iPORT CL-Ten External Frame Grabbers

High-performance GigE Vision connectivity for Camera Link Full and 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, or a single Camera Link Full camera at 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. Deploying the CL-Ten, manufacturers and integrators can 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 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 Camera Link cameras over 10 GigE with low, consistent latency
- Product options for designers to meet system requirements:
  - iPORT CL-Ten Full supports transmission of a single Full (including Deca/80-bit), Medium, or Base mode camera
  - iPORT CL-Ten Dual Medium supports simultaneous transmission of 1 or 2 Medium or Base mode cameras
- Provides power to cameras utilizing the Power over Camera Link (PoCL) standard
- RS-232 and GPIO to control external accessories

Ordering Information

905-0001	• iPORT CL-Ten Dual Medium External Frame Grabber in mountable enclosure.
905-0003	• iPORT CL-Ten Dual Medium Fiber Development Kit includes 905-0001, power supply, 10 GigE NIC, two SFP+ fiber modules, 2m of fiber optic cabling, and an eBUS SDK USB stick.
905-0008	• iPORT CL-Ten Full External Frame Grabber in mountable enclosure.
905-0012	• iPORT CL-Ten Full OEM Kit, includes CL-Ten Full OEM board set without enclosure and heatsink*, and GPIO board with unsoldered 12-pin circular connector and flat flex cable.
905-0009	• iPORT CL-Ten Full Fiber Development Kit includes 905-0008, power supply, 10 GigE NIC, two SFP+ fiber modules, 2m of fiber optic cabling, and an eBUS SDK USB stick.

*This product must be operated with a heatsink.

Pleora Technologies

iPORT CL-Ten External Frame Grabbers

Networked Video Connectivity Solutions

iPORT™ External Frame Grabbers	· Highly reliable, up to 8.16 Gb/s data transfer rate with low, end-to-end latency · Enclosed unit
eBUS™ SDK	· eBUS Universal Pro driver · Support for CLProtocol · Sample applications, including NetCommand™, 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	· iPORT CL-Ten Dual Medium compatible with Base and Medium mode cameras at up to 85 MHz · iPORT CL-Ten Full compatible with Full (including Deca/80-bit) mode cameras at up to 85MHz · Supports Power over Camera Link (PoCL) · Supports CLProtocol
Tap Geometry	· 1X_1Y, 1X2_1Y, 1X, 1X2, 1X4_1Y, 1X4, 2X2E, 1X8_1Y, 1X8, 1X10_1Y, 1X10

Connectors

Power	· 6-pin circular, male
Network	· Supports 10GBASE-SR, -LR, and –LRM using linear or limiting SFP+ modules
Video interface	· Miniature Camera Link® (MiniCL)
Inputs/Outputs and serial control interface	· 12-pin circular, female

Programmable Logic Controller Features

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

Characteristics

Size (L x W x H)	· 121.4 mm x 69 mm x 23.1 mm (OEM kit) · 125.4 mm x 100 mm x 71.7 mm (enclosed)
Operating temperature	· 0°C to 70°C (OEM board set)** · 0°C to 70°C (enclosed)*
Storage temperature	· -40°C to 85°C
External power supply	· 12 V
Power consumption	· 11.5 W
MTBF @ 40°C	· iPORT CL-Ten Dual Medium: 586 855 hours · iPORT CL-Ten Full: 731 249 hours

*If using industrial temperature SFP+ module; otherwise 0°C to 55°C.
**The product is specified for operation within the stated ambient and case temperature range of its components.

Networking Features

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