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

Sensor to Image S3E-1200 GigE Vision® 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 S3E-1200 boards over-come 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 inter-connecting multiple cameras or centralizing control and maintenance. S3E-1200 board grabs data from Camera Link cameras, convert it to IP 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 S3E-1200 GigE Vision® boards use a sophisticated design in a 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, the S3E-1200 are offered with field-proven software tools:

- Sphynx SDK – a feature-rich tool-kit that provides the building blocks needed to quickly and easily design high-performance video applications that consume minimal CPU resources
- XML sample files – XML files in source code which can be adapted to your individual needs creating GenICam™ compliant devices.

The Sensor to Image S3E-1200 GigE Vision® boards are fully compliant with the GigE Vision® and GenICam™ standards. Together with SPHYNX PC software it gives users a solid basis for camera control.

www.sensor-to-image.de

Sensor to Image GmbH
**GigE Vision® and Networking Features**

- Gigabit Ethernet based
- Fully compliant GigE Vision® firmware load
- Compatible with all 3rd party GenICam™ compliant vision software libraries (MILL, 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

**Sphynx SDK**

- PC filter driver and acquisition library for Windows and LINUX OS (sources on request)
- Sample applications, including GenICam™ compliant viewer (sources on request)
- Driver installation tool
- Documentation

**Characteristics enclosed Version**

<table>
<thead>
<tr>
<th>Interface</th>
<th>CameraLink BASE or MEDIUM connector</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature Range</td>
<td>0°C to +70°C, optional -40°C to +85°C</td>
</tr>
<tr>
<td>Power Supply</td>
<td>8–15 V, 3 Watt</td>
</tr>
<tr>
<td>Dimensions Housing in mm</td>
<td>56×46×99</td>
</tr>
<tr>
<td>Lens Thread</td>
<td>C-Mount</td>
</tr>
</tbody>
</table>

**Characteristics OEM Version**

| FPGA / CPU | Xilinx Spartan S3E-1200 / µBlaze |
| Memory CPU / Framebuffer / Flash / EEPROM | 32 MByte / 32 MByte / 8 MByte / 8 kByte |
| Module interface | 55 LVTTL lines, e.g. for data/address bus, cmd select |
| RS232 / LAN interface / 1 LV-LU | 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 | 75×50×10 |

**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 depths up to 24 bits, color or B/W, and multi-tap free running or externally triggered
- Flexible acquisition modes

**AddOn Modules**

- CameraLink BASE Interface
  - or – max. pixel clock 88 MHz
- CameraLink BASE Interface
  - max. pixel clock 85 MHz
  - optional MEDIUM connector
  - extra 32 MByte image buffer with a maximum image size of 8 MByte
  - extra FPGA: Spartan3A 1800 free for image processing

**Connectors**

| Power | DSUB15 |
| Network | RJ45 |
| OEM version | 1 or 2 Mini DSUB26 connectors (3M MDR Connector 102 Series) |