Frame Grabber Portfolio – High Performance, Reliable and Flexible

Frame grabbers are the control center for robust high-speed image acquisition and processing in real time on FPGAs including image pre-processing, which minimizes the CPU load. Paired with graphic FPGA programming (VisualApplets), software and appropriate components, our frame grabbers play a vital role in the success of your individual image processing project.

Frame Grabbers and Accessories

Select the right board for your image processing task from one of the most extensive frame grabber ranges in the market.

The boards excel with robust image capture, image preprocessing, minimal latencies and top speeds for all conventional camera interfaces.

We realize solutions in the field of real-time image processing and industrial use. Frame grabbers have powerful FPGA processors to integrate high-quality image preprocessing functions into the firmware.

For programmable frame grabbers, further FPGA resources and larger memory expansion are available for carrying out even complex image processing directly on the frame grabber without loading the CPU. Our extension products offer new opportunities for building new system solutions, and include signal processing boards, image data replicators, image processing library and many more.

CXP-12 Interface Cards

The CXP-12 interface cards with one, two and four channels are based on the PCIe Gen 3.0 industry standard which delivers high speed access to the memory of the host computer. It enables a bandwidth of up to 12.5 Gbps per transmission channel and seamless plug and play integration of our boost cameras via the pylon Camera Software Suite.

This eliminates the need to install and program an additional SDK for the interface card: simply plug in the card and start image acquisition. All in all, the CXP-12 interface cards significantly reduce both system costs and configuration effort.

Basler CXP-12 interface cards are also available as part of a boost evaluation kit. Please see *page 28* for detailed information on our evaluation kits.

Highlights

- High-performance image acquisition cards for all conventional camera interfaces

- High data rates and resolutions are possible, with bandwidths up to 50 Gbps for CXP-12 four-channel frame grabber

- Minimal latencies through image processing in real time

- Variant signal controls between frame grabber and surrounding (cameras, lighting, encoder …)

- No CPU load thanks to effective image preprocessing

Highlights

- CoaXPress (CXP-12) 1C, 2C, 4C

- up to 6520 MB/s bandwidth via PCIe 3.0 bus

- Low-profile

- Passive heatsink

- Several trigger scenarios through front GPIO

- Fully harmonized with Basler boost cameras

- Simply install and start image acquisition via pylon SDK

For more information and a full model overview, please visit *baslerweb.com/framegrabbers*

FRAME GRABBER	CAMERA IF	CONNECTORS	MAX. DATA IN	FPGA PROGRAM-MING	PC BUS IF	RESOLUTION A:AREA, L:LINE
CoaXPress 2.0						
imaWorx CXP-12 Quad	CoaXPress 2.0	4x Micro-BNC	4x 12.5 Gbps	configurable	PCIe x8 (Gen 3)	A: 32 k x 65 k, L: 32 k
CoaXPress 1.1						
mE5 ironman AQ8-CXP6D	CoaXPress 1.1	4x DIN 1.0/2.3	4x 6,25 Gbps	configurable	PCIe x8 (Gen 2)	A: 16 k x 64 k, L: 16 k
mE5 ironman VQ8-CXP6D	CoaXPress 1.1	4x DIN 1.0/2.3	4x 6,25 Gbps	programmable	PCIe x8 (Gen 2)	A: 64 k x 64 k, L: 64 k
mE5 marathon ACX-SP	CoaXPress 1.1.1	1x DIN 1.0/2.3	1x 6,25 Gbps	configurable	PCIe x4 (Gen 2)	A: 16 k x 64 k, L: 32 k
mE5 marathon ACX-DP	CoaXPress 1.1.1	2x DIN 1.0/2.3	2x 6,25 Gbps	configurable	PCIe x4 (Gen 2)	A: 16 k x 64 k, L: 32 k
mE5 marathon ACX-QP	CoaXPress 1.1.1	4x DIN 1.0/2.3	4x 6,25 Gbps	configurable	PCIe x4 (Gen 2)	A: 16 k x 64 k, L: 32 k
mE5 marathon VCX-QP	CoaXPress 1.1.1	4x DIN 1.0/2.3	4x 6,25 Gbps	programmable	PCIe x4 (Gen 2)	A: 64 k x 64 k, L: 64 k
Camera Link HS						
mE5 marathon AF2	Camera Link HS	2x SFP+	2x 10 Gbps	configurable	PCIe x4 (Gen 2)	A: 32 k x 64 k, L: 16 k
mE5 marathon VF2	Camera Link HS	2x SFP+	2x 10 Gbps	programmable	PCIe x4 (Gen 2)	A: 64 k x 64 k, L: 64 k
Camera Link						
mE5 ironman AD8-PoCL	Camera Link 2.0	2x MDR26	850 MBps	configurable	PCIe x8 (Gen 2)	A: 16 k x 64 k, L: 16 k
mE5 ironman VD8-PoCL	Camera Link 2.0	2x MDR26	850 MBps	programmable	PCIe x8 (Gen 2)	A: 64 k x 64 k, L: 64 k
mE5 marathon ACL	Camera Link 2.0	2x SDR26 (miniCL)	850 MBps	configurable	PCIe x4 (Gen 2)	A: 16 k x 64 k, L: 16-52 k
mE5 marathon VCL	Camera Link 2.0	2x SDR26 (miniCL)	850 MBps	programmable	PCIe x4 (Gen 2)	A: 64 k x 64 k, L: 64 k
mE5 marathon VCLx	Camera Link 2.0	2x SDR26 (miniCL)	850 MBps	programmable	PCIe x4 (Gen 2)	A: 64 k x 64 k, L: 64 k
mE5 marathon deepVCL	Camera Link 2.0	2x SDR26 (miniCL)	850 MBps	programmable	PCIe x4 (Gen 2)	A: 64 k x 64 k, L: 64 k

CXP-12 INTERFACE CARDS

	CXP-12 Interface Card 1C	CXP-12 Interface Card 2C	CXP-12 Interface Card 4C
Data Rate	3260 MB/s	6520 MB/s	
Interface Host	PCIe 3.0 x4	PCIe 3.0 x8	
On-Board Memory	1 GB DDR4-RAM		1.5 GB DDR4-RAM
Size (L × W× H)	PCIe low profile card (167.65 mm × 68.9 mm × 18 mm)	PCIe standard height (167.64mm × 111.15 mm)	
Camera Interface	1× Micro-BNC (HD-BNC)	2× Micro-BNC (HD-BNC)	4× Micro-BNC (HD-BNC)
Power Supply	PCIe 6-pin connector 12 V (required for PoCXP)		
Trigger Connector	D-Sub Micro-D 15pin		
Typical Weight	180 g	270 g	
Software	Basler pylon Camera Software Suite (version 6.1 or higher)		
Operating System	Windows, Linux (64-Bit)		
Conformity	CE, RoHS, WEEE, REACH, GenICam, EAC1, PCB compliant with UL 94 V-0		

[1]Only for selected models

Tested and Qualified Acquisition Cards for Various Interfaces – Rely on Our Expertise

With acquisition cards you can flexibly connect cameras to the host PC and obtain high-performance and reliable image acquisition via your optimal interface. Our acquisition cards are tested over the product life cycle with common operating conditions and against operating system updates. The advantage is a smooth integration of tested and qualified components into the image processing system and at the same time a noticeable cost advantage.

For more information, please visit *baslerweb.com/pccards*

USB 3.0 Interface Cards

With the USB 3.0 interface cards with 2 or 4 ports, you no longer have to worry about faulty drivers or operating system updates. Frequently occurring problems are also a thing of the past, such as when the PC's host controller has already been occupied with additional peripherals and conflicts occur on the data bus, which in turn lead to data errors or image loss. Furthermore, our vision components are available on the market longer than the chipsets used in common PCs.

USB 3.0 INTERFACE CARDS	NO. OF PORTS	CHIPSET	PCIE CONNECTION
USB 3.0 Interface Card PCIe, Fresco FL1100, 1HC, x1, 4 Ports	4	Fresco FL1100	PCIe x1 Gen2
USB 3.0 Interface Card PCIe, Fresco FL1100, 4HC, x4, 4 Ports	4	Fresco FL1100	PCIe x4 Gen2
USB 3.0 Interface Card PCIe, Ren, 1 HC, x1, SATA, 2 Ports	2	Renesas	PCIe x1 Gen2
USB 3.0 Interface Card PCIe, ASM, x4, 2 Ports	2	ASM	PCIe x4 Gen3

GigE Interface Cards

GigE interface cards are required when the PC used has only a single LAN port, which is occupied by (for example) the machine controller, or does not have a Power over Ethernet (PoE) function for power supply. Using the GigE interface cards, a single cable solution can be implemented using the PoE function if required, thus enabling a multi-camera system to be developed with reduced system complexity. Depending on the application scenario and the camera used, our portfolio offers corresponding 1GigE interface cards with or without PoE function as well as 10GigE interface cards.

Highlights

- Technology for receiving image data and operating several cameras on one vision PC for the most demanding applications

- Performance optimizations using our pylon SDK and the Basler Performance Driver

- Harmonized for Basler cameras and cable solutions

- Same MAC address space as Basler cameras for easier network management

Basler Standard GigE Interface Cards

- 1GigE with 1, 2 or 4 ports
- 10GigE with 1 port
- Cost-optimized product design

Basler Premium GigE Interface Cards

- 1GigE with 1, 2 or 4 ports with PoE feature
- Ideal for single cable solutions with low installation effort

GIGE INTERFACE CARDS	CONNECTORS	POE (IEEE 802.3AF)	PTP (IEEE 1588)	PC BUS IF
Basler Standard GigE Interface Cards				
Basler 10GigE Interface Card, 1 Port	RJ45x1	no	yes	PCIe x4 (3.0)
Basler GigE Interface Card, 1 Port	RJ45x1	no	yes	PCIe x1 (2.1)
Basler GigE Interface Card, 2 Port	RJ45x2	no	yes	PCIe x1 (2.1)
Basler GigE Interface Card, 4 Port	RJ45x4	no	yes	PCIe x4 (2.1)
Basler Premium GigE Interface Cards				
Basler GigE Interface Card, 1 Port PoE	RJ45x1	yes	yes	PCIe x1 (2.1)
Basler GigE Interface Card, 2 Port PoE	RJ45x2	yes	yes	PCIe x4 (2.1)
Basler GigE Interface Card, 4 Port PoE	RJ45x4	yes	yes	PCIe x4 (2.1)

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