



iPORT CL-Ten External Frame Grabbers

High-performance GigE Vision connectivity for Camera Link Medium cameras over 10 GigE links

Overview

Pleora's iPORT™ CL-Ten External Frame Grabbers use a high-performance GigE Vision® 2.0 over 10 Gigabit Ethernet (10 GigE) link to transmit video simultaneously from two Camera Link Base or Medium cameras at their maximum data rates, with low, predictable latency. These external frame grabbers allow designers to extend and aggregate system cabling, and integrate Camera Link cameras into a networked environment.

CL-Ten External Frame Grabbers interact seamlessly with Pleora's other products in networked or point-to-point digital video systems. The frame grabbers also comply fully with the GigE Vision and GenICam™ standards, enabling interoperation with third-party equipment in multi-vendor environments. The GigE Vision and GenICam standards are agnostic to Ethernet link speed, which means the CL-Ten can be designed into multi-speed systems alongside GigE Vision cameras operating at 1 Gb/s, with no software modifications. With these benefits, manufacturers and integrators can use the CL-Ten to shorten time-to-market, reduce development and deployment risk, and lower design and system costs.

The CL-Ten converts video data to packets and sends them over a 10 GigE link to receiving software or hardware. The CL-Ten is compatible with industry-standard copper or fiber-based links via an SFP+ (small form-factor pluggable) connector, and can be easily connected to off-the-shelf 10 GigE components such as network cards and switches.

A sophisticated on-board programmable logic controller (PLC) allows users to precisely measure, synchronize, trigger, and control the operation of other vision system elements.

The CL-Ten is bundled with Pleora's feature-rich application toolkit, eBUS™ SDK.

Features

- Transmits video from two Camera Link Medium or Base mode cameras over 10 GigE with low, consistent latency
- Provides power to cameras utilizing the Power over Camera Link (PoCL) standard
- Built-in Programmable Logic Controller (PLC) for advanced real-time synchronization and triggering
- RS-232 and GPIO to control external accessories

Ordering Information

905-0001	• iPORT CL-Ten External Frame Grabber enclosed product
905-0003	• iPORT CL-Ten External Frame Grabber Fiber Evaluation Kit, which includes 905-0001, power supply, a 10 GigE NIC, two SFP+ fiber modules, and 2 m of fiber optic cabling
905-0004	• iPORT CL-Ten External Frame Grabber Copper Evaluation Kit, which includes 905-0001, power supply, 10 GigE NIC, and 2 m of Direct Attach copper cabling



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For more information, visit www.pleora.com



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Networked Video Connectivity Solutions

iPORT™ External Frame Grabbers	- Highly reliable, 8.16 Gb/s data transfer rate with low, end-to-end latency - Enclosed unit or OEM, in-system board set
eBUS™ SDK	- eBUS Universal Pro driver - Support for CLProtocol - Sample applications, including NetCommand™ sample application, a demonstration of multi-device network connectivity - Driver installation tool - Documentation
GigE Vision® 2.0	- Fully-compatible firmware load - Guarantees delivery of all packets - Comprehensive data transfer diagnostics

Camera Compatibility

Camera Link® cameras	- Compatible with Base and Medium mode cameras at up to 85 MHz - Supports Power over Camera Link (PoCL) - Supports CLProtocol
Hardware tap reconstruction	- Supports interleaved 2-tap and 4-tap configurations - Support for key non-interleaved tap configurations

Connectors

Power	6-pin circular, male
Network	- Supports 10GBASE-SR, -LR, and -LRM using linear or limiting SFP+ modules - Supports SFP+ Direct-Attach copper (passive, 7m maximum length)
Video interface	Four Mini Camera Link®
Inputs/Outputs and serial control interface	12-pin circular, female

Programmable Logic Features

2 x TTL inputs	- Provides a flexible, general-purpose interface - Allows synchronization of multiple devices or system elements - Synchronized triggering of multiple network devices via IEEE 1588 Precision Time Protocol and Scheduled Action Command
2 x TTL outputs	
4 x TTL inputs/outputs (configurable)	
Delayer, rescaler, general-purpose counter	- Allows full synchronization to line scan cameras - Allows synchronized capture between multiple cameras - Allows camera acquisition to track changing speeds on conveyor belts
UART and RS-232 serial links (LVCMOS/LVTTL)	Serial control of camera and other devices via PC application over the GigE link

Characteristics

Size (L x W x H)	117mm x 100mm x 83.5mm
Operating temperature	0-45°C
Storage temperature	-40°C to 85°C
Power supply	12 V

Networking Features

10 Gigabit Ethernet-based	- Industry standard, easy-to-use equipment - Supports IGMPv2, ICMP and IEEE 1588 Precision Time Protocol
Multicast capability	- Standards-based, IGMPv2 - Enables advanced distributed processing and control architectures