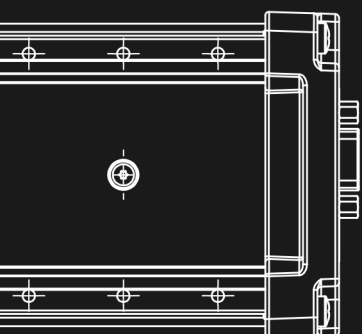
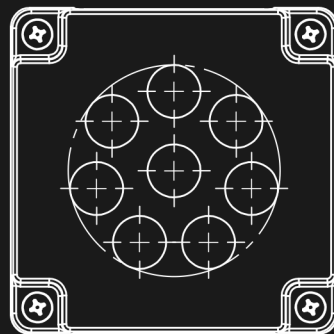
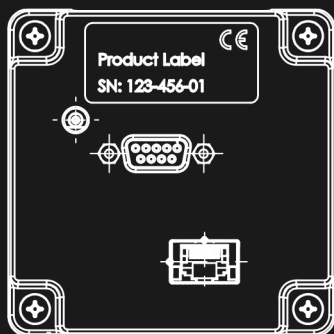
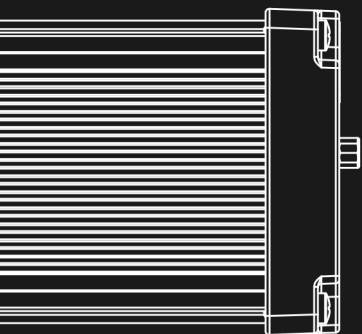
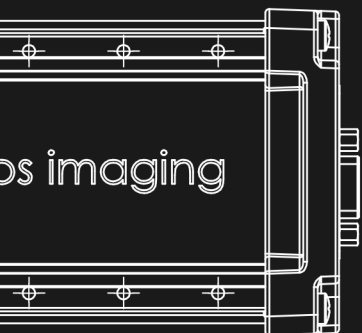


GEN<i>CAM

Odos Imaging

StarForm™ Swift GenICam™ Interface Reference Guide

Version 2.0.2, May 1, 2018



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2 Introduction

This manual provides a complete reference for the GenICam™ interface for the Odos Imaging StarForm™ Swift camera.

2.1 Styles and Convention

This manual uses certain typographical conventions in order to maintain an easily accessible and consistent layout. The styles contained in Table 2.1 and symbols noted below are used throughout the manual.

Table 2.1: Description of typographical styles used throughout this manual.

Style	Function	Example
Bold	important information, key words, headings,	Bold
Emphasis	GenICam™ features	ComponentEnable
Italic	filenames	<i>helpfile.pdf</i>
Monotype	code	<code>perl -00 -pe ''</code>



Note

This symbol highlights important information to note.



Caution

Use of the CAUTION heading throughout this manual explains risks that are potentially harmful to either the product or personnel. These sections should always be read carefully and understood.

3 GenICam™ Interface

This chapter contains a complete reference of all available features which are required to configure and control the StarForm™ Swift camera. The features are grouped into a hierarchical tree of categories with the **Root** category as the root of the tree.

The feature categories are listed first, in alphabetical order, along with a table showing their child features.

The non-category features follow, again listed in alphabetical order. Each GenICam™ feature is itemised as shown in the example below.

Name	name of feature [selector]
Category	category of feature
Interface	data type of feature
Access	read/write access
Unit	physical units
Visibility	visibility level
Values	possible values

3.1 Categories

3.1.1 AcquisitionControl

Category for the acquisition and trigger control features.

Name	Description
AcquisitionMode	Sets the acquisition mode of the device.
AcquisitionStart	Starts the Acquisition function of the device.
AcquisitionStop	Stops the Acquisition function of the device at the end of the current Frame.
IlluminationEnable	Controls if the illumination is enabled.
IlluminationPower	Sets the emission and exposure counts.
TriggerActivation	Specifies the activation mode of the trigger.
TriggerMode	Controls if the selected trigger is active.
TriggerSelector	Selects the type of trigger to configure.
TriggerSoftware	Generates an internal trigger.
TriggerSource	Specifies the internal signal or physical input Line to use as the trigger source.
TriggerWaitMode	Specifies camera action when waiting for a trigger.

3.1.2 CalibrationControl

Category that contains camera calibration related features.

Name	Description
CalibrationCameraSerial	Serial number of camera for calibration data.
CalibrationDate	Date for camera calibration data.
CalibrationIdentifier	Identifier for calibration data.
CalibrationStatus	Indicate state of camera calibration.
SensorTemperatureRegulationEffort	Indicates the proportion of the available cooling / heating capability currently being applied to provide stabilization of the sensor temperature.
SensorTemperatureRegulationStatus	Indicates state of sensor temperature regulation.
SensorTemperatureRegulationTarget	Center of operating temperature range used to select regulation and calibration profile.

3.1.3 ChunkDataControl

Category that contains the Chunk Data control features.

Name	Description
ChunkComponentSelector	Selects the Component from which to retrieve data from.
ChunkDeviceStatus	Device status information in chunk.
ChunkDeviceStatusSelector	Selector for device status information in chunk.
ChunkModeActive	Activates the inclusion of Chunk data in the payload of the image.

3.1.4 DeviceControl

Category for device information and control.

Name	Description
DeviceFirmwareIdentifier	Identifier for device firmware.
DeviceFirmwareVersion	Version of the firmware in the device.
DeviceLicenses	Category that contains features to document the open source licenses in use.
DeviceManufacturerInfo	Manufacturer information about the device.
DeviceModelName	Model of the device.
DeviceSFNCVersionMajor	Major version of the Standard Features Naming Convention that was used to create the device's GenICam XML.
DeviceSFNCVersionMinor	Minor version of the Standard Features Naming Convention that was used to create the device's GenICam XML.
DeviceSFNCVersionSubMinor	Sub minor version of Standard Features Naming Convention that was used to create the device's GenICam XML.
DeviceSerialNumber	Serial number of the device.
DeviceStatus	Device status information.
DeviceStatusSelector	Selector for device status information.
DeviceTLType	Transport Layer type of the device.
DeviceTLVersionMajor	Major version of the Transport Layer of the device.
DeviceTLVersionMinor	Minor version of the Transport Layer of the device.
DeviceTLVersionSubMinor	Sub minor version of the Transport Layer of the device.
DeviceTemperature	Device temperature in degrees Celsius (C).
DeviceTemperatureSelector	Selects the location within the device, where the temperature will be measured.
DeviceType	Returns the device type.
DeviceUserID	User-programmable device identifier.
DeviceVendorName	Name of the manufacturer of the device.
DeviceVersion	Version of the device.

3.1.5 DeviceLicenses

Category that contains features to document the open source licenses in use.

Name	Description
DeviceLicenseName	Package name for license.
DeviceLicensePage	Selected page from selected license.
DeviceLicensePageSelector	Selects the page of the license to view.
DeviceLicenseSelector	Selects the license to view.

3.1.6 DigitalIOControl

Category that contains the digital input and output control features.

Name	Description
LineMode	Controls if the physical Line is used to Input or Output a signal.
LineSelector	Selects the physical line (or pin) of the external device connector or the virtual line of the Transport Layer to configure.
LineSource	Selects which internal acquisition or I/O source signal to output on the selected Line.
LineStatus	Returns the current status of the selected input or output Line.
LineStatusUpdate	Trigger a read of the current LineStatus from the camera.
UserOutputSelector	Selects which bit of the User Output register will be set by UserOutputValue.
UserOutputValue	Sets the value of the bit selected by UserOutputSelector.

3.1.7 GigE Vision

Category that contains the features pertaining to the GigE Vision transport layer of the device.

Name	Description
GevCurrentDefaultGateway	Reports the default gateway IP address to be used on the given logical link.
GevCurrentIPAddress	Reports the IP address for the given logical link.
GevCurrentIPConfigurationPersistentIP	Controls whether the PersistentIP configuration scheme is activated on the given logical link.
GevCurrentSubnetMask	Reports the subnet mask of the given logical link.
GevMACAddress	MAC address of the logical link.
GevPersistentDefaultGateway	Controls the persistent default gateway for this logical link.
GevPersistentIPAddress	Controls the Persistent IP address for this logical link.
GevPersistentIPValidity	Checks the current settings for GevPersistentIP.
GevPersistentSubnetMask	Controls the Persistent subnet mask associated with the Persistent IP address on this logical link.
GevSCPSDoNotFragment	The state of this feature is copied into the "do not fragment" bit of IP header of each stream packet.
GevSCSPPacketSize	This GigE Vision specific feature corresponds to DeviceStream-ChannelPacketSize and should be kept in sync with it.

3.1.8 ImageFormatControl

Category for Image Format Control features.

Name	Description
ComponentEnable	Controls if streaming of the selected component is active.
ComponentSelector	Selects a component to activate/deactivate its data streaming.
Height	Height of the image provided by the device (in pixels).
PixelFormat	Format of the pixels provided by the device.
Width	Width of the image provided by the device (in pixels).

3.1.9 Root

Provides the Root of the GenICam features tree.

Name	Description
AcquisitionControl	Category for the acquisition and trigger control features.
CalibrationControl	Category that contains camera calibration related features.
ChunkDataControl	Category that contains the Chunk Data control features.
DeviceControl	Category for device information and control.
DigitalIOControl	Category that contains the digital input and output control features.
ImageFormatControl	Category for Image Format Control features.
Scan3dControl	Category for control of 3D camera specific features.
TLParamsLocked	Used by the Transport Layer to prevent critical features from changing during acquisition.
TransportLayerControl	Category that contains the transport Layer control features.

3.1.10 Scan3dControl

Category for control of 3D camera specific features.

Name	Description
Scan3dCalibrationXaUrl	File URL for XA calibration data.
Scan3dCalibrationYaUrl	File URL for YA calibration data.
Scan3dCalibrationZaUrl	File URL for ZA calibration data.
Scan3dCoordinateOffset	Range conversion offset.
Scan3dCoordinateScale	Range conversion scale.
Scan3dFilterControl	Category that contains the 3D filter features.
Scan3dRangeSpan	Selects time-of-flight pulse settings for different spans of interest.
Scan3dSignalThresholdLower	Lower signal threshold setting.

3.1.11 Scan3dFilterControl

Category that contains the 3D filter features.

Name	Description
Scan3dFilterLength	Length of filter to apply (number of frames) for Scan3dFilterMode other than None.
Scan3dFilterMode	Select type of filter to apply to the range component.

3.1.12 TransportLayerControl

Category that contains the transport Layer control features.

Name	Description
GigEVision	Category that contains the features pertaining to the GigE Vision transport layer of the device.
PayloadSize	Provides the number of bytes transferred for each image or chunk on the stream channel.

3.2 Features

3.2.1 AcquisitionMode

Name	AcquisitionMode
Category	AcquisitionControl
Interface	IEnumeration
Access	Read/Write
Unit	-
Visibility	Beginner
Values	Continuous

Sets the acquisition mode of the device. It defines mainly the number of frames to capture during an acquisition and the way the acquisition stops.

- **Continuous.** Frames are captured continuously until stopped with the AcquisitionStop command.

3.2.2 AcquisitionStart

Name	AcquisitionStart
Category	AcquisitionControl
Interface	Command
Access	Write
Unit	-
Visibility	Beginner
Values	-

Starts the Acquisition function of the device. The number of frames captured is specified by AcquisitionMode.

3.2.3 AcquisitionStop

Name	AcquisitionStop
Category	AcquisitionControl
Interface	Command
Access	Write
Unit	-
Visibility	Beginner
Values	-

Stops the Acquisition function of the device at the end of the current Frame. It is mainly used when AcquisitionMode is Continuous but can be used in any acquisition mode.

3.2.4 CalibrationCameraSerial

Name	CalibrationCameraSerial
Category	CalibrationControl
Interface	IString
Access	Read
Unit	-
Visibility	Expert
Values	-

Serial number of camera for calibration data. Used to identify calibration in camera.

3.2.5 CalibrationDate

Name	CalibrationDate
Category	CalibrationControl
Interface	IString
Access	Read
Unit	-
Visibility	Expert
Values	-

Date for camera calibration data. Used to identify calibration in camera.

3.2.6 CalibrationIdentifier

Name	CalibrationIdentifier
Category	CalibrationControl
Interface	IString
Access	Read
Unit	-
Visibility	Expert
Values	-

Identifier for calibration data. Used to identify calibration in camera.

3.2.7 CalibrationStatus

Name	CalibrationStatus
Category	CalibrationControl
Interface	IEnumeration
Access	Read/Write
Unit	-
Visibility	Beginner
Values	OK, InvalidCalibration

Indicate state of camera calibration.

- **OK.** Calibration status is good.
- **InvalidCalibration.** The camera calibration is invalid.

3.2.8 ChunkComponentSelector

Name	ChunkComponentSelector
Category	ChunkDataControl
Interface	IEnumeration
Access	Read
Unit	-
Visibility	Expert
Values	Intensity, Range, PointCloudMultiplierX, PointCloudMultiplierY, PointCloudMultiplierZ

Selects the Component from which to retrieve data from. See also ComponentSelector.

- **Intensity.** The image data is the intensity component (active IR).
- **Range.** The image data is the range component (distance or depth).
- **PointCloudMultiplierX.** The image data is the point cloud multiplier X component.
- **PointCloudMultiplierY.** The image data is the point cloud multiplier Y component.

- **PointCloudMultiplierZ.** The image data is the point cloud multiplier Z component.

3.2.9 ChunkDeviceStatus

Name	ChunkDeviceStatus
Category	ChunkDataControl
Interface	IEnumeration
Access	Read
Unit	-
Visibility	Beginner
Values	InRange, OutOfRange, Error

Device status information in chunk. See DeviceStatus for description.

- **InRange.** Selected attribute is in stable range.
- **OutOfRange.** Selected attribute is not in the stable/calibrated range.
- **Error.** Serious error in camera status or configuration - contact Odos Imaging for support.

3.2.10 ChunkDeviceStatusSelector

Name	ChunkDeviceStatusSelector
Category	ChunkDataControl
Interface	IEnumeration
Access	Read/Write
Unit	-
Visibility	Beginner
Values	All, TemperatureRegulation, TimingStabilization, IlluminationTemperature, CalibrationValidity

Selector for device status information in chunk.

- **All.** Summary of all ChunkDeviceStatus entries.
- **TemperatureRegulation.** Indicate state of sensor temperature regulation.
- **TimingStabilization.** Indicate state of timing stabilization.

- **IlluminationTemperature.** Indicate state of illumination temperature.
- **CalibrationValidity.** Indicate validity of calibration.

3.2.11 ChunkModeActive

Name	ChunkModeActive
Category	ChunkDataControl
Interface	IBoolean
Access	Read/Write
Unit	-
Visibility	Expert
Values	-

Activates the inclusion of Chunk data in the payload of the image. Some camera interface software may need this setting disabled if they cannot handle Chunk data. The Odos SDK requires this setting to be enabled.

3.2.12 ComponentEnable

Name	ComponentEnable
Category	ImageFormatControl
Interface	IBoolean
Access	
Unit	-
Visibility	Beginner
Values	-

Controls if streaming of the selected component in ComponentSelector is active.

3.2.13 ComponentSelector

Name	ComponentSelector
Category	ImageFormatControl
Interface	IEnumeration
Access	Read/Write
Unit	-
Visibility	Beginner
Values	Intensity, Range, PointCloudMultiplierX, PointCloudMultiplierY, PointCloudMultiplierZ

Selects a component to activate/deactivate its data streaming.

- **Intensity.** The acquisition of intensity (monochrome) of the visible reflected light is controlled.
- **Range.** The acquisition of range (distance) data is controlled. The data produced is range (2.5D) which can be converted to an XYZ point cloud using the PointCloudMultiplierX/Y/Z.
- **PointCloudMultiplierX.** The image used to multiply a raw Range image to convert to a point cloud X coordinate. Enabling this will disable all other components and enabling a different component will disable this.
- **PointCloudMultiplierY.** The image used to multiply a raw Range image to convert to a point cloud Y coordinate. Enabling this will disable all other components and enabling a different component will disable this.
- **PointCloudMultiplierZ.** The image used to multiply a raw Range image to convert to a point cloud Z coordinate. Enabling this will disable all other components and enabling a different component will disable this.

3.2.14 DeviceFirmwareIdentifier

Name	DeviceFirmwareIdentifier
Category	DeviceControl
Interface	IString
Access	Read
Unit	-
Visibility	Expert
Values	-

Identifier for device firmware.

3.2.15 DeviceFirmwareVersion

Name	DeviceFirmwareVersion
Category	DeviceControl
Interface	IString
Access	Read
Unit	-
Visibility	Beginner
Values	-

Version of the firmware in the device.

3.2.16 DeviceLicenseName

Name	DeviceLicenseName
Category	DeviceLicenses
Interface	IString
Access	Read
Unit	-
Visibility	Guru
Values	-

Package name for license.

3.2.17 DeviceLicensePage

Name	DeviceLicensePage
Category	DeviceLicenses
Interface	IString
Access	Read
Unit	-
Visibility	Guru
Values	-

Selected page from selected license.

3.2.18 DeviceLicensePageSelector

Name	DeviceLicensePageSelector
Category	DeviceLicenses
Interface	IInteger
Access	Read/Write
Unit	-
Visibility	Guru
Values	≥ 0

Selects the page of license to view.

3.2.19 DeviceLicenseSelector

Name	DeviceLicenseSelector
Category	DeviceLicenses
Interface	IInteger
Access	Read/Write
Unit	-
Visibility	Guru
Values	≥ 0

Selects the license to view.

3.2.20 DeviceManufacturerInfo

Name	DeviceManufacturerInfo
Category	DeviceControl
Interface	IString
Access	Read
Unit	-
Visibility	Beginner
Values	-

Manufacturer information about the device.

3.2.21 DeviceModelName

Name	DeviceModelName
Category	DeviceControl
Interface	IString
Access	Read
Unit	-
Visibility	Beginner
Values	-

Model of the device.

3.2.22 DeviceSFNCVersionMajor

Name	DeviceSFNCVersionMajor
Category	DeviceControl
Interface	IInteger
Access	Read
Unit	-
Visibility	Beginner
Values	-

Major version of the Standard Features Naming Convention that was used to create the device's GenICam XML.

3.2.23 DeviceSFNCVersionMinor

Name	DeviceSFNCVersionMinor
Category	DeviceControl
Interface	IInteger
Access	Read
Unit	-
Visibility	Beginner
Values	-

Minor version of the Standard Features Naming Convention that was used to create the device's GenICam XML.

3.2.24 DeviceSFNCVersionSubMinor

Name	DeviceSFNCVersionSubMinor
Category	DeviceControl
Interface	IInteger
Access	Read
Unit	-
Visibility	Beginner
Values	-

Sub minor version of Standard Features Naming Convention that was used to create the device's GenICam XML.

3.2.25 DeviceSerialNumber

Name	DeviceSerialNumber
Category	DeviceControl
Interface	IString
Access	Read
Unit	-
Visibility	Expert
Values	-

Serial number of the device. This string is a unique identifier of the device.

3.2.26 DeviceStatus

Name	DeviceStatus
Category	DeviceControl
Interface	IEnumeration
Access	Read
Unit	-
Visibility	Beginner
Values	InRange, OutOfRange, Error

Device status information. When any status is OutOfRange the data provided by the camera may be invalid or outside specification.

- **InRange.** Selected attribute is in stable range.
- **OutOfRange.** Selected attribute is not in the stable/calibrated range. The data provided by the camera may be invalid or outside specification.
- **Error.** Serious error in camera status or configuration - contact Odos Imaging for support.

3.2.27 DeviceStatusSelector

Name	DeviceStatusSelector
Category	DeviceControl
Interface	IEnumeration
Access	Read/Write
Unit	-
Visibility	Beginner
Values	All, TemperatureRegulation, TimingStabilization, IlluminationTemperature, CalibrationValidity

Selector for device status information.

- **All.** Summary of all DeviceStatus entries.
- **TemperatureRegulation.** Indicate state of sensor temperature regulation.
- **TimingStabilization.** Indicate state of timing stabilization.
- **IlluminationTemperature.** Indicate state of illumination temperature.

- **CalibrationValidity.** Indicate validity of calibration.

3.2.28 DeviceTLType

Name	DeviceTLType
Category	DeviceControl
Interface	IEnumeration
Access	Read
Unit	-
Visibility	Beginner
Values	GigEVision

Transport Layer type of the device.

- **GigEVision.** GigE Vision.

3.2.29 DeviceTLVersionMajor

Name	DeviceTLVersionMajor
Category	DeviceControl
Interface	StructEntry
Access	Read
Unit	-
Visibility	Beginner
Values	-

Major version of the Transport Layer of the device.

3.2.30 DeviceTLVersionMinor

Name	DeviceTLVersionMinor
Category	DeviceControl
Interface	StructEntry
Access	Read
Unit	-
Visibility	Beginner
Values	-

Minor version of the Transport Layer of the device.

3.2.31 DeviceTLVersionSubMinor

Name	DeviceTLVersionSubMinor
Category	DeviceControl
Interface	IInteger
Access	Read
Unit	-
Visibility	Beginner
Values	-

Sub minor version of the Transport Layer of the device.

3.2.32 DeviceTemperature

Name	DeviceTemperature
Category	DeviceControl
Interface	IFloat
Access	Read
Unit	C
Visibility	Expert
Values	-

Device temperature in degrees Celsius (C). It is measured at the location selected by DeviceTemperatureSelector.

3.2.33 DeviceTemperatureSelector

Name	DeviceTemperatureSelector
Category	DeviceControl
Interface	IEnumeration
Access	Read/Write
Unit	-
Visibility	Expert
Values	Sensor, Mainboard, Illumination, IlluminationBoard

Selects the location within the device, where the temperature will be measured.

- **Sensor.** Temperature of the image sensor of the camera.

- **Mainboard.** Temperature of the device's mainboard.
- **Illumination.** Temperature of the image illumination of the camera.
- **IlluminationBoard.** Temperature of the device's illumination board.

3.2.34 DeviceType

Name	DeviceType
Category	DeviceControl
Interface	IEnumeration
Access	Read
Unit	-
Visibility	Guru
Values	Transmitter

Returns the device type.

- **Transmitter.** Data stream transmitter device.

3.2.35 DeviceUserID

Name	DeviceUserID
Category	DeviceControl
Interface	IString
Access	Read/Write
Unit	-
Visibility	Beginner
Values	-

User-programmable device identifier. This is stored persistently and can be used to easily identify and connect to a specific camera.

3.2.36 DeviceVendorName

Name	DeviceVendorName
Category	DeviceControl
Interface	IString
Access	Read
Unit	-
Visibility	Beginner
Values	-

Name of the manufacturer of the device.

3.2.37 DeviceVersion

Name	DeviceVersion
Category	DeviceControl
Interface	IString
Access	Read
Unit	-
Visibility	Beginner
Values	-

Version of the device.

3.2.38 GevCurrentDefaultGateway

Name	GevCurrentDefaultGateway
Category	GigEVision
Interface	IInteger
Access	Read
Unit	-
Visibility	Beginner
Values	-

Reports the default gateway IP address to be used on the given logical link.

3.2.39 **GevCurrentIPAddress**

Name	GevCurrentIPAddress
Category	GigEVision
Interface	Integer
Access	Read
Unit	-
Visibility	Beginner
Values	-

Reports the IP address for the given logical link.

3.2.40 **GevCurrentIPConfigurationPersistentIP**

Name	GevCurrentIPConfigurationPersistentIP
Category	GigEVision
Interface	Boolean
Access	
Unit	-
Visibility	Beginner
Values	-

Controls whether the PersistentIP configuration scheme is activated on the given logical link.

3.2.41 **GevCurrentSubnetMask**

Name	GevCurrentSubnetMask
Category	GigEVision
Interface	Integer
Access	Read
Unit	-
Visibility	Beginner
Values	-

Reports the subnet mask of the given logical link.

3.2.42 GevMACAddress

Name	GevMACAddress
Category	GigEVision
Interface	Integer
Access	Read
Unit	-
Visibility	Beginner
Values	-

MAC address of the logical link.

3.2.43 GevPersistentDefaultGateway

Name	GevPersistentDefaultGateway
Category	GigEVision
Interface	Integer
Access	Read/Write
Unit	-
Visibility	Beginner
Values	-

Controls the persistent default gateway for this logical link. It is only used when the device boots with the Persistent IP configuration scheme.

3.2.44 GevPersistentIPAddress

Name	GevPersistentIPAddress
Category	GigEVision
Interface	Integer
Access	Read/Write
Unit	-
Visibility	Beginner
Values	-

Controls the Persistent IP address for this logical link. It is only used when the device boots with the Persistent IP configuration scheme.

3.2.45 GevPersistentIPValidity

Name	GevPersistentIPValidity
Category	GigEVision
Interface	IEnumeration
Access	Read
Unit	-
Visibility	Beginner
Values	Valid, DefaultGatewayNotInSubnet, IPAddressesBroadcast, DefaultGatewayIsBroadcast, IPAddressesZero, SubnetMaskIsZero

Provides guidance on the validity of the current settings for GevPersistentIP.

- **Valid.** GevPersistentIP settings are valid.
- **DefaultGatewayNotInSubnet.** Invalid - GevPersistentDefaultGateway is not in subnet. Set to address in subnet or all zero.
- **IPAddressesBroadcast.** Invalid - GevPersistentIPAddress is the broadcast address for the subnet.
- **DefaultGatewayIsBroadcast.** Invalid - GevPersistentDefaultGateway is the broadcast address for the subnet. Set to address in subnet or all zero.
- **IPAddressesZero.** Invalid - GevPersistentIPAddress is all zero.
- **SubnetMaskIsZero.** Invalid - GevPersistentSubnetMask is all zero.

3.2.46 GevPersistentSubnetMask

Name	GevPersistentSubnetMask
Category	GigEVision
Interface	IInteger
Access	Read/Write
Unit	-
Visibility	Beginner
Values	-

Controls the Persistent subnet mask associated with the Persistent IP address on this logical link. It is only used when the device boots with the Persistent IP configuration scheme.

3.2.47 GevSCPSDoNotFragment

Name	GevSCPSDoNotFragment
Category	GigEVision
Interface	Boolean
Access	Read/Write
Unit	-
Visibility	Guru
Values	-

The state of this feature is copied into the "do not fragment" bit of IP header of each stream packet. It can be used by the application to prevent IP fragmentation of packets on the stream channel.

3.2.48 GevSCPSPacketSize

Name	GevSCPSPacketSize
Category	GigEVision
Interface	Integer
Access	Read/Write
Unit	B
Visibility	Expert
Values	$\geq 256, \leq 1500$

This GigE Vision specific feature corresponds to DeviceStream-ChannelPacketSize and should be kept in sync with it. It specifies the stream packet size, in bytes, to send on the selected channel for a GVSP transmitter or specifies the maximum packet size supported by a GVSP receiver.

3.2.49 Height

Name	Height
Category	ImageFormatControl
Interface	IInteger
Access	Read
Unit	-
Visibility	Beginner
Values	-

Height of the image provided by the device (in pixels).

3.2.50 IlluminationEnable

Name	IlluminationEnable
Category	AcquisitionControl
Interface	IBoolean
Access	Read/Write
Unit	-
Visibility	Guru
Values	-

Controls if the illumination is enabled.

3.2.51 IlluminationPower

Name	IlluminationPower
Category	AcquisitionControl
Interface	IInteger
Access	Read/Write
Unit	-
Visibility	Beginner
Values	≥ 256

Sets the emission and exposure counts. When changed this will cause the DeviceStatus for TimingStabilization to go OutOfRange briefly the user should wait until back InRange before acquiring images.

3.2.52 LineMode

Name	LineMode
Category	DigitalIOControl
Interface	IEnumeration
Access	Read/Write
Unit	-
Visibility	Expert
Values	Input, Output

Controls if the physical Line is used to Input or Output a signal.

- **Input.** The selected physical line is used to Input an electrical signal.
- **Output.** The selected physical line is used to Output an electrical signal.

3.2.53 LineSelector

Name	LineSelector
Category	DigitalIOControl
Interface	IEnumeration
Access	Read/Write
Unit	-
Visibility	Expert
Values	Line0, Line1

Selects the physical line (or pin) of the external device connector or the virtual line of the Transport Layer to configure.

- **Line0.** Index of the physical line and associated I/O control block to use.
- **Line1.** Index of the physical line and associated I/O control block to use.

3.2.54 LineSource

Name	LineSource
Category	DigitalIOControl
Interface	IEnumeration
Access	Read
Unit	-
Visibility	Expert
Values	Off, UserOutput0, FrameOutputToggle

Selects which internal acquisition or I/O source signal to output on the selected Line. LineMode must be Output.

- **Off.** Line output is disabled.
- **UserOutput0.** The chosen User Output Bit state as defined by its current UserOutputValue.
- **FrameOutputToggle.** Output is toggled on reception of a frame.

3.2.55 LineStatus

Name	LineStatus
Category	DigitalIOControl
Interface	IBoolean
Access	Read
Unit	-
Visibility	Expert
Values	-

Returns the current status of the selected input or output Line.

3.2.56 LineStatusUpdate

Name	LineStatusUpdate
Category	DigitalIOControl
Interface	Command
Access	Read/Write
Unit	-
Visibility	Expert
Values	-

Trigger a read of the current LineStatus from the camera.

3.2.57 PayloadSize

Name	PayloadSize
Category	TransportLayerControl
Interface	IInteger
Access	Read
Unit	B
Visibility	Expert
Values	-

Provides the number of bytes transferred for each image or chunk on the stream channel. This includes any end-of-line, end-of-frame statistics or other stamp data. This is the total size of data payload for a data block.

3.2.58 PixelFormat

Name	PixelFormat
Category	ImageFormatControl
Interface	IEnumeration
Access	
Unit	-
Visibility	Beginner
Values	Mono16, Coord3D_ABC32f, Coord3D_A32f

Format of the pixels provided by the device. It represents all the information provided by PixelSize, PixelColorFilter combined in a single feature.

- **Mono16.** Monochrome 16-bit.
- **Coord3D_ABC32f.** 3D coordinate A-B-C 32-bit floating point.
- **Coord3D_A32f.** 3D coordinate A 32-bit floating point.

3.2.59 Scan3dCalibrationXaUrl

Name	Scan3dCalibrationXaUrl
Category	Scan3dControl
Interface	IString
Access	Read
Unit	-
Visibility	Expert
Values	-

File descriptor for XA calibration data.

3.2.60 Scan3dCalibrationYaUrl

Name	Scan3dCalibrationYaUrl
Category	Scan3dControl
Interface	IString
Access	Read
Unit	-
Visibility	Expert
Values	-

File descriptor for YA calibration data.

3.2.61 Scan3dCalibrationZaUrl

Name	Scan3dCalibrationZaUrl
Category	Scan3dControl
Interface	IString
Access	Read
Unit	-
Visibility	Expert
Values	-

File descriptor for ZA calibration data.

3.2.62 Scan3dCoordinateOffset

Name	Scan3dCoordinateOffset
Category	Scan3dControl
Interface	IFloat
Access	Read
Unit	-
Visibility	Expert
Values	-

Offset to apply when converting raw range to meters.

3.2.63 Scan3dCoordinateScale

Name	Scan3dCoordinateScale
Category	Scan3dControl
Interface	IFloat
Access	Read
Unit	-
Visibility	Expert
Values	-

Scale to apply when converting raw range to meters.

3.2.64 Scan3dFilterLength

Name	Scan3dFilterLength
Category	Scan3dFilterControl
Interface	IntConverter
Access	
Unit	-
Visibility	Beginner
Values	-

Length of filter to apply (number of frames) for Scan3dFilterMode other than None. Greater lengths result in a greater influence of the filter on the range data.

3.2.65 Scan3dFilterMode

Name	Scan3dFilterMode
Category	Scan3dFilterControl
Interface	IEnumeration
Access	Read/Write
Unit	-
Visibility	Beginner
Values	None, Block, ContinuousAdaptive

Select type of filter to apply to the range component.

- **None.** No filtering is applied.
- **Block.** Simple block-wise filter resulting in one frame of output for every Scan3dFilterLength frames acquired, with a corresponding decrease in output frame rate.
- **ContinuousAdaptive.** [Pre-release Preview] Adaptive filter offering the following benefits as compared to "Block": full frame-rate, reduced motion artifacts, fewer missing (0/65535) pixels.

This is a pre-release preview of this feature. Behaviour may change in future revisions of the firmware as we continue to make improvements.

3.2.66 Scan3dRangeSpan

Name	Scan3dRangeSpan
Category	Scan3dControl
Interface	IEnumeration
Access	Read/Write
Unit	-
Visibility	Beginner
Values	Small, Standard, Large

Selects time-of-flight pulse settings for different spans of interest.

- **Small.** Small span.
- **Standard.** Standard span.
- **Large.** Large span.

3.2.67 Scan3dSignalThresholdLower

Name	Scan3dSignalThresholdLower
Category	Scan3dControl
Interface	IInteger
Access	Read/Write
Unit	-
Visibility	Beginner
Values	-

Lower signal threshold setting.

3.2.68 SensorTemperatureRegulationEffort

Name	SensorTemperatureRegulationEffort
Category	CalibrationControl
Interface	IInteger
Access	
Unit	%
Visibility	Beginner
Values	$\geq -100, \leq 100$

Indicates the proportion of the available cooling / heating capability currently being applied to provide stabilization of the sensor temperature. Positive values indicate cooling, negative values indicate heating.

If the system can not bring the sensor temperature into the selected range, this value can be checked to identify whether the system is too hot (maximum cooling effort will be reached) or too cool (maximum heating effort will be reached) for the chosen SensorTemperatureRegulationTarget.

3.2.69 SensorTemperatureRegulationStatus

Name	SensorTemperatureRegulationStatus
Category	CalibrationControl
Interface	IEnumeration
Access	
Unit	-
Visibility	Beginner
Values	InRange, OutOfRange

Indicates state of sensor temperature regulation.

- **InRange.** Regulation is in stable range.
- **OutOfRange.** Regulation is not in the stable range. This can arise due to a change in SensorTemperatureRegulationTarget, or a change in environmental conditions, as well as on power-up.

Usually the status will change to InRange after a period of time. If it does not, it may be that the selected SensorTemperatureRegulationTarget is not suitable for the ambient temperature, and a different SensorTemperatureRegulationTarget should be selected. If the system can not achieve temperature regulation at any SensorTemperatureRegulationTarget contact support.

3.2.70 SensorTemperatureRegulationTarget

Name	SensorTemperatureRegulationTarget
Category	CalibrationControl
Interface	IEnumeration
Access	Read/Write
Unit	-
Visibility	Beginner
Values	Temp_10C, Temp_25C, Temp_40C, Temp_55C

Center of operating temperature range used to select regulation and calibration profile. Note that these temperatures relate to the temperature of the system housing, after a warm-up period.

The relationship between system housing temperature and ambient temperature depends on several factors, such as airflow,

any thermal connection between the system and mounting hardware, and illumination setting and duty cycle. In a typical situation, the housing temperature will stabilise at around 20 to 25 degrees above ambient.

- **Temp_10C.** Temperature range centered on 10C.
- **Temp_25C.** Temperature range centered on 25C.
- **Temp_40C.** Temperature range centered on 40C.
- **Temp_55C.** Temperature range centered on 55C.

3.2.71 TLParamsLocked

Name	TLParamsLocked
Category	Root
Interface	IInteger
Access	Read/Write
Unit	-
Visibility	Invisible
Values	-

Used by the Transport Layer to prevent critical features from changing during acquisition.

3.2.72 TriggerActivation

Name	TriggerActivation
Category	AcquisitionControl
Interface	IEnumeration
Access	-
Unit	-
Visibility	Beginner
Values	RisingEdge, FallingEdge, AnyEdge

Specifies the activation mode of the trigger.

- **RisingEdge.** Specifies that the trigger is considered valid on the rising edge of the source signal.
- **FallingEdge.** Specifies that the trigger is considered valid on the falling edge of the source signal.

- **AnyEdge.** Specifies that the trigger is considered valid on the falling or rising edge of the source signal.

3.2.73 TriggerMode

Name	TriggerMode
Category	AcquisitionControl
Interface	IEnumeration
Access	Read/Write
Unit	-
Visibility	Beginner
Values	Off, On

Controls if the selected trigger is active.

- **Off.** Disables the selected trigger.
- **On.** Enable the selected trigger.

3.2.74 TriggerSelector

Name	TriggerSelector
Category	AcquisitionControl
Interface	IEnumeration
Access	Read/Write
Unit	-
Visibility	Beginner
Values	FrameBurstStart

Selects the type of trigger to configure.

- **FrameBurstStart.** Selects a trigger starting the capture of the bursts of frames in an acquisition.

3.2.75 TriggerSoftware

Name	TriggerSoftware
Category	AcquisitionControl
Interface	Command
Access	Write
Unit	-
Visibility	Beginner
Values	-

Generates an internal trigger. TriggerSource must be set to Software.

3.2.76 TriggerSource

Name	TriggerSource
Category	AcquisitionControl
Interface	IEnumeration
Access	
Unit	-
Visibility	Beginner
Values	Software, Line0

Specifies the internal signal or physical input Line to use as the trigger source. The selected trigger must have its TriggerMode set to On.

- **Software.** Specifies that the trigger source will be generated by software using the TriggerSoftware command.
- **Line0.** Specifies which physical line (or pin) and associated I/O control block to use as external source for the trigger signal.

3.2.77 TriggerWaitMode

Name	TriggerWaitMode
Category	AcquisitionControl
Interface	IEnumeration
Access	
Unit	-
Visibility	Beginner
Values	Pause, Run

Specifies camera action when waiting for a trigger.

- **Pause.** Specifies that the acquisition cycle is paused waiting for a trigger (no-illumination). In order to allow the camera to run internal calibration routines and maintain accuracy the trigger should be supplied periodically.
- **Run.** Specifies that the acquisition cycle keeps running and the next burst of frames completed after a trigger is returned.

3.2.78 UserOutputSelector

Name	UserOutputSelector
Category	DigitalIOControl
Interface	IEnumeration
Access	Read/Write
Unit	-
Visibility	Expert
Values	UserOutput0

Selects which bit of the User Output register will be set by UserOutputValue.

- **UserOutput0.** Selects the bit 0 of the User Output register.

3.2.79 UserOutputValue

Name	UserOutputValue
Category	DigitalIOControl
Interface	IBoolean
Access	Read/Write
Unit	-
Visibility	Expert
Values	-

Sets the value of the bit selected by UserOutputSelector.

3.2.80 Width

Name	Width
Category	ImageFormatControl
Interface	IInteger
Access	Read
Unit	-
Visibility	Beginner
Values	-

Width of the image provided by the device (in pixels).

4 Document History

Date	Version	Changelog
18.12.2016	0.9.0	Internal release
29.01.2017	1.0.0	First release
11.04.2017	1.2.0	Updated to 1.2 firmware release
01.05.2018	2.0.2	Updated to 2.0.2 firmware release

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