizontal axis (first line becomes last line).

Parameter Usage

Parameter Values

Enumeration: OFF, ON

OFF

MC_ImageFlipY_OFF

Description

No vertical mirroring effect.

ON

MC_ImageFlipY_ON

Description

Vertical mirror applied.

ColorFormat

Color format

Parameter Info

Class	Category	Level	Type	Access
Channel	Cluster	ADJUST	Enumerated	Set and Get

Num ID	String Identifier	C, C++ identifier
2224 << 14	ColorFormat	MC_ColorFormat

Parameter Description

This parameter summarizes all the properties describing how the frame grabber stores pixel data in the destination surface.

Refer to [MultiCam Storage Formats](#) on page 458 for detailed information.

Parameter Values

Enumeration: Monochrome and color packed YUV formats, YUV411, YUV422, YUV444, Y8, Y10, Y12, Y16, Planar YUV formats, YUV411PL, Y41B, YUV422PL, Y42B, YUV444PL, YUV411PL_Dec, YUV9, YVU9, YUV422PL_Dec, I420, IYUV, YV12, Color packed RGB formats, RGB15, RGB16, RGB24, RGB10_10_10, RGB10_12_10, RGB32, RGB48, RGB64, Color planar RGB formats, RGB24PL, RGB30PL, RGB36PL, RGB42PL, RGB48PL, Compressed formats, DX50, BAYER color formats, BAYER8, BAYER10, BAYER12, BAYER14, BAYER16, RAW formats, RAW8, RAW10, RAW12, RAW14, RAW16, Packed RGB color and Y luminance combined formats, RGB16Y8, RGB24Y8, RGB24Y10, RGB24Y12, RGB24Y16, YRGB32, YRGB64, Planar RGB color and Y luminance combined formats, RGB24PLY8, RGB24PLY10, RGB24PLY12, RGB24PLY16, RGB30PLY8, RGB30PLY10, RGB30PLY12, RGB30PLY16, RGB36PLY8, RGB36PLY12, RGB36PLY16, RGB48PLY8, RGB48PLY10, RGB48PLY12, RGB48PLY16

Y8

MC_ColorFormat_Y8

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR, 1155 Picolo, 1401 Picolo Junior 4, 1157 Picolo Pro 2, 1303 Picolo Tetra, 1402 Picolo Tymo, 1305 Picolo Alert.

Description

Each pixel luminance is stored using Y8 system. FOURCC code: Y800

Y10

MC_ColorFormat_Y10

Applicable product(s): 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

Each pixel luminance is stored using Y10 system.

Y12

MC_ColorFormat_Y12

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

Each pixel luminance is stored using Y12 system.

Y16

MC_ColorFormat_Y16

Applicable product(s): 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

Each pixel luminance is stored using Y16 system. In this storage format, the least 6 significant bits of the pixel value are 0.

RGB24

MC_ColorFormat_RGB24

Applicable product(s): 1161 Domino Alpha 2, 1168 Domino Harmony, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR, 1155 Picolo, 1401 Picolo Junior 4, 1157 Picolo Pro 2, 1303 Picolo Tetra, 1402 Picolo Tymo, 1305 Picolo Alert.

Description

Each pixel color is stored using RGB24 packed data format. FOURCC code: BI_RGB RGB

RGB32

MC_ColorFormat_RGB32

Applicable product(s): 1161 Domino Alpha 2, 1168 Domino Harmony, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR, 1155 Picolo, 1401 Picolo Junior 4, 1157 Picolo Pro 2, 1303 Picolo Tetra, 1402 Picolo Tymo, 1305 Picolo Alert.

Description

Each pixel color is stored using RGB32 packed data format. FOURCC code: BI_RGB RGB

RGB24PL

MC_ColorFormat_RGB24PL

Applicable product(s): 1168 Domino Harmony, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR, 1305 Picolo Alert.

Description

Each pixel color is stored using RGB24PL system.

RGB30PL

MC_ColorFormat_RGB30PL
Applicable product(s): 1168 Domino Harmony, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
Description Each pixel color is stored using RGB30PL system.

RGB36PL

MC_ColorFormat_RGB36PL
Applicable product(s): 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
Description Each pixel color is stored using RGB36PL system.

RGB42PL

MC_ColorFormat_RGB42PL
Applicable product(s): 1198 Grablink Avenue, 1621 Grablink Express.
Description Each pixel color is stored using RGB42PL system.

RGB48PL

MC_ColorFormat_RGB48PL
Applicable product(s): 1168 Domino Harmony, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
Description Each pixel color is stored using RGB48PL system. In this storage format, the least 6 significant bits of the pixel value are 0.

BAYER8

MC_ColorFormat_BAYER8
Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
Description Each pixel data is stored using BAYER8 system.

BAYER10

MC_ColorFormat_BAYER10
Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
Description Each pixel data is stored using BAYER10 system.

BAYER12

MC_ColorFormat_BAYER12

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

Each pixel data is stored using BAYER12 system.

BAYER14

MC_ColorFormat_BAYER14

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express.

Description

Each pixel data is stored using BAYER14 system.

BAYER16

MC_ColorFormat_BAYER16

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

Each pixel data is stored using BAYER16 system.

RAW8

MC_ColorFormat_RAW8

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express.

Description

Each pixel data is stored using RAW8 system.

RAW10

MC_ColorFormat_RAW10

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express.

Description

Each pixel data is stored using RAW10 system.

RAW12

MC_ColorFormat_RAW12

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express.

Description

Each pixel data is stored using RAW12 system.

RAW14

MC_ColorFormat_RAW14
Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express.
Description Each pixel data is stored using RAW14 system.

RAW16

MC_ColorFormat_RAW16
Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express.
Description Each pixel data is stored using RAW16 system.

RedBlueSwap

Controls the swapping of the red and blue color components

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Cluster	ADJUST	Enumerated	Set and Get

Num ID	String Identifier	C, C++ identifier
11052 << 14	RedBlueSwap	MC_RedBlueSwap

Parameter Description

This enumerated parameter controls the swapping of the red and blue color components when acquiring color packed image data from RGB color cameras.

Parameter Usage

Relevance condition(s):

- **Condition:** Parallel RGB camera (delivers 8-bit R, G, and B color components in parallel).
- **Condition:** RGB color packed pixel format

Prerequisite action(s):

- **Condition:** `Spectrum` must be set to `Color`.
- **Condition:** `ColorMethod` must be set `RGB`.
- **Condition:** `TapConfiguration` must be set to `BASE_1T24`.
- **Condition:** `ColorFormat` must be set to `RGB24` or `RGB32`

Parameter Values

Enumeration: ENABLE, DISABLE

ENABLE

MC_RedBlueSwap_ENABLE

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

The frame grabber swaps the Red and Blue components of the Camera Link RGB pixel data.



Note: This corresponds to the behaviour of MultiCam prior to Release 6.9.8.

Default value.

DISABLE

MC_RedBlueSwap_DISABLE
Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
Description The frame grabber keeps the pixel component order of the Camera Link RGB pixel data

ColorComponentsOrder

Color components order

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Cluster	EXPERT	Enumerated	Get Only

Num ID	String Identifier	C, C++ identifier
11054 << 14	ColorComponentsOrder	MC_ColorComponentsOrder

Parameter Description

This enumerated parameter reports the color components order of RGB packed pixel formats.

Parameter Usage

Relevance condition(s):

- **Condition:** Parallel RGB camera (delivers R, G, and B color components in parallel).
- **Condition:** RGB color packed pixel format.

Prerequisite action(s):

- **Condition:** Spectrum must be set to Color.
- **Condition:** ColorMethod must be set RGB.
- **Condition:** TapConfiguration must be set to BASE_1T24 or MEDIUM_2T24.
- **Condition:** ColorFormat must be set to RGB24, RGB32 or RGB32

ImagePlaneCount

Number of image planes

Parameter Info

Class	Category	Level	Type	Access
Channel	Cluster	ADJUST	Integer	Get Only

Num ID	String Identifier	C, C++ identifier
1718 << 14	ImagePlaneCount	MC_ImagePlaneCount

Parameter Description

MultiCam creates the surfaces and automatically allocates the memory buffers, if not done by the application. The following channel parameters configure the automatic allocation: [BufferSize](#) , [BufferPitch](#) , [ImagePlaneCount](#) and [SurfaceCount](#) . MultiCam decides the adequate number of surfaces for the selected acquisition mode. This parameter indicates the number of planes required by the frame grabber to store the pixel data. The channel cannot be activated if all surfaces do not meet this requirement.

Parameter Values

Numeric values: 1, 2, 3, 4

BufferSize

Recommended size (in bytes) for the image buffer(s)

Parameter Info

Class	Category	Level	Type	Access
Channel	Cluster	ADJUST	Integer collection	Get Only

Num ID	String Identifier	C, C++ identifier
3333 << 14	BufferSize	MC_BufferSize

Parameter Description

MultiCam creates the surfaces and automatically allocates the memory buffers, if not done by the application. The following channel parameters configure the automatic allocation: [BufferSize](#) , [BufferPitch](#) , [ImagePlaneCount](#) and [SurfaceCount](#) . MultiCam decides the adequate number of surfaces for the selected acquisition mode.

This parameter is expressed as a number of bytes.

It provides the buffer size needed to contain one image produced by the channel.

If [ImagePlaneCount](#) > 1, the channel produces a "multi-plane" image. In this case, one must allocate [ImagePlaneCount](#) buffers.

Each buffer size is given in the [BufferSize](#) collection members.

For instance, if [ImagePlaneCount](#) = 3, allocate 3 buffers.

- Buffer 1 size is indicated by [BufferSize](#) [0].
- Buffer 2 size is indicated by [BufferSize](#) [1].
- Buffer 3 size is indicated by [BufferSize](#) [2].

For more information about access to integer collections, refer to Parameters.

SurfaceIndex

Index of the next acquisition surface to fill

Parameter Info

Class	Category	Level	Type	Access
Channel	Cluster	EXPERT	Integer	Set and Get

Num ID	String Identifier	C, C++ identifier
17 << 14	SurfaceIndex	MC_SurfaceIndex

Parameter Description

Getting this parameter gives access to the index of the lastly or currently written surface. This surface is in the FILLING state, as defined by [SurfaceState](#) , or got most recently the FILLED state.

Setting this parameter allows the selection of a surface to be used by the next acquisition phase. The target surface must be in the FREE state.

The value is the zero-based index of the surface in the cluster.

This parameter selects the strategy to be exercised by the capture controller.

SurfaceCount

Number of surfaces in the channel

Parameter Info

Class	Category	Level	Type	Access
Channel	Cluster	EXPERT	Integer	Set and Get

Num ID	String Identifier	C, C++ identifier
82 << 14	SurfaceCount	MC_SurfaceCount

Parameter Description

MultiCam creates the surfaces and automatically allocates the memory buffers, if not done by the application. The following channel parameters configure the automatic allocation: [BufferSize](#) , [BufferPitch](#) , [ImagePlaneCount](#) and [SurfaceCount](#) . MultiCam decides the adequate number of surfaces for the selected acquisition mode.

Getting [SurfaceCount](#) indicates the number of surfaces in the channel. The user may change [SurfaceCount](#) to another value before channel activation.

LineIndex

Index of the written line

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR, 1155 Picolo, 1401 Picolo Junior 4, 1157 Picolo Pro 2, 1303 Picolo Tetra, 1402 Picolo Tymo, 1305 Picolo Alert.

Parameter Info

Class	Category	Level	Type	Access
Channel	Cluster	EXPERT	Integer	Get Only

Num ID	String Identifier	C, C++ identifier
16 << 14	LineIndex	MC_LineIndex

Parameter Description

This parameter gives access to the index of the line currently written into the FILLING surface, as defined by [SurfaceState](#).

Parameter Values

Numeric values: 0

[Minimum Range](#)

	Description
0	Firstly written line. Always applicable.

ImageColorRegistration

Alignment of Bayer pattern filter over acquired surface

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Cluster	EXPERT	Enumerated	Get Only

Num ID	String Identifier	C, C++ identifier
1274 << 14	ImageColorRegistration	MC_ImageColorRegistration

Parameter Description

This parameter indicates how the Bayer pattern filter covers the image acquired in the destination surface. It applies when *Spectrum* is COLOR and *ColorMethod* is BAYER.

It is automatically set according to the value of *ColorRegistration* and according to the setting of the grabbing window. Upper left corner of destination surface

Parameter Values

Numeric values: GB, BG, RG, GR

List of Values

GB	Description The first two pixels are green and blue. Always applicable.
BG	Description The first two pixels are blue and green. Always applicable.
RG	Description The first two pixels are red and green. Always applicable.
GR	Description The first two pixels are green and red. Always applicable.

SurfacePlaneName

Image component type stored for each plane

Applicable product(s): 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Cluster	EXPERT	Enumerated collection	Get Only

Num ID	String Identifier	C, C++ identifier
4876 << 14	SurfacePlaneName	MC_SurfacePlaneName

Parameter Description

For a complete description of color formats, see [MultiCam Storage Formats](#) on page 458.

Parameter Values

Enumeration: UNUSED, Y, YUV, R, G, B, RGB, YRGB

UNUSED

MC_SurfacePlaneName_UNUSED
Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
Description The plane does not exist.

Y

MC_SurfacePlaneName_Y
Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
Description The plane holds the luminance component of the image.

YUV

MC_SurfacePlaneName_YUV
Applicable product(s): 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
Description The plane holds the image in a YUV color packed format.

R

MC_SurfacePlaneName_R

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

The plane holds the red component of the image in a color planar format.

G

MC_SurfacePlaneName_G

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

The plane holds the green component of the image in a color planar format.

B

MC_SurfacePlaneName_B

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

The plane holds the blue component of the image in a color planar format.

RGB

MC_SurfacePlaneName_RGB

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

The plane holds the image in a RGB color packed format.

YRGB

MC_SurfacePlaneName_YRGB

Applicable product(s): 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

The plane holds the image in a combined luminance and RGB color packed format.

MinBufferPitch

Minimum size to contain one line of the image plane, expressed as a number of bytes.

Parameter Info

Class	Category	Level	Type	Access
Channel	Cluster	EXPERT	Integer collection	Get Only

Num ID	String Identifier	C, C++ identifier
3335 << 14	MinBufferPitch	MC_MinBufferPitch

Parameter Description

This parameter indicates the minimal size required to contain one line of the image plane produced by the channel. The channel cannot be activated if all surfaces do not meet this requirement.

The line pitch size is defined by parameter [BufferPitch](#) .

The dimension of this collection parameter is specified by [ImagePlaneCount](#) . The assignment of the planes is returned by [SurfacePlaneName](#) . For a complete description of color formats, see [MultiCam Storage Formats](#) on page 458.

Parameter Values

Numeric values: 4, 32768

Minimum Range

4	Always applicable.
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Maximum Range

32768	Always applicable.
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BufferPitch

Size required to contain one line of the plane, expressed in bytes

Parameter Info

Class	Category	Level	Type	Access
Channel	Cluster	EXPERT	Integer collection	Set and Get

Num ID	String Identifier	C, C++ identifier
3336 << 14	BufferPitch	MC_BufferPitch

Parameter Description

MultiCam creates the surfaces and automatically allocates the memory buffers, if not done by the application. The following channel parameters configure the automatic allocation: [BufferSize](#) , [BufferPitch](#) , [ImagePlaneCount](#) and [SurfaceCount](#) . MultiCam decides the adequate number of surfaces for the selected acquisition mode.

Getting this parameter gives the minimum size (in bytes) required to contain one line of the plane produced by the channel.

Setting this parameter defines the desired line pitch. If allowed, this value will be used in the computation of other [parameters](#).

The minimum value is reported by parameter [MinBufferPitch](#) .

The dimension of this collection parameter is specified by [ImagePlaneCount](#) . The assignment of the planes is returned by [SurfacePlaneName](#) . For a complete description of color formats, see [MultiCam Storage Formats](#) on page 458.

MinBufferSize

Minimal size required to contain the image plane, expressed as a number of bytes.

Parameter Info

Class	Category	Level	Type	Access
Channel	Cluster	EXPERT	Integer collection	Get Only

Num ID	String Identifier	C, C++ identifier
3334 << 14	MinBufferSize	MC_MinBufferSize

Parameter Description

This parameter indicates the absolute minimal buffer size accepted by the channel.

If the size of one or more surface buffers is below the corresponding [MinBufferSize](#) , the channel will report an error at activation and image acquisition will not be possible.

The dimension of this collection parameter is specified by [ImagePlaneCount](#) . The assignment of the planes is returned by [SurfacePlaneName](#) . For a complete description of color formats, see [MultiCam Storage Formats](#) on page 458.

SurfaceAllocation

Memory allocation method of MultiCam surfaces

Parameter Info

Class	Category	Level	Type	Access
Channel	Cluster	EXPERT	Enumerated	Set and Get

Num ID	String Identifier	C, C++ identifier
10092 << 14	SurfaceAllocation	MC_SurfaceAllocation

Parameter Description

MultiCam sets automatically this parameter to the right value, so there should be no need to modify it.

Parameter Values

Enumeration: ANYWHERE, BELOW4G

ANYWHERE

MC_SurfaceAllocation_ANYWHERE

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1155 Picolo, 1401 Picolo Junior 4, 1157 Picolo Pro 2, 1303 Picolo Tetra, 1402 Picolo Tymo, 1305 Picolo Alert.

Description

The surfaces allocated automatically by MultiCam can be anywhere in the available memory.

BELOW4G

MC_SurfaceAllocation_BELOW4G

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1155 Picolo, 1401 Picolo Junior 4, 1157 Picolo Pro 2, 1303 Picolo Tetra, 1402 Picolo Tymo, 1305 Picolo Alert.

Description

The surfaces allocated automatically by MultiCam will be in the lowest 4 GB of the available physical memory addressing space. This mode allows to run MultiCam with PAE activated and more than 4 GB RAM.

MaxFillingSurfaces

Filling surfaces control

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Cluster	EXPERT	Enumerated	Set and Get

Num ID	String Identifier	C, C++ identifier
10712 << 14	MaxFillingSurfaces	MC_MaxFillingSurfaces

Parameter Description

This parameter specifies the operation of the cluster mechanism regarding the number of surfaces it is allowed to put in the FILLING state.

Parameter Usage

- Prerequisite action(s):**
- Condition:** The parameter must be set prior to the channel activation, i.e. when `ChannelState=IDLE`
- Directive:** Allocate a sufficient amount of surfaces and manage the surfaces such that the cluster mechanism maintains a sufficient amount of surfaces in the `MC_SurfaceState_FILLING` state to cover the largest system interrupt latencies.

Parameter Values

Enumeration: MINIMUM, MAXIMUM

MINIMUM

MC_MaxFillingSurfaces_MINIMUM
Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
Description The cluster mechanism is allowed to put only one surface in the FILLING state at a time.

MAXIMUM

MC_MaxFillingSurfaces_MAXIMUM
Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.
Description The cluster mechanism is allowed to put up to 512 surfaces in the FILLING state at a time.
Default value.

Channel Management Category

Parameters controlling state information of the channel

Parent Class

[Channel Class](#) on page 88

ChannelState

State of the channel

Parameter Info

Class	Category	Level	Type	Access
Channel	Channel Management	SELECT	Enumerated	Set and Get

Num ID	String Identifier	C, C++ identifier
15 << 14	ChannelState	MC_ChannelState

Parameter Description

Refer to [Automatic Switching](#).

Parameter Values

Enumeration: IDLE, ACTIVE, ORPHAN, READY, FREE

IDLE

MC_ChannelState_IDLE

Description

The channel owns the grabber at this moment but does not lock it.

Description

Sets the channel's state to IDLE or READY.

ACTIVE

MC_ChannelState_ACTIVE

Description

The channel uses the grabber.

ORPHAN

MC_ChannelState_ORPHAN

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

The channel has no grabber.

READY

MC_ChannelState_READY

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

The channel locks the grabber and is ready to start an acquisition sequence.

FREE

MC_ChannelState_FREE

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

Try to set the channel's state to ORPHAN.

CallbackPriority

Priority of the callback thread

Parameter Info

Class	Category	Level	Type	Access
Channel	Channel Management	EXPERT	Enumerated	Set and Get

Num ID	String Identifier	C, C++ identifier
100 << 14	CallbackPriority	MC_CallbackPriority

Parameter Description

Registering a callback function results into the creation in the application process of a separate thread dedicated to the callback function. This thread is maintained idle until a signal occurs. This parameter can be used to select the priority of this callback thread.

Refer to Registration of Callback Function and [Callback Signaling](#) for information on MultiCam callbacks.

Parameter Values

Enumeration: LOWEST, BELOW_NORMAL, NORMAL, ABOVE_NORMAL, HIGHEST, TIME_CRITICAL

[LOWEST](#)

MC_CallbackPriority_LOWEST
Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR, 1155 Picolo, 1401 Picolo Junior 4, 1157 Picolo Pro 2, 1303 Picolo Tetra, 1402 Picolo Tymo, 1305 Picolo Alert.
Description

[BELOW_NORMAL](#)

MC_CallbackPriority_BELOW_NORMAL
Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR, 1155 Picolo, 1401 Picolo Junior 4, 1157 Picolo Pro 2, 1303 Picolo Tetra, 1402 Picolo Tymo, 1305 Picolo Alert.
Description

NORMAL

MC_CallbackPriority_NORMAL

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR, 1155 Picolo, 1401 Picolo Junior 4, 1157 Picolo Pro 2, 1303 Picolo Tetra, 1402 Picolo Tymo, 1305 Picolo Alert.

Description

ABOVE_NORMAL

MC_CallbackPriority_ABOVE_NORMAL

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR, 1155 Picolo, 1401 Picolo Junior 4, 1157 Picolo Pro 2, 1303 Picolo Tetra, 1402 Picolo Tymo, 1305 Picolo Alert.

Description

HIGHEST

MC_CallbackPriority_HIGHEST

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR, 1155 Picolo, 1401 Picolo Junior 4, 1157 Picolo Pro 2, 1303 Picolo Tetra, 1402 Picolo Tymo, 1305 Picolo Alert.

Description

TIME_CRITICAL

MC_CallbackPriority_TIME_CRITICAL

Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR, 1155 Picolo, 1401 Picolo Junior 4, 1157 Picolo Pro 2, 1303 Picolo Tetra, 1402 Picolo Tymo, 1305 Picolo Alert.

Description

Signaling Category

Parameters controlling signaling information of the channel

Parent Class

[Channel Class](#) on page 88

SignalEnable

Selection of callback or waiting signals

Parameter Info

Class	Category	Level	Type	Access
Channel	Signaling	ADJUST	Enumerated	Set and Get

Num ID	String Identifier	C, C++ identifier
24 << 14	SignalEnable	MC_SignalEnable

Parameter Description

This collection parameter selects the MultiCam signals able to call a callback function or to trigger a waiting function. For more information, refer to [Enabling Signals](#).

Parameter Values

Enumeration: ON, OFF, AFTER_EAS

ON

MC_SignalEnable_ON

Description

The signal is included in the selection.

OFF

MC_SignalEnable_OFF

Description

The signal is not included in the selection.

AFTER_EAS

MC_SignalEnable_AFTER_EAS

Description

The signal is disabled until the end of acquisition sequence.

SignalEvent

Operating system events associated with a MultiCam signals

Parameter Info

Class	Category	Level	Type	Access
Channel	Signaling	EXPERT	Enumerated	Get Only

Num ID	String Identifier	C, C++ identifier
25 << 14	SignalEvent	MC_SignalEvent

Parameter Description

This collection parameter holds operating system handles to event objects that are signaled when MultiCam signals occur.

SignalHandling

Signaling method to use when MultiCam signal appears

Parameter Info

Class	Category	Level	Type	Access
Channel	Signaling	EXPERT	Enumerated	Set and Get

Num ID	String Identifier	C, C++ identifier
74 << 14	SignalHandling	MC_SignalHandling

Parameter Description

This parameter selects which signaling method is used when a particular MultiCam signal appears.

If an application needs to use one method for signals of a particular type and another method for other signals, it must define this parameter for all concerned signals. If only one signaling method is used for all types of signals, this parameter does not have to be set.

If the setting of [SignalHandling](#) :s is CALLBACK_SIGNALING, each signal of type s will cause the callback function to be called. The MultiCam wait function McWaitSignal called for signal s will not be released upon occurrence of a signal of type s. Likewise, the OS event linked to signal s ([SignalEvent](#) :s) will not be signaled.

If the setting of [SignalHandling](#) :s is WAITING_SIGNALING, each signal of type s will release the MultiCam wait function McWaitSignal called for signal s. The callback function will not be called upon occurrence of a signal of type s. Likewise, the OS event linked to signal s ([SignalEvent](#) :s) will not be signaled.

If the setting of [SignalHandling](#) :s is OS_EVENT_SIGNALING, each signal of type s will cause the corresponding OS event ([SignalEvent](#) :s) to be signaled. The callback function will not be called upon occurrence of a signal of type s. Likewise, the MultiCam wait function McWaitSignal called for signal s will not be released.

Parameter Values

Enumeration: ANY, CALLBACK_SIGNALING, WAITING_SIGNALING, OS_EVENT_SIGNALING

[ANY](#)

MC_SignalHandling_ANY

Description

No signaling method has been selected.

[CALLBACK_SIGNALING](#)

MC_SignalHandling_CALLBACK_SIGNALING

Description

The callback signaling method is used.

WAITING_SIGNALING

MC_SignalHandling_WAITING_SIGNALING
Description The waiting signaling method is used.

OS_EVENT_SIGNALING

MC_SignalHandling_OS_EVENT_SIGNALING
Description The OS event signaling method is used.

GenerateSignal

Signal generation mode

Parameter Info

Class	Category	Level	Type	Access
Channel	Signaling	EXPERT	Enumerated	Set and Get

Num ID	String Identifier	C, C++ identifier
73 << 14	GenerateSignal	MC_GenerateSignal

Parameter Description

This parameter is used to choose between two possible modes of signal generation.

By default, each MultiCam event produces a signal (if the corresponding signal is enabled). If a signal cannot be generated when the event occurs, the signal is queued.

In the other signal generation mode, the signals are not queued. MultiCam only keeps information about the latest event of each type.

Parameter Values

Enumeration: EACH_EVENT, LATEST_EVENT

EACH_EVENT

MC_GenerateSignal_EACH_EVENT

Description

Each MultiCam event produces a signal. If necessary, the signals are queued by MultiCam.

Default value.

LATEST_EVENT

MC_GenerateSignal_LATEST_EVENT

Description

The signals are not queued by MultiCam.

Exception Management Category

Parameters controlling the exception situations encountered by the channel

Parent Class

[Channel Class](#) on page 88

AcquisitionCleanup

Filtering of spoiled images

Applicable product(s): 1161 Domino Alpha 2, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Exception Management	ADJUST	Enumerated	Set and Get

Num ID	String Identifier	C, C++ identifier
3024 << 14	AcquisitionCleanup	MC_AcquisitionCleanup

Parameter Description

Some acquired images may be spoiled, due to FIFO overruns for example. This parameter allows not to transfer these images to the application.

Parameter Values

Enumeration: ENABLED, DISABLED

ENABLED

MC_AcquisitionCleanup_ENABLED

Applicable product(s): 1161 Domino Alpha 2, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

The spoiled images are not signalled. The corresponding surfaces ([SurfaceState](#)) are immediately set to FREE.

DISABLED

MC_AcquisitionCleanup_DISABLED

Applicable product(s): 1161 Domino Alpha 2, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

The spoiled images are managed the same way as accurate images.

AcqTimeout_ms

Configuration of the acquisition timeout

Parameter Info

Class	Category	Level	Type	Access
Channel	Exception Management	EXPERT	Integer	Set and Get

Num ID	String Identifier	C, C++ identifier
56 << 14	Timeout	MC_AcqTimeout_ms

Parameter Description

This parameter controls the acquisition timeout:

- The timeout duration can be configured in steps of 1 millisecond.
- The timeout function can be disabled.

 **Note:** The string identifier differs from the parameter name for backward compatibility reasons.

Parameter Usage

Directive: The parameter must be set prior to the activation of the channel.

Parameter Values

Numeric values: 1, 10, 1000000, MC_MAX_INT32, 10000, MC_INDETERMINATE (-1)

Minimum Range

1	Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1155 Picolo, 1401 Picolo Junior 4, 1157 Picolo Pro 2, 1303 Picolo Tetra, 1402 Picolo Tymo, 1305 Picolo Alert. Description 1 millisecond timeout duration
10	Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR. Description 10 milliseconds timeout duration

Maximum Range

1000000	Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR. Description 1,000,000 milliseconds (= 16 minutes and 40 seconds) timeout duration
---------	---

MC_MAX_INT32	Applicable product(s): 1161 Domino Alpha 2, 1167 Domino Melody, 1168 Domino Harmony, 1601 Domino Symphony PCIe, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1155 Picolo, 1401 Picolo Junior 4, 1157 Picolo Pro 2, 1303 Picolo Tetra, 1402 Picolo Tymo, 1305 Picolo Alert. Description 2,147,483,647 milliseconds (> 24 days) timeout duration
--------------	--

List of Values

10000	Description 10,000 milliseconds (= 10 seconds) timeout duration Always applicable. Default value.
MC_INDETERMINATE (-1)	Description Disabled timeout function (= infinite duration) Always applicable.

OverrunCount

Counter of overrun occurrences

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Exception Management	EXPERT	Integer	Get Only

Num ID	String Identifier	C, C++ identifier
46 << 14	OverrunCount	MC_OverrunCount

Parameter Description

This parameter returns the number of overrun occurrences since the creation of the channel. It is incremented each time a transfer overrun occurs. It may be initialized at any time by setting its value.

An overrun is an exception condition occurring when the data transfer between the frame grabber and the host computer saturates the PCI bus.

TriggerSkipHold

Protection method of trigger

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Exception Management	EXPERT	Enumerated	Set and Get

Num ID	String Identifier	C, C++ identifier
1309 << 14	TriggerSkipHold	MC_TriggerSkipHold

Parameter Description

When the trigger frequency is faster than allowable, the requested trigger is either skipped or held until the end of the current acquisition phase.

When *TriggerSkipHold* is set to HOLD, only the last trigger is maintained in the queue, even if many triggers appeared.

Parameter Values

Enumeration: SKIP, HOLD

SKIP

MC_TriggerSkipHold_SKIP

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

A trigger event is ignored if occurring while a previous trigger is already being treated.

HOLD

MC_TriggerSkipHold_HOLD

Applicable product(s): 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Description

A trigger event is hold if occurring when a previous trigger is already being treated. The end of the current trigger event will be chained with the "hold" trigger event.

LineTriggerViolation

Counter of line trigger violation occurrences

Applicable product(s): 1161 Domino Alpha 2, 1191 Grablink Value, 1198 Grablink Avenue, 1621 Grablink Express, 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Channel	Exception Management	EXPERT	Integer	Get Only

Num ID	String Identifier	C, C++ identifier
57 << 14	LineTriggerViolation	MC_LineTriggerViolation

Parameter Description

This parameter increases when line trigger violations occur. It is not incremented each time a line trigger violation occurs. At least, it will be incremented once per page. It is only relevant with line-scan cameras.

Setting this parameter sets an initial value for the counter.

A line trigger violation occurs in case of line-scan operation when the line trigger occurs too quickly.

FrameTriggerViolation

Counter of frame trigger violation occurrences

Parameter Info

Class	Category	Level	Type	Access
Channel	Exception Management	EXPERT	Integer	Get Only

Num ID	String Identifier	C, C++ identifier
58 << 14	FrameTriggerViolation	MC_FrameTriggerViolation

Parameter Description

This parameter increases when frame trigger violations occur. It is not incremented each time a frame trigger violation occurs. At least, it will be incremented once per page (line-scan) or per frame (area-scan).

Setting this parameter sets an initial value for the counter.

In case of area-scan operation, a frame trigger violation occurs when the frame trigger pulses occur too quickly. In case of line-scan operation, the rule applies to the page trigger pulses.

Surface Class

What Is a Surface?

The surface is a container where a 2D image can be stored. In most situations, the surface is a buffer in the host memory. Other types of surfaces may be defined, such as the hardware frame buffer located inside a frame grabber. In the particular case of a line-scan camera, the surface can be used as a circular buffer. This implies that, although the surface is 2D-limited, the incoming data flow is continuous and virtually unlimited.

Regarding the acquisition process, the surface is the destination where the grabbed images from the cameras are recorded. The overall goal of the MultiCam driver is to provide flexible channels to route images coming from a camera towards a specified surface.

Surface creation

The Surface class groups all MultiCam parameters dedicated to the definition of memory buffers for image or data storage. A Surface object is an instance of the Surface class represented by a dedicated set of such parameters that uniquely describe the surface.

Several surfaces can exist simultaneously. A process called "surface creation" is applied to define a new surface. A created surface is entirely characterized by a corresponding instance of the Surface class in the MultiCam environment.

Surfaces can be deleted by their owning application with an appropriate API function.

Categories

[Surface Specification Category](#) on page 443

Parameters specifying the static attributes of the surface

[Surface Dynamics Category](#) on page 449

Parameters specifying the dynamic attributes of the surface

Surface Specification Category

Parameters specifying the static attributes of the surface

Parent Class

[Surface Class](#) on page 442

SurfaceSize

Size of the surface for one plane, expressed in bytes

Parameter Info

Class	Category	Level	Type	Access
Surface	Surface Specification	ADJUST	Integer collection	Set and Get

Num ID	String Identifier	C, C++ identifier
27 << 14	SurfaceSize	MC_SurfaceSize

Parameter Description

This parameter should be defined large enough to hold the intended image in the adequate format.
For backward compatibility, when it is used as an integer, it gives access to the first plane.

SurfaceAddr

Address of the surface for one plane, or list of addresses of the surface planes

Parameter Info

Class	Category	Level	Type	Access
Surface	Surface Specification	ADJUST	Pointer collection	Set and Get

Num ID	String Identifier	C, C++ identifier
28 << 14	SurfaceAddr	MC_SurfaceAddr

Parameter Description

If *PlaneCount* > 1, this parameter is a collection of the starting addresses for every plane constituting the surface.

 **Note:** For backward compatibility, it is still possible to use an integer collection instead of a pointer collection. When it is used as an integer, it gives access to the first plane.

SurfacePitch

Pitch of the surfaces, expressed in bytes

Parameter Info

Class	Category	Level	Type	Access
Surface	Surface Specification	ADJUST	Integer collection	Set and Get

Num ID	String Identifier	C, C++ identifier
29 << 14	SurfacePitch	MC_SurfacePitch

Parameter Description

This parameter declares the pitch between vertically adjacent pixels of the surface for one plane. For backward compatibility, when it is used as an integer, it gives access to the first plane.

PlaneCount

Number of planes in the surface

Parameter Info

Class	Category	Level	Type	Access
Surface	Surface Specification	EXPERT	Integer	Set and Get

Num ID	String Identifier	C, C++ identifier
30 << 14	PlaneCount	MC_PlaneCount

Parameter Description

Usually, the number of planes in the surface is 1. But some image formats, such as planar representation of RGB data, require more than one plane. PlaneCount is changed automatically when the collection parameter [SurfaceAddr](#) is set. All planes constituting the surface have a similar structure, but the starting address of each plane is different.

SurfaceContext

Placeholder for a pointer-precision user-defined value associated with this surface

Parameter Info

Class	Category	Level	Type	Access
Surface	Surface Specification	EXPERT	Pointer	Set and Get

Num ID	String Identifier	C, C++ identifier
32 << 14	SurfaceContext	MC_SurfaceContext

Parameter Description

This parameter provides a convenient way of declaring a user-defined context associated with a MultiCam surface using a pointer value. This context can be easily retrieved from the surface handle in a callback or waiting function. For backward compatibility, it is still possible to use a 32-bit integer value instead of a pointer.

Surface Dynamics Category

Parameters specifying the dynamic attributes of the surface

Parent Class

[Surface Class](#) on page 442

SurfaceState

State of the surface

Parameter Info

Class	Category	Level	Type	Access
Surface	Surface Dynamics	ADJUST	Enumerated	Set and Get

Num ID	String Identifier	C, C++ identifier
31 << 14	SurfaceState	MC_SurfaceState

Parameter Description

Get or set the current state of the surface.

Parameter Usage

TBD

Parameter Values

Enumeration: FREE, FILLING, FILLED, PROCESSING, RESERVED

FREE

MC_SurfaceState_FREE
Description The surface is able to receive image data from the grabber.

FILLING

MC_SurfaceState_FILLING
Description The surface is currently receiving or ready to receive image data from the grabber.

FILLED

MC_SurfaceState_FILLED
Description The surface has finished receiving image data from the grabber, and thus is ready for processing

PROCESSING

MC_SurfaceState_PROCESSING
Description The surface is being processed by the host processor.

RESERVED

MC_SurfaceState_RESERVED
Description The surface is removed from the standard state transition.

LastInSequence

Applicable product(s): 1624 Grablink Base, 1623 Grablink DualBase, 1622 Grablink Full, 1626 Grablink Full XR.

Parameter Info

Class	Category	Level	Type	Access
Surface	Surface Dynamics	ADJUST	Enumerated	Get Only

Num ID	String Identifier	C, C++ identifier
92 << 14	LastInSequence	MC_LastInSequence

Parameter Description

Parameter Usage

FillCount

Number of bytes written by the acquisition

Parameter Info

Class	Category	Level	Type	Access
Surface	Surface Dynamics	EXPERT	Integer collection	Get Only

Num ID	String Identifier	C, C++ identifier
43 << 14	FillCount	MC_FillCount

Parameter Description

This parameter holds the number of bytes actually written into the surface by the acquisition in this plane.

TimeCode

Internal numbering of surface during acquisition sequence

Parameter Info

Class	Category	Level	Type	Access
Surface	Surface Dynamics	EXPERT	Integer	Get Only

Num ID	String Identifier	C, C++ identifier
72 << 14	TimeCode	MC_TimeCode

Parameter Description

The timecode is the order in a sequence. The first acquisition of a sequence is numbered 0, the second 1, and so on. The last acquired surface has the number [SeqLength_Ph](#) -1. If an acquisition happens but is not signaled to the application (for example, when no surface is available: cluster unavailable), the timecode is still incremented. The timecode is reset to 0 at each new sequence (channel state -> ACTIVE).

TimeAnsi

ANSI time of surface filled event

Parameter Info

Class	Category	Level	Type	Access
Surface	Surface Dynamics	EXPERT	Integer	Get Only

Num ID	String Identifier	C, C++ identifier
76 << 14	TimeAnsi	MC_TimeAnsi

Parameter Description

This parameter represents the number of seconds elapsed since midnight (00:00:00), January 1, 1970, coordinated universal time (UTC), according to the system clock when the surface is filled.

TimeStamp_us

Time of surface filled event

Parameter Info

Class	Category	Level	Type	Access
Surface	Surface Dynamics	EXPERT	Integer	Get Only

Num ID	String Identifier	C, C++ identifier
77 << 14	TimeStamp_us	MC_TimeStamp_us

Parameter Description

This parameter represents the number of microseconds elapsed since midnight (00:00:00), January 1, 1970, coordinated universal time (UTC), according to the system clock when the surface is filled.

This parameter is a 64-bit integer.

 **Note:** For backward compatibility, this parameter may still be a collection of two 32-bit integers; one for the low part and one for the high part.

SurfaceColorFormat

Internal organization of pixels of the surface

Parameter Info

Class	Category	Level	Type	Access
Surface	Surface Dynamics	EXPERT	Enumerated	Get Only

Num ID	String Identifier	C, C++ identifier
86 << 14	SurfaceColorFormat	MC_SurfaceColorFormat

Parameter Description

This parameter holds the internal pixel organization. It is deduced from the *ColorFormat* of the channel.
The possible values are described in the *ColorFormat* parameter.

Parameter Values

Enumeration:

MC_SurfaceColorFormat_
Description

Appendix

MultiCam Acquisition Principles

Link to external PDF document: [MultiCam_Acquisition_Principles.pdf](#).

MultiCam Storage Formats

Link to external PDF document: [multicam-storage-formats.pdf](#).

Channel Creation

To create a channel, go through the following three steps.

1. Create a channel instance.
2. Associate the channel to a board.
3. Select the connector.



Important: For boards having multiple topologies, it is required to define the board class `BoardTopology` parameter before the first channel creation on this board.

Channel Instance Creation

The channel is created with the `McCreate` or `McCreateNm` function.

```
//The By-Ident Method
McCreate(MC_CHANNEL, &m_Channel);
//The By-Name Method
McCreateNm("CHANNEL", &m_Channel);
```

Maximum number of Channels

- At any time, up to 2048 MultiCam channels can exist in a single process.
- At any time, up to 64 MultiCam channels can exist on a Domino or Grablink board.
- At any time, up to 256 MultiCam channels can exist on a Pico board.

Channel-Board Association

The targeted board is identified by one of the 4 channel parameters: `DriverIndex`, `PciPosition`, `BoardName` or `BoardIdentifier`.

```
// Channel-Board association example
McSetParamInt(m_Channel, MC_DriverIndex, 0);
```

Connector Selection

For boards with multiple camera connectors, it is required to set the channel parameter `Connector`.

```
// Connector selection example
McSetParamInt(m_Channel, MC_Connector, MC_Connector_VID1);
```

I/O Configuration

The Board-object adjust-level MultiCam parameters [InputConfig](#) and [OutputConfig](#) are collection parameters.

Both are set(get) parameters.

The purpose of these parameters is to declare the function of the I/O lines.

When the function of an I/O line is determined by the channel, as reported by [InputFunction](#) or [OutputFunction](#), it cannot be altered. Using the board parameter would result into a MultiCam error.

Line Rate Modes

The "line rate mode" expresses how the Downweb Line Rate is determined in a line-scan acquisition system.

The user specifies the Line Rate Mode by means of MultiCam parameter [LineRateMode](#). Five Line Rate modes are identified in MultiCam:

LineRateMode	Description
CAMERA	Camera – The downweb line rate is originated by the camera.
PULSE	Trigger Pulse – The downweb line rate originates from a train of pulses applied on the line trigger input belonging to the grabber.
CONVERT	Rate Converter – The downweb line rate originates from a train of pulses applied on the line trigger input and processed by a rate converter belonging to the grabber.
PERIOD	Periodic – The downweb line rate originates from an internal periodic generator belonging to the grabber
EXPOSE	Exposure Time – The downweb line rate is identical to the camera line rate and established by the exposure time settings

LineRateMode = CAMERA

This mode is applicable exclusively for free-run permanent exposure – **LxxxxSP** – class of line scan cameras when [LineCaptureMode](#)=ALL. The grabber does not perform any sampling in the downweb direction; the downweb line rate is equal to the camera line rate. The camera line rate is entirely under control of the camera. Notice that most of the line scan cameras provide an internal line rate adjustment.

LineRateMode = PULSE

When the speed of motion is varying, the Downweb Line Rate should be slaved to this motion. To achieve this, a motion encoder is a good solution.

The motion encoder delivers an electrical pulse each time the moving web advances by a determined amount of length. The continuous motion results in a train of pulses the frequency of which is proportional to the web speed.

There exists another way to take knowledge of the web speed. In some applications, the motion is caused by a stepping motor controlled by pulses. The controlling train of pulses is also a measure of relative motion.

In both cases, the pulses are called line trigger pulses, and their repetition rate is the Line Trigger Rate. The line trigger pulses are applied to the frame grabber to determine the Downweb Line Rate .

Each line trigger pulse may result into the generation of one line in the acquired image. This means that the Downweb Line Rate is equal to the Trigger Rate.

LineRateMode = CONVERT

Alternatively to the "PULSE" mode, for more flexibility, the Line Trigger Rate may be scaled up or down to match the required Downweb Line Rate. The proportion between the two rates is freely programmable to any value lower or greater than unity, with high accuracy. This makes possible to accommodate a variety of mechanical setups, and still maintain a full control over the downweb resolution. The hardware device responsible for this rate conversion is called the rate converter. This device is a unique characteristic of Euresys line-scan frame grabbers.

LineRateMode = PERIOD

Other circumstances necessitate the Downweb Line Rate to be hardware-generated by a programmable timer, called the "periodic generator".

LineRateMode = EXPOSE

This mode is applicable exclusively for line rate controlled permanent exposure – **LxxxxRP** – class of line scan cameras when [LineCaptureMode](#)=ALL. The grabber does not perform any sampling in the downweb direction; the downweb line rate is equal to the camera line rate. The camera line rate is entirely under control of the grabber through the exposure time settings.



Note: This mode is the default and recommended mode for **LxxxxRP** class of cameras on Grablink Avenue and Grablink Express.



Note: This mode is not available on Grablink Value, Grablink Expert 2 and Grablink Quickpack ColorScan. On these boards:

1. Use [LineRateMode](#)=PERIOD instead
2. Specify the desired exposure time through [Period_us](#)
3. Assign a value to [Expose_us](#) that is smaller than the desired exposure time.

Code Example of Callback Mechanism

The following code uses the callback mechanism to process images grabbed during an acquisition sequence. One or several surfaces have to be created and assigned to the cluster owned by the channel. At the end of each acquisition phase, the surface is filled and made available to the callback function. The Status variable can be used for error checking.

```
void MyApplication()
{
    //Application level initializing code
    MCSTATUS Status = McOpenDriver(NULL);
    //Application level initializing code
    MCHANDLE MyChannel;
    Status = McCreateNm("EXPERT_A", &MyChannel);
    //Assign grabber and camera to channel
    //Configure channel including triggering mode
    //Assign to channel a destination cluster of surfaces
    //Registering the callback function
    Status = McRegisterCallback(MyChannel, MyFunction, NULL);
    //Activating acquisition sequence
    Status = McSetParamInt(MyChannel, MC_ChannelState, MC_ChannelState_ACTIVE);
    //Acquisition sequence is now active
    //A callback is automatically generated after each acquisition phase
    //Deleting the channels
    Status = McDelete(MyChannel);
    //Disconnecting from driver
    Status = McCloseDriver();
}

void MCAPI MyFunction(PMCSIGNALINFO SignalInfo)
{
    //...
    //Image processing code
}
```

```
//Image to be processed is available in the destination cluster of surfaces
//...
}
```

Code Example: How to Gather Board Information?

The following code scans all installed MultiCam boards, and builds a database containing their information relative to name, serial number and type.

MC_CONFIGURATION is the C identifier used as a handle to the configuration object. This object has not to be explicitly instantiated.

MC_BOARD is the C identifier used as a handle to the board object. This object has not to be explicitly instantiated.

The Status variable can be used for error checking.

```
//Defining the database structure type
typedef struct
{
    char BoardName[17];
    INT32 SerialNumber;
    INT32 BoardType;
} MULTICAM_BOARDINFO;

//Variables declaration
MULTICAM_BOARDINFO BoardInfo[10];
INT32 BoardCount;
INT32 i;
MCSTATUS Status;

//Connecting to driver
Status = McOpenDriver(NULL);
//Getting number of boards
Status = McGetParamInt(MC_CONFIGURATION, MC_BoardCount, &BoardCount);
//Scanning across MultiCam boards
for (i=0; i<BoardCount; i++)
{
    //Fetching the board name (String MultiCam parameter)
    Status = McGetParamStr(
        MC_BOARD+i,
        MC_BoardName,
        BoardInfo[i].BoardName,
        17);
    //Fetching the board serial number (Integer MultiCam parameter)
    Status = McGetParamInt(
        MC_BOARD+i,
        MC_SerialNumber,
        &BoardInfo[i].SerialNumber);
    //Fetching the board type (Enumerated MultiCam parameter)
    Status = McGetParamInt(
        MC_BOARD+i,
        MC_BoardType,
        &BoardInfo[i].BoardType);
}
//Disconnecting from driver
Status = McCloseDriver();
```

Board Security Feature

A security feature is incorporated in all MultiCam-compliant boards.

The general idea is that the OEM application programmer is able to engrave in the board a secret proprietary key.

The security key is an 8-bytes string of ASCII characters. Any character is allowed. A null character acts as the termination character of the key.

The security key is stored in the non-volatile memory of the board and cannot be read back.

There is no way to obtain this security key number back from the board. However, it is possible to verify that a given board currently holds a security key equal to a given one.

Using this simple mechanism, it is easy to lock an application to a board or to a set of boards.

Automatic Switching

To Leave IDLE State

To Leave ACTIVE State

To Leave IDLE State

Automatically

MultiCam automatically makes the transition IDLE to ORPHAN, when needed.

This occurs when another channel requires some involved grabber resources.

This is a part of the automatic switching mechanism.

Setting ChannelState to ACTIVE

On setting the parameter [ChannelState](#) to ACTIVE, MultiCam immediately starts the image acquisition sequence. The channel's state changes to ACTIVE.

This is a part of the automatic switching mechanism.

To Leave ACTIVE State

Automatically

The end of a sequence (EAS) occurs automatically after [SeqLength_Fr](#) acquisition phases.

Consequently, [ChannelState](#) changes to IDLE.

Setting ChannelState to IDLE

The end of an acquisition sequence (EAS) can be forced by setting [ChannelState](#) to IDLE. According to the channel settings, the last acquisition phase finishes and afterwards [ChannelState](#) is IDLE.

Using Line-Scan Acquisitions

This section describes the capabilities of MultiCam to acquire images from line-scan cameras. MultiCam provides an elaborate set of triggering capabilities and system interfaces.

The latest enhancements of MultiCam includes:

- LONGPAGE mode with fixed length up to 2,147,483,648 (= 231) lines.
- LONGPAGE mode with variable length up to 231 lines.

- Enhanced rate converter with overflow detection and activity detector.

Three fundamental operation modes are available for line-scan cameras: [WEB](#), [PAGE](#) and [LONGPAGE](#).

The WEB operation mode is intended for image acquisition of single continuous objects.

The PAGE and LONGPAGE operation modes are both intended for image acquisition of multiple discrete objects.

The LONGPAGE operation mode supports objects up to 2,147,483,648 lines while the classic PAGE operation mode is limited to objects up to 65,535 lines.

The LONGPAGE operation mode has the capability to acquire variable size objects as defined by a "Page Cover" signal.

The PAGE operation mode has the capability to terminate the Page acquisition sequence after a pre-defined number of objects. This feature is not available in LONGPAGE operation mode.

Callback Signaling

[Callback Signaling Mechanism](#)

[Callback Signaling Information](#)

[Code Example of Callback Mechanism](#)

Callback Signaling Mechanism

The callback mechanism implies an event driven behavior. The following description uses the Surface Processing signal as an example of callback generating event.

The Surface Processing signal occurs when a transfer phase terminates. It is issued by a channel to indicate that the destination memory surface has been filled with an image coming from the source camera, and that this surface is available for image processing (see [SurfaceState](#)).

The image processing task is performed on this event by a special function called the callback function.

Callback mechanism

The callback function is called by the MultiCam driver, not by the user application. This ensures that the image-processing task is realized at the ideal instant, exactly when the surface becomes ready for processing.

MultiCam benefits from several built-in features to ease the implementation of the callback function.

- A dedicated thread is created for the callback function execution.
- The callback function prototype is declared in the MultiCam system C header file.
- Means are provided to designate the channel and the signal(s) issuing the callback function calls.
- The callback function argument provides all relevant information to the user-written code.

The MultiCam function to register a callback function to a channel or a processor is [McRegisterCallback](#).

Enabling Signals

To designate one or several signals as responsible for signaling operation, the MultiCam system provides an adjust-level parameter called [SignalEnable](#).

One such parameter exists for the channel and processor class. It has the MultiCam type "enumerated collection".

Each item of the collection allows for enabling or disabling a specific signal. The value of the item is ON or OFF.

The set of all ON signals constitute the selection of signals enabling the relevant channel or processor to perform one of the following:

- Calling a callback function
- Releasing a waiting thread
- Causing a Windows event

To address a specific signal, the by-ident parameter access method is used with the [SignalEnable](#) parameter belonging to the desired channel or processor object. The parameter setting function [McSetParamInt](#) or [McSetParamStr](#) is used with a parameter identifier established as follows:

To reach signal...	Use parameter identifier...
Frame Trigger Violation	MC_SignalEnable + MC_SIG_FRAME_TRIGGER_VIOLATION
Start Exposure	MC_SignalEnable + MC_SIG_START_EXPOSURE
End Exposure	MC_SignalEnable + MC_SIG_END_EXPOSURE
Release (*)	MC_SignalEnable + MC_SIG_RELEASE
Surface Filled	MC_SignalEnable + MC_SIG_SURFACE_FILLED
Surface Processing	MC_SignalEnable + MC_SIG_SURFACE_PROCESSING
Cluster Unavailable	MC_SignalEnable + MC_SIG_CLUSTER_UNAVAILABLE
Acquisition failure	MC_SignalEnable + MC_SIG_ACQUISITION_FAILURE
End of acquisition	MC_SignalEnable + MC_SIG_END_ACQUISITION_SEQUENCE
Start of acquisition	MC_SignalEnable + MC_SIG_START_ACQUISITION_SEQUENCE
End of channel activity	MC_SignalEnable + MC_SIG_END_CHANNEL_ACTIVITY

(*) This signal is generated only with Domino boards.

Example

The following code enables the "Surface Filled" signal with the channel designated by my_Channel:

```
Status = McSetParamInt (
    my_Channel,
    MC_SignalEnable + MC_SIG_SURFACE_FILLED,
    MC_SignalEnable_ON
);
```

The Status variable can be used for error checking.

Callback Signaling Information

Callback Function Prototype

The callback function prototype is declared in the MultiCam system's MultiCam.h header file as follows:

```
typedef void (MCAPI *PMCCALLBACK) (PMCSIGNALINFO SignalInfo);
```

Item	Type	Description
Function	PMCCALLBACK	Callback function
SignalInfo	PMCSIGNALINFO	Argument providing the signal information structure.

The user should define the callback function in the application code in accordance with this prototype.

The callback function is called by the MultiCam driver when a channel or a processor issues a pre-defined signal. The pre-defined signal should be enabled with the [SignalEnable](#) parameter. It is allowed to enable several signals. If more than one enabled signals are issued simultaneously from an object, the callback function is successively called for each signal occurrence.

When the signal occurs, the callback dedicated thread is released, and the callback function is automatically invoked. The thread is restored to an idle condition when the callback function is exited.

The function has a single argument, which is a structure passing information on the signal that caused the callback function. This structure has the **signal information** type.

If the callback signaling mechanism is used, the waiting and advanced signaling mechanisms cannot be used.

Registration of Callback Function

A callback function should be registered to a channel or processor object before use. Only one callback function per object is supported.

Registering the callback function results into the creation in the application process of a separate thread dedicated to the callback function. This thread is maintained in a idle state until a signal occurs. There can be only one dedicated thread per channel or processor object.

A dedicated MultiCam function is provided for callback registration: [McRegisterCallback](#).

Context

Context is an argument of the callback registration function as well as a member of the signal information structure available to the callback function.

The user is free to use this item at the registration time to hold any identifying information he may find useful.

When the callback function is executed, the user gets back the context information as it was passed to the registration function.

Error Reporting Behaviors

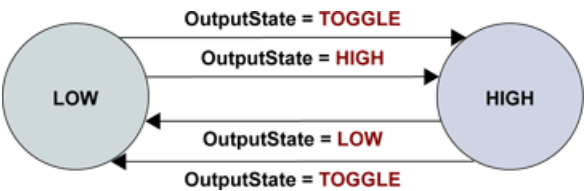
Four behaviors are supported when an error occurs during the execution of a MultiCam API function.

The wished behavior is selected with the [ErrorHandling](#) parameter, which can assume one of the four following values:

ErrorHandling	Behavior designation	Effect
NONE	Return	The MultiCam function returns the error code .
MSGBOX	Message	A dialog box is displayed.
EXCEPTION	Exception	A Windows structured exception is issued.
MSGEXCEPTION	Message and exception	A dialog box is displayed, allowing for a Windows structured exception to be issued.

General-Purpose Output

When configured for general-purpose usage, the output multiplexer is restricted to two positions: LOW and HIGH. The following state diagram shows the 2 states and all the possible inter-state transition:



Output multiplexer state diagram (OutputFunction = SOFT)

The position of the output multiplexer is controlled by means of [OutputState](#), a Board class MultiCam parameter belonging to the [Input/Output Control category](#).

The "LOW" state means that the output multiplexer is in the "LOW" position. Setting [OutputState](#) to LOW forces immediately the output multiplexer to the "LOW state".

The "HIGH" state means that the output multiplexer is in the "HIGH" position. Setting [OutputState](#) to HIGH forces immediately the output multiplexer to the "HIGH state".

Setting [OutputState](#) to TOGGLE forces immediately the output multiplexer to change its position from LOW to HIGH, if it was at the LOW position or vice-versa.

Grablink Base

I/O index assignments and specific member values of the output-related board I/O parameters

Index	ConnectorName	OutputPinName	OutputStyle	OutputConfig	OutputFunction
1	IO	IOUT1	OPTO	FREE SOFT EVENT	UNKNOWN SOFT EVENT
2	IO	IOUT2	OPTO	FREE SOFT EVENT	UNKNOWN SOFT EVENT
3	IO	IOUT3	OPTO	FREE SOFT EVENT	UNKNOWN SOFT EVENT
4	IO	IOUT4	OPTO	FREE SOFT EVENT	UNKNOWN SOFT EVENT
7	CAMERA	CC1	LVDS	FREE SOFT	UNKNOWN SOFT
8	CAMERA	CC2	LVDS	FREE SOFT	UNKNOWN SOFT
9	CAMERA	CC3	LVDS	FREE SOFT	UNKNOWN SOFT
10	CAMERA	CC4	LVDS	FREE SOFT	UNKNOWN SOFT

The I/O indices 0, 5, 6, and {11...24} have no output-related function.

Grablink DualBase

I/O index assignments and specific member values of the output-related board I/O parameters

Index	ConnectorName	OutputPinName	OutputStyle	OutputConfig	OutputFunction
1	IO_A	IOUT1	OPTO	FREE SOFT EVENT	UNKNOWN SOFT EVENT
2	IO_A	IOUT2	OPTO	FREE SOFT EVENT	UNKNOWN SOFT EVENT
3	IO_A	IOUT3	OPTO	FREE SOFT EVENT	UNKNOWN SOFT EVENT
4	IO_A	IOUT4	OPTO	FREE SOFT EVENT	UNKNOWN SOFT EVENT
7	CAMERA_A	CC1	LVDS	FREE SOFT	UNKNOWN SOFT
8	CAMERA_A	CC2	LVDS	FREE SOFT	UNKNOWN SOFT
9	CAMERA_A	CC3	LVDS	FREE SOFT	UNKNOWN SOFT
10	CAMERA_A	CC4	LVDS	FREE SOFT	UNKNOWN SOFT
12	IO_B	IOUT1	OPTO	FREE SOFT EVENT	UNKNOWN SOFT EVENT
13	IO_B	IOUT2	OPTO	FREE SOFT EVENT	UNKNOWN SOFT EVENT
14	IO_B	IOUT3	OPTO	FREE SOFT EVENT	UNKNOWN SOFT EVENT
15	IO_B	IOUT4	OPTO	FREE SOFT EVENT	UNKNOWN SOFT EVENT
18	CAMERA_B	CC1	LVDS	FREE SOFT	UNKNOWN SOFT

19	CAMERA_B	CC2	LVDS	FREE SOFT	UNKNOWN SOFT
20	CAMERA_B	CC3	LVDS	FREE SOFT	UNKNOWN SOFT
21	CAMERA_B	CC4	LVDS	FREE SOFT	UNKNOWN SOFT

The I/O indices 0, 5, 6, 11, 16, 17 and {22...26} have no output-related function.

Grablink Full and Grablink Full XR

I/O index assignments and specific member values of the output-related board I/O parameters

Index	ConnectorName	OutputPinName	OutputStyle	OutputConfig	OutputFunction
1	IO	IOUT1	OPTO	FREE SOFT EVEN	UNKNOWN SOFT EVENT
2	IO	IOUT2	OPTO	FREE SOFT EVEN	UNKNOWN SOFT EVENT
3	IO	IOUT3	OPTO	FREE SOFT EVEN	UNKNOWN SOFT EVENT
4	IO	IOUT4	OPTO	FREE SOFT EVEN	UNKNOWN SOFT EVENT
7	CAMERA	CC1	LVDS	FREE SOFT	UNKNOWN SOFT
8	CAMERA	CC2	LVDS	FREE SOFT	UNKNOWN SOFT
9	CAMERA	CC3	LVDS	FREE SOFT	UNKNOWN SOFT
10	CAMERA	CC4	LVDS	FREE SOFT	UNKNOWN SOFT

The I/O indices 0, 5, 6, and {11...24} have no output-related function.

Camera Imaging Basic Geometry

The *Imaging* parameter declares the basic geometry of the camera feeding the channel. MultiCam supports three basic geometries:

- AREA:** The area-scan cameras are based on 2D imager(s) and deliver 2D data frames

- **LINE:** The non-TDI line-scan cameras are based on 1D imager(s) and deliver 1D data lines
- **TDI:** The TDI line-scan cameras are based on 2D imager(s) and deliver 1D data lines

TDI stands for Time Delay Integration. TDI line-scan cameras exhibit an increased sensitivity since the light integration spans over multiple line periods.

MultiCam distinguishes TDI and non-TDI line-scan cameras since TDI line-scan cameras have specific requirements for their control. However, both are line-scan cameras and share a common set of acquisition modes.

Camera Spectral Sensitivity

The [Spectrum](#) parameter declares the spectral sensitivity of the camera feeding the channel. MultiCam supports three spectral sensitivities:

- **BW:** The black/white cameras are delivering a monochrome video signal built from an imager having a spectral response covering the visible light spectrum
- **IR:** The infrared cameras are delivering a monochrome video signal built from an imager having a spectral response covering the infra-red light spectrum
- **COLOR:** The color cameras are delivering a multi-component video signal built from either a single imager having Color Filter Arrays or from multiple imagers having different spectral responses

For the frame grabber point of view, BW and IR are equivalent. The wording "monochrome cameras" designates both classes of cameras.

The class of color cameras is further divided into several sub-classes. See [Color Camera Specification](#).

Camera Data Transfer Method

The [DataLink](#) parameter declares the data transfer method of the camera feeding the channel. MultiCam supports three data transfer methods:

- **COMPOSITE:** The "composite video" cameras deliver the video data as an analog composite video signal. The signal can be:
 - CVBS including Color, Video, Blanking, and Sync
 - VBS including Video, Blanking, and Sync
- **ANALOG:** The "analog industrial" cameras deliver the video data as an analog video signal. The signal can be:
 - Single lane VBS including Video, Blanking, and Sync
 - Single lane VB including Video, Blanking
 - Three lane analog RGB with Sync on Green
- **CAMERALINK:** The "Camera Link" cameras deliver digital video data complying with the Camera Link standard.

Note. There is a 1-to-1 match between the values of [DataLink](#) and the Euresys frame grabber series:

- The Picolo series supports exclusively "composite video" cameras
- The Domino series supports exclusively "analog industrial" cameras
- The Grablink series supports exclusively "Camera Link" cameras

Camera Color Analysis Method

The [ColorMethod](#) parameter declares the color analysis method of the camera feeding the channel. MultiCam supports the following color analysis methods:

- **NONE:** The "monochrome" cameras have no color analysis method
- **RGB:** The "RGB" cameras deliver the video data as three separate color components respectively named Red, Green, Blue.
- **BAYER:** The "Bayer CFA" cameras deliver the raw video obtained from a Bayer CFA imager.
- **PRISM:** The "PRISM " cameras are a sub-class of RGB cameras using a 3-CCD prism assembly ensuring a perfect registration of all color components of a pixel.
- **TRILINEAR:** The "trilinear" cameras are a sub-class of non-TDI line-scan RGB color cameras using a triple line-array imager and delivering un-registered color components.

Camera Color Pattern Filter Alignment

The [ColorRegistration](#) parameter declares the alignment of the color pattern filter of the camera feeding the channel. MultiCam supports the following filter alignments for **Bayer CFA cameras**:

- GB, BG, RG, GR

MultiCam supports the following filter alignments for **trilinear cameras**:

- RGB, GBR, BRG