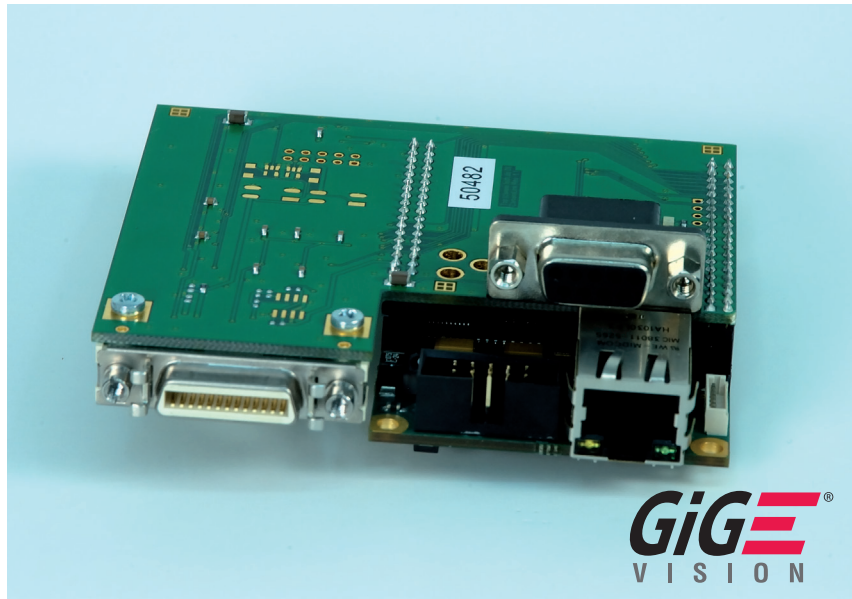# CameraLink to GigE Vision® Converter

Applications:
- Quality inspection and sorting systems
- Medical and scientific imaging systems
- Military sensing systems features
- Transmits imaging data from CameraLink® Base cameras at Gigabit Ethernet rates
- Ultra-low latency and jitter
- GigE Vision® and GenICam™ compliant

CameraLink to GigE module

Sensor to Image CANCamGigE boards stream video and imaging data in real time over standard GigE connections between Base-configuration CameraLink® cameras and PCs using the industry-standard GigE Vision® protocol.

By leveraging the inherent capabilities of GigE, the CANCamGigE boards overcome the limitations of traditional Camera Link-based systems: the need for proprietary frame grabbers, short distances between cameras and PCs and no networking flexibility for interconnecting multiple cameras or centralizing control and maintenance. CANCamGigE boards grab data from Camera Link cameras, convert it to GigE Vision® quickly and efficiently, and send it to PCs over GigE links using Cat-5e or Cat6 cables. These operations are performed by Sensor to Image field-proven, purpose-built hardware with very low latency and jitter, at the full, 1 gigabit per second data rate. At the PC, the Cat-5e/6 cable plugs into an economical GigE network interface card (NIC), eliminating the need for a frame grabber. Point-to-point connections go up to 100 m.
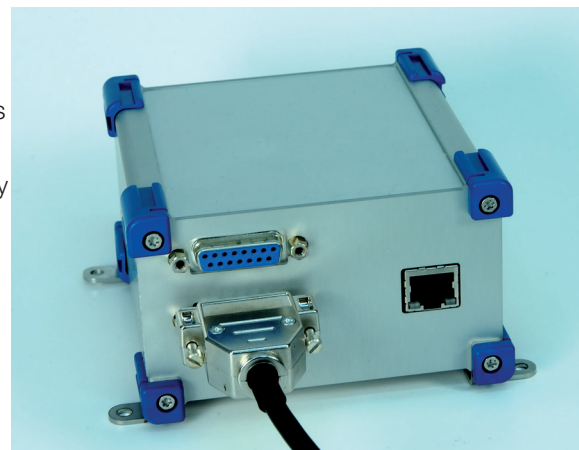
Sensor to Image CANCamGigE boards use a sophisticated design in an industrial grade FPGA to manage control signals from host PCs and other system elements. This powerful capability allows users to precisely measure, trigger, and control the operation of system components.

As an element of Sensor to Image networked interface solutions, CANCamGigE boards are offered with field-proven software tool:

Sphinx SDK – a feature-rich tool-kit that provides the building blocks needed to design quickly easily high-performance video applications that consume minimal CPU resources.

The Sensor to Image CANCamGigE boards are fully compliant with the GigE Vision® and GenICam™ standards. Together with Sphinx PC software, it gives users a solid basis for camera control and operation.

CameraLink to GigE module, enclosed version

USB/CAMERALINK/GIGE-CAMERAS

INTELLIGENT CAMERAS

COMPACT VISION SYSTEMS

FRAMEGRABBER

TECHNOLOGY

Sensor to Image GmbH

GigE Vision® and Networking Features

Gigabit Ethernet based

Fully compliant GigE Vision® firmware load

Compatible with all 3rd party GigE Vision®/GenICam™ compliant vision software libraries (MIL, LabView, Halcon, Sapera, CVB, VisionPro, StreamPix, TroublePix,...)

Low-cost, easy-to-use equipment

Compatible with 10/100/1000 Mb/s IP/Ethernet networks

Supports IEEE 802.3 (Ethernet), IP, IGMP v.2, UDP and ICMP (ping)

Long reach: 100 m point-to-point, further with Ethernet switches or fiber converters

Multicast capability enables advanced distributed processing and control architectures

Sphinx SDK

PC filter driver and acquisition library for Windows and LINUX OS (sources on request)

Sample applications, including GigE Vision® /GenICam™ compliant viewer (sources on request)

Driver installation tool

Documentation

Characteristics enclosed Version

Interface	CameraLink BASE
Temperature Range	0°C to +70°C, optional -40°C to +85°C
Power Supply	8–15 V, 3 Watt
Dimensions Housing in mm	110×68×112

Characteristics OEM Version

FPGA / CPU	Xilinx Spartan S3ADSP-1800 / µBlaze
Memory CPU / Framebuffer / Flash / EEPROM	8 MByte / 24 MByte / 8 MByte / 8 kByte
Module Interface (without AddOn)	55 LVTTL lines, e.g. for data/adress bus, chip select
RS232 / CAN Interface / TTL-IO	1 / Yes / 2 in + 2 out
Temperature Range	0°C to +70°C, optional -40°C to +85°C
Power Supply	8–15 V, optional up to 30V, 2.5 Watt
Dimensions PCB in mm	90×20×86

Data Acquisition Features

Accepts LVCMOS / LVTTL controls and LVDS camera signals

Compatible with all base-configuration Camera Link cameras

Can acquire images from a wide variety of sources, with pixel depth up to 24 bits, color or B/W, and multi-tap free running or externally triggered

Flexible acquisition modes

AddOn Modules

CameraLink BASE Interface	max. pixel clock 85 MHz

Connectors

Power / IO / RS232	DSUB15
Network	RJ45
CameraLink version	1 Mini DSUB26 connector (3M MDR Connector 102 Series)

FRAMEGRABBER