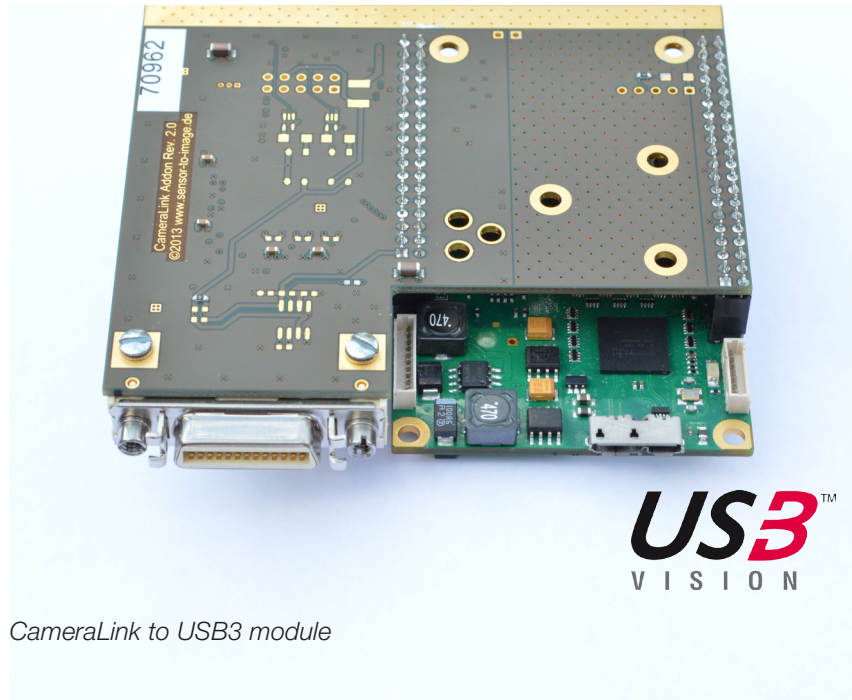# CameraLink to USB Vision® Converter

Applications:

- Quality inspection and sorting systems
- Medical and scientific imaging systems
- Military sensing systems features
- Transmits imaging data from CameraLink® Base cameras at 5 Gigabit Ethernet rates
- Ultra-low latency and jitter
- USB3 Vision® and GenICam™ compliant

CameraLink to USB3 module

Sensor to Image CANCamU3V boards stream video and imaging data in real time over standard USB3 connections between Base-configuration CameraLink® cameras and PCs using the industry-standard USB3 Vision® protocol.

By leveraging the inherent capabilities of U3V, the CANCamU3V boards overcome the limitations of traditional Camera Link-based systems: the need for proprietary frame grabbers, short distances between cameras and PCs and no flexibility for inter-connecting multiple cameras or centralizing control and maintenance. CanCamU3V3 boards grab data from Camera Link cameras, convert it to USB3 Vision® quickly and efficiently, and send it to PCs over standard USB3 links using standard USB3 cables. These operations are performed by Sensor to Image field-proven, purpose-built hardware with very low latency and jitter, at the full 5 Gigabit per second data rate. On the PC side, the USB cable plugs into an economical USB interface, eliminating the need for a frame grabber. A recommendable USB3 cable length can go up to 5m and you can run as many CanCamU3V boards as many USB3 plugs you have on your PC.

Sensor to Image CanCamU3V 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, CanCamU3V boards are offered with field-proven software tool: Sphinx U3V 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. The Sensor to Image CanCamU3V board is fully compliant with the USB3 Vision® and Genicam standards. Together with Sphinx PC software, it gives users a solid basis for camera control and operation.
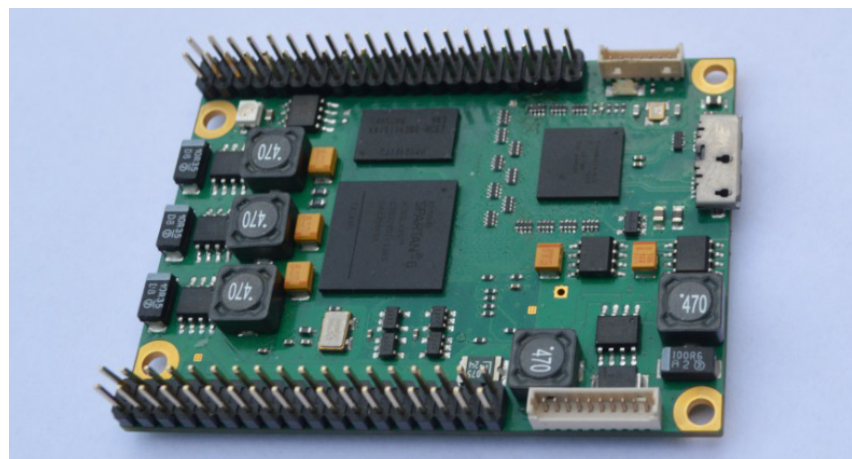
Cameralink to USB3 module

USB3 Vision® Features

Fully compliant USB3 Vision® firmware load

Compatible with all 3rd party USB3 Vision®/GenICam™ compliant vision software libraries (MIL, LabView, Halcon, Sapera, CVB, VisionPro, StreamPix, Trouble Pix,...)

Low-cost, easy-to-use equipment

Medium reach: 5 m point-to-point

Sphinx U3V SDK

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

Sample applications, including U3V 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	105×105×60

Characteristics OEM Version

FPGA / CPU	Xilinx Spartan-6 SLX45 / µBlaze
Memory CPU / Framebuffer / Flash / EEPROM	32 MByte / 32 MByte / 8 MByte / 8 kByte
Module Interface (without AddOn)	55 LVTTL/LVCMOS 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	70×50×10

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 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	Power, IO: MOLEX PicoBlade connector, RS232: USB-Mini B
USB3	Micro B
CameraLink version	1 Mini DSUB26 connector (3M MDR Connector 102 Series)

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