DATA SHEET

iPORT CL-U3 External Frame Grabbers

Simple to integrate USB3 Vision video interface for Camera Link cameras

Overview

Pleora's iPORT™ CL-U3 External Frame Grabbers provide systems manufacturers and integrators with cost and design flexibility advantages by converting Camera Link® cameras into native USB3 Vision™ cameras. With these external frame grabbers, Camera Link® cameras can transport high-speed imaging and video data over the widely available USB 3.0 bus. The cameras can also be used with a broader selection of smaller form factor, low-power computing platforms to help reduce system costs.

Based on a field-proven design, the CL-U3 delivers additional benefits including high bandwidth output, extended operating temperature range, and extensive GPIO functionality enabling real-time, low-jitter triggering of cameras, and synchronization of other vision system elements.

The CL-U3 transmits video from Base and Medium mode Camera Link cameras with low, predictable latency over a USB 3.0 link. The connection at the workstation is a standard USB 3.0 port, eliminating the need for a desktop computer with an available peripheral card slot for a traditional frame grabber. As a result, designers can reduce system size, cost, and power consumption by using computing platforms with smaller form factors, such as laptops, embedded computers, and single-board computers.

Pleora's CL-U3 External Frame Grabbers help systems manufacturers and integrators to leverage the performance attributes of USB 3.0, including high-bandwidth, power over cable, and plug-and-play usability. In addition, the frame grabbers support flexible configurations, allowing multiple cameras to be aggregated to a single USB 3.0 port, when using an off-the-shelf USB 3.0 hub. The CL-U3 complies fully with the USB3 Vision and GenICam™ standards, ensuring interoperability with third-party equipment in multi-vendor environments.

Features

- Transmits video from Camera Link Base or Medium mode cameras over USB 3.0, with low, predictable latency
- Plugs into a wide range of computing platforms without needing a PCI/PCIe frame grabber
- Compact and low power
- Available in mountable enclosure and OEM board set
- Line scan and area scan modes
- 120 MB frame buffer to accommodate multi-mega pixel sensor sizes
- Throughput approaching 3 Gb/s
- Record and playback functionality
- USB3 Vision and GenICam compatible
- Power, control, and video over the same USB 3.0 cable
- Power over Camera Link (PoCL) with models CL-U3B-IND and CL-U3M-IND (external power supply required)
- Sophisticated on-board programmable logic controller (PLC) allows users to precisely measure, synchronize, trigger, and control the operation of other vision system elements
- Bundled with Pleora's feature-rich eBUS™ SDK application toolkit

USB3 VISION™ PoCL® CAMERA Link

GEN<i>CAM

For more information, visit www.pleora.com

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iPORT CL-U3 External Frame Grabbers

Video Connectivity Solutions

iPORT External Frame Grabber	• Highly reliable, 3 Gb/s data transfer rate with low, end-to-end latency • Surface-mountable enclosure
eBUS SDK	• eBUS Universal Pro driver • Sample applications and documentation • Support for CLProtocol
USB3 Vision and GenICam	• Fully compatible firmware load • Guarantees delivery of all packets • Comprehensive data transfer diagnostics

Video Formats

Tap Support	• Base mode: 1 and 2 taps • Medium mode: 1,2, and 4 taps
Tap Geometry	• 1X_1Y, 1X, 1X2_1Y, 1X2, 1X4_1Y, 1X4
Video Modes	• Mono, BayerGR, BayerRG, BayerGB, BayerBG, RGB, BGR, Sparse Color Filter pattern
Pixel Depth	• 8, 10, 12, 14, 16 bits, 24-bit RGB

Features

Pixel Clock	• 20 MHz to 85 MHz
Frame Buffer	• 120 MB
USB 3.0-Based	• Connection to low-cost, easy-to-use equipment • USB3 Vision 1.0 compliant
Programmable Logic Controller	• Advanced image capture control • Integrated with GPIO
GPIO	• 4 TTL/LVCMOS inputs • 3 TTL/LVCMOS outputs
GPIO (CL-U3 industrial models only)	• 2 LVDS/RS-422/HVTTL/±24V/±30V differential or single-ended inputs • 2 TTL/LVCMOS inputs • 3 TTL/LVCMOS outputs

Connectors

Video	• SDR-26 (Mini CL) for Camera Link
USB	• 10-pin USB 3.0 micro-B Receptacle with locking screw connectors
GPIO	• 12-pin circular connector
Power In	• Power over USB cable • GPIO Connector (CL-U3 industrial models only)
Power Out (CL-U3 industrial models only)	• PoCL • SDR-26 Connector

Characteristics

Size (L x W x H)	• 38 mm X 83 mm X 51 mm
Weight	• Up to 132 g
Operating Temperature*	• 0°C to 45°C • -40°C to 60°C (CL-U3 industrial models only) • -40°C to 85°C (CL-U3 OEM board set, industrial models only)
Storage Temperature	• -40°C to 85°C
External Power Supply	• 11.6V to 13.0V (CL-U3 industrial models only)
Power Consumption	• 3.5 W maximum for all models
MTBF @ 40°C	• 1 135 333 hours • 958 332 hours (CL-U3 industrial models only)

*The product is specified for operation within the stated ambient and case temperature range of its components.

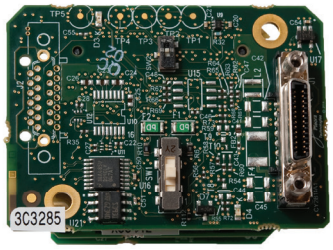
Pleora Technologies Inc.
340 Terry Fox Drive, Suite 300
Kanata, Ontario
Canada, K2K 3A2

Tel: +1.613.270.0625
Fax: +1.613.270.1425
Email: info@pleora.com

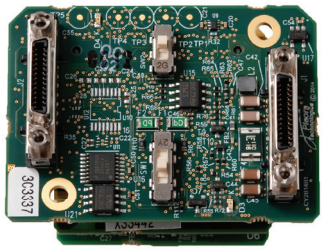
iPORT CL-U3 External Frame Grabbers

Ordering Information

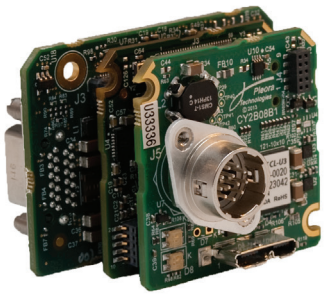
903-0007	• iPORT CL-U3B External Frame Grabber in mountable enclosure for Camera Link Base mode.
903-0011	• iPORT CL-U3B Development Kit including 903-0007, USB 3.0 cable, and eBUS SDK USB stick.
903-0009	• iPORT CL-U3B-IND External Frame Grabber (industrial use) in mountable enclosure for Camera Link Base mode, extended operating temperature range, extensive GPIO, and power over Camera Link (PoCL).
903-0019	• iPORT CL-U3B-IND External Frame Grabber (industrial use) OEM board set without enclosure for Camera Link Base mode with extended operating temperature range, extensive GPIO, and power over Camera Link (PoCL).
903-0013	• iPORT CL-U3B-IND Development Kit including 903-0009, power supply, USB 3.0 cable, and eBUS SDK USB stick.
903-0008	• iPORT CL-U3M External Frame Grabber in mountable enclosure for Camera Link Medium mode.
903-0012	• iPORT CL-U3M Development Kit including 903-0008,USB 3.0 cable, and eBUS SDK USB stick.
903-0010	• iPORT CL-U3M-IND External Frame Grabber (industrial use) in mountable enclosure for Camera Link Medium mode, extended operating temperature range, extensive GPIO, and power over Camera Link (PoCL).
903-0020	• iPORT CL-U3M-IND External Frame Grabber (industrial use) OEM board set without enclosure for Camera Link Medium mode with extended operating temperature range, extensive GPIO, and power over Camera Link (PoCL).
903-0014	• iPORT CL-U3M-IND Development Kit including 903-0010, power supply, USB 3.0 cable, and eBUS SDK USB stick.



iPORT CL-U3B-IND External Frame Grabber
OEM Board Set (903-0019)
for Camera Link Base Mode



iPORT CL-U3M-IND External Frame Grabber
OEM Board Set (903-0020)
for Camera Link Medium Mode



External Frame Grabber OEM Board Set for Camera Link
Base and Medium Mode