iPORT™ PT1000-LV IP Engines

High-performance, ultra efficient connectivity between LVDS cameras and Gigabit Ethernet links of LANs

Applications

- Medical and scientific imaging systems
- Quality inspection and sorting systems
- Intelligent traffic systems
- Military sensing systems

Features

- Transmits imaging data from LVDS cameras at Gigabit Ethernet rates
- Ultra-low latency and jitter
- PLC independently synchronizes external system elements
- GigE Vision® and GenICam™ compliant

Pleora's iPORT™ PT1000-LV IP engines stream video and imaging data in real time over standard GigE connections between LVDS cameras and PCs using the industry-standard GigE Vision® protocol.

By leveraging the inherent capabilities of GigE, the iPORT PT1000-LV IP engines overcome the limitations of traditional LVDS-based systems: the need for proprietary frame grabbers; limited distances between cameras and PCs; and no networking flexibility for interconnecting multiple cameras or centralizing control and maintenance.

iPORT PT1000-LV IP engines grab data from LVDS cameras, convert it to IP quickly and efficiently, and send it to PCs over GigE links using Cat-5 cables. These operations are performed by the engine's field-proven, purpose-built hardware with very low latency and jitter, at the full, 1-Gb/s line rate.

At the PC, the Cat-5 cable plugs into an economical GigE network interface card (NIC), eliminating the need for a frame grabber. Point-to-point connections extend 100 m. With affordable GigE switches, the reach is much further, and users gain immediate access to the wide range of Ethernet networking options. With GigE switches, users can interconnect multiple cameras, multicast data from one camera to multiple PCs, or distribute image processing across multiple PCs.

iPORT PT1000-LV IP engines also handle control signals from PCs and other system elements. These signals are routed through a Programmable Logic Controller (PLC) that allows users to precisely measure and control the operation of conveyors, encoders, cameras, and other components — either independently from or in conjunction with the host PC on the network.

As an element of Pleora's networked video connectivity solutions, the iPORT PT1000-LV IP engines are offered with field-proven software tools:

- **eBUS™ SDK** — a feature-rich toolkit that provides the building blocks needed to quickly and easily design high-performance video applications that consume minimal CPU resources; and

- **the AutoGEV™ XML generation tool** — a unique GenICam XML management utility for creating GenICam compliant devices.

The iPORT PT1000-LV IP engines are fully compliant with the GigE Vision and GenICam™ standards. In conjunction with the eBUS SDK, it gives users a range of options for camera control.

Pleora Technologies

iPORT™ PT1000-LV IP Engines

Networked Video Connectivity Solutions

iPORT™ IP Engines	· Purpose-built hardware compatible with TIA/EIA 644 LVDS cameras · Highly reliable, 1 Gb/s data transfer rate with low, end-to-end latency · Enclosed unit or OEM board
eBUS™ SDK	· eBUS Universal Pro driver · Sample applications, including NetCommand™ sample application, a demonstration of multi-device network connectivity · Driver installation tool · Documentation
GigE Vision®	· Fully compliant firmware load · Guarantees delivery of all packets · Comprehensive data transfer diagnostics

Programmable Logic Controller Features

Inputs 2 TTL inputs 1 LVDS input 1 optically isolated input **Outputs:** 2 TTL outputs 1 optically isolated output	· Allows synchronization of multiple cameras or system elements · Flexible triggering capabilities, including Boolean combinations and camera control signals · Provides an electrically isolated control interface · Built-in debouncers
2 RS-232 serial links	· Simultaneous serial control of camera and other devices via PC application over Ethernet link
Delayer, rescaler, general-purpose counter	· Allows full synchronization with line scan cameras · Allows synchronized capture between multiple cameras · Allows camera acquisition to track changing speeds on conveyor belts
Timestamp trigger, counter, and reset	· Allows system actions to be triggered based on timestamps · Allows resets to be broadcast to all iPORTs in system from host
Host interrupts	· Allows host to be interrupted based on events on any input or internal signal

Data Acquisition Features

Accepts TIA/EIA-644 signals	· Compatible with a wide range of cameras
Integrated acquisition engine	· Can acquire image data from a wide variety of sources, with pixel depths up to 16 bits, color or B/W, and multi-tap
Free running or externally triggered	· Flexible acquisition modes

Networking Features

Gigabit Ethernet-based	· Low-cost, easy-to-use equipment · Compatible with 10/100/1000 Mb/s IP/Ethernet networks · Supports IEEE 802.3 (Ethernet), IP, IGMP v.2, UDP and ICMP (ping) · Long reach: 100 m point-to-point, further with Ethernet switches or fiber
Multicast capability	· Enables advanced distributed processing and control architectures

Connectors

Power	· **Enclosed:** Hirose 6-pin (HR10A-7R-6P) · **OEM:** Molex 4-pin 6373 series (22-23 -2041)
Network	· RJ45
Video	· Hirose 68-pin female MDR (DX10GM-68SE)
I/O and serial control	· **Enclosed:** Hirose 12-pin (HR10A-10R-12S) · **OEM:** Sametec 16-pin 2 mm male header (TMM-108-01-G-D-SM)

Characteristics

Size (LxWxH)	· **Enclosed:** 95 mm X 97 mm X 37 mm · **OEM:** 89 mm X 72 mm X 21 mm
Operating temperature	· **Enclosed:** 0°C to 45°C · **OEM:** 0°C to 70°C
Power supply	· 4.5 V to 16 V
Power consumption	· 2.5 W