

# Zebra Aurora™ Vision Studio Support for Photoneo 3D Sensors using GigE Vision

User guide on using the GigE Vision standard in Zebra Aurora™ Vision Studio (AVS)

#### What is GigE Vision?

GigE Vision is a high-speed communication protocol and interface standard that is designed for transmitting data over Ethernet networks.



#### GigE Vision with Photoneo devices

<u>GigE support</u> was introduced to Photoneo devices with Firmware 1.10.0. Third-party software with GigE support can be used to operate Photoneo 3D Sensors without a running instance of PhoXi Control.

#### What is Zebra Aurora™ Vision Studio?

It is machine vision software that is based on visual data flow programming and comes with a comprehensive set of image analysis tools. Typical applications include industrial quality inspection and robot guidance, using both ruler-based and deep neural networks-based algorithms. Find out more at the <u>Zebra Aurora Vision Studio website</u>.

## Supported Photoneo 3D Sensors

• A device with firmware version 1.10.0 or later (can be found in PhoXi Control)

💼 Pho>	🕏 PhoXi Control Photoneo								
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	Name	Device details							
•	🛥 MotionCam-3D-DVJ-067	Name	MotionCam-3D-DVJ-067						
۲	🛃 basic-example	Description	MotionCam-3D Color						
٠	color-example	Status							
		Comment	N/A						
		ID	DVJ-067						
		Adapter	N/A						
		IPv4							
		IPv6	-						
		Port							
		Version	1.10.0						
		Variant	S						

Note: If your device has a lower firmware version, consult the <u>Versioning Guide</u> to see if it can be updated and the <u>Firmware updater</u> to update the device.

### Running the examples

- Download an example from <u>GitHub</u>
- Install Zebra Aurora™ Vision Studio 5.2.10.92454 or later
  - o If necessary, consult the Zebra Aurora™ Vision Studio Online documentation
- Open the downloaded example and extract it in a folder with read/write permissions
- Open the \*.avproj file

PhotoneoSimpleConnectionGige.avcode	5/11/2023 10:38 A	AVCODE File	7 KB
PhotoneoSimpleConnectionGige.avproj	5/11/2023 10:38 A	Aurora Visi	1 KB
PhotoneoSimpleConnectionGige.avview	5/11/2023 10:38 A	AVVIEW File	2 KB

- After opening the \*.avproj file, *Project Explorer*, *Program Editor Design* and *OutputFrame* tabs will be opened as seen below.
- The PhotoneoSimpleConnectionGige example connects to a defined device and starts a freerun acquisition.

Aurora Vision Studio 5.2 Professional +	Parallel Add-on - PhotoneoSimpleConnectionGige.avproj*	– 🗆 ×
File Edit Program View Tools He	lp	ONLINE 🖉 💄 Advanced 🛛 🔀 English
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		25% Zoom: 40%
PhotoneoSimpleConnectionGige	$= \bigcirc \operatorname{Main} \sqcup \bigcirc \lor \rightarrow \sqcup \lor \lor + \sqcup \lor $ -388, 4	48 -175, 185
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	This parameter "Photoneo3DSensor" can be edited in the "Project Explorer" window,	
	outPhotoneo3 🛫 outPhotone3D	
	2. GenICam_SetParameter: Enum +	
	Set camera trigger type to "Software".	
	Zoom	17% Zoom: 17%
~ ~	3. GigEVision_SetParameter: Enum + 1347, 2	1245, 938
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Properties - Photone3DSensorAddre	4 CanTCam CatDenameters Basel	
Name Value 🗮	4. GeniCam_SetParameter: Bool * Change parameter "UseFixedDataOrdering" to	
Photone3DS 169.254.172.2	false.	
	5. GenICam_StartAcquisition +	
	Start camera acquisition.	
	6. GigEVision StartAcquisition	
	Console	• <b>~ X</b>
	inAddress Time	Level Message
	ACQUIRE 10:42: 11:50:	18 AM Info [Main] Program initialized.
	In the Aquire section program is waiting for 11:51:	27 AM Info [Main] Program execution stopped.
	new trames from the camera. 11:56:	24 AM Info [Main] Program initialized.
	C Genitcam_ExecuteCommand • II:56:	Concole = Results III Filmetrin - Default
Not started	Iterations p	ver second: 0.19 Time elapsed: 11.80 s Diagnostic

• The *[GevAddress] Photoneo 3DSensorAddress* in the Project Explorer tab, allows the user to choose the desired device.

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Properties - Photo	ne3DSensorAddress -	д	×
Name	Value		۰
Photone3DS	169.254.164.227		

In the properties tab, click on the 
icon to open the GigE Vision Device Manager.
Double-click to connect to a device (or use the Select button on the bottom).

GigE Vision Device Manager					?	$\times$
Select source device:			Ref	resh	Tools	•
Device name	IP Address	MAC Address	Serial number	User ID		^
Photoneo MotionCam-3D Color	10.6.110.33		TBR-059			
Photoneo PhoXi 3D Scanner	10.6.112.111		CTR-059			
Photoneo MotionCam-3D Color	10.6.116.142		COLORCAM-M3			
Photoneo MotionCam-3D	10.6.113.133		JEG-083			
Photoneo MotionCam-3D Color	10.6.116.82		CTR-053			
Photoneo MotionCam-3D Color	10.6.114.115	100000000	DVJ-116			~
Identify this device in network by						
IP Address     O MAC Address	⊖ Serial number					
			Select	C	ancel	

• To access the settings of the device, click Tools -> Access Device Settings



The Photoneo <device type> GenICam settings window allows the user to adjust a variety
of device settings. Consult the <u>Photoneo 3D Sensor User Manual</u> and <u>PhoXi Control User</u>
<u>Manual</u> to understand the desired parameters..

Photoneo MotionCam-3D Color GenICam settings	— 🗆 X
	Transport Layer Control
Test Control     Test Control     Test Control     Capturing Settings - Scanner     Capturing Settings - Camera     Processing Settings     Calibration Settings     Calibration Settings     Color Camera Settings     Color Camera Calibration Settings	Category that contains the transport Layer control features.
Visibility: Guru · Q	~ ~
	Close

• Launch the example using the 🕨 icon - device connects and freerun acquisition starts

Aurora Vision Studio 5.2 Professional + Para	illel Add-on - PhotoneoSimple	ConnectionGige.avproj*				- 🗆 ×
File Edit Program View Tools Help					ONLINE #	Advanced 🔀 English
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	Set camera trigger type	to "Software".			学者:	
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	3. Gig	EVision_SetParameter:	Enum 4	Zoom: 52%	Zoom: 52%	
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	-> inAddress	DISABLED				
	5. 0	GenICam_StartAcquisi	tion +			
	Start camera acquisition					
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	8. G	enICam_ExecuteComn	nand 🔸	10:40:17 AM Info	[Main] Program initialized.	
	Trigger camera - send so	ftware trigger to the came	ra.	10:41:03 AM Info	[Main] Program execution stopped.	
	inAddress	DISABLED		Hints Concels	Paguite Electric Default	*
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Running Main(10)						Diagnostic

- Block 3. *GigEVision\_SetParameter:Enum* sets parameter Trigger mode:
  - *InValue = Off* to use Freerun.

				3. Gigl	EVision_SetParameter: Enum	+		
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 The component selector which can be found in the settings → Image Format Control → Component Selector allows the user to enable and disable output structures that are visible in block 11. *GigEVision\_GrabImage: Multipart.*

Photoneo MotionCam-3D Color GenICam set	tings					$\times$
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				(	Close	

• To stop the example, use the 📕 icon.

<u>Note:</u> Optionally, the example also contains blocks (disabled) to operate the devices using GenICam. GenICam standard requires a PhoXi Control (1.8.2 or above) to be running. See <u>Zebra</u> <u>Aurora<sup>TM</sup> Vision Studio Support forPhotoneo 3D Sensors using GenICam</u> to find out more.