Compliant list for Baumer industrial cameras / USB 3.0
AN201403/v05/2016-11-04

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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Contents

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
	Recommended	Recommended
CPU	Intel® Core™ i5-3470 Processor	Intel® Core™ i7-3770 Processor
Clock	3,2 GHz	3,4 GHz
RAM	4 GByte	8 GByte
OS	Microsoft® Windows 7™ 32bit Microsoft® Windows 8™ 32bit	Microsoft® Windows 7™ 64bit Microsoft® Windows 8™ 64bit

Table 1: Recommended Standard PC configuration

2.2   Tested Standard PCs

Test Equipment	Manufacturer / Reseller	Description	Function
PC1	Casawave Station i5	- Microsoft® Windows® 7 Professional - Intel® Core® i5-3550 4 x 3,3GHz - BIOS Intel® Corp. BHZ7710H.86A.0085.2012.0809.1641, 09.08.2012 - RAM 8GB	performance within specification without limitation
PC2	Optiplex 9020	- Microsoft® Windows® 7 Enterprise 64bit - Intel® Core® i7-4790 - BIOS Dell Inc. A09, 20.11.2014 - RAM 16GB	performance within specification without limitation

Table 2: Tested Standard PCs

3   USB 3.0 interface

3.1   Onboard USB interface tested with Camera Explorer

	Name	Type	Description
PC Mainboard	Intel® Desktop Board DZ77BH-55K	Intel® USB3.0 Host Controller	- 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	- 6port USB back panel connectors (2ports USB 3.0; Intel® Q87 Express Chipset)

3.2 PCI Express boards tested with Camera Explorer

	Manufacturer / Reseller	Type / Name	Description
	DeLock	89243	- 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 - **Baumer order no.: 11141165**
	IOI	U3X4-PCIE4XE101 (v.1.1.3)	- 4 port USB card - 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 NIC's can't be ordered any more.
The tests are based on below listed configurations between chip set and network card, other configurations were not tested.

Manufacturer / Reseller	Type	Used network interface card (NIC)	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 (v.1.1.3)	PCIe (x4 Lane)	5476Mbit/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-1184HMV	- 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-1184HMVS	- 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

5.2 USB Extenders and active cables tested with Camera Explorer

	Manufacturer / Reseller	Type / Name	Description

Front view
Back view
	Icron	USB 3.0 Spectra™ 3022	- USB 3.0 extender setup up to 100m (with OM3 Multimode Fiber)
			- Local extender:
			  1 x USB 3.0 Type B Locking Receptacle,
			  2 x LC connectors
			- Remote extender
			  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	- 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 2889Mbit/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	11140628	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 - Coaxial cable, static use only!***) - Minimum bend radius 125 mm	11140627	5.0m
		- USB 3.0 type A die-cast connector to USB 3.0 Micro-B die-cast connector cable - screw lock on camera side - Coaxial cable, static use only!***) - Minimum bend radius 125 mm	11140626	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
***) 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.

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9   Legal Notes

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