

```
// Create an instant camera object with the first
Camera_t camera( CT1Factory::GetInstance().Creat

// Register an image event handler that accesses
camera.RegisterImageEventHandler(_new CSampleIma
Ownership_TakeOwnership);

// Open the camera.
camera.Open();
```

## Basler CXP GenTL Producer: Feature Documentation

*Applicable to Basler boost cameras / Basler CXP-12 interface cards only*

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# 1 General Information about Basler CXP GenTL Producer

Basler provides the Basler CXP GenTL Producer. This GenTL producer has been designed for use with Basler boost Series cameras and Basler CXP-12 Interface Card.

## 1.1 GenICam Components and Versions

The Basler CXP GenTL Producer is based on the following GenICam components and versions:

- GenTL 1.5
- SFNC 2.5
- GenTL SFNC 1.1.1
- GenAPI 3.1.0 (internally implemented)

## 1.2 Feature Groups and Documentation Sources

The features implemented in the Basler CXP GenTL Producer belong to three different groups. You find the respective feature documentation in the according documentation sources:

Feature Group	Description	Where to find the feature documentation
GenTL standard features	The implementation of the GenTL standard features and their properties (like tooltips or descriptions) follows the definitions in SFNC 2.5 and GenTL SFNC 1.1.1.	Directly on the <a href="#">EMVA GenICam download site</a> : <ul style="list-style-type: none"> <li>▪ <a href="#">SFNC 2.5</a></li> <li>▪ <a href="#">GenTL SFNC 1.1.1</a></li> </ul>
GenTL custom features	These features have been implemented by Basler for optimal support of Basler CXP-12 Interface Card 1C.	In chapter 4 of this document.
Applet Features	All applet features are listed in the XML document for the GenTL <b>Device</b> module, in category <b>DeviceFgFeatures</b> . These features have been implemented by Basler for optimal support of Basler CXP-12 Interface Card 1C.	Feature Reference Manual: <a href="https://www.baslerweb.com/en/sales-support/downloads/document-downloads/acq-single-cxp12x1area-cxp12-ic-1c/">https://www.baslerweb.com/en/sales-support/downloads/document-downloads/acq-single-cxp12x1area-cxp12-ic-1c/</a>

Chapter [2](#) of this document lists all features implemented in the Basler CXP GenTL Producer that are not described in the Feature Reference Manual.

Chapter [3](#) of this document provides some information about the applet features provided by the Basler CXP GenTL Producer.

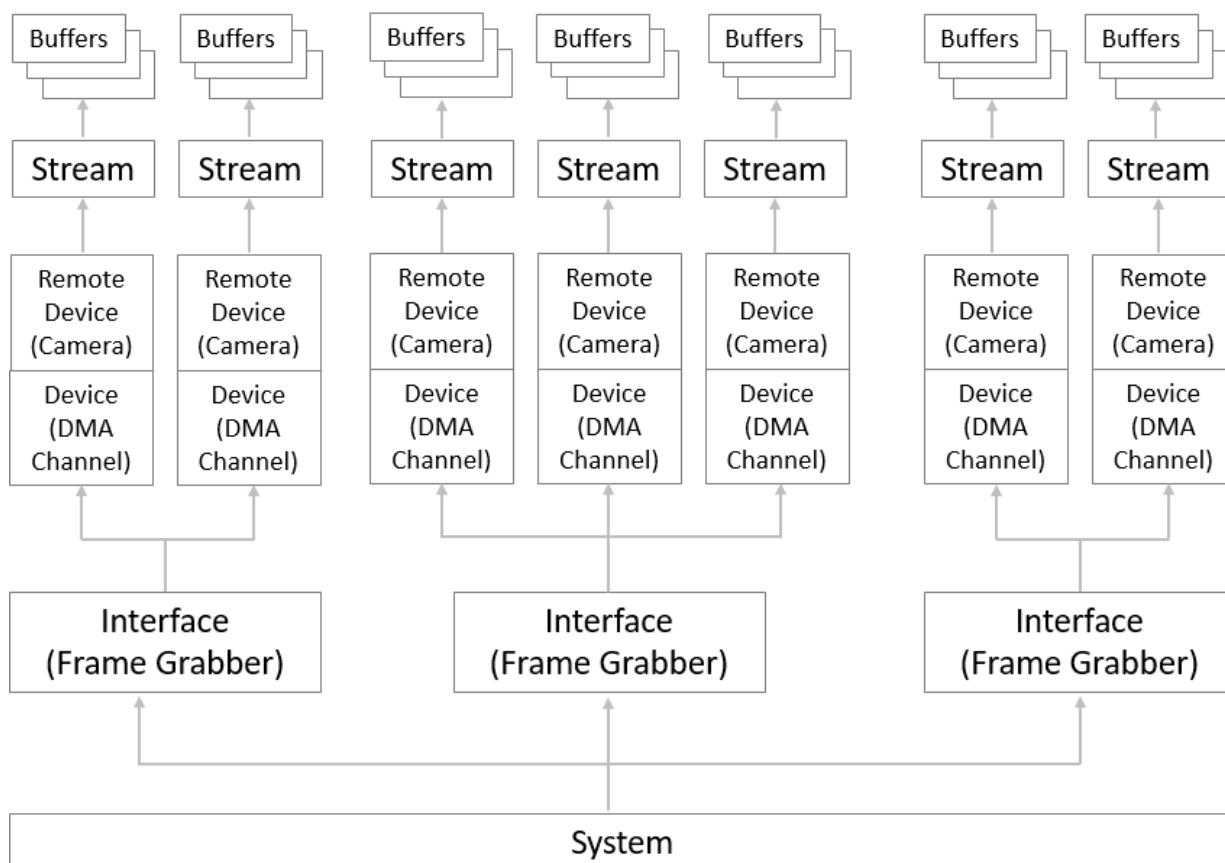
Chapter [4](#) of this document gives detailed information about the GenTL custom features implemented in the Basler CXP GenTL Producer that are not described in the Feature Reference Manual.

### 1.3 GenTL Modules and Addressed Hardware

Each frame grabber in the system is one GenTL module of type **Interface**.

Each DMA channel (transferring image data from the frame grabber to the RAM on the host PC) is one GenTL module of type **Device**.

Each camera connected to a frame grabber is one GenTL module of type **Remote Device**.



All applet features are listed in the XML document for the GenTL **Device** module, under category **DeviceFgFeatures**.

The following chapters depict the features of the Basler CXP GenTL Producer:

- Chapter [2](#) lists all features supported by this GenTL producer (standard and custom) that are not described in the Feature Reference Manual.
- Chapter [3](#) provides some information about the applet features provided by this GenTL Producer and where to find the according documentation.
- Chapter [4](#) gives a detailed description of all **custom** features supported by this GenTL producer that are not described by Feature Reference Manual or by the GenICam GenTL standard.

## 2 Features of the Basler CXP GenTL Producer (Except Applet Features)

This chapter lists all features supported by this GenTL producer that are not described in the Feature Reference Manual<sup>1</sup>. The features are sorted by module (System, Interface, Device, Stream, and Buffer).

### NOTICE

For some features, under specific circumstances the access type may differ from the one stated in the lists below. This is the case under the following circumstances:

- The selectors are set to **not available** if there are no available elements.
- The events are only readable from their respective GenICam port, as described in the standards.

Some Custom features, like “OutputPackedFormats” may not be available under specific circumstances. These cases are described in the descriptions of the custom features in chapter 4.

### 2.1 System Module

Module	Name	Display Name	Namespace	Interface Type	Access
System	SystemInformation	System Information	Standard	ICategory	RO
System	TLID	TLID	Standard	IString	RO
System	TLVendorName	TL Vendor Name	Standard	IString	RO
System	TLModelName	TL Model Name	Standard	IString	RO
System	TLVersion	TL Version	Standard	IString	RO
System	TLFileName	TL File Name	Standard	IString	RO
System	TLDisplayName	TL Display Name	Standard	IString	RO
System	TLPath	TL Path	Standard	IString	RO
System	TLType	TL Type	Standard	IEnumeration	RO
System	GenTLVersionMajor	Gen TL Version Major	Standard	IInteger	RO

<sup>1</sup> The features described in the reference manual belong to category **DeviceFgFeatures**.

Module	Name	Display Name	Namespace	Interface Type	Access
System	GenTLVersionMinor	Gen TL Version Minor	Standard	IInteger	RO
System	GenTLFNCVersionMajor	Gen TLFNC Version Major	Standard	IInteger	RO
System	GenTLFNCVersionMinor	Gen TLFNC Version Minor	Standard	IInteger	RO
System	InterfaceEnumeration	Interface Enumeration	Standard	ICategory	RO
System	InterfaceUpdateList	Interface Update List	Standard	ICommand	WO
System	InterfaceUpdateTimeout	Interface Update Timeout	Standard	IInteger	RW
System	InterfaceSelector	Interface Selector	Standard	IInteger	RW
System	InterfaceID	Interface ID	Standard	IString	RO
System	InterfaceDisplayName	Interface Display Name	Standard	IString	RO

## 2.2 Interface Module



Use the link provided with the feature name to go to the detailed description of a given custom feature.

Module	Name	Display Name	Namespace	Interface Type	Access
Interface	<a href="#">InterfaceApplets</a>	Interface Applets	Custom	ICategory	RO
Interface	<a href="#">InterfaceApplet</a>	Interface Applet	Custom	IEnumeration	RW
Interface	InterfaceInformation	Interface Information	Standard	ICategory	RO
Interface	InterfaceID	Interface ID	Standard	IString	RO
Interface	InterfaceDisplayName	Interface Display Name	Standard	IString	RO
Interface	InterfaceType	Interface Type	Standard	IEnumeration	RO

Module	Name	Display Name	Namespace	Interface Type	Access
Interface	InterfaceTLVersionMajor	Interface TL Version Major	Standard	Integer	RO
Interface	InterfaceTLVersionMinor	Interface TL Version Minor	Standard	Integer	RO
Interface	DeviceEnumeration	Device Enumeration	Standard	Category	RO
Interface	DeviceUpdateList	Device Update List	Standard	Command	WO
Interface	DeviceUpdateTimeout	Device Update Timeout	Standard	Integer	RW
Interface	DeviceSelector	Device Selector	Standard	Integer	RW
Interface	DeviceID	Device ID	Standard	String	RO
Interface	DeviceVendorName	Device Vendor Name	Standard	String	RO
Interface	DeviceModelName	Device Model Name	Standard	String	RO
Interface	DeviceAccessStatus	Device Access Status	Standard	Enumeration	RO
Interface	DeviceSerialNumber	Device Serial Number	Standard	String	RO
Interface	DeviceUserID	Device User ID	Standard	String	RO
Interface	DeviceTLVersionMajor	Device TL Version Major	Standard	Integer	RO
Interface	DeviceTLVersionMinor	Device TL Version Minor	Standard	Integer	RO
Interface	TransportLayerControl	Transport Layer Control	Standard	Category	RO
Interface	CxpPoCxpAuto	PoCxp Auto	Standard	Command	WO
Interface	CxpPoCxpTurnOff	PoCxp Off	Standard	Command	WO
Interface	CxpPoCxpTripReset	PoCxp TripReset	Standard	Command	WO



Module	Name	Display Name	Namespace	Interface Type	Access
Interface	CxpPoCxpStatus	Cxp PoCxp Status	Standard	IEnumeration	RO
Interface	CxpLinkConfiguration	Cxp Link Configuration	Standard	IEnumeration	RW
Interface	<a href="#">BoardSensors</a>	Board Sensors	Custom	ICategory	RO
Interface	<a href="#">AmbientTemperature</a>	Board Ambient Temperature	Custom	IFloat	RO
Interface	<a href="#">PowerSupplyTemperature</a>	Board Power Supply Temperature	Custom	IFloat	RO
Interface	<a href="#">FpgaCoreTemperature</a>	FPGA Core Temperature	Custom	IFloat	RO
Interface	<a href="#">FpgaCoreVoltage</a>	FPGA Core Voltage	Custom	IFloat	RO
Interface	<a href="#">FpgaAuxVoltage</a>	FPGA Aux Voltage	Custom	IFloat	RO
Interface	<a href="#">FpgaBRamVoltage</a>	FPGA BRAM Voltage	Custom	IFloat	RO
Interface	<a href="#">ExternalPowerPresent</a>	External Power Present	Custom	IBoolean	RO
Interface	<a href="#">Port0Status</a>	Port 0 Status	Custom	ICategory	RO
Interface	<a href="#">CxpPort0LinkSpeed</a>	CXP Port 0 Link Speed	Custom	IFloat	RO
Interface	<a href="#">CxpPort0PowerState</a>	CXP Port 0 Power State	Custom	IEnumeration	RO
Interface	<a href="#">CxpPort0Voltage</a>	CXP Port 0 Voltage	Custom	IFloat	RO
Interface	<a href="#">CxpPort0Current</a>	CXP Port 0 Current	Custom	IFloat	RO
Interface	<a href="#">CxpPort0Power</a>	CXP Port 0 Power	Custom	IFloat	RO
Interface	<a href="#">CxpPort0NotInTableErrorCount</a>	CXP Port 0 Not-In-Table Error Count	Custom	IInteger	RO

Module	Name	Display Name	Namespace	Interface Type	Access
Interface	<a href="#">CxpPort0DisparityErrorCount</a>	CXP Port 0 Disparity Error Count	Custom	Integer	RO

## 2.3 Device Module



Use the link provided with the feature name to go to the detailed description of a given custom feature.

Module	Name	Display Name	Namespace	Interface Type	Access
Device	<a href="#">DeviceFgFeatures</a>	Device Fg Features	<b>Custom</b>	ICategory	RO
Device	DeviceInformation	Device Information	Standard	ICategory	RO
Device	DeviceDisplayName	Device Display Name	Standard	IString	RO
Device	DeviceID	Device ID	Standard	IString	RO
Device	DeviceAccessStatus	Device Access Status	Standard	IEnumeration	RO
Device	DeviceVendorName	Device Vendor Name	Standard	IString	RO
Device	DeviceModelName	Device Model Name	Standard	IString	RO
Device	DeviceType	Device Type	Standard	IEnumeration	RO
Device	ImageFormatControl	Image Format Control	Standard	ICategory	RO
Device	<a href="#">AutomaticFormatControl</a>	Automatic Format Control	<b>Custom</b>	IBoolean	RW
Device	<a href="#">AutomaticROIControl</a>	Automatic ROI Control	<b>Custom</b>	IBoolean	RW
Device	<a href="#">OutputPackedFormats</a>	Output Packed Formats	<b>Custom</b>	IBoolean	<b>RW</b>

---

Device	StreamEnumeration	Stream Enumeration	Standard	ICategory	RO
Device	StreamSelector	Stream Selector	Standard	Integer	<b>RW</b>
Device	StreamID	Stream ID	Standard	IString	RO
Device	StreamDisplayName	Stream ID	Standard	IString	RO
Device	EventControl	Event Control	Standard	ICategory	RO
Device	EventSelector	Event Selector	Standard	IEnumeration	RW
Device	EventNotification	Event Notification	Standard	IEnumeration	RW
Device	EventDeviceLostData	Event Device Lost Data	Standard	ICategory	RO
Device	EventDeviceLost	Event Device Lost	Standard	Integer	RO

## 2.4 Stream Module

Module	Name	Display Name	Namespace	Interface Type	Access
Stream	StreamInformation	Stream Information	Standard	ICategory	RO
Stream	StreamID	Stream ID	Standard	IString	RO
Stream	StreamType	Stream Type	Standard	IEnumeration	RO
Stream	BufferHandlingControl	Buffer Handling Control	Standard	ICategory	RO
Stream	StreamAnnouncedBufferCount	Stream Announced Buffer Count	Standard	Integer	RO
Stream	StreamBufferHandlingMode	Stream Buffer Handling Mode	Standard	IEnumeration	RO
Stream	StreamAnnounceBufferMinimum	Stream Announce Buffer Minimum	Standard	Integer	RO
Stream	StreamDeliveredFrameCount	Stream Delivered Frame Count	Standard	Integer	RO
Stream	StreamLostFrameCount	Stream Lost Frame Count	Standard	Integer	RO
Stream	StreamInputBufferCount	Stream Input Buffer Count	Standard	Integer	RO
Stream	StreamOutputBufferCount	Stream Output Buffer Count	Standard	Integer	RO
Stream	StreamStartedFrameCount	Stream Started Frame Count	Standard	Integer	RO
Stream	PayloadSize	Payload Size	Standard	Integer	RO
Stream	StreamIsGrabbing	Stream Is Grabbing	Standard	Boolean	RO
Stream	StreamChunkCountMaximum	Stream Chunk Count Maximum	Standard	Integer	RO
Stream	StreamBufferAlignment	Stream Buffer Alignment	Standard	Integer	RO

## 2.5 Buffer Module

Module	Name	Display Name	Namespace	Interface Type	Access
Buffer	BufferDataInformation	Buffer Data Information	Standard	ICategory	RO
Buffer	BufferTimeStamp	Buffer Time Stamp	Standard	Integer	RO
Buffer	BufferNewData	Buffer New Data	Standard	Boolean	RO
Buffer	BufferIsQueued	Buffer Is Queued	Standard	Boolean	RO
Buffer	BufferPayloadType	Buffer Payload Type	Standard	Enumeration	RO
Buffer	BufferNumberOfParts	Buffer Number Of Parts	Standard	Integer	RO
Buffer	BufferPartSelector	Buffer Part Selector	Standard	Integer	<b>RW</b>
Buffer	BufferWidth	Buffer Width	Standard	Integer	RO
Buffer	BufferHeight	Buffer Height	Standard	Integer	RO
Buffer	BufferXOffset	Buffer X Offset	Standard	Integer	RO
Buffer	BufferYOffset	Buffer Y Offset	Standard	Integer	RO
Buffer	BufferXPadding	Buffer X Padding	Standard	Integer	RO
Buffer	BufferYPadding	Buffer Y Padding	Standard	Integer	RO
Buffer	BufferFrameID	Buffer Frame ID	Standard	Integer	RO

## 3 Applet Features of the Basler CXP GenTL Producer

All applet features supported by this GenTL producer are described in full detail in the Feature Reference Manual, available at:

<https://www.baslerweb.com/en/sales-support/downloads/document-downloads/acq-single-cxp12x1area-cxp12-ic-1c/>

The features described in the reference manual belong to category **DeviceFgFeatures**. They are contained in the XML document that belongs to GenTL module **Device**.

## 4 Description of Custom Features of the Basler CXP GenTL Producer

This chapter provides you with a detailed description of all implemented GenTL custom features that are not described in the reference manual<sup>2</sup>. The features are sorted by module (Interface, Device, Stream, and Buffer).

### 4.1 Interface Module: Custom Features Description

#### 4.1.1 InterfaceApplets

<b>Module</b>	Interface
<b>Parent</b>	Root
<b>Interface Type</b>	ICategory
<b>Namespace</b>	Custom
<b>Display Name</b>	Interface Applets
<b>Tooltip</b>	Category containing general information about the Applets in the Interface Module.
<b>Description</b>	Category containing general information about the Applets in the Interface Module. Different Applets are associated with different Frame Grabber functionalities or initialization modes.
<b>Access</b>	RO
<b>CachingMode</b>	WriteThrough
<b>Visibility</b>	Beginner

---

<sup>2</sup> The features described in the reference manual belong to module **Device**, category **DeviceFgFeatures**.

### 4.1.2 InterfaceApplet

<b>Module</b>	Interface
<b>Parent</b>	InterfaceApplets
<b>Interface Type</b>	IEnumeration
<b>Namespace</b>	Custom
<b>Display Name</b>	Interface Applet
<b>Tooltip</b>	Selected Applet used to initialize the Interface
<b>Description</b>	Selected Applet used to initialize the Interface. Applets are specific dlls used to initialize the frame grabber. Each Applet has different characteristics and functionality.
<b>Access</b>	RW
<b>CachingMode</b>	WriteThrough
<b>Visibility</b>	Beginner

The Applets are specific dlls used to initialize the frame grabber. They are located in the dll folder, inside the installation folder of the Producer. Each Applet contains different features and functionalities, described under the *DeviceFgFeatures* category in the Device xml. Choosing a different applet implies producing a different xml for all the devices in one frame grabber. Every time that the frame grabber is initialized, a default applet is loaded from the applets inside the Producer dll folder.

The Interface Applet feature allows changing this default applet. Changing the applet through this feature triggers a device disconnect event for the current device, and takes effect after updating the devices, so that the frame grabber can be reinitialized. If the devices are not updated or the frame grabber cannot be properly initialized with the new applet, the default applet will not be changed.

### 4.1.3 BoardSensors

<b>Module</b>	Interface
<b>Parent</b>	Root
<b>Interface Type</b>	ICategory
<b>Namespace</b>	Custom
<b>Display Name</b>	Board Sensors
<b>Tooltip</b>	This category contains all sensors available for the board

---

<b>Description</b>	This category contains all sensors available for the board
<b>Access</b>	RO
<b>CachingMode</b>	WriteThrough
<b>Visibility</b>	Beginner

#### 4.1.4 AmbientTemperature

<b>Module</b>	Interface
<b>Parent</b>	BoardSensors
<b>Interface Type</b>	IFloat
<b>Namespace</b>	Custom
<b>Display Name</b>	Board Ambient Temperature
<b>Tooltip</b>	Board Ambient Temperature Sensor
<b>Description</b>	Board Ambient Temperature Sensor
<b>Access</b>	RO
<b>CachingMode</b>	NoCache
<b>Visibility</b>	Beginner
<b>Unit</b>	°C

#### 4.1.5 PowerSupplyTemperature

<b>Module</b>	Interface
<b>Parent</b>	BoardSensors
<b>Interface Type</b>	IFloat
<b>Namespace</b>	Custom
<b>Display Name</b>	Board Power Supply Temperature
<b>Tooltip</b>	Board Power Supply Temperature Sensor
<b>Description</b>	Board Power Supply Temperature Sensor



---

<b>Access</b>	RO
<b>CachingMode</b>	NoCache
<b>Visibility</b>	Beginner
<b>Unit</b>	°C

#### 4.1.6 FpgaCoreTemperature

<b>Module</b>	Interface
<b>Parent</b>	BoardSensors
<b>Interface Type</b>	IFloat
<b>Namespace</b>	Custom
<b>Display Name</b>	FPGA Core Temperature
<b>Tooltip</b>	FPGA Core Temperature Sensor
<b>Description</b>	FPGA Core Temperature Sensor
<b>Access</b>	RO
<b>CachingMode</b>	NoCache
<b>Visibility</b>	Beginner
<b>Unit</b>	°C

#### 4.1.7 FpgaCoreVoltage

<b>Module</b>	Interface
<b>Parent</b>	BoardSensors
<b>Interface Type</b>	IFloat
<b>Namespace</b>	Custom
<b>Display Name</b>	FPGA Core Voltage
<b>Tooltip</b>	FPGA Core Voltage Sensor
<b>Description</b>	FPGA Core Voltage Sensor

---

<b>Access</b>	RO
<b>CachingMode</b>	NoCache
<b>Visibility</b>	Beginner
<b>Unit</b>	V

#### 4.1.8 FpgaAuxVoltage

<b>Module</b>	Interface
<b>Parent</b>	BoardSensors
<b>Interface Type</b>	IFloat
<b>Namespace</b>	Custom
<b>Display Name</b>	FPGA Aux Voltage
<b>Tooltip</b>	FPGA Aux Voltage Sensor
<b>Description</b>	FPGA Aux Voltage Sensor
<b>Access</b>	RO
<b>CachingMode</b>	NoCache
<b>Visibility</b>	Beginner
<b>Unit</b>	V

#### 4.1.9 FpgaBRamVoltage

<b>Module</b>	Interface
<b>Parent</b>	BoardSensors
<b>Interface Type</b>	IFloat
<b>Namespace</b>	Custom
<b>Display Name</b>	FPGA BRAM Voltage
<b>Tooltip</b>	FPGA BRAM Voltage Sensor
<b>Description</b>	FPGA BRAM Voltage Sensor

---

<b>Access</b>	RO
<b>CachingMode</b>	NoCache
<b>Visibility</b>	Beginner
<b>Unit</b>	V

#### 4.1.10 ExternalPowerPresent

<b>Module</b>	Interface
<b>Parent</b>	BoardSensors
<b>Interface Type</b>	IBoolean
<b>Namespace</b>	Custom
<b>Display Name</b>	External Power Present
<b>Tooltip</b>	External Power Presence Sensor
<b>Description</b>	External Power Presence Sensor
<b>Access</b>	RO
<b>CachingMode</b>	NoCache
<b>Visibility</b>	Beginner

#### 4.1.11 Port0Status

<b>Module</b>	Interface
<b>Parent</b>	Root
<b>Interface Type</b>	ICategory
<b>Namespace</b>	Custom
<b>Display Name</b>	Port 0 Status
<b>Tooltip</b>	This category conatins various status values for port 0
<b>Description</b>	This category conatins various status values for port 0
<b>Access</b>	RO

<b>CachingMode</b>	WriteThrough
<b>Visibility</b>	Beginner

#### 4.1.12 CxpPort0LinkSpeed

<b>Module</b>	Interface
<b>Parent</b>	Port0Status
<b>Interface Type</b>	IFloat
<b>Namespace</b>	Custom
<b>Display Name</b>	CXP Port 0 Link Speed
<b>Tooltip</b>	CXP Port 0 Link Speed
<b>Description</b>	CXP Port 0 Link Speed
<b>Access</b>	RO
<b>CachingMode</b>	NoCache
<b>Visibility</b>	Beginner
<b>Unit</b>	Gbit/s

#### 4.1.13 CxpPort0PowerState

<b>Module</b>	Interface
<b>Parent</b>	Port0Status
<b>Interface Type</b>	IEnumeration
<b>Namespace</b>	Custom
<b>Display Name</b>	CXP Port 0 Power State
<b>Tooltip</b>	CXP Port 0 Power State Sensor
<b>Description</b>	CXP Port 0 Power State Sensor
<b>Access</b>	RO
<b>CachingMode</b>	NoCache

<b>Visibility</b>	Beginner
-------------------	----------

<b>Parent</b>	CxpPort0PowerState
<b>EnumEntry</b>	AdcFault
<b>Display Name</b>	A/D Converter Fault
<b>Tooltip</b>	PoCxp state cannot be determined because of an A/D converter fault
<b>Description</b>	PoCxp state cannot be determined because of an A/D converter fault
<b>Value</b>	9

<b>Parent</b>	CxpPort0PowerState
<b>EnumEntry</b>	Disabled
<b>Tooltip</b>	PoCxp is disabled
<b>Description</b>	PoCxp is disabled
<b>Value</b>	0

<b>Parent</b>	CxpPort0PowerState
<b>EnumEntry</b>	HighCurrent
<b>Display Name</b>	High Current
<b>Tooltip</b>	PoCxp is off because of an over current trip
<b>Description</b>	PoCxp is off because of an over current trip
<b>Value</b>	6

<b>Parent</b>	CxpPort0PowerState
<b>EnumEntry</b>	HighVoltage
<b>Display Name</b>	High Voltage
<b>Tooltip</b>	PoCxp is off because voltage is too high

<b>Description</b>	PoCxp is off because voltage is too high
<b>Value</b>	8

<b>Parent</b>	CxpPort0PowerState
<b>EnumEntry</b>	Initializing
<b>Tooltip</b>	PoCxp state machine is looking for devices
<b>Description</b>	PoCxp state machine is looking for devices
<b>Value</b>	1

<b>Parent</b>	CxpPort0PowerState
<b>EnumEntry</b>	InvalidValue
<b>Display Name</b>	Invalid Value
<b>Tooltip</b>	PoCxp state cannot be determined
<b>Description</b>	PoCxp state cannot be determined
<b>Value</b>	10

<b>Parent</b>	CxpPort0PowerState
<b>EnumEntry</b>	LowVoltage
<b>Display Name</b>	Low Voltage
<b>Tooltip</b>	PoCxp is off because voltage is too low
<b>Description</b>	PoCxp is off because voltage is too low
<b>Value</b>	7

<b>Parent</b>	CxpPort0PowerState
<b>EnumEntry</b>	On

---

<b>Tooltip</b>	PoCxp is active
<b>Description</b>	PoCxp is active
<b>Value</b>	4

#### 4.1.14 CxpPort0Voltage

<b>Module</b>	Interface
<b>Parent</b>	Port0Status
<b>Interface Type</b>	IFloat
<b>Namespace</b>	Custom
<b>Display Name</b>	CXP Port 0 Voltage
<b>Tooltip</b>	CXP Port 0 Voltage Sensor
<b>Description</b>	CXP Port 0 Voltage Sensor
<b>Access</b>	RO
<b>CachingMode</b>	NoCache
<b>Visibility</b>	Beginner
<b>Unit</b>	V

#### 4.1.15 CxpPort0Current

<b>Module</b>	Interface
<b>Parent</b>	Port0Status
<b>Interface Type</b>	IFloat
<b>Namespace</b>	Custom
<b>Display Name</b>	CXP Port 0 Current
<b>Tooltip</b>	CXP Port 0 Current Sensor

<b>Description</b>	CXP Port 0 Current Sensor
<b>Access</b>	RO
<b>CachingMode</b>	NoCache
<b>Visibility</b>	Beginner
<b>Unit</b>	mA

#### 4.1.16 CxpPort0Power

<b>Module</b>	Interface
<b>Parent</b>	Port0Status
<b>Interface Type</b>	IFloat
<b>Namespace</b>	Custom
<b>Display Name</b>	CXP Port 0 Power
<b>Tooltip</b>	CXP Port 0 Power Sensor
<b>Description</b>	CXP Port 0 Power Sensor
<b>Access</b>	RO
<b>CachingMode</b>	NoCache
<b>Visibility</b>	Beginner
<b>Unit</b>	W

#### 4.1.17 CxpPort0NotInTableErrorCount

<b>Module</b>	Interface
<b>Parent</b>	Port0Status
<b>Interface Type</b>	IInteger
<b>Namespace</b>	Custom
<b>Display Name</b>	CXP Port 0 Not-In-Table Error Count
<b>Tooltip</b>	Number of CXP Port 0 Not-In-Table Errors



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<b>Description</b>	Number of CXP Port 0 Not-In-Table Errors
<b>Access</b>	RO
<b>CachingMode</b>	NoCache
<b>Visibility</b>	Beginner

#### 4.1.18 CxpPort0DisparityErrorCount

<b>Module</b>	Interface
<b>Parent</b>	Port0Status
<b>Interface Type</b>	Integer
<b>Namespace</b>	Custom
<b>Display Name</b>	CXP Port 0 Disparity Error Count
<b>Tooltip</b>	Number of CXP Port 0 Disparity Errors
<b>Description</b>	Number of CXP Port 0 Disparity Errors
<b>Access</b>	RO
<b>CachingMode</b>	NoCache
<b>Visibility</b>	Beginner

## 4.2 Device Module: Custom Features Description

### 4.2.1 DeviceFgFeatures

<b>Module</b>	Device
<b>Parent</b>	Root
<b>Interface Type</b>	ICategory
<b>Namespace</b>	Custom
<b>Display Name</b>	Device Fg Features
<b>Tooltip</b>	Category that contains all the Applet features of the device.
<b>Description</b>	Category that contains all the Applet features of the device. This part of the xml depends on the Applet dll used to open the Interface module of this device.
<b>Access</b>	RO
<b>CachingMode</b>	WriteThrough
<b>Visibility</b>	Beginner

### 4.2.2 AutomaticFormatControl

<b>Module</b>	Device
<b>Parent</b>	ImageFormatControl
<b>Interface Type</b>	IBoolean
<b>Namespace</b>	Custom
<b>Display Name</b>	Automatic Format Control
<b>Tooltip</b>	Activates or deactivates the automatic control of the Format in the Device.
<b>Description</b>	Activates or deactivates the automatic control of the Format in the Device. If this feature is active, the frame grabber format and its dependencies are automatically updated to fit the camera format.
<b>Access</b>	RW
<b>CachingMode</b>	WriteThrough

<b>Visibility</b>	Expert
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This feature activates or deactivate the automatic control of the Pixel Format, coordinating this feature along the remote device, device, stream and buffers. If this feature is active, the frame grabber features inside the *DeviceFgFeatures* category are automatically set before the acquisition to match the the camera ones. This affects the Device features “*PixelFormat*”, “*Format*”, “*BitAlignment*” and “*CustomBitShiftRight*”, described in the Feature Reference Manual. If this feature is selected, the real output format outputed by the buffers and set in the buffer GenTL Infos, won’t be the Output Format, but the camera one.

The above referenced features will be combined to produce this non-processing effect. There are two possibilities in which this processing may be done, depending on the state of the feature “*OutputPackedFormats*”. If this feature is enable, the Cxp packed formats proceeding from the camera are not unpacked to the unpacked standard ones. If is disable, which is the default behaviour, the input Cxp format will be unpacked to the matching unpacked one.

If the “*OutputPackedFormats*” feature is selected, the following actualizations take place before each Acquisition:

- The “*PixelFormat*” is actualized to match the camera one.
- The “*Format*” is actualized to match the camera one.
- The “*BitAlignment*” is actualized to “*CustomBitShift*”.
- The “*CustomBitShiftRight*” is actualized to “0”.

If the “*OutputPackedFormats*” feature is not selected, the following actualizations take place before each Acquisition:

- The “*PixelFormat*” is actualized to match the camera one.
- The “*Format*” is actualized to match the camera one, or a 16 bit version in case that the camera format is a 10-12 or 14 bit format.
- The “*BitAlignment*” is actualized to “*CustomBitShift*”.
- The “*CustomBitShiftRight*” is actualized to “0”, “2”, “4” or “6” for the 16, 14, 12, or 10 bit formats respectively.

The “*OutputPackedFormats*” feature is only available when the “*AutomaticFormatControl*”.

### 4.2.3 OutputPackedFormats

<b>Module</b>	Device
<b>Parent</b>	ImageFormatControl
<b>Interface Type</b>	IBoolean
<b>Namespace</b>	Custom
<b>Display Name</b>	Output Packed Formats
<b>Tooltip</b>	Automatically outputs packed formats instead of unpacked ones

<b>Description</b>	Automatically outputs packed formats instead of unpacked ones. This feature is only available if the automatic format control is enable.
<b>Access</b>	RW
<b>CachingMode</b>	WriteThrough
<b>Visibility</b>	Expert

This feature is only available if the feature *“AutomaticFormatControl”* is enable. The feature *“OutputPackedFormats”* produce as output the associated packed formats for the 10, 12, and 14 bit formats. For more information, read the description of the *“AutomaticFormatControl”* feature.

### 4.3 Invisible Features: Custom Features Description

The following Custom Features are set to invisible and have only test or debugging purpose.

#### 4.3.1 AutomaticROIControl

<b>Module</b>	Device
<b>Parent</b>	ImageFormatControl
<b>Interface Type</b>	IBoolean
<b>Namespace</b>	Custom
<b>Display Name</b>	Automatic ROI Control
<b>Tooltip</b>	Activates or deactivates the automatic control of the ROI in the Device.
<b>Description</b>	Activates or deactivates the automatic control of the ROI in the Device. If this feature is active, the frame grabber ROI is automatically updated to the camera one.
<b>Access</b>	RW
<b>CachingMode</b>	WriteThrough
<b>Visibility</b>	Invisible

This feature activates or deactivate the automatic control of the ROI, coordinating its associated features along the remote device, device, stream and buffers. If this feature is active, the associated frame grabber features inside the *DeviceFgFeatures* category are automatically set before the acquisition, to match the the camera ones. This affects the Device features “*Width*” and “*Height*”, described in the Feature Reference Manual. If this feature is selected, the real output buffers and their GenTL buffer Infos, will be the one expected by reading this parameters in the camera. If the Width (or Height) readed from the camera is not a valid value for the frame grabber Width (or Height) due to the parameter granularity, the framegrabber parameter Width (or Height) will be actualised to the nearest value from below. This is done to prevent errors in some consumers that calculate the payload from the camera ROI parameters instead of reading it from the GenTL Stream.

#### 4.3.2 ControlCoreLinkTest

<b>Module</b>	Interface
<b>Parent</b>	TransportLayerControl
<b>Interface Type</b>	Category

<b>Namespace</b>	Custom
<b>Display Name</b>	Control Core Link Test
<b>Tooltip</b>	Category containing control core Link test features.
<b>Description</b>	Category containing control core Link test features.
<b>Access</b>	RO
<b>CachingMode</b>	WriteThrough
<b>Visibility</b>	Invisible

### 4.3.3 ControlCoreTxLinkTest

<b>Module</b>	Interface
<b>Parent</b>	ControlCoreLinkTest
<b>Interface Type</b>	Category
<b>Namespace</b>	Custom
<b>Display Name</b>	Control Core Tx Link Test
<b>Tooltip</b>	Category containing control core transmitter Link test features.
<b>Description</b>	Category containing control core transmitter Link test features.
<b>Access</b>	RO
<b>CachingMode</b>	WriteThrough
<b>Visibility</b>	Invisible

### 4.3.4 TxTestSequencesToSendLink0

<b>Module</b>	Interface
<b>Parent</b>	ControlCoreTxLinkTest
<b>Interface Type</b>	Integer
<b>Namespace</b>	Custom

<b>Display Name</b>	Tx Test Sequences To Send Link 0
<b>Tooltip</b>	Number of test sequences To Send at Link 0
<b>Description</b>	Number of test sequences To Send at Link 0
<b>Access</b>	RW
<b>CachingMode</b>	NoCache
<b>Visibility</b>	Invisible

Amount of link test packets to be sent during the test. A test packet is defined in CXP 2.0 standard chapter 9.9.2.

#### 4.3.5 TxTestControlLink0

<b>Module</b>	Interface
<b>Parent</b>	ControlCoreTxLinkTest
<b>Interface Type</b>	Boolean
<b>Namespace</b>	Custom
<b>Display Name</b>	Tx Test Control Link 0
<b>Tooltip</b>	Transmitter test control at Link 0
<b>Description</b>	Transmitter test control at Link 0
<b>Access</b>	RW
<b>CachingMode</b>	NoCache
<b>Visibility</b>	Invisible

When set, starts the uplink test for the specified amount of packets to send and resets the counter value upon start. The start is performed upon writing to this bit.

When reset, aborts the currently running test at the next packet boundary.

#### 4.3.6 TxLinkTestStatusLink0

<b>Module</b>	Interface
<b>Parent</b>	ControlCoreTxLinkTest

<b>Interface Type</b>	Boolean
<b>Namespace</b>	Custom
<b>Display Name</b>	Tx Link Test Status Link 0
<b>Tooltip</b>	Transmitter Link Test Status at Link 0
<b>Description</b>	Transmitter Link Test Status at Link 0
<b>Access</b>	RO
<b>CachingMode</b>	NoCache
<b>Visibility</b>	Invisible

When set, the uplink tester is busy running the test. When reset, the uplink test is finished.

#### 4.3.7 TxTestTransmittedSequencesLink0

<b>Module</b>	Interface
<b>Parent</b>	ControlCoreTxLinkTest
<b>Interface Type</b>	Integer
<b>Namespace</b>	Custom
<b>Display Name</b>	Tx Test Transmitted Sequences Link 0
<b>Tooltip</b>	Number of transmitted test sequences at Link 0
<b>Description</b>	Number of transmitted test sequences at Link 0
<b>Access</b>	RO
<b>CachingMode</b>	NoCache
<b>Visibility</b>	Invisible

Amount of link test packets which were transmitted. This register is useful to see how many packets were sent since the start of the test. It is cleared with the clear bit from the control register.

#### 4.3.8 ControlCoreRxLinkTest

<b>Module</b>	Interface
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<b>Parent</b>	ControlCoreLinkTest
<b>Interface Type</b>	Category
<b>Namespace</b>	Custom
<b>Display Name</b>	Control Core Rx Link Test
<b>Tooltip</b>	Category containing control core receiver Link test features.
<b>Description</b>	Category containing control core receiver Link test features.
<b>Access</b>	RO
<b>CachingMode</b>	WriteThrough
<b>Visibility</b>	Invisible

#### 4.3.9 RxTestClearLink0

<b>Module</b>	Interface
<b>Parent</b>	ControlCoreRxLinkTest
<b>Interface Type</b>	Command
<b>Namespace</b>	Custom
<b>Display Name</b>	Rx Test Clear Link 0
<b>Tooltip</b>	Clear test for the receiver at Link 0
<b>Description</b>	Clear test for the receiver at Link 0
<b>Access</b>	WO
<b>CachingMode</b>	NoCache
<b>Visibility</b>	Invisible

#### 4.3.10 RxTestCorruptedWordsLink0

<b>Module</b>	Interface
<b>Parent</b>	ControlCoreRxLinkTest

<b>Interface Type</b>	Integer
<b>Namespace</b>	Custom
<b>Display Name</b>	Rx Test Corrupted Words Link 0
<b>Tooltip</b>	Receiver: number of corrupted test words at Link 0
<b>Description</b>	Receiver: number of corrupted test words at Link 0
<b>Access</b>	RO
<b>CachingMode</b>	NoCache
<b>Visibility</b>	Invisible

Amount of measured packet word errors. A packet word is a 32 bit CXP native word which carries 4 test characters.

#### 4.3.11 RxTestSequenceLengthErrorsLink0

<b>Module</b>	Interface
<b>Parent</b>	ControlCoreRxLinkTest
<b>Interface Type</b>	Integer
<b>Namespace</b>	Custom
<b>Display Name</b>	Rx Test Sequence Length Errors Link 0
<b>Tooltip</b>	Receiver: number of sequence length test errors at Link 0
<b>Description</b>	Receiver: number of sequence length test errors at Link 0
<b>Access</b>	RO
<b>CachingMode</b>	NoCache
<b>Visibility</b>	Invisible

Amount of packets which did not provide 1024 test words. CXP standard defines a test packet to contain 4096 test characters, i.e. 1024 x 32 bit words. This packet is repeated infinitely until the test is terminated. The count range is [0; 128]. The maximal value 128 means that there were at least 128 or more packets which violated the length requirements as defined in CXP 2.0 standard chapter 9.9.2.

### 4.3.12 RxTestReceivedPacketsLink0

<b>Module</b>	Interface
<b>Parent</b>	ControlCoreRxLinkTest
<b>Interface Type</b>	Integer
<b>Namespace</b>	Custom
<b>Display Name</b>	Rx Test Received Packets Link 0
<b>Tooltip</b>	Receiver: number of received test packets at Link 0
<b>Description</b>	Receiver: number of received test packets at Link 0
<b>Access</b>	RO
<b>CachingMode</b>	NoCache
<b>Visibility</b>	Invisible

## 5 Further Reading

For full information on Basler CXP-12 Interface Card 1C, refer to the following sources:

Feature Reference Manual

<https://www.baslerweb.com/en/sales-support/downloads/document-downloads/acq-single-cxp12x1area-cxp12-ic-1c/>

CXP-12 Interface Card 1C (Hardware Documentation)

<https://docs.baslerweb.com/cxp-12-interface-card-1c.html>

Configuring the Basler CXP-12 Interface Card 1C

<https://docs.baslerweb.com/configuring-the-cxp-12-interface-card-1c.html>

## Revision History

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