

## Compliant list for Baumer industrial cameras / Gigabit Ethernet (GigE) AN201402/v11/2020-09-17

### Description

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

### Products

<i>VisiLine</i> ® cameras	HXG cameras	VEXG cameras
<i>VisiLine</i> ® IP cameras	SXG cameras	
TXG cameras	LXG cameras	
EXG cameras	VCXG cameras	
MXG cameras	VCXG.I cameras	

### Preparation

-

## Contents

<b>1</b>	<b>Technical Background</b>	<b>2</b>
<b>2</b>	<b>Test platforms</b>	<b>2</b>
2.1	Recommended Standard PC configuration for operation of Baumer GigE cameras	2
2.2	Recommended Standard PC configuration for operation of Baumer 10-GigE cameras	2
2.3	Tested Standard PCs	2
<b>3</b>	<b>Gigabit Ethernet interface</b>	<b>3</b>
3.1	PCI Express boards tested with Baumer GigE cameras	3
3.2	Express Card bus boards tested with Baumer GigE cameras	4
<b>4</b>	<b>Tested GigE Chip Sets</b>	<b>4</b>
<b>5</b>	<b>GigE accessories</b>	<b>5</b>
5.1	Network Components	5
5.2	GigE Cables	7
5.2.1	GigE cables for RJ45 (screw lock) connector to standard RJ45 connector	7
5.2.2	GigE cables for x-coded M12 connector to standard RJ45 connector	7
<b>6</b>	<b>Related Topics</b>	<b>8</b>
<b>7</b>	<b>Downloads</b>	<b>8</b>
<b>8</b>	<b>Support</b>	<b>8</b>
<b>9</b>	<b>Legal Notes</b>	<b>8</b>

## 1 Technical Background

The following listed equipment has been tested successfully with Baumer GigE 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 GigE cameras

	Single-camera system	Multi-camera system
<b>CPU</b>	Intel® Core™ i5-2520M CPU @ 2.50GHz, Cores: 4	Intel® Core™ i7-3770 CPU @ 3.40GHz, Cores: 8
<b>RAM</b>	4 GB	8 GB
<b>OS</b>	Microsoft® Windows 7™ 32 / 64 bit systems Microsoft® Windows 10™ 32 / 64 bit systems  Linux Kernel 4.7.x 32 / 64 bit systems	
<b>Network</b>	Gigabit Ethernet compliant network controller	
<b>Graphic</b>	Recommended resolution at least 1280 x 1024, color depth 32 bit	

### 2.2 Recommended Standard PC configuration for operation of Baumer 10-GigE cameras

Minimum recommended configuration	
<b>CPU</b>	Intel® Core™ i7-7820X @ 3.6 GHz, Cores: 4
<b>RAM</b>	2x 16 GB RAM (Dual Channel)
<b>OS</b>	Microsoft® Windows 7™ 64 bit systems incl. Service Pack 1 or higher Microsoft® Windows 10™ 64 bit systems incl. V1607 or higher  Linux Kernel 4.7.x 32 / 64 bit systems
<b>Network</b>	Intel® Ethernet Converged Network Adapter X550-T2
<b>Graphic</b>	Recommended resolution at least 1280 x 1024, color depth 32 bit





### 2.3 Tested Standard PCs

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

### 3 Gigabit Ethernet interface

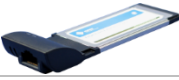
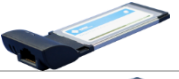



#### 3.1 PCI Express boards tested with Baumer GigE cameras

	Manufacturer / Reseller	Type / Name	Description
	Intel®	Intel® Ethernet Server Adapter I210-T1	<ul style="list-style-type: none"> <li>- 1-port GigE to PCI Express host adapter</li> <li>- RJ45 connector</li> <li>- Chipset: Intel® i210 Gigabit Controller*</li> <li>- tested Jumbo Frames: 9 kByte</li> <li>- 1 lane connector</li> <li>- Baumer Art.-no.: 11137188</li> </ul>
	Adlink	PCIe-GIE74(G)	<ul style="list-style-type: none"> <li>- 4-port GigE to PCI Express host adapter</li> <li>- RJ45 connector</li> <li>- Chipset : Intel® I210-IT *</li> <li>- tested Jumbo Frames: 9 kByte</li> <li>- Power over Ethernet Plus, IEEE 802.3at Compliant, support class 0, 1, 2, 3, 4 and provides up to 30 W</li> <li>- 4-pin Molex connector</li> <li>- Note: 4 lane connector is necessary in the PC</li> </ul>
	Intel®	Intel® Pro / 1000 PT Quad Port LP Server Adapter	<ul style="list-style-type: none"> <li>- 4-port GigE to PCI Express host adapter</li> <li>- RJ45 connector</li> <li>- Chipset : 2 x 82571GB Gigabit Controller*</li> <li>- tested Jumbo Frames: 9 kByte</li> <li>- Note: 4 lane connector is necessary in the PC</li> </ul>
	Intel®	I350-T2 V2	<ul style="list-style-type: none"> <li>- 2-port GigE to PCI Express host adapter</li> <li>- RJ45 connector</li> <li>- Chipset : Intel® I350-AM4 *</li> <li>- IEEE802.3az compliant (EEE – Energy Efficient Ethernet)</li> <li>- tested Jumbo Frames: 9 kByte</li> <li>- improved power supply</li> <li>- Note: 4 lane connector is necessary in the PC</li> <li>- Baumer Art.-no.: 11168452</li> </ul>
	Intel®	I350-T4 V2	<ul style="list-style-type: none"> <li>- 4-port GigE to PCI Express host adapter</li> <li>- RJ45 connector</li> <li>- Chipset : Intel® I350-AM4 *</li> <li>- IEEE802.3az compliant (EEE – Energy Efficient Ethernet)</li> <li>- tested Jumbo Frames: 9 kByte</li> <li>- improved power supply</li> <li>- Note: 4 lane connector is necessary in the PC</li> </ul>
	Advantech	PCIe-1672E-AE	<ul style="list-style-type: none"> <li>- 2-port GigE to PCI Express host adapter</li> <li>- RJ45 connector</li> <li>- Chipset : Intel® I350-AM2 *</li> <li>- supported Jumbo Frames: 9 kByte</li> <li>- Power over Ethernet, IEEE 802.3af Compliant, support class 0, 1, 2, 3, 4 and provides up to 18 W</li> <li>- Note: 4 lane connector is necessary in the PC. Please use the external power supply, otherwise lost frames may occur</li> <li>- Baumer Art.-no.: 11168453</li> </ul>
	Advantech	PCIe-1674E-AE	<ul style="list-style-type: none"> <li>- 4-port GigE to PCI Express host adapter</li> <li>- RJ45 connector</li> <li>- Chipset : Intel® I350-AM4 *</li> <li>- tested Jumbo Frames: 9 kByte</li> <li>- Power over Ethernet, IEEE 802.3af Compliant, support class 0, 1, 2, 3, 4, and provides up to 18 W</li> <li>- Note: 4 lane connector is necessary in the PC</li> </ul>

	Matrox®	Concorde	<ul style="list-style-type: none"> <li>- 1-port GigE to PCI Express host adapter</li> <li>- RJ45 connector</li> <li>- tested Jumbo Frames: 9 kByte</li> <li>- 1 lane connector, only runs with MIL (Matrox® Imaging Library)</li> </ul>
	Matrox®	Solios GigE	<ul style="list-style-type: none"> <li>- 4-port GigE to PCI Express host adapter</li> <li>- RJ45 connector</li> <li>- tested Jumbo Frames: 9 kByte</li> <li>- Note: 4 lane connector is necessary in the PC, only runs with MIL (Matrox® Imaging Library)</li> </ul>
	Silicon Software	microEnable IV VQ4-GE	<ul style="list-style-type: none"> <li>- 4-port GigE to PCI Express host adapter</li> <li>- Tested with microDisplay 5.1.0</li> <li>- Note: 4 lane connector is necessary in the PC</li> </ul>
	Intel®	X550-T2	<ul style="list-style-type: none"> <li>- 2-port 10-GigE PCIe server adapter</li> <li>- RJ45 connector</li> <li>- Chipset: Intel® Ethernet Controller X550-AT2</li> <li>- Jumbo Frames supported</li> <li>- Note: 4 lane connector is necessary in the PC</li> <li>- <b>Baumer Art.-no.: 11190893</b></li> </ul>
	IOI	GE10-PCIE4XG202	<ul style="list-style-type: none"> <li>- 1-port 10-GigE PCIe host card</li> <li>- RJ45 connector</li> <li>- Chipset: Intel® Ethernet Controller X550-AT2</li> <li>- Jumbo Frames supported</li> <li>- Note: 4 lane connector is necessary in the PC</li> </ul>

\*) Tests were performed with INTEL driver release version 19.1.51.0. System stability might be affected when using another version. For example with driver version 19.3.141.0 resends and lost frames were encountered.

### 3.2 Express Card bus boards tested with Baumer GigE cameras

	Manufacturer / Reseller	Type / Name	Description
	Sunix	ECL1400	<ul style="list-style-type: none"> <li>- 1-port GigE (RJ45 connector) to Express Card adapter</li> <li>- Chipset: Marvell Yukon 88E8053</li> <li>- 34mm Card bus system</li> <li>- tested Jumbo Frames: 9 kByte</li> </ul>
	Sunix	ECL1400D	
	Conrad	EK-106	
	Sonnet	Presto Gigabit Ethernet Pro ExpressCard	<ul style="list-style-type: none"> <li>- 1-port GigE (RJ45 connector) to Express Card adapter</li> <li>- 34mm Card bus system</li> <li>- tested Jumbo Frames: 9 kByte</li> </ul>
	Belkin	Gigabit Ethernet ExpressCard	<ul style="list-style-type: none"> <li>- 1-port GigE to Express Card adapter</li> <li>- RJ45 connector</li> <li>- Chipset: Marvel Yukon</li> <li>- 34mm Card bus system</li> <li>- tested Jumbo Frames: 9 kByte</li> </ul>

## 4 Tested GigE Chip Sets

Note: Under some circumstances it can happen 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 have not been tested.

Manufacturer / Reseller	Type	Used Network Interface Card (NIC)	Interface	Tested Throughput*	Notes
<b>Intel</b>	Intel® 82572GI	Intel Pro 1000 PT Server Adapter	PCIe (x1 Lane)	950 Mbit/sec	
		Intel Pro 1000 PT Dual Server Adapter	PCIe (x4 Lane)	1438 Mbit/sec	
	Intel® 82571GB	Intel Pro 1000 PT Quad Port LP Server Adapter	PCIe (x4 Lane)	2879 Mbit/sec	
	Intel® 82572GI	Adlink GIE62+	PCIe (x4 Lane)	1640 Mbit/sec	
	Intel® I350-AM4	Intel I350-T2	PCIe (x4 Lane)	1926 Mbit/sec	Please note: Intel® ANS, required for link aggregation, for Windows 10 is supported in the Windows 10 version 1607, build 10.0.14393. Please use the Intel® network driver version 22.0.1 or higher. Future Windows 10 versions might not support ANS.
		Intel I350-T4		3852 Mbit/sec	
		Advantech PCIe-1674P		3760 Mbit/sec	
		Advantech PCIE-1672E-AE		995 Mbit/sec	
	Advantech PCIE-1674E-AE	3920 Mbit/sec			
	Intel® i210	Intel i210-T1	PCIe (x1 Lane)	950 Mbit/sec	
Adlink PCIe-GIE 74		PCIe (x4 Lane)	3944 Mbit/sec		
Intel® X550-AT2	Intel X550-T1	PCIe (x4 Lane)	9,5 Gbit/sec		
	IOI GE10-PCIE4XG202	PCIe (x4 Lane)	9,34 Gbit/sec		
<b>Realtek</b>	RTL 8169	DeLock 61611	PCMCIA	636 Mbit/sec	Packet size >7Kbyte occurs stripes in image
<b>Marvell Yukon</b>	88E8053	Sunix ECL1400	Express Card	950 Mbit/sec	
		Sunix ECL1400D			
		Conrad EK-106			
88E8001	D-Link DGE530T	PCI	790 Mbit/sec		
<b>Agere</b>	ET-131X	Exsys EX-6086	Express Card	950 Mbit/sec	
		DeLock 61383			


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

## 5 GigE accessories

### 5.1 Network Components

	Manufacturer / Reseller	Description
	Baumer	<ul style="list-style-type: none"> <li>- Industrial 4-Port PoE Gigabit Ethernet Switch</li> <li>- Standard housing with DIN Rail</li> <li>- Switching Capacity: 32 Gbit/sec</li> <li>- Max. supported Jumbo Frames: 10 kByte</li> <li>- Packet Buffer Memory: 1 Mbit</li> <li>- Unmanaged switch</li> <li>- Power over Ethernet: 15,4 W per port</li> <li>- Operating voltage 24 .. 48 VDC (PoE: 48VDC)</li> <li>- Baumer Art.-no.: 11008795</li> </ul>

 <p style="color: red; font-weight: bold; font-size: 1.2em;">End of life</p>	Baumer	<ul style="list-style-type: none"> <li>- Industrial 6-Port PoE Gigabit Ethernet Switch</li> <li>- Standard housing with DIN Rail</li> <li>- 5 x RJ45 and 1 x SFP</li> <li>- Max. supported Jumbo Frames: 10 kByte</li> <li>- Unmanaged switch</li> <li>- Power over Ethernet: 15,4 W per port</li> <li>- Operating voltage 24 .. 48 VDC (PoE: 48VDC)</li> <li>- Baumer Art.-no.: 11008794</li> </ul>
	Dell™ PowerConnect™ 2816	<ul style="list-style-type: none"> <li>- 16 Ports Gigabit Ethernet switch</li> <li>- Switching capacity: 32 Gbit/sec</li> <li>- Max. supported Jumbo Frames: 9 kByte</li> <li>- Flow control</li> <li>- Managed switch</li> <li>- Packet Buffer memory: 2 MByte **</li> </ul>
	D-Link® DGS 1005D	<ul style="list-style-type: none"> <li>- 5 Ports Gigabit Ethernet switch</li> <li>- Max. supported Jumbo Frames: 9 kByte</li> <li>- Flow control, Unmanaged switch</li> <li>- Packet Buffer memory: 64 kByte per device **</li> </ul>
	D-Link® DGS 1008D	<ul style="list-style-type: none"> <li>- 8 Ports Gigabit Ethernet switch</li> <li>- Switching capacity: 16 Gbit/sec</li> <li>- Max. supported Jumbo Frames: 9 kByte</li> <li>- Flow control, Unmanaged switch</li> <li>- Packet Buffer memory: 192 kByte per device**</li> </ul>
	SMC Networks® SMC8024L2 Tigerswitch	<ul style="list-style-type: none"> <li>- 24 Ports Gigabit Ethernet switch</li> <li>- Switching capacity: 48 Gbit/sec</li> <li>- Max. supported Jumbo Frames: 9 kByte</li> <li>- Flow control, Managed switch</li> <li>- Packet Buffer Memory: 400 kByte**</li> </ul>
	Netgear® GS724TP	<ul style="list-style-type: none"> <li>- 24 Ports Gigabit Ethernet switch</li> <li>- Switching capacity: 48 Gbit/sec</li> <li>- Max. supported Jumbo Frames: 9 kByte</li> <li>- Flow control</li> <li>- Managed switch</li> <li>- Power over Ethernet until 192 W**</li> <li>- Packet Buffer Memory: 3 MByte per system**</li> </ul>
	Netgear® ProSafe XS712T	<ul style="list-style-type: none"> <li>- 12 Ports 10-Gigabit Ethernet switch, 2 Combo SFP+ Ports</li> <li>- Switching capacity: 240 Gbit/sec</li> <li>- Max. supported Jumbo Frames: 9 kByte</li> <li>- Smart managed switch</li> <li>- Packet Buffer Memory: 2 MByte per system**</li> </ul>
	Cisco SG-300-10P	<ul style="list-style-type: none"> <li>- 10 Ports Gigabit Ethernet switch ( 2 Gigabit Ethernet-Kombi)</li> <li>- Switching capacity: 10Gigabit/sec</li> <li>- Max. supported Jumbo Frames: 10KByte</li> <li>- Flow control</li> <li>- Managed switch</li> <li>- Power over Ethernet until 62W</li> <li>- Packet Buffer memory: 4Megabyte</li> </ul>
	Harting Ha – VIS eCon 3070GB-A-P	<ul style="list-style-type: none"> <li>- 7 Ports Gigabit Ethernet switch (4x PoE, only active at 48V)</li> <li>- Switching capacity: Non-Blocking</li> <li>- Max. supported Jumbo Frames: 10KByte</li> <li>- Flow control deactivated (advice from manufacturer and IEEE)</li> <li>- Unmanaged switch</li> <li>- Packet Buffer memory: 1Mbit</li> <li>- Power over Ethernet: 15 W per port</li> <li>- Operating voltage 24 .. 48 VDC (PoE: 48VDC)</li> </ul>
	Harting Ha-VIS eCon 3070GB-A-PP	<ul style="list-style-type: none"> <li>- 7 Ports Gigabit Ethernet switch (4x PoE, full voltage range)</li> <li>- Switching capacity: Non-Blocking</li> <li>- Max. supported Jumbo Frames: 10KByte</li> <li>- Flow control deactivated</li> <li>- Unmanaged switch</li> <li>- Packet Buffer memory: 1Mbit</li> <li>- Power over Ethernet: 34.2 W per port</li> <li>- Operating voltage 18 .. 60 VDC, typical 24 .. 48 VDC</li> </ul>


	Perle IDS-105GPP	<ul style="list-style-type: none"> <li>- 7 Ports Gigabit Ethernet switch (4x PoE, full voltage range)</li> <li>- Switching capacity: Non-Blocking</li> <li>- Max. supported Jumbo Frames: 10KByte</li> <li>- Flow control</li> <li>- Unmanaged switch</li> <li>- Packet Buffer memory: 1Mbit</li> <li>- Power over Ethernet: 30 W per port</li> <li>- Operating voltage 18 .. 57 VDC, typical 24 .. 48 VDC</li> </ul>
*) for PoE+ 24 VDC input is needed **) information from vendor specific datasheet		

## 5.2 GigE Cables




### 5.2.1 GigE cables for RJ45 (screw lock) connector to standard RJ45 connector

	Manufacturer / Reseller	Interface	Baumer Article-No.	Cable Length
	Baumer	<ul style="list-style-type: none"> <li>- GigE (Cat7)</li> <li>- RJ45 – RJ45 connector</li> </ul>	10170048 10141719	3 m 6 m
	Baumer	<ul style="list-style-type: none"> <li>- GigE (Cat5E)</li> <li>- RJ45 – RJ45 connector</li> <li>- screw lock on camera side</li> <li>- Drag-chain suitable</li> </ul>	11013591	10 m
	Baumer	<ul style="list-style-type: none"> <li>- GigE (Cat6)</li> <li>- RJ45 – RJ45 connector</li> <li>- screw lock on camera side</li> <li>- Drag-chain suitable</li> </ul>	11150185 11150302 11150186 11150188	5 m 10 m 15 m 20 m
	Baumer	<ul style="list-style-type: none"> <li>- GigE (Cat5e)</li> <li>- RJ45 – RJ45 connector</li> <li>- screw lock on camera side</li> <li>- Robotic suitable</li> </ul>	11173256 11173257 11173258	10 m 20 m 30 m
	Alysium-Tech	<ul style="list-style-type: none"> <li>- Alysium-Tech cable A72-1217</li> <li>- RJ45 – RJ45 connector</li> <li>- screw lock on camera side</li> <li>- Drag-chain and torsion suitable</li> </ul>	-	up to 20 m
	Iigus®	<ul style="list-style-type: none"> <li>- Chainflex® CFROBOT8.045</li> <li>- RJ45 – RJ45 connector</li> </ul>	-	up to 50 m tested by Iigus®
	Iigus®	<ul style="list-style-type: none"> <li>- Chainflex® CFBUS.044 (Cat5)</li> <li>- RJ45 – RJ45 connector</li> </ul>	-	up to 50 m tested by Iigus®

### 5.2.2 GigE cables for x-coded M12 connector to standard RJ45 connector

	Manufacturer / Reseller	Interface	Baumer Article-No.	Cable Length
	Baumer	<ul style="list-style-type: none"> <li>- GigE (Cat6a)</li> <li>- M12-X - RJ45 connector</li> <li>- Drag-chain suitable, high flex</li> </ul>	11185139 11195760 11195761 11195762 11196995 11185190	2 m 5 m 10 m 15 m 20 m 30 m



	Baumer	<ul style="list-style-type: none"> <li>- 10 GigE (Cat6a)</li> <li>- 90° angled M12/x-coded connector to RJ45 connector</li> <li>- Positively tested up to 60 m</li> </ul>	11195123	5 m
			11195122	10 m
	Baumer	<ul style="list-style-type: none"> <li>- GigE (Cat6a)</li> <li>- M12-X - RJ45 connector</li> </ul>	11101979	5 m
			11117630	10 m
			11117632	15 m
			11117633	20 m
	Igus®	<ul style="list-style-type: none"> <li>- Chainflex® CFBUS.045 (Cat5e)</li> <li>- M12/x-coded - RJ45 connector</li> </ul>	-	up to 50 m tested by Igus®

## 6 Related Topics

-

## 7 Downloads

-

## 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](mailto:support.cameras@baumer.com)

## 9 Legal Notes

*VisiLine®* is a registered trademark of Baumer Optronic GmbH.

All product and company names mentioned are trademarks or registered trademarks of their respective owners.

All rights reserved. Reproduction of this document in whole or in part is only permitted with previous written consent from Baumer Optronic GmbH.

Revisions in the course of technical progress and possible errors reserved.



**Baumer Group**

The Baumer Group is one of the worldwide leading manufacturers of sensors, encoders, measuring instruments and components for automated image-processing. Baumer combines innovative technologies and customer-oriented service into intelligent solutions for factory and process automation and offers an unrivalled wide technology and product portfolio. With around 2,700 employees and 38 subsidiaries in 19 countries, the family-owned group of companies is always close to the customer. Baumer provides clients in most diverse industries with vital benefits and measurable added value by worldwide consistent high quality standards and outstanding innovative potential. Learn more at [www.baumer.com](http://www.baumer.com) on the internet.

**Baumer Optronic GmbH**

Badstrasse 30 · DE-01454 Radeberg  
Phone +49 3528 4386 0 · Fax +49 3528 4386 86  
sales@baumeroptronic.com · [www.baumer.com](http://www.baumer.com)