

Compliant list for Baumer industrial cameras / USB 3.0 AN201403/v11/2021-01-11

Description

The equipment listed below has been tested successfully with the following Baumer camera models featuring the USB 3.0 interface.

Products

VCXU cameras
VEXU cameras
MXU cameras
VLU cameras
PXU cameras

Preparation

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1 Technical Background

The following listed equipment has been tested successfully with Baumer USB 3.0 cameras. The tested PC configurations, PCI Express boards as well as accessories performed within the specification without any limitations in the data transfer of cameras in the PC configuration.

2 Test platforms

2.1 Recommended Standard PC configuration for operation of Baumer USB 3.0 cameras

	Single-camera system	Multi-camera system
CPU	Intel® Core™ i5-2520M CPU @ 2.50GHz, Cores: 4	Intel® Core™ i7-3770 CPU @ 3.40GHz, Cores: 8
RAM	4 GB	8 GB
OS	Microsoft® Windows 7™ 32/64 bit systems Microsoft® Windows 10™ 32/64 bit systems Linux Kernel 4.7.x 32 / 64 bit systems	
Graphics	recommended resolution at least 1280 x 1024, color depth 32 bit	

2.2 Tested Standard PCs

Test Equipment	Manufacturer / Reseller	Description	Function
PCDERAD345	Casawave Station i5	<ul style="list-style-type: none"> - Microsoft® Windows® 7™ Professional 32bit - Intel® Core i5-3550, 3,3 GHz - BIOS Intel Corp. 09.08.2012, BHZ7710H.86A.0085.2012.0809.1641 - RAM 8GB - Intel Desktop Board DZ77BH-55K 	performance within specification without limitation
PCDERAD0520	Dell Optiplex 9020	<ul style="list-style-type: none"> - Microsoft® Windows® 7™ Enterprise 64bit - Intel® Core i7-4790, 3,6 GHz - BIOS Dell Inc. A09, 20.11.2014 - RAM 16GB 	performance within specification without limitation
PCDERAD0536	ASUS X99-F WS	<ul style="list-style-type: none"> - Microsoft® Windows® 10™ Enterprise 64bit - Intel® Core i7-5820K, 3,3 GHz - BIOS American Megatrends 2003, 04.03.2015 - RAM 16GB 	performance within specification without limitation

3 USB 3.0 interface

3.1 Information



We strongly recommend using the latest USB host controller driver in order to avoid system crashes when using the USB producer. Please use at least the following driver versions:

- Intel® USB 3.0 eXtensible Host Controller Driver for Intel® 8/9/100 Series and C220/C610 Chipset Family Version **4.0.6.60** from 01-Aug-2016
- Intel® USB 3.0 eXtensible Host Controller Driver for Intel® 7 Series/C216 Chipset Family Version **1.0.10.255** from 03-Feb-2014
- Renesas/NEC uPD720201/720202 USB 3.0 Driver Version **3.0.23.0** WHQL 27-Feb-2014

3.2 Onboard USB interface tested with Camera Explorer

	Name	Type	Description
PC Mainboard	Intel® Desktop Board DZ77BH-55K	Intel® USB3.0 Host Controller	<ul style="list-style-type: none"> - 4port USB back panel connectors (Intel® Z77 Express Chipset) - 2port internal connector, for front USB (NEC D720200F1, not tested)
PC Mainboard	Intel® DP/N 06X1TJ	Intel® USB3.0 Host Controller	<ul style="list-style-type: none"> - 6port USB back panel connectors (2ports USB 3.0; Intel® Q87 Express Chipset)

3.3 PCI Express boards tested with Camera Explorer

	Manufacturer / Reseller	Type / Name	Description
	DeLock	89243	<ul style="list-style-type: none"> - 2 port USB card - Renesas PD720202 (please mind the notes in chapter 4) - 1 lane PCIe edge connector - 1 auxiliary power connector (Molex) - Low profile bracket - Note: For reliable data transfer, the power cable must be connected! - Baumer order no.: 11141165
	IOI	U3X4-PCIE4XE101 (v.1.1.3)	<ul style="list-style-type: none"> - 4 port USB card (for screw lock cables see chapter 5.3, IOI) - Renesas PD720202 (please mind the notes in chapter 4) - 4 lane PCIe edge connector - 2 auxiliary power connectors (Molex / SATA) - Baumer order no.: 11119094

4 Tested USB 3.0 chip sets

Note: It can happen under circumstances that some interface cards can't be ordered any more.

The tests are based on below listed configurations between chip set and interface card, other configurations were not tested.



Manufacturer / Reseller	Type	Used process interface card (PCIe)	Interface	Tested throughput*	Notes
Intel	Intel® Z77 Express Chipset	Intel® Desktop Board DZ77BH-55K		4720Mbit/sec*	Driver version Intel® 1.0.9.254
	Intel 8 Series / C220	Intel® DP/N 06X1TJ			Driver version Intel® 4.0.6.60
Renesas	PD720202	PC0054	PCIe (x1 Lane)	2900Mbit/sec*	Recommended driver version: Renesas 3.0.23.0 or higher; Recommended firmware version: v2.0.2.4**) or higher
		DeLock 89243	PCIe (x1 Lane)	2771Mbit/sec*	
		U3X4-PCIE4XE101	PCIe (x4 Lane)	11288Mbit/sec*	

*) tested throughput by Baumer, the maximum throughput can be higher

**) older firmware versions lose the connection to the USB device from time to time. The currently used firmware is not readable from the chipset, so the update tool K2024FWUP1.EXE from Renesas needs to be installed.




5 USB accessories

5.1 USB Hubs tested with Camera Explorer

	Manufacturer / Reseller	Type / Name	Description
	Exsys***	EX-1184H MV	<ul style="list-style-type: none"> - 5port USB hub - 4 x USB3.0 A jacks with screwlock - 1 x USB3.0 B jack with screwlock - 2 external power connectors - (1 x 7-24VDC; 1 x 12VDC) - Chipset: GL3520 Note: limited bandwidth to ~2000Mbit/sec in multiple camera system
	Exsys***	EX-1184H MVS	<ul style="list-style-type: none"> - 5port USB hub - 4 x USB3.0 A jacks with screwlock - 1 x USB3.0 B jack with screwlock - 1 external power connector (1 x 7-24VDC) - Chipset: GL3520 Note: limited bandwidth to ~2000Mbit/sec in multiple camera system

***) It is recommended to use the external power supply.

5.2 USB Extenders and active cables tested with Camera Explorer

	Manufacturer / Reseller	Type / Name	Description
 <p>Front view</p>  <p>Back view</p>	Icron	USB 3.0 Spectra™ 3022	<ul style="list-style-type: none"> - USB 3.0 extender setup up to 100m (OM3 Multimode Fiber) - Local extender: <ul style="list-style-type: none"> 1 x USB 3.0 Type B Locking Receptacle, 2 x LC connectors - Remote extender <ul style="list-style-type: none"> 12x USB 3.0 Type A Locking Receptacles, 2 x LC connectors - Available current 900mA (each USB Port) - Power Supply 100-240 AC Input, 5VDC Output
	Icron	USB 3.0 Spectra™ 3001-15	<ul style="list-style-type: none"> - Active USB 3.0 copper cable, length 15.0 m - USB 3.0 type A screw-lock connector to - USB 3.0 type A connector and USB 2.0 type A connector for additional power supply - tested throughput 2889 Mbit/sec
	Fujitsu	USB 3.0 Hybrid AOC	<ul style="list-style-type: none"> - Active USB 3.0 hybrid cable, length 20.0 m - USB 3.0 type A screw-lock connector to - USB 3.0 type A connector and USB 2.0 type A connector - No additional power supply, Output 4.5 V / 900 mA (some power consumed by OE/EO engines) - tested throughput 3148 Mbit/sec

5.3 Data interface cables

	Manufacturer / Reseller	Description	Article-No.	Cable length
	Alysium-Tech	- USB 3.0 type A die-cast connector to USB 3.0 Micro-B die-cast connector cable - screw lock on camera side, optional screw lock at Type A connector	11702660	3.0m
		- USB 3.0 type A die-cast connector to USB 3.0 Micro-B die-cast connector cable - screw lock on camera side, optional screw lock at Type A connector	11702816	5.0m
		- USB 3.0 type A die-cast connector to USB 3.0 Micro-B die-cast connector cable Discontinued	11140628	3.0m
		- USB 3.0 type A die-cast connector to USB 3.0 Micro-B die-cast connector cable Discontinued	11140627	5.0m
		- USB 3.0 type A die-cast connector to USB 3.0 Micro-B die-cast connector cable Discontinued - Coaxial cable, static use only!****) - Minimum bend radius 125 mm	11140626	8.0m
		- USB 3.0 type A die-cast connector to USB 3.0 Micro-B die-cast connector cable Discontinued - Coaxial cable, static use only!****) - Minimum bend radius 125 mm		
		- ZVM-USB A Vertical Supralock PVC - Detachable for vertical screw lock option of USB A connectors - Especially suitable for connection to PCIe ZVA-IOI PCIe USB3.0 Quad Channel 4 Port (11119094)	11195338	
	OKI	- USB 3.0 Vision cable - USB 3.0 type A connector to USB 3.0 Micro-B screw-lock connector - Grey PVC - 6.4 mm outer diameter - AWM 20276 80C 30V VW-1	USB3-T8-A-MBS -030	3.0m
			USB3-T8-A-MBS -050	5.0m
			USB3-T8-A-MBS -060	6.0m
			USB3-T8-A-MBS -070	7.0m
			USB3-T8-A-MBS -080	8.0m
	OKI	- USB 3.0 Vision flexible cable - USB 3.0 type A connector to USB 3.0 Micro-B screw-lock connector - OKI flexing test: Sliding, 80 times/min., moving distance 350 mm, 100 mm bending radius, back-and-forth movement means 1 time. Tested with 1 million times and more. (No guarantee) - Black PVC - 8.2 mm outer diameter - AWM 20276 80C 30V VW-1	USB3-KR1-A-MBS-030	3.0m
			USB3-KR1-A-MBS-050	5.0m
			USB3-KR1-A-MBS-080	8.0m
	IOI	- USB 3.0 A Plug with one Jackscrew (M2) to Micro-B Plug with two Jackscrew (M2) Cable (U3APS1-MBPS2) - Suitable screw locking at IOI USB 3.0 PCIe board U3X4-PCIE4XE101 (Baumer article no. for PCIe: 11119094)	CB-00666	3.0m 5.0m

****) Coaxial cables for longer distances enhance the range of co-operating system components

6 Related Topics

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7 Downloads

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8 Support

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

Worldwide

Baumer Optronic GmbH

Badstrasse 30 · DE-01454 Radeberg
Deutschland

Phone +49 3528 4386 0

support.cameras@baumer.com

9 Legal Notes

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Baumer Optronic GmbH

Badstrasse 30 · DE-01454 Radeberg
Phone +49 3528 4386 0 · Fax +49 3528 4386 86
sales@baumeroptronic.com · www.baumer.com