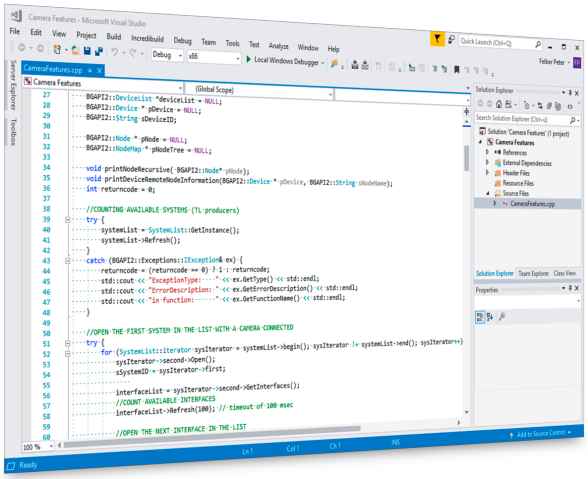
Baumer
Passion for Sensors



Software Manual

Programmer´s Guide Baumer Features

Baumer GAPI SDK v2.12

EN-US

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Table of Contents

1. Introduction

The GenTL SFNC standard provides a generic way to enumerate devices known to a system, communicate with one or more devices and, where possible, stream data from the device to the host independent of the underlying transport technology. This allows third party software to use different technologies to control cameras and to acquire data in a transport layer-agnostic way.

Notice
This document is based on the GenTL SFNC standard, therefore the standard features will only be listed, while the Baumer specific features will be described.

1.1 Conventions

Feature Name and Interface

According to the GenICam™ GenTL SFNC standard, all the public features of a GenTL Producer must be included in the corresponding XML description file following the GenTL module hierarchy, and must use the SFNC name and interface type for those features should they exist. Other vendor-specific or specialized features not mapping to existing SNFC features can be included, but must be located in a vendor-specific namespace in the XML description file. They may also use a vendor-specific name.

Feature Category

With the GenTL SFNC, each feature should be included in a "Category". The Category element defines in which group of features a particular feature will be located.

The Category does not affect the functionality of the features, but is used by the GUIs to group the features when displaying them. The main purpose of this is to insure that the GUI can present features in a more organized way.

Feature Visibility

According to the GenTL SFNC standard, each feature can be assigned a "Visibility". The Visibility defines the type of user that can access the feature. Possible values are: **Beginner**, **Expert**, **Guru** and **Invisible**. The latter is required to make features accessible from the API, but invisible in the GUI.

The visibility does not affect the functionality of the features, but is used by the GUI to select which features to display based on the current user level. The main purpose of this to insure that the GUI is not cluttered with information that is not intended for the current user level.

The following criteria were used when assigning the recommended visibility:

- **Beginner** – Features that should be visible for all users via the GUI and API. This is the default visibility in the XML description file and will be used if the Visibility element is omitted for a feature. The number of features with "Beginner" visibility should be limited to all basic features of the GenTL Producer so that the GUI display is well-organized and is easy to use.

- **Expert** – Features that require a more in-depth knowledge of the camera functionality. This is the preferred visibility level for all advanced features of the cameras.

- **Guru** – Advanced features that may damage the camera if set incorrectly for the camera's current mode of operation.

- **Invisible** – Features that should be kept hidden for the GUI users but still be available via the API.

This document lists a recommended Visibility that should be used for each feature.

1.2 Controlling the Software Features

Software features are defined as the features of a GenTL producer, which can be divided into standard features and Baumer specific features.

You can request all of the defined software features for the main classes *System*, *Interface*, *Device*, *DataStream*, *Buffer* as well as the *Image* and *Image processor* (see Programmer's Guide) using the `GetNodeTree` and `GetNodeList` methods.

You can manage the features of the XML description file from the device using the `GetRemoteNodeTree` and `GetRemoteNodeList` methods.

2. GigE Vision® Features

2.1 System Module

Contains all GigE Vision® standard / Baumer specific features of the System module.

2.1.1 Category: ActionControl

This category contains the features for the broadcast control with optional acknowledge.

Notice

The functions of the category *Action Control* are supported by TXG cameras Rel 2.1 and higher.

Notice

Delays in the transmission of an action command to multiple interfaces in the computer is inherent to Ethernet.

The measurement on a computer (Intel (R) Core (TM) i7-3770 CPU @ 3,40 GHz) with the operating system Ubuntu14.04 (64-bit) returned a delay of 23 microseconds between two host IP addresses.

Standard GigE Vision® Features

ActionDeviceKey	ActionGroupMask
ActionGroupKey	

2.1.2 ScheduledActionEnable

Name	ScheduledActionEnable
Category	ActionControl
Interface	IBoolean
Access	Read / Write
Unit	-
Visibility	Beginner
Values	OnValue = 1 OffValue = 0
Description	Enable the transmission of action time.

2.1.2.1 ActionTime

Name	ActionTime
Category	ActionControl
Interface	IInteger
Access	Read / Write
Unit	ns
Visibility	Beginner
Values	1 - 9223372036854775807
Description	Time when to assert the action signal in the device nanoseconds since the epoch (1. January 1970 00:00:00 TAI).

2.1.2.2 ActionCommandWrite

Name	ActionCommandWrite
Category	ActionControl
Interface	ICommand
Access	Write
Unit	-
Visibility	Beginner
Values	-
Description	Sends Action Command with the Standard GigE Vision® Features (Action Device Key, Action Group Key, Action Group Mask) to all IP addresses from the action command IP list. This IP address must be added with *Action Interface IP Add*.

2.1.2.3 ActionControlInterface

Name	ActionControlInterface
Category	ActionControl
Interface	ICategory
Access	-
Unit	-
Visibility	Beginner
Values	-
Description	Configure a list of interface IP addresses, which are used for sending the action command.

2.1.2.4 ActionControlGevDeviceAcknowlegde

Name	ActionControlGevDeviceAcknowlegde
Category	ActionControl
Interface	ICategory
Access	-
Unit	-
Visibility	-
Values	-
Description	Configure a list of device IP addresses, which are used for waiting of the device acknowledge, when performing a action command.

2.1.3 Category: ActionControlInterface

Features to control the interface IP list for the action commands.

Notice

This category contains no standard features.

2.1.3.1 ActionInterfaceIPSelector

Name	Action Interface IP Selector
Category	Action Control
Interface	IInteger
Access	Read / Write
Unit	-
Visibility	Beginner
Values	-
Description	Selects a interface IP address from interface IP address list. Example

Selector	IP-Address
0	192.x.x.x
1	168.x.x.x
2	175.x.x.x

2.1.3.2 ActionInterfaceIP

Name	ActionInterfaceIP
Category	ActionControlInterface
Interface	IInteger
Access	Read / Write
Unit	-
Visibility	Beginner
Values	0.0.0.0 - 255.255.255.255
Description	Read the IP address from the selected interface. This feature depends on the selected interface IP address. See selector *ActionInterfaceIPSelector*.

2.1.3.3 ActionInterfaceIPRemove

Name	ActionInterfaceIPRemove
Category	ActionControlInterface
Interface	Command
Access	Write
Unit	-
Visibility	Beginner
Values	CommandValue = 1
Description	Remove the selected interface IP address from the interface IP address list. This feature depends on the selected interface IP address. See selector *ActionInterfaceIPSelector*.

2.1.3.4 ActionInterfaceIPAdd

Name	ActionInterfaceIPAdd
Category	ActionControlInterface
Interface	IInteger
Access	Write
Unit	-
Visibility	Beginner
Values	0.0.0.0 - 255.255.255.255
Description	Adds an interface IP address to the interface IP address list. To the added IP addresses, an action command is sent with *ActionCommandWrite*.

2.1.4 Category: ActionControlGevDeviceAcknowlegde

Features to control action commands with acknowledge of listed devices.

Notice
This category contains no standard features.

2.1.4.1 ActionGevDeviceIP

Name	ActionGevDeviceIP
Category	ActionControlGevDeviceAcknowledge
Interface	IInteger
Access	Read
Unit	-
Visibility	Beginner
Values	0.0.0.0 - 255.255.255.255
Description	Read the IP address from the selected device. This feature depends on the selected device IP address. See selector *ActionGevDeviceIPSelector*.

2.1.4.2 ActionGevDeviceIPSelector

Name	ActionGevDeviceIPSelector
Category	ActionControlGevDeviceAcknowledge
Interface	IInteger
Access	Read / Write
Unit	-
Visibility	Beginner
Values	-
Description	Selects a device IP address from device IP address list. It is necessary for ActionGevDeviceIP and Action *ActionGevDeviceIPRemove*.

2.1.4.3 ActionGevDeviceIPRemove

Name	ActionGevDeviceIPRemove
Category	ActionControlGevDeviceAcknowledge
Interface	ICommand
Access	Write
Unit	-
Visibility	Beginner
Values	-
Description	Remove the selected device IP address from the device IP address list. This feature depends on the selected device IP address. See selector *ActionGevDeviceIPSelector*.

2.1.4.4 ActionGevDeviceIPAdd

Name	ActionGevDeviceIPAdd
Category	ActionControlGevDeviceAcknowledge
Interface	IInteger
Access	Write
Unit	-
Visibility	Beginner
Values	0.0.0.0 - 255.255.255.255
Description	Adds an device IP address to the device IP address list.

2.1.4.5 ActionGevDeviceAckWait

Name	ActionGevDeviceAckWait
Category	ActionControlGevDeviceAcknowledge
Interface	IBoolean
Access	Read / Write
Unit	-
Visibility	Beginner
Values	true / false
Description	Waits for the device acknowledge, when performing an action command. This feature depends on the selected device IP address. See selector *ActionGevDeviceIPSelector*.

2.1.5 Category: SystemInformation

Features to access system information.

Standard GigE Vision® Features

TLVendorName	GenTLVersionMajor
TLModelName	GenTLVersionMinor
TLID	GevVersionMajor
TLVersion	GevVersionMinor
TLPath	
TLType	

2.1.5.1 GevFilterDrvVersion

Name	GevFilterDrvVersion
Category	SystemInformation
Interface	IString
Access	Read
Unit	-
Visibility	Beginner
Values	-
Description	Version of the GigE Vision Filter Driver.

2.1.5.2 GevFilterDrvName

Name	GevFilterDrvName
Category	SystemInformation
Interface	IString
Access	Read
Unit	-
Visibility	Beginner
Values	-
Description	Name of the Baumer GigE Vision Filter Driver.

2.1.6 Category: SystemControl

Feature to access system features.

Notice
This category contains no standard features.

2.1.6.1 StreamChannelSendInterval

Name	StreamChannelSendInterval
Category	SystemControl
Interface	IInteger
Access	Read / Write
Unit	-
Visibility	Beginner
Values	-
Description	This value controls the interval for sending packets on the stream channel. This behavior is used to allow stream data to bypass firewalls. Setting this value to 0 will stop sending packets on the stream channel.

2.1.6.2 MessageChannelSendInterval

Name	MessageChannelSendInterval
Category	SystemControl
Interface	IInteger
Access	Read / Write
Unit	-
Visibility	Beginner
Values	-
Description	This value controls the interval for sending packets on the message channnel. This behavior is used to allow event data to bypass firewalls. Setting this value to 0 will stop sending packets on the message channel.

2.1.6.3 IncreaseThreadPriority

Name	IncreaseThreadPriority
Category	SystemControl
Interface	IBoolean
Access	Read / Write
Unit	-
Visibility	Beginner
Values	-
Description	This value controls if the receive thread tries to get a higher priority. This can help to reduce the number of missing packets.

2.1.6.4 IncreasePriorityClass

Name	IncreasePriorityClass
Category	SystemControl
Interface	IBoolean
Access	Read / Write
Unit	-
Visibility	Guru
Values	-
Description	This value controls if the receive process tries to get a higher priority. This can help to reduce the number of missing packets.

2.1.6.5 DeviceStreamChannelPacketSizeMax

Name	DeviceStreamChannelPacketSizeMax
Category	SystemControl
Interface	IInteger
Access	Read / Write
Unit	-
Visibility	Expert
Values	-
Description	Maximum packet size for GigE transmission. This value is used as upper limitation for automatic MTU (maximum transmission unit) detection. If you set a value outside this range the default value is used. A larger packet size can reduce CPU load but must be supported by your network.

2.1.6.6 UseMTUDetection

Name	UseMTUDetection
Category	SystemControl
Interface	IBoolean
Access	Read / Write
Unit	-
Visibility	Expert
Values	-
Description	Enable automatic MTU (maximum transmission unit) detection.

2.1.6.7 DeviceStreamChannelPacketSizeFix

Name	DeviceStreamChannelPacketSizeFix
Category	SystemControl
Interface	IInteger
Access	Read / Write
Unit	-
Visibility	Expert
Values	-
Description	If you specify this value the DeviceStreamChannelPacketSizeMax is ignored. The specified value is used directly as packet size if it is between minimum or maximum. If you set a value outside the range and unequal to zero, the minimum is used. A larger packet size can reduce CPU load but must be supported by your network.

2.1.6.8 ControlSocketSize

Name	ControlSocketBufferSize
Category	SystemControl
Interface	IInteger
Access	Read / Write
Unit	Byte
Visibility	Expert
Values	min 16.384 - max 67.108.864
Description	This value controls the size of socket buffer for the control sockets in byte. Depending on the operating system, the value for max may differ.

2.1.6.9 StreamSocketSize

Name	StreamSocketBufferSize
Category	SystemControl
Interface	IInteger
Access	Read / Write
Unit	Byte
Visibility	Expert
Values	min 16.384 - max 67.108.864
Description	This value controls the size of socket buffer for the stream sockets in byte. Depending on the operating system, the value for max may differ.

2.1.6.10 MessageSocketSize

Name	MessageSocketBufferSize
Category	SystemControl
Interface	IInteger
Access	Read / Write
Unit	Byte
Visibility	Expert
Values	min 16.384 - max 67.108.864
Description	This value controls the size of socket buffer for the message sockets in byte. Depending on the operating system, the value for max may differ.

2.1.7 Category: InterfaceEnumeration

Features to access interface functions.

Standard GigE Vision® Features

InterfaceUpdateList	GevInterfaceDefaultSubnetMask
InterfaceSelector	GevInterfaceDefaultGateway
InterfaceID	GevInterfaceDefaultIPAddress
GevInterfaceMACAddress	

2.1.7.1 NumberOfInterfaces

Name	NumberOfInterfaces
Category	InterfaceEnumeration
Interface	IInteger
Access	Read
Unit	-
Visibility	Beginner
Values	-
Description	The number of interfaces currently detected.

2.2 Interface Module

Contains all standard / Baumer specific features of the GigE Vision® Interface module.

2.2.1 Category: InterfaceInformation

Features to access interface information.

Notice
This category contains no Baumer specific features.

Standard GigE Vision® Features

InterfaceID	GevInterfaceMACAddress
InterfaceType	GevInterfaceSubnetSelector
GevInterfaceGatewaySelector	GevInterfaceSubnetIPAddress
GevInterfaceGateway	GevInterfaceSubnetMask

2.2.2 Category: DeviceEnumeration

Features to access device functions.

Standard GigE Vision® Features

DeviceUpdateList	DeviceAccessStatus
DeviceSelector	GevDeviceIPAddress
DeviceID	GevDeviceSubnetMask
DeviceVendorName	GevDeviceMACAddress
DeviceModelName	GevApplicationSwitchoverKey

2.2.2.1 ForceIPAdress

Name	ForceIPAdress
Category	DeviceEnumeration
Interface	IInteger
Access	Read / Write
Unit	-
Visibility	Beginner
Values	-
Description	Forced IP address of the GVCP interface of the selected remote device.

2.2.2.2 ForcedSubnetmask

Name	ForcedSubnetmask
Category	DeviceEnumeration
Interface	IInteger
Access	Read / Write
Unit	-
Visibility	Beginner
Values	-
Description	Forced subnet mask of the GVCP interface of the selected remote device.

2.2.2.3 Forcedgateway

Name	Forcedgateway
Category	DeviceEnumeration
Interface	IInteger
Access	Read / Write
Unit	-
Visibility	Beginner
Values	-
Description	Forced gateway for the GVCP interface of the selected remote device.

2.2.2.4 NumberOfDevices

Name	NumberOfDevices
Category	DeviceEnumeration
Interface	IInteger
Access	Read / Write
Unit	-
Visibility	Beginner
Values	-
Description	The number of devices currently detected.

2.2.2.5 MACAddressNeededToForce

Name	MACAddressNeededToForce
Category	DeviceEnumeration
Interface	IInteger
Access	Read / Write
Unit	-
Visibility	Beginner
Values	-
Description	48-bit MAC address of selected remote device that is the target to force IP.

2.2.2.6 ForceIP

Name	ForceIP
Category	DeviceEnumeration
Interface	ICommand
Access	Read / Write
Unit	-
Visibility	Beginner
Values	-
Description	Forced gateway for the GVCP interface of the selected remote device.

2.2.3 Category: PnPFeatures

Features for Plug and Play handling.

Notice
This category contains no standard features.

2.2.3.1 PnPWaitTime

Name	PnPWaitTime
Category	PnPFeatures
Interface	IInteger
Access	Read / Write
Unit	ms
Visibility	Beginner
Values	-
Description	Plug and Play feature, time interval to monitor any unit status change.

2.2.3.2 GlobalDiscovery

Name	GlobalDiscovery
Category	PnPFeatures
Interface	IBoolean
Access	Read / Write
Unit	-
Visibility	Beginner
Values	OnValue = 1 OffValue = 0
Description	Global discovery if set accordingly, otherwise discovery only within the local subnet specified in "Gev device subnet mask".

2.2.3.3 PnPDeviceAdd

Name	PnPDeviceAdd
Category	PnPFeatures
Interface	IBoolean
Access	Read / Write
Unit	-
Visibility	Beginner
Values	OnValue = 1 OffValue = 0
Description	Plug and Play feature, if set detected devices are added to and removed from the system, otherwise detected devices are not added and only removed from the system.

2.2.3.4 PnPDeviceAtPowerOn

Name	PnPDeviceAtPowerOn
Category	PnPFeatures
Interface	IBoolean
Access	Read / Write
Unit	-
Visibility	Beginner
Values	OnValue = 1 OffValue = 0
Description	Plug and Play feature, if set devices are detected after power on they are added to the system, required camera features no static IP and DHCP is enabled.

2.3 Device Module

Contains all standard / Baumer specific features of the GigE Vision® Device module.

2.3.1 Category: DeviceInformation

Features to access device information.

Standard GigE Vision® Features

DeviceID	GevDeviceGateway
DeviceVendorName	DeviceType
DeviceModelName	GevDeviceIPAddress
GevDeviceSubnetMask	GevDeviceMACAddress

2.3.1.1 DevicePresent

Name	DevicePresent
Category	DeviceInformation
Interface	IBoolean
Access	Read
Unit	-
Visibility	Beginner
Values	true = 1 false = 0
Description	This function checks the presence of a device, by checking the connection to the device.

2.3.2 Category: DeviceControl

Features to access device functions.

Standard GigE Vision® Features

DeviceEndianessMechanism	

2.3.2.1 ForcedIPAdress

Name	ForcedIPAdress
Category	DeviceControl
Interface	IInteger
Access	Read / Write
Unit	-
Visibility	Beginner
Values	-
Description	Forced IP address of the GVCP interface of the selected remote device.

2.3.2.2 ForcedSubnetMask

Name	ForcedSubnetMask
Category	DeviceControl
Interface	IInteger
Access	Read / Write
Unit	-
Visibility	Beginner
Values	-
Description	Forced subnet mask of the GVCP interface of the selected remote device.

2.3.2.3 ForcedGateway

Name	ForcedGateway
Category	DeviceControl
Interface	IInteger
Access	Read / Write
Unit	-
Visibility	Beginner
Values	-
Description	Forced gateway for the GVCP interface of the selected remote device.

2.3.2.4 ForceIP

Name	ForceIP
Category	DeviceControl
Interface	ICommand
Access	Read / Write
Unit	-
Visibility	Beginner
Values	-
Description	Forced gateway for the GVCP interface of the selected remote device.

2.3.2.5 MACAddressNeededToForce

Name	MACAddressNeededToForce
Category	DeviceControl
Interface	IInteger
Access	Read / Write
Unit	-
Visibility	Beginner
Values	-
Description	48-bit MAC address of selected remote device that is the target to force IP.

2.3.2.6 DeviceStreamChannelPacketSize

Name	DeviceStreamChannelPacketSize
Category	DeviceControl
Interface	IInteger
Access	Read
Unit	-
Visibility	Beginner
Values	-
Description	Specifies the stream packet size in bytes to send on this channel.

2.3.2.7 GevCCPOverride

Name	GevCCPOverride
Category	DeviceControl
Interface	ICommand
Access	Write only
Unit	-
Visibility	Beginner
Values	-
Description	Compatibility feature. The feature overwrites the GEV CCP Register. Only available for TXG series cameras.

2.3.3 Category: StreamEnumeration

Standard GigE Vision® Features

StreamSelector	StreamID

2.3.3.1 DisableTLParamsLocked

Name	DisableTLParamsLocked
Category	StreamEnumeration
Interface	IBoolean
Access	Read / Write
Unit	-
Visibility	Beginner
Values	-
Description	Disable lock of streaming features.

2.3.3.2 MulticastStream

Name	MulticastStream
Category	StreamEnumeration
Interface	IBoolean
Access	Read / Write
Unit	-
Visibility	Beginner
Values	true = 1 false = 0
Description	Use multicast IP address for selected stream.

2.3.3.3 GevSCDA

Name	GevSCDA
Category	StreamEnumeration
Interface	IInteger
Access	Read / Write
Unit	-
Visibility	Beginner
Values	-
Description	Destination IP address for selected stream.

2.3.4 Category: TransportLayerControl

Standard GigE Vision® Features

Notice
This category contains no standard features.

2.3.4.1 HeartbeatThreadDisable

Name	HeartbeatThreadDisable
Category	TransportLayerControl
Interface	IBoolean
Access	Read / Write
Unit	-
Visibility	Beginner
Values	true = 1 false = 0
Description	Disables the GVCP heartbeat thread.

2.3.5 Category: GVCP

Standard GigE Vision® Features

Notice
This category contains no standard features.

2.3.5.1 ControlChannelTimeout

Name	ControlChannelTimeout
Category	GVCP
Interface	IInteger
Access	Read / Write
Unit	ms
Visibility	Beginner
Values	-
Description	Set the timeout for the control channel in ms.

2.3.5.2 ControlChannelRetries

Name	ControlChannelRetries
Category	GVCP
Interface	IInteger
Access	Read / Write
Unit	-
Visibility	Beginner
Values	-
Description	Set the retries for the control channel.

2.3.5.3 UseControlChannelLocking

Name	UseControlChannelLocking
Category	GVCP
Interface	IBoolean
Access	Read / Write
Unit	-
Visibility	Beginner
Values	true = 1 false = 0
Description	After a failed command the control channel is locked, that means no further commands were transmitted. This feature controls this locking mechanism.

2.3.5.4 MessageChannelTimeout

Name	MessageChannelTimeout
Category	GVCP
Interface	IInteger
Access	Read / Write
Unit	ms
Visibility	Beginner
Values	-
Description	Set the timeout in ms of the message channel.

2.3.5.5 MessageChannelRetries

Name	MessageChannelRetries
Category	GVCP
Interface	IInteger
Access	Read / Write
Unit	-
Visibility	Beginner
Values	-
Description	Set the retries of the message channel.

2.3.5.6 MulticastMessage

Name	MulticastMessage
Category	GVCP
Interface	IBoolean
Access	Read / Write
Unit	-
Visibility	Beginner
Values	true = 1 false = 0
Description	Use multicast IP address for messages.

2.3.5.7 GevMCDA

Name	GevMCDA
Category	GVCP
Interface	IInteger
Access	Read / Write
Unit	ms
Visibility	Beginner
Values	-
Description	Destination IP address for messages.

2.4 Data Stream Module

Contains all standard / Baumer specific features of the GigE Vision® Data Stream module.

2.4.1 Category: StreamInformation

Features to access data stream information.

Notice
This category contains no Baumer specific features.

Standard GigE Vision® Features

StreamID	StreamType

2.4.2 Category:BufferHandlingControl

Contains all features of the Data Stream module that control the used buffers.

Notice
This category contains no Baumer specific features.

Standard GigE Vision® Features

StreamAnnouncedBufferCount	StreamAnnounceBufferMinimum
StreamBufferHandlingMode	

2.4.2.1 StreamDriverModel

Name	StreamDriverModel
Category	BufferHandlingControl
Interface	IEnumeration
Access	Read/Write
Unit	-
Visibility	Beginner
Values	-
Description	Identifies the transport layer technology for the stream.

2.4.2.2 FilterDriverBufferCount

Name	StreamDriverModel
Category	BufferHandlingControl
Interface	IInteger
Access	Read/Write
Unit	-
Visibility	Beginner
Values	10 - 10000
Description	Number of Packet Buffers used for the Filter Driver.

2.4.2.3 ThroughputCalculationEntries

Name	ThroughputCalculationEntrys
Category	BufferHandlingControl
Interface	IInteger
Access	Read/Write
Unit	-
Visibility	Expert
Values	1 (min)
Description	Set the number of data blocks / images used for frame rate calculation. The frame rate calculation needs a minimum of two data blocks / images.

2.4.2.4 StreamChannelReceiveTimeout

Name	ReadTimeout
Category	BufferHandlingControl
Interface	IInteger
Access	Read/Write
Unit	ms
Visibility	Expert
Values	1 (min)
Description	Set the stream channel receive timeout in ms.

2.4.3 Category: StreamStatistic

Features to access statistical information regarding the data transfer from camera to host.

Standard GigE Vision® Features

Notice
This category contains no standard features.

2.4.3.1 Reset

Name	Reset
Category	StreamStatistic
Interface	ICommand
Access	Write
Unit	-
Visibility	Beginner
Values	-
Description	Resets the resend statistic.

2.4.3.2 GoodFrames

Name	GoodFrames
Category	StreamStatistic
Interface	IInteger
Access	Read
Unit	-
Visibility	Invisible
Values	-
Description	Number of correctly transmitted frames.

2.4.3.3 CorruptedFrames

Name	CorruptedFrames
Category	StreamStatistic
Interface	IInteger
Access	Read
Unit	-
Visibility	Invisible
Values	-
Description	Number of captured frames.

2.4.3.4 LostFrames

Name	LostFrames
Category	StreamStatistic
Interface	IInteger
Access	Read
Unit	-
Visibility	Invisible
Values	-
Description	Number of frames, lost during transmission.

2.4.3.5 ResendRequests

Name	ResendRequests
Category	StreamStatistic
Interface	IInteger
Access	Read
Unit	-
Visibility	Invisible
Values	-
Description	Number of resend requests.

2.4.3.6 ResendPackets

Name	ResendPackets
Category	StreamStatistic
Interface	IInteger
Access	Read
Unit	-
Visibility	Invisible
Values	-
Description	Number of resend packets.

2.4.3.7 LostPackets

Name	LostPackets
Category	StreamStatistic
Interface	IInteger
Access	Read
Unit	-
Visibility	Invisible
Values	-
Description	Number of packets, lost during transmission.

2.4.3.8 Bandwidth

Name	Bandwidth
Category	StreamStatistic
Interface	IInteger
Access	Read
Unit	-
Visibility	Invisible
Values	-
Description	Used bandwidth.

2.4.3.9 Category: DataBlockPreviousBlockDropped

Standard GigE Vision® Features

Notice
This category contains no standard features.

2.4.3.9.1 DataBlockComplete

Name	DataBlockComplete
Category	StreamStatisticDataBlock
Interface	IInteger
Access	Read
Unit	-
Visibility	Beginner
Values	-
Description	Statistic count for complete received data block.

2.4.3.9.2 DataBlockInComplete

Name	DataBlockInComplete
Category	StreamStatisticDataBlock
Interface	IInteger
Access	Read
Unit	-
Visibility	Beginner
Values	-
Description	Statistic count for incomplete received data block.

2.4.3.9.3 DataBlockMissing

Name	DataBlockMissing
Category	StreamStatisticDataBlock
Interface	IInteger
Access	Read
Unit	-
Visibility	Beginner
Values	-
Description	Statistic count for data block are missing.

2.4.3.9.4 DataBlockDroppedBufferUnderrun

Name	DataBlockDroppedBufferUnderrun
Category	StreamStatisticDataBlock
Interface	IInteger
Access	Read
Unit	-
Visibility	Beginner
Values	-
Description	Statistic count for data block lost due to lack of buffer.

2.4.3.9.5 DataBlockDroppedResendUnderrun

Name	DataBlockDroppedResendUnderrun
Category	StreamStatisticDataBlock
Interface	IInteger
Access	Read
Unit	-
Visibility	Expert
Values	-
Description	Statistic count for data block lost due to lack of buffer.

2.4.3.9.6 DataBlockDroppedTransmitter

Name	DataBlockDroppedTransmitter
Category	StreamStatisticDataBlock
Interface	IInteger
Access	Read
Unit	-
Visibility	Expert
Values	-
Description	Statistic count for a dropped data block by GVSP transmitter.

2.4.3.9.7 DataBlockAlwaysPreviouslyPurged

Name	DataBlockAlwaysPreviouslyPurged
Category	StreamStatisticDataBlock
Interface	IInteger
Access	Read
Unit	-
Visibility	Expert
Values	-
Description	Statistic count for a data block due to any packet was previously purged.

2.4.3.9.8 DataBlockPreviousBlockDropped

Name	DataBlockAlwaysPreviouslyBlockDropped
Category	StreamStatisticDataBlock
Interface	IInteger
Access	Read
Unit	-
Visibility	Expert
Values	-
Description	Statistic count one or more data blocks are dropped internally by GVSP transmitter, including the data leader.

2.4.3.9.9 DataBlockTestDBReceived

Name	DataBlockTestDBReceived
Category	StreamStatisticDataBlock
Interface	IInteger
Access	Read
Unit	-
Visibility	Guru
Values	-
Description	Statistic count for a data block with datablock_id are zero, used as test data block.

2.4.3.10 Category: StreamStatisticBufferManagement

Standard GigE Vision® Features

Notice
This category contains no standard features.

2.4.3.10.1 StateBufferPacketDropped

Name	StateBufferPacketDropped
Category	StreamStatisticBufferManagement
Interface	IInteger
Access	Read
Unit	-
Visibility	Guru
Values	-
Description	Statistic count for packets they are dropped because buffer state is STATE_BUFFER_PACKET_DROPPED, packet received in buffer state STATE_BUFFER_PACKET_DROPPED.

2.4.3.10.2 StateBufferUnchaining

Name	StateBufferUnchaining
Category	StreamStatisticBufferManagement
Interface	IInteger
Access	Read
Unit	-
Visibility	Guru
Values	-
Description	Statistic count for buffers there are unchaining by cmd ACQ_STOP_FLAGS_KILL, all buffer between head and tail are set to STATE_BUFFER_COMPLETE with state corrupted and GENTL State Filled.

2.4.3.10.3 StateBufferPurging

Name	StateBufferPurging
Category	StreamStatisticBufferManagement
Interface	IInteger
Access	Read
Unit	-
Visibility	Guru
Values	-
Description	Statistic count for buffers there are purging by stopping resend algo, buffer in state STATE_BUFFER_FILLED or STATE_BUFFER_COMPLETE are set to GENTL State Free.

2.4.3.10.4 StateBufferInsufficientBufferSize

Name	StateBufferInsufficientBufferSize
Category	StreamStatisticBufferManagement
Interface	IInteger
Access	Read
Unit	-
Visibility	Guru
Values	-
Description	Statistic count attempt copy data from packet into a too small available buffer, buffer size too small.

2.4.3.10.5 StateBufferUnderrun

Name	StateBufferUnderrun
Category	StreamStatisticBufferManagement
Interface	IInteger
Access	Read
Unit	-
Visibility	Beginner
Values	-
Description	Statistic count for data block window size overflow, count packets with with old datablock id.

2.4.3.11 Category: StreamStatisticPacket

Standard GigE Vision® Features

Notice
This category contains no standard features.

2.4.3.11.1 PacketDroppedReceiveTwice

Name	PacketDroppedReceiveTwice
Category	StreamStatisticPacket
Interface	IInteger
Access	Read
Unit	-
Visibility	Guru
Values	-
Description	Statistic count for a packet due to always in m_Receive_Map.

2.4.3.11.2 PacketReceiveComplete

Name	PacketReceiveComplete
Category	StreamStatisticPacket
Interface	IInteger
Access	Read
Unit	-
Visibility	Expert
Values	-
Description	Statistic count for received packets.

2.4.3.11.3 PacketReceiveIncomplete

Name	PacketReceiveInComplete
Category	StreamStatisticPacket
Interface	IInteger
Access	Read
Unit	-
Visibility	Guru
Values	-
Description	Statistic count for packets with incomplete packet header.

2.4.3.11.4 PacketResendRequestThreshold

Name	PacketResendRequestThreshold
Category	StreamStatisticPacket
Interface	IInteger
Access	Read
Unit	-
Visibility	Guru
Values	-
Description	Statistic count for unique count of resend request threshold condition.

2.4.3.11.5 PacketResendRequestTimeout

Name	PacketResendRequestTimeout
Category	StreamStatisticPacket
Interface	IInteger
Access	Read
Unit	-
Visibility	Guru
Values	-
Description	Statistic count for resend request timeout condition.

2.4.3.11.6 PacketResendRequestTimeoutThreshold

Name	PacketResendRequestTimeoutThreshold
Category	StreamStatisticPacket
Interface	IInteger
Access	Read
Unit	-
Visibility	Guru
Values	-
Description	Statistic count for resend request timeout condition.

2.4.3.11.7 PacketResendRequestTrailerMissing

Name	PacketResendRequestTrailerMissing
Category	StreamStatisticPacket
Interface	IInteger
Access	Read
Unit	-
Visibility	Guru
Values	-
Description	Statistic count for missing trailer.

2.4.3.11.8 PacketOutsideHostDataBlockWindowSize

Name	PacketOutsideHostDataBlockWindowSize
Category	StreamStatisticPacket
Interface	IInteger
Access	Read
Unit	-
Visibility	Guru
Values	-
Description	Statistic count for outside of host datablock windows size.

2.4.3.11.9 PacketStatusSuccess

Name	PacketStatusSuccess
Category	StreamStatisticPacket
Interface	IInteger
Access	Read
Unit	-
Visibility	Guru
Values	-
Description	Statistic count for received packets with status success.

2.4.3.11.10 PacketStatusError

Name	PacketStatusError
Category	StreamStatisticPacket
Interface	IInteger
Access	Read
Unit	-
Visibility	Guru
Values	-
Description	Statistic count for received packets with status error.

2.4.3.11.11 PacketResendRequestSingle

Name	PacketResendRequestSingle
Category	StreamStatisticPacket
Interface	IInteger
Access	Read
Unit	-
Visibility	Beginner
Values	-
Description	Statistic count for single received packets requests to camera.

2.4.3.11.12 PacketResendRequestRange

Name	PacketResendRequestRange
Category	StreamStatisticPacket
Interface	IInteger
Access	Read
Unit	-
Visibility	Beginner
Values	-
Description	Statistic count for range received packets requests to camera.

2.4.3.11.13 PacketResendReceive

Name	PacketResendReceive
Category	StreamStatisticPacket
Interface	IInteger
Access	Read
Unit	-
Visibility	Beginner
Values	-
Description	Statistic count for received packets requests to camera.

2.4.3.11.14 PacketStatusPacketResend

Name	PacketStatusPacketResend
Category	StreamStatisticPacket
Interface	IInteger
Access	Read
Unit	-
Visibility	Guru
Values	-
Description	Statistic count for a packet with resend status code.

2.4.3.11.15 PacketStatusPacketUnavailable

Name	PacketStatusPacketUnavailable
Category	StreamStatisticPacket
Interface	IInteger
Access	Read
Unit	-
Visibility	Guru
Values	-
Description	Statistic count for the requested packet is not available anymore.

2.4.3.11.16 PacketStatusPacketNotYetAvailable

Name	PacketStatusPacketNotYetAvailable
Category	StreamStatisticPacket
Interface	IInteger
Access	Read
Unit	-
Visibility	Guru
Values	-
Description	Statistic count for the requested packet has not yet been acquired.

2.4.3.11.17 PacketStatusPacketAndPrevRemovedFromMemory

Name	PacketStatusPacketAndPrevRemovedFromMemory
Category	StreamStatisticPacket
Interface	IInteger
Access	Read
Unit	-
Visibility	Guru
Values	-
Description	Statistic count for packet status code have been removed from the GVSP transmitter memory.

2.4.3.11.18 PacketStatusPacketTemporarilyUnavailable

Name	PacketStatusPacketTemporarilyUnavailable
Category	StreamStatisticPacket
Interface	IInteger
Access	Read
Unit	-
Visibility	Guru
Values	-
Description	Statistic count for packets there are cannot be resent at the moment due to temporary bandwidth issues and should be requested again in the future.

2.4.3.11.19 PacketStatusPacketRemovedFromMemory

Name	PacketStatusPacketRemovedFromMemory
Category	StreamStatisticPacket
Interface	IInteger
Access	Read
Unit	-
Visibility	Guru
Values	-
Description	Statistic count for packet status code is linked to the packet resend logic and it is used to indicate that the requested packet has been removed from the GVSP transmitter memory.

2.4.3.11.20 PacketStatusUnknownError

Name	PacketStatusUnknownError
Category	StreamStatisticPacket
Interface	IInteger
Access	Read
Unit	-
Visibility	Guru
Values	-
Description	Statistic count for a packet with undefined Status Codes see GEV2.0 table 19-1.

2.4.3.11.21 PacketStatusFlagResendRangeError

Name	PacketStatusUnknownError
Category	StreamStatisticPacket
Interface	IInteger
Access	Read
Unit	-
Visibility	Guru
Values	-
Description	Statistic count for a packet with flag Resend Range Error set, see GEV2.0 table 24-1.

2.4.3.11.22 PacketStatusFlagPreviousBlockDropped

Name	PacketStatusUnknownError
Category	StreamStatisticPacket
Interface	IInteger
Access	Read
Unit	-
Visibility	Guru
Values	-
Description	Statistic count for a packet with flag Previous Block Dropped, see GEV2.0 table 24-1.

2.4.3.11.23 PacketStatusUnexpectedBlockIDModeReceived

Name	PacketStatusUnexpectedBlockIDModeReceived
Category	StreamStatisticPacket
Interface	IInteger
Access	Read
Unit	-
Visibility	Guru
Values	-
Description	Statistic count for a packet with unexpected blockid 16 or 64 bit abnormal from stream start.

2.4.3.12 Category: StreamStatisticMaintenance

Standard GigE Vision® Features

Notice
This category contains no standard features.

2.4.3.12.1 MaxHostDataBlockWindowSize

Name	MaxHostDataBlockWindowSize
Category	StreamStatisticMaintenance
Interface	IInteger
Access	Read
Unit	-
Visibility	Guru
Values	-
Description	Statistic count for maximum host data block windows size. Max difference between head and tail.

2.4.3.12.2 SpuriousSocketReceiveHandled

Name	SpuriousSocketReceiveHandled
Category	StreamStatisticMaintenance
Interface	IInteger
Access	Read
Unit	-
Visibility	Guru
Values	-
Description	Statistic count for spurious socket receive handled, callback from socket_receive() without any data.

2.4.3.12.3 Throughput

Name	Throughput
Category	StreamStatisticMaintenance
Interface	IFloat
Access	Read
Unit	fps
Visibility	Beginner
Values	-
Description	Calculated fps throughput.

2.4.3.12.4 Bitrate

Name	Bitrate
Category	StreamStatisticMaintenance
Interface	IFloat
Access	Read
Unit	MBit/s
Visibility	Beginner
Values	-
Description	Calculated bitrate bandwidth. If Dual Gige is configured bitrate can oscilate around average, because unpredictable flush the link receive fifos.

2.4.3.12.5 Duration_DB_Receive_Min

Name	Duration_DB_Receive_Min
Category	StreamStatisticMaintenance
Interface	IInteger
Access	Read
Unit	-
Visibility	Guru
Values	-
Description	Minimal duration time for receive complete datablock.

2.4.3.12.6 Duration_DB_Receive_Max

Name	Duration_DB_Receive_Max
Category	StreamStatisticMaintenance
Interface	IInteger
Access	Read
Unit	-
Visibility	Guru
Values	-
Description	Maximal duration time for receive complete datablock.

2.4.4 Category: Resend

Features to resend information.

Standard GigE Vision® Features

Notice
This category contains no standard features.

2.4.4.1 ResendRetryThreshold

Name	ResendRetryThreshold
Category	Resend
Interface	IInteger
Access	Read / Write
Unit	ms
Visibility	Beginner
Values	-
Description	Set a timeout for completion a data block if no packet received and a resend request must be generated. This time controls when a data block / image will be aborted if outstanding packets are not received.

2.4.4.2 MaxResendsPerImage

Name	MaxResendsPerImage
Category	Resend
Interface	IInteger
Access	Read / Write
Unit	-
Visibility	Beginner
Values	-
Description	Set the maximum number of resend requests per image (default 500).

2.4.4.3 MaxResendsPerPacket

Name	MaxResendsPerPacket
Category	Resend
Interface	IInteger
Access	Read / Write
Unit	-
Visibility	Expert
Values	-
Description	Set the maximum number of resend requests per packet (default 3). If the stream is opened by a read only device the value is set to 0 as default.

2.4.4.4 FirstResendWaitPackets

Name	FirstResendPerPacket
Category	Resend
Interface	IInteger
Access	Read / Write
Unit	-
Visibility	Beginner
Values	-
Description	Set the number of packets to wait before sending the first resend requests (default 0).

2.4.4.5 FirstResendWaitPacketsDualLink

Name	FirstResendWaitPacketsDualLink
Category	Resend
Interface	IInteger
Access	Read / Write
Unit	-
Visibility	Beginner
Values	-
Description	Set the number of packets to wait before issuing the first resend requests where the camera sends the data over two physical links (default 20). This feature is locked when the camera uses only one physical link.

2.4.4.6 FirstResendWaitTime

Name	FirstResendWaitTime
Category	Resend
Interface	IInteger
Access	Read / Write
Unit	ms
Visibility	Beginner
Values	-
Description	Set the time [ms] to wait before sending the first resend requests (default 150).

2.4.4.7 NextResendWaitPackets

Name	NextResendWaitPackets
Category	Resend
Interface	IInteger
Access	Read / Write
Unit	-
Visibility	Beginner
Values	-
Description	Set the number of packets to wait before sending the next resend requests (default 20). This feature is locked when the camera uses two physical links.

2.4.4.8 NextResendWaitPacketsDualLink

Name	NextResendWaitPacketsDualLink
Category	Resend
Interface	IInteger
Access	Read / Write
Unit	-
Visibility	Beginner
Values	-
Description	Set the number of packets to wait before issuing the next resend requests where the camera sends the data over two physical links (default 20). This feature is locked when the camera uses only one physical link.

2.4.4.9 NextResendWaitTime

Name	NextResendWaitTime
Category	Resend
Interface	IInteger
Access	Read / Write
Unit	ms
Visibility	Beginner
Values	-
Description	Set the time [ms] to wait before issuing the next resend requests (default 100).

2.4.4.10 ResendHostTimeout

Name	NextResendWaitTime
Category	Resend
Interface	IInteger
Access	Read / Write
Unit	-
Visibility	Expert
Values	-
Description	Set a timeout for completion a data block. if no packet received and a resend request must be generated. This time controls when a data block / image will be aborted if outstanding packets are not received.

2.5 Buffer Module

Contains all standard / Baumer specific features of the GigE Vision® Buffer module.

2.5.1 Category: BufferInformation

Features to access buffer information.

Notice
This category contains no Baumer specific features.

Standard GigE Vision® Features

BufferUserData	

2.5.2 Category: BufferDataInformation

Contains all Buffer Data Information features of the Buffer module

Standard GigE Vision® Features

BufferData	

2.5.2.1 FrameIDMax

Name	FrameIDMax
Category	BufferModulInformation
Interface	IInteger
Access	Read
Unit	-
Visibility	Beginner
Values	GigE Vision 1.2: Max = 65535 (0xffff 16bit)
Description	Get the maximum number for the FrameID.

2.5.2.2 FrameIDMin

Name	FrameIDMin
Category	BufferModulInformation
Interface	IInteger
Access	Read
Unit	-
Visibility	Beginner
Values	GigE Vision 1.2: Min = 1
Description	Get the minimum number for the FrameID.

3. USB3 Vision™ Features

3.1 System Module

Contains all standard / Baumer specific features of the USB3 Vision™ System module.

3.1.1 Category: SystemInformation

Features to access system information.

Standard USB3 Vision™ Features

TLVendorName	TLPath
TLModelName	TLType
TLID	GenTLVersionMajor
TLVersion	GenTLVersionMinor

3.1.1.1 USBDriverSelector

Name	USBDriverSelector
Category	SystemInformation
Interface	IInteger
Access	Read / Write
Unit	-
Visibility	Beginner
Values	-
Description	Selector for the installed USB Device Driver.

3.1.1.2 USBDriverManufacturer

Name	USBDriverManufacturer
Category	SystemInformation
Interface	IString
Access	Read
Unit	-
Visibility	Beginner
Values	-
Description	Manufacturer of selected USB Device Driver.

3.1.1.3 USBDriverCurrentVersion

Name	USBDriverCurrentVersion
Category	SystemInformation
Interface	IString
Access	Read
Unit	-
Visibility	Beginner
Values	-
Description	Current version of USB Device Driver.

3.1.1.4 USBDriverRequiredVersion

Name	USBDriverRequiredVersion
Category	SystemInformation
Interface	IString
Access	Read
Unit	-
Visibility	Beginner
Values	-
Description	Required version of USB Device Driver.

3.1.1.5 USBDriverCurrentDate

Name	USBDriverCurrentDate
Category	SystemInformation
Interface	IString
Access	Read
Unit	-
Visibility	Beginner
Values	-
Description	Current modification date of USB Device Driver.

3.1.1.6 USBDriverRequiredDate

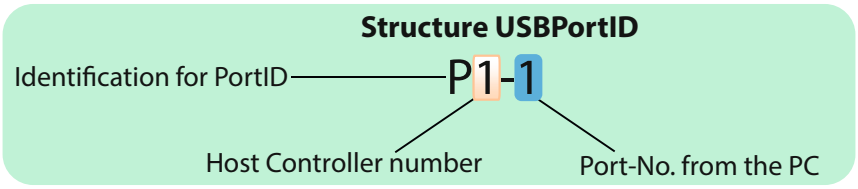
Name	USBDriverRequiredDate
Category	SystemInformation
Interface	IString
Access	Read
Unit	-
Visibility	Beginner
Values	-
Description	Current modification date of USB Device Driver.

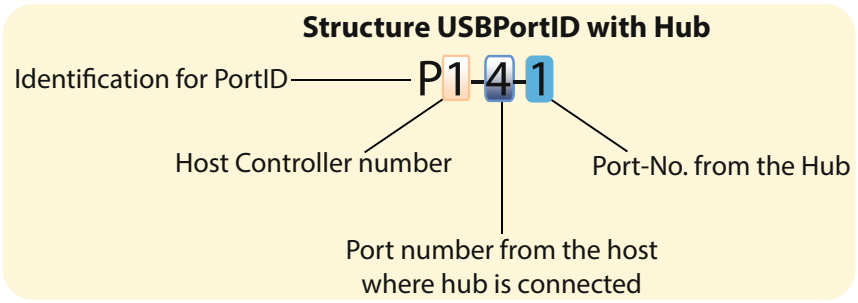
3.1.1.7 USBPortSelector

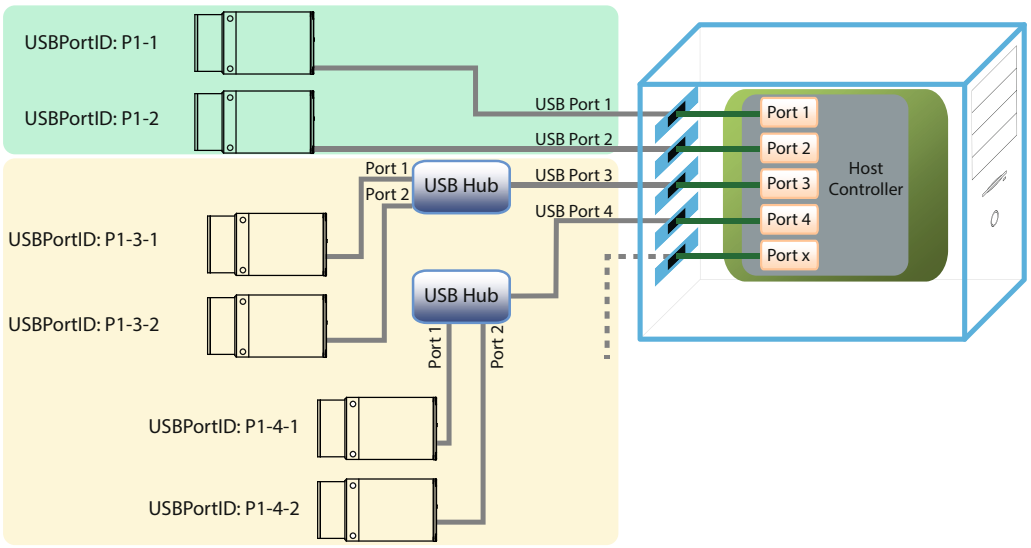
Name	USBPortSelector
Category	SystemInformation
Interface	IInteger
Access	Read / Write
Unit	-
Visibility	Beginner
Values	-
Description	Selector for the existing USB Ports

3.1.1.8 USBPortID

The *USBPortID* describes the invariable, hierarchical position of the USB ports on the computer.







Name	USBPortID
Category	SystemInformation
Interface	IString
Access	Read
Unit	-
Visibility	Beginner
Values	-
Description	USB Port Identificator e.g. `PCIROOT(0)#PCI(1D00)#USBROOT(0)#USB(1)#USB(5).`

3.1.1.9 USBPortLocationPath

Name	USBPortLocationPath
Category	SystemInformation
Interface	IString
Access	Read
Unit	-
Visibility	Beginner
Values	-
Description	USB Port Location Path.

3.1.2 Category: InterfaceEnumeration

Features to access interface functions.

Standard USB3 Vision™ Features

InterfaceUpdateList	InterfaceID
InterfaceSelector	

3.1.2.1 NumberOfInterfaces

Name	NumberOfInterfaces
Category	IInterfaceEnumeration
Interface	IInteger
Access	Read
Unit	-
Visibility	Beginner
Values	-
Description	The number of interfaces currently detected.

3.2 Interface Module

Contains all standard / Baumer specific features of the USB3 Vision™ Interface module.

3.2.1 Category: InterfaceInformation

Features to access interface information.

Notice
This category contains no Baumer specific features.

Standard USB3 Vision™ Features

InterfaceID	InterfaceType

3.2.2 Category: DeviceEnumeration

Features to access device functions.

Standard USB3 Vision™ Features

DeviceUpdateList	DeviceVendorName
DeviceSelector	DeviceModelName
DeviceID	DeviceAccessStatus

3.2.2.1 NumberOfDevices

Name	NumberOfDevices
Category	DeviceEnumeration
Interface	IInteger
Access	Read / Write
Unit	-
Visibility	Beginner
Values	-
Description	The number of devices currently detected.

3.3 Device Module

Contains all standard / Baumer specific features of the USB3 Vision™ Device module.

3.3.1 Category: DeviceInformation

Features to access device information.

Standard USB3 Vision™ Features

DeviceID	DeviceModelName
DeviceVendorName	DeviceType

3.3.1.1 DevicePresent

Name	DevicePresent
Category	DeviceInformation
Interface	IBoolean
Access	Read
Unit	-
Visibility	Beginner
Values	true = 1 false = 0
Description	This function checks the presence of a device, by checking the connection to the device.

3.3.1.2 USBDriverDate

Name	USBDriverDate
Category	DeviceInformation
Interface	IString
Access	Read
Unit	-
Visibility	Beginner
Values	-
Description	USB Device Driver Modification Date of this device.

3.3.1.3 USBDriverVersion

Name	USBDriverVersion
Category	DeviceInformation
Interface	IString
Access	Read
Unit	-
Visibility	Beginner
Values	-
Description	USB Device Driver version of this device.

3.3.1.4 USBPortID

Name	USBPortID
Category	DeviceInformation
Interface	IString
Access	Read
Unit	-
Visibility	Beginner
Values	-
Description	USB Port Identicator.

3.3.1.5 USB3VisionGUID

Name	USB3VisionGUID
Category	DeviceInformation
Interface	IString
Access	Read
Unit	-
Visibility	Beginner
Values	-
Description	USB3Vision GUID of this device.

3.3.2 Category: DeviceControl

Category that contains all Device Control features for the Device module.

Standard USB3 Vision™ Features

Notice
This category contains no standard features.

3.3.2.1 UsbSpec

Name	UsbSpec
Category	DeviceControl
Interface	IInteger
Access	Read
Unit	-
Visibility	Beginner
Values	-
Description	Currently used USB specification.

3.3.2.2 UsbSpecSupported

Name	UsbSpecSupported
Category	DeviceControl
Interface	IBoolean
Access	Read
Unit	-
Visibility	Beginner
Values	OnValue = 1 OffValue = 0
Description	This feature indicates whether frame transfer is permitted for the camera's current USB specification or is locked by the camera.

3.3.3 Category: StreamEnumeration

Standard USB3 Vision™ Features

StreamID	StreamSelector

3.3.3.1 DisableTLParamsLocked

Name	DisableTLParamsLocked
Category	DeviceControl
Interface	IBoolean
Access	Read / Write
Unit	-
Visibility	Beginner
Values	OnValue = 1 OffValue = 0
Description	Disable lock of streaming features.

3.4 Data Stream Module

Contains all Standard / Baumer specific features of the USB Vision™ Data Stream module.

3.4.1 Category: StreamInformation

Category that contains all Stream Information features for the Data Stream module.

Notice
This category contains no Baumer specific features.

Standard USB3 Vision™ Features

StreamID	StreamType

3.4.2 Category: BufferHandlingControl

Contains all features of the Data Stream module that control the used buffers.

Standard USB3 Vision™ Features

StreamAnnouncedBufferCount	StreamAnnounceBufferMinimum
StreamBufferHandlingMode	

3.4.2.1 DisableUnderrunBuffer

Name	DisableUnderrunBuffer
Category	BufferHandlingControl
Interface	IBoolean
Access	Read / Write
Unit	-
Visibility	Beginner
Values	true = 1 false = 0
Description	Disable underrun buffer mechanism.

3.4.3 Category: StreamStatistic

Features to access statistical information regarding the data transfer from camera to host.

Standard USB3 Vision™ Features

Notice
This category contains no standard features.

3.4.3.1 Reset

Name	Reset
Category	StreamStatistic
Interface	ICommand
Access	Write
Unit	-
Visibility	Beginner
Values	-
Description	Resets the resend statistic.

3.4.3.2 GoodFrames

Name	GoodFrames
Category	StreamStatistic
Interface	IInteger
Access	Read
Unit	-
Visibility	Beginner
Values	-
Description	Number of correctly transmitted frames.

3.4.3.3 CorruptedFrames

Name	CorruptedFrames
Category	StreamStatistic
Interface	IInteger
Access	Read
Unit	-
Visibility	Beginner
Values	-
Description	Number of captured frames.

3.4.3.4 LostFrames

Name	LostFrames
Category	StreamStatistic
Interface	IInteger
Access	Read
Unit	-
Visibility	Beginner
Values	-
Description	Number of frames, lost during transmission.

3.5 Buffer Module

Contains all Standard / Baumer specific features of the USB Vision™ Buffer module.

3.5.1 Category: BufferInformation

Features to access buffer information.

Notice
This category contains no Baumer specific features.

Standard USB3 Vision™ Features

BufferUserData	

3.5.2 Category: BufferDataInformation

Contains all Buffer Data Information features of the Buffer module.

Standard USB3 Vision™ Features

BufferData	

3.5.2.1 FrameIDMax

Name	FrameIDMax
Category	BufferInformation
Interface	IInteger
Access	Read
Unit	-
Visibility	Beginner
Values	USB3 Vision 1.0: Max = 18446744073709551615 (0xffffffffffffffff 64 bit)
Description	Get the maximum number for the FrameID.

3.5.2.2 FrameIDMin

Name	FrameIDMin
Category	BufferInformation
Interface	IInteger
Access	Read
Unit	-
Visibility	Beginner
Values	USB3 Vision 1.0: Min = 0
Description	Get the minimum number for the FrameID.

4. Image Processor Features

4.1 ImageProcessor Module

Contains all Baumer specific features of the ImageProcessor module.

4.1.1 Category: TransformationSettings

Features to access device information.

Notice
This category contains no standard features.

4.1.1.1 SourcePixelFormatIndex

Name	SourcePixelFormatIndex
Category	TransformationSettings
Interface	IInteger
Access	Read / Write
Unit	-
Visibility	Beginner
Values	-
Description	Test Feature for Image.

4.1.1.2 SourcePixelFormatValue

Name	SourcePixelFormatValue
Category	TransformationSettings
Interface	IString
Access	Read
Unit	-
Visibility	Beginner
Values	-
Description	-

4.1.1.3 DestinationPixelFormatIndex

Name	DestinationPixelFormatIndex
Category	TransformationSettings
Interface	IInteger
Access	Read / Write
Unit	-
Visibility	Beginner
Values	-
Description	Test Feature for Image.

4.1.1.4 DestinationPixelFormatValue

Name	DestinationPixelFormatValue
Category	TransformationSettings
Interface	IInteger
Access	Read / Write
Unit	-
Visibility	Beginner
Values	-
Description	Test Feature for Image.

4.1.2 Category: TestImageProcessor

Features to access device information.

Notice
This category contains no standard features.

4.1.2.1 TestFeatureImageProcessor

Name	TestFeatureImageProcessor
Category	TestImageProcessor
Interface	IInteger
Access	Read / Write
Unit	-
Visibility	Beginner
Values	-
Description	Test Feature for ImageProcessor.

4.1.3 Category: ColorTransformationControl

Category that contains the Color Transformation control features.

Notice
This category contains no standard features.

4.1.3.1 ColorTransformationValueSelector

Name	ColorTransformationValueSelector
Category	ColorTransformationControl
Interface	IEnumeration
Access	Read / Write
Unit	-
Visibility	Beginner
Values	Gain00, Gain01, Gain02, Gain10, Gain11, Gain12, Gain20, Gain21, Gain22
Description	Selects the Gain factor or Offset of the Transformation matrix to access in the selected Color Transformation module.

4.1.3.2 ColorTransformationValue

Name	ColorTransformationValue
Category	ColorTransformationControl
Interface	IFloat
Access	Read / Write
Unit	-
Visibility	Beginner
Values	min -8.0 - max 8.0
Description	Represents a selected entry of the color transformation matrix. This feature depends on the *ColorTransformationValueSelector*.

4.1.3.3 DemosaicingMethod

Name	DemosaicingMethod
Category	ColorTransformationControl
Interface	IEnumeration
Access	Read / Write
Unit	-
Visibility	Expert
Values	Bilinear3x3, Baumer5x5, NearestNeighbor
Description	For demosaicing the ImageProcessor provides a nearest neighbor algorithm. A bilinear algorithm working in a 3x3 environment and a high quality Baumer specific algorithm working in a 5x5 environment comes along with Baumer GAPI version 2.3 SP4. The feature *DemosaicingMethod* allows the switching between these algorithms to implement the application requirements, regarding speed and image quality, optimal. Because the bilinear and the Baumer specific algorithm deliver best quality at the expense of speed. With nearest neighbor it behaves vice versa.

4.2 Image Module

Contains all Baumer specific features of the Image Module.

4.2.1 ImageInformation

Information about the image.

Notice
This category contains no standard features.

4.2.1.1 TestFeatureImage

Name	TestFeatureImage
Category	ImageInformation
Interface	IInteger
Access	Read / Write
Unit	-
Visibility	Beginner
Values	-
Description	Test Feature for Image.

4.2.1.2 Width

Name	Width
Category	ImageInformation
Interface	IInteger
Access	Read
Unit	-
Visibility	Beginner
Values	-
Description	Width Feature for Image.

4.2.1.3 Height

Name	Height
Category	ImageInformation
Interface	IInteger
Access	Read
Unit	-
Visibility	Beginner
Values	-
Description	Height Feature for Image.

4.2.1.4 PixelFormat

Name	PixelFormat
Category	ImageInformation
Interface	IString
Access	Read
Unit	-
Visibility	Beginner
Values	-
Description	-

4.2.1.5 PixelFormatBits

Name	PixelFormatBits
Category	ImageInformation
Interface	IInteger
Access	Read
Unit	-
Visibility	Beginner
Values	-
Description	DEPRECATED! Use Feature *PixelFormatBitsPerPixel*. Number of Bits occupied by one pixel.

4.2.1.6 PixelFormatBytes

Name	PixelFormatBytes
Category	ImageInformation
Interface	IFloat
Access	Read
Unit	-
Visibility	Beginner
Values	-
Description	DEPRECATED! Use Feature *PixelFormatBytesPerPixel*. Number of Bytes occupied by one pixel.

4.2.1.7 PixelFormatCanals

Name	PixelFormatCanals
Category	ImageInformation
Interface	IInteger
Access	Read
Unit	-
Visibility	Beginner
Values	-
Description	DEPRECATED! Use Feature *PixelFormatChannels*. Number of Bytes occupied by one pixel.

4.2.1.8 PixelFormatBitsPerPixel

Name	PixelFormatBitsPerPixel
Category	ImageInformation
Interface	IInteger
Access	Read
Unit	-
Visibility	Beginner
Values	-
Description	Number of Bits occupied by one pixel.

4.2.1.9 PixelFormatBitsPerPixelEff

Name	PixelFormatBitsPerPixelEff
Category	ImageInformation
Interface	IInteger
Access	Read
Unit	-
Visibility	Beginner
Values	-
Description	Number of Bits used by one pixel effectively.

4.2.1.10 PixelFormatBytesPerPixel

Name	PixelFormatBytesPerPixel
Category	ImageInformation
Interface	IInteger
Access	Read
Unit	-
Visibility	Beginner
Values	-
Description	Number of Bytes occupied by one pixel.

4.2.1.11 PixelFormatBitsPerChannel

Name	PixelFormatBitsPerChannel
Category	ImageInformation
Interface	IInteger
Access	Read
Unit	-
Visibility	Beginner
Values	-
Description	Number of Bits occupied by one channel.

4.2.1.12 PixelFormatBitsPerChannelEff

Name	PixelFormatBitsPerChannelEff
Category	ImageInformation
Interface	IInteger
Access	Read
Unit	-
Visibility	Beginner
Values	-
Description	Number of Bits occupied by one channel effectively.

4.2.1.13 PixelFormatChannelsPerPixel

Name	PixelFormatChannelPerPixel
Category	ImageInformation
Interface	IInteger
Access	Read
Unit	-
Visibility	Beginner
Values	-
Description	Number of Channels occupied by one pixel.

4.2.1.14 PixelFormatChannelMask

Name	PixelFormatChannelMask
Category	ImageInformation
Interface	IInteger
Access	Read
Unit	-
Visibility	Beginner
Values	-
Description	Channels mask used by pixel bits. The number is identical to highest channel value!

4.2.2 HistogramSupport

Features to access device information.

Notice
This category contains no standard features.

4.2.2.1 HistogramPixelFormatIndex

Name	HistogramPixelFormatIndex
Category	HistogramSupport
Interface	IInteger
Access	Read / Write
Unit	-
Visibility	Beginner
Values	-
Description	Test Feature for Image.

4.2.2.2 HistogramPixelFormatValue

Name	HistogramPixelFormatValue
Category	HistogramSupport
Interface	IInteger
Access	Read / Write
Unit	-
Visibility	Beginner
Values	-
Description	Test Feature for Image.

5. Support / Software Examples

In the event of any questions, or for troubleshooting, please contact our support team.

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Baumer GAPI software examples

https://www.baumer.com/a/service-support/know-how/technical-application-notes-industrial-cameras/a/technical-application-notes-industrial-cameras#baumer-gapi-software-examples

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