

DATA SHEET

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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 temperature operating 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
- Mountable enclosure
- Line scan and area scan modes
- 128 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



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Video Connectivity Solutions

iPORT External Frame Grabber	<ul style="list-style-type: none"> Highly reliable, 3 Gb/s data transfer rate with low, end-to-end latency Contained in surface-mountable enclosure
eBUS SDK	<ul style="list-style-type: none"> Driver installation tool Documentation
USB3 Vision and GenICam	<ul style="list-style-type: none"> Fully compatible firmware load Guarantees delivery of all packets Comprehensive data transfer diagnostics

Video Formats

Tap Support	<ul style="list-style-type: none"> Base mode: 1 and 2 taps Medium mode: 1,2, and 4 taps
Tap Geometry	<ul style="list-style-type: none"> 1X_1Y, 1X2_1Y, 1X, 1X2, 1X4_1Y, 1X4
Video Modes	<ul style="list-style-type: none"> Mono, BayerGR, Bayer RG, BayerGB, BayerBG, RGB, BGR, Sparse Color Filter pattern
Pixel Depth	<ul style="list-style-type: none"> 8, 10, 12, 14, 16 bits

Features

Pixel Clock	<ul style="list-style-type: none"> 20 MHz to 85 MHz
Frame Buffer	<ul style="list-style-type: none"> 128 MB
USB 3.0 based	<ul style="list-style-type: none"> Connection to low-cost, easy-to-use equipment USB3 Vision 1.0 compliant
Programmable Logic Controller	<ul style="list-style-type: none"> Advanced image capture control Integrated with GPIO
GPIO	<ul style="list-style-type: none"> 4 TTL/LVCMOS inputs 3 TTL/LVCMOS outputs
GPIO (CL-U3x-IND models only)	<ul style="list-style-type: none"> 2 RS-422/HVTTL/24V/30V differential or single-ended inputs 2 TTL/LVCMOS inputs 3 TTL/LVCMOS outputs

Characteristics

Size (L x W x H)	<ul style="list-style-type: none"> 38 mm X 82 mm X 51 mm
Operating temperature	<ul style="list-style-type: none"> 0°C to 45°C -20°C to 60°C (CL-U3x-IND models only)
Storage temperature	<ul style="list-style-type: none"> -40°C to 85°C
External power supply	<ul style="list-style-type: none"> 4.8V to 16V (CL-U3x-IND models only)
Power consumption	<ul style="list-style-type: none"> 2.5 W

Connectors

Video	<ul style="list-style-type: none"> SDR-26 (Mini CL) for Camera Link
USB	<ul style="list-style-type: none"> 10-Pin USB 3.0 micro-B Receptacle with locking screw connectors
GPIO	<ul style="list-style-type: none"> Hirose 12-pin (HR10A-10R-12S)
Power In	<ul style="list-style-type: none"> Power over USB cable GPIO Connector (CL-U3x-IND models only)
Power Out (CL-U3x-IND models only)	<ul style="list-style-type: none"> PoCL SDR-26

Ordering Information

903-0007	<ul style="list-style-type: none"> iPORT CL-U3B External Frame Grabber for Camera Link Base mode with 128 MB frame buffer.
903-0011	<ul style="list-style-type: none"> iPORT CL-U3B Evaluation Kit including 903-0007, USB 3.0 cable, and eBUS SDK USB stick.
903-0009	<ul style="list-style-type: none"> iPORT CL-U3B-IND External Frame Grabber for Camera Link Base mode with 128 MB frame buffer, extended operating temperature range, extensive GPIO, and power over Camera Link (PoCL).
903-0013	<ul style="list-style-type: none"> iPORT CL-U3B-IND Evaluation Kit including 903-0009, power supply, USB 3.0 cable, and eBUS SDK USB stick.
903-0008	<ul style="list-style-type: none"> iPORT CL-U3M External Frame Grabber for Camera Link Medium mode with 128 MB frame buffer.
903-0012	<ul style="list-style-type: none"> iPORT CL-U3M Evaluation Kit including 903-0008, USB 3.0 cable, and eBUS SDK USB stick.
903-0010	<ul style="list-style-type: none"> iPORT CL-U3M-IND External Frame Grabber for Camera Link Medium mode with 128 MB frame buffer, extended operating temperature range, extensive GPIO, and power over Camera Link (PoCL).
903-0014	<ul style="list-style-type: none"> iPORT CL-U3M-IND Evaluation Kit including 903-0010, power supply, USB 3.0 cable, and eBUS SDK USB stick.