

Subject: Compliant list for Baumer Gigabit Ethernet Cameras

Abstract/ brief description:

The equipment listed below was tested with the Baumer Gigabit Ethernet cameras.
The tested PC configurations, PCI boards and accessories is within the specification.
Known limitations are listed in the following document.

Index

Index	1
1 Recommended minimal standard PC configuration for operation of Baumer GigE cameras.....	2
2 Test platforms.....	3
2.1 Tested Standard PCs with Baumer GigE cameras.....	3
3 Gigabit Ethernet interface	5
3.1 Tested PCI boards with Baumer GigE cameras	5
3.2 Tested PCI Express boards with Baumer GigE cameras.....	6
3.3 Tested Express Card bus boards with Baumer GigE cameras	7
3.4 Tested PCMCIA boards with Baumer GigE cameras	7
4 Tested Gigabit Ethernet chip sets	8
5 Gigabit Ethernet accessories	9
5.1 Switches	9
5.2 SFP modules	10
6 Gigabit Ethernet patch cables	11
6.1 GigE cables for standard RJ45 connector.....	11
6.2 GigE cables for M12 connector (IP67 cameras)	12

1 Recommended minimal standard PC configuration for operation of Baumer GigE cameras

	Single-camera system		Multi-camera system	
	Minimum	Recommended	Minimum	Recommended
CPU	Intel® Pentium®4 or comparable processor	Intel® Core™ Duo comparable processor		
Clock	2.5 GHz	> 2.5 GHz	2.5 GHz	3 GHz
RAM	1024 MB	2048 MB	2048 MB	> 2048 MB
Operating system (OS)	Microsoft® Windows® XP incl. Service Pack 2 or higher Microsoft® Windows® XP x64 incl. Service Pack 2 or higher Microsoft® Windows Vista™ 32 / 64 bit systems Linux® 32 / 64 bit systems from Kernel 2.6.xx			
Graphics	Recommended resolution: 1280 x 1024; Color depth: at least 16 bit			
Ethernet	Gigabit Ethernet compliant NIC ¹⁾ (Recommended: Intel® chipset)			
Framework (optional)	Windows® OS: .NET™ Framework 2.0 or higher Linux® OS: Mono 1.2.4 or higher			

2 Test platforms





2.1 Tested Standard PCs with Baumer GigE cameras

Test Equipment:	Manufacturer / Reseller:	Description:	Function:
PC1	Dell™ Precision 390	<ul style="list-style-type: none"> - Microsoft Windows XP™ Professional 5.1.2600 Service Pack 2 Build 2600 - Microsoft® Windows Vista™ Business 6.0.6000 Build 6000 - DualCore, x86 Family 6 Model 15 Stepping 2 GenuineIntel® 2 x 2,1 GHz - BIOS Dell Inc. 2.2.0, 29.03.2007 - RAM 2GB - NVIDIA Quadro FX 550 	performance within specification without limitation
PC2	Dell™ Precision T3400	<ul style="list-style-type: none"> - Microsoft Windows XP™ Professional 5.1.2600 Service Pack 3 Build 2600 - DualCore, x86 Family 6 Model 15 Stepping 11 GenuineIntel® 2 x 2,7GHz - BIOS Dell Inc. A05, 09.05.2008 - RAM 2GB - NVIDIA Quadro FX 550 	performance within specification without limitation
PC3	Intel®	<ul style="list-style-type: none"> - Microsoft Windows XP™ Professional 5.1.2600 Service Pack 2 Build 2600 - DualCore, x86 Family 6 Model 15 Stepping 2 GenuineIntel® 2 x 2,1 GHz - BIOS Intel Corp. MQ96510J.86A.0816.2006.0716.2308, 7/16/2006 - RAM 2GB - NVIDIA GeForce 7300 GS - Express Card to PCIe adapter card - PCMCIA to PCI adapter card 	performance within specification without limitation
PC4	Intel®	<ul style="list-style-type: none"> - Microsoft Windows XP™ Professional 5.1.2600 Service Pack 2 Build 2600 - QuadCore, x86 Family 6 Model 15 Stepping 11 GenuineIntel 4 x 2930 Mhz - BIOS Intel Corp. MQ96510J.86A.1687.2007.0510.0258, 10.05.2007 - RAM 2GB - Intel® G965 PCI Express Chip set 	performance within specification without limitation
PC5	Shuttle® SD32V10	<ul style="list-style-type: none"> - Microsoft Windows XP Professional 5.1.2600 Service Pack 2 Build 2600 - DualCore, x86 Family 15 Model 6 Stepping 4 GenuineIntel® 2 x 2,8GHz - BIOS Phoenix Technologies, LTD 6.00 PG, 30.11.2006 - RAM 2GB - NVIDIA GeForce 9500 GT 	performance within specification without limitation




Test Equipment:	Manufacturer / Reseller:	Description:	Function:
PC6	Shuttle® SG31	<ul style="list-style-type: none"> - Microsoft Windows XP Professional 5.1.2600 Service Pack 3 Build 2600 - DualCore, x86 Family 6 Model 15 Stepping 11 GenuineIntel® 2 x 2,7GHz - BIOS Phoenix Technologies, LTD 6.00 PG, 23.08.2007 - RAM 2GB - NVIDIA GeForce 9500 GT 	performance within specification without limitation

3 Gigabit Ethernet interface




3.1 Tested PCI boards with Baumer GigE cameras

	manufacturer / reseller:	type / name:	description:
	Intel®	Intel® PRO / 1000 GT Desktop Adapter	<ul style="list-style-type: none"> - 1-port GigE to PCI host adapter - RJ45 connector - Chipset: Intel® 82541PI Gigabit Controller - tested Jumbo Frames: 16 kByte - Baumer Art.-no.: 11008787
	Netgear®	GA311	<ul style="list-style-type: none"> - 1-port GigE to PCI host adapter - RJ45 connector - Chipset: Realtek RTL 8169S-32 - tested Jumbo Frames: 7 kByte - Note: Packet size >7 kByte it's possible to get stripes in the image
	D-Link®	DG530T	<ul style="list-style-type: none"> - 1-port GigE to PCI host adapter - RJ45 connector - Chipset: Marvell Yukon 88E8001 - tested Jumbo Frames: 9 kByte
	Leve One®	GNC-0105T	<ul style="list-style-type: none"> - 1-port GigE to PCI host adapter - RJ45 connector - Chipset : Realtek RTL 8169S-32 - tested Jumbo Frames: 7 kByte - Note: Packet size >7 kByte it's possible to get stripes in the image - tested driver version 5.606.811.2003 (in this version of driver Jumbo frames are supported)


3.2 Tested PCI Express boards with Baumer GigE cameras

	manufacturer / meseller:	type / name:	description:
	Intel®	Intel® Gigabit CT Desktop Adapter	<ul style="list-style-type: none"> - 1-port GigE to PCI Express host adapter - RJ45 connector - Chipset: Intel® 82574L Gigabit Controller - tested Jumbo Frames: 9 kByte - 1 lane connector - Baumer Art.-no.: 11013588
	Intel®	Intel® PRO / 1000 PT Server Adapter	<ul style="list-style-type: none"> - 1-port GigE to PCI Express host adapter - RJ45 connector - Chipset: Intel® 82572GI Gigabit Controller - tested Jumbo Frames: 9 kByte - 1 lane connector - Baumer Art.-no.: 11013590
	Intel®	Intel® PRO / 1000 PT Dual Server Adapter	<ul style="list-style-type: none"> - 2-port GigE to PCI Express host adapter - RJ45 connector - Chipset: Intel® 82572GI Gigabit Controller - tested Jumbo Frames: 9 kByte - Note: 4 lane connector is necessary in the PC - Baumer Art.-no.: 11008785
	Intel®	Intel® Pro / 1000 PT Quad Port LP Server Adapter	<ul style="list-style-type: none"> - 4-port GigE to PCI Express host adapter - RJ45 connector - Chipset : 2 x 82571GB Gigabit Controller - tested Jumbo Frames: 9 kByte - Note: 4 lane connector is necessary in the PC
	Matrox®	Concorde	<ul style="list-style-type: none"> - 1-port GigE to PCI Express host adapter - RJ45 connector - tested Jumbo Frames: 9 kByte - 1 lane connector - Note: only runs with MIL (Matrox® Imaging Library)
	Matrox®	Solios GigE	<ul style="list-style-type: none"> - 4-port GigE to PCI Express host adapter - RJ45 connector - tested Jumbo Frames: 9 kByte - Note: 4 lane connector is necessary in the PC, only runs with MIL (Matrox® Imaging Library)

3.3 Tested Express Card bus boards with Baumer GigE cameras

	manufacturer / reseller:	type / name:	description:
	Sunix	ECL1400	<ul style="list-style-type: none"> - 1-port GigE to Express Card adapter - RJ45 connector - Chipset: Marvell Yukon 88E8053 - 34 mm Card bus system - tested Jumbo Frames: 9 KByte
	Sunix	ECL1400D	<ul style="list-style-type: none"> - 1-port GigE to Express Card adapter - RJ45 connector - Chipset: Marvell Yukon 88E8053 - 34 mm Card bus system - tested Jumbo Frames: 9 kByte
	Conrad	EK-106	<ul style="list-style-type: none"> - 1-port GigE to Express Card adapter - RJ45 connector - Chipset: Marvell Yukon 88E8053 - 34mm Card bus system - tested Jumbo Frames: 9 kByte

3.4 Tested PCMCIA boards with Baumer GigE cameras

	manufacturer / reseller:	type / name:	description:
	DeLock®	61611	<ul style="list-style-type: none"> - 1-port GigE to PCMCIA adapter - RJ45 connector - Chipset: RTL 8169 - 54 mm Card bus system - tested Jumbo Frames: 7 kByte - Note: Packet size >7 kByte it's possible to get stripes in the image

4 Tested Gigabit Ethernet 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)	tested throughput *	notes
Intel	Intel® 82572GI	Intel Pro® 1000 PT Desktop Adapter	950 Mbit/sec	
		Intel Pro® 1000 PT Dual Server Adapter		
	Intel® 82541PI	Intel Pro® 1000 GT Desktop Adapter	780 Mbit/sec	
	Intel® 82574L	Intel Pro® 1000 CT Desktop Adapter	950 Mbit/sec	
	Intel® 82571GB	Intel Pro® 1000 PT Quad Port LP Server Adapter	719 Mbit/sec	
Realtek	RTL 8169S-32	Level One® GNC-0105T (tested driver version 5.606.811.2003)	816 Mbit/sec	Packet size >7 kByte it's possible to get stripes in the image
		Netgear® GA311	740 Mbit/sec	
	RTL 8169	DeLock® 61611	636 Mbit/sec	
Marvell Yukon	88E8053	Sunix ECL1400	950 Mbit/sec	
		Sunix ECL1400D		
		Conrad EK-106		
	88E8001	D-Link® DGE530T	790 Mbit/sec	

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

5 Gigabit Ethernet accessories




5.1 Switches

	manufacturer / reseller:	description:
	Baumer	<ul style="list-style-type: none"> - Industrial 6-Port PoE Gigabit Ethernet Switch with Port Extender - Standard housing with DIN Rail - Switching Capacity: 32 Gbit/sec - Max. supported Jumbo Frames: 10 kByte - Packet Buffer Memory: 1 Mbit - Unmanaged switch - 5 RJ45 ports with PoE - 1 SFP port - Power over Ethernet: 15,4 W per port - Operating voltage 24 .. 48 VDC - Baumer Art.-no.: 11008794
	Baumer	<ul style="list-style-type: none"> - Industrial 4-Port PoE Gigabit Ethernet Switch - Standard housing with DIN Rail - Switching Capacity: 32 Gbit/sec - Max. supported Jumbo Frames: 10 kByte - Packet Buffer Memory: 1 Mbit - Unmanaged switch - Power over Ethernet: 15,4 W per port - Operating voltage 24 .. 48 VDC - Baumer Art.-no.: 11008795
	Baumer	<ul style="list-style-type: none"> - Industrial Dual PoE Injector for Gigabit Ethernet - Standard housing with DIN Rail - 2 LAN and PoE Port Pairs - Power over Ethernet: 15,4 W per port - Operating voltage 24..48 VDC - Baumer Art.-no.: 11008796
	Dell™ PowerConnect ™ 2816	<ul style="list-style-type: none"> - 16 Ports Gigabit Ethernet switch - Switching capacity: 32 Gbit/sec - Max. supported Jumbo Frames: 9 kByte - Flow control - Managed switch - Packet Buffer memory: 2 MByte *
	D-Link® DGS 1005D	<ul style="list-style-type: none"> - 5 Ports Gigabit Ethernet switch - Max. supported Jumbo Frames: 9 kByte - Flow control - Unmanaged switch - Packet Buffer memory: 64 kByte per device *

	D-Link® DGS 1008D	<ul style="list-style-type: none"> - 8 Ports Gigabit Ethernet switch - Switching capacity: 16 Gbit/sec - Max. supported Jumbo Frames: 9 kByte - Flow control - Unmanaged switch - Packet Buffer memory: 192 kByte per device*
	SMC Networks® SMC8024L2 Tigerswitch	<ul style="list-style-type: none"> - 24 Ports Gigabit Ethernet switch - Switching capacity: 48 Gbit/sec - Max. supported Jumbo Frames: 9 kByte - Flow control - Managed switch - Packet Buffer Memory: 400 kByte*
	Netgear® GS724TP	<ul style="list-style-type: none"> - 24 Ports Gigabit Ethernet switch - Switching capacity: 48 Gbit/sec - Max. supported Jumbo Frames: 9 kByte - Flow control - Managed switch - Power over Ethernet until 192 W* - Packet Buffer Memory: 3 MByte per system*






*) extract from manufacturer datasheet

5.2 SFP modules





	manufacturer / reseller:	description:
	Baumer	<ul style="list-style-type: none"> - SFP module type: Copper - Hi-Optel HTSFP-24-1112F - Media Interface: 1000base-T - RJ45 (8P8C) connector - Baumer Art.-no.: 11008781
	Baumer	<ul style="list-style-type: none"> - SFP module type: Fiber Optic - Coretec CT-1250TSP-MB4L - Media Interface: 1000base-SX - LC connector - Baumer Art.-no.: 11008782
	Baumer	<ul style="list-style-type: none"> - SFP module type: Fiber Optic - Coretec CT-1250NSP-SB1L - Media Interface: 1000base-LX - LC connector - Baumer Art.-no.: 11008783

6 Gigabit Ethernet patch cables

6.1 GigE cables for standard RJ45 connector

	manufacturer / reseller	description	Baumer Article-no.	Cable lengths
	Baumer	- GigE (Cat7) - RJ45 – RJ45 connector	11008802	5 m
			11008806	10 m
			11008805	15 m
			11008804	20 m
			11008803	30 m
			11013592	50 m
	Baumer	- GigE (Cat5E) - RJ45 – RJ45 connector - screw lock on camera side - Drag-chain suitable	11013591	10 m
	Baumer	- GigE (Cat6) - RJ45 – RJ45 connector - screw lock on camera side - Drag-chain suitable, high flex	11008807	1.8 m
			11008802	5 m
			11008806	10 m
			11008805	15 m
			11008804	20 m
11008803	30 m			
	Igus®	- Chainflex® CFROBOT8.045 - RJ45 – RJ45 connector	-	up to 50 m tested by Igus®
	Igus®	- Chainflex® CFBUS.044 (Cat5) - RJ45 – RJ45 connector	-	up to 50 m tested by Igus®

6.2 GigE cables for M12 connector (IP67 cameras)

	manufacturer / reseller	description	Baumer Article-no.	Cable lengths
	Baumer	- GigE (Cat6) - M12 - RJ45 connector - Drag-chain suitable, high flex	11003440	5 m
			11003441	10 m
			11012529	15 m
	Baumer	- GigE (Cat5E) - M12 - RJ45 connector - Drag-chain suitable	11004686	30 m
	Lumberg	- GigE (Cat5E) - M12-RJ45 connector	-	5 m
	Igus®	- Chainflex® CFBUS.045 (Cat5) - M12 - RJ45 connector	-	up to 50 m tested by Igus®

 End of Document