

iPORT™ PT1000-VB IP Engine

High-throughput, real-time GigE connectivity in a compact, low-power, camera-ready OEM board



GEN<i>CAM

Pleora's iPORT PT1000-VB In-Camera IP Engine is a fast, affordable, and simple way to integrate high-performance Gigabit Ethernet (GigE) connectivity into almost any industrial camera. This OEM board features hardened, field-proven technology that is used today in more than 100 different GigE camera models. It is ideal for GigE-enabling cameras targeted at applications in product inspection, security/surveillance, traffic monitoring, and post and parcel sorting.

The PT1000-VB is optimized for in-camera use. It has a small, square footprint, very low power consumption, and vertical mounts for power, I/O, and GigE. Straightforward interfaces to parallel data, clocks, line, and frame signals allow most cameras, including Camera Link models, to support GigE with a simple change-out to their back-end electronics.

The engine uses an advanced, purpose-built hardware design to acquire, packetize, and drive imaging data onto GigE links or LANs with ultra-efficient, clock-cycle accuracy and extremely low latency. The design enables continuous image data throughput of up to 1 Gb/s, the highest in the industry and enough to support real-time operation with most image sensors, including high-resolution sensors with fast frame rates.

At all throughput rates, the PT1000-VB consumes less than 2.25 W of power, making it an easy fit for small-body cameras with strict power budgets.

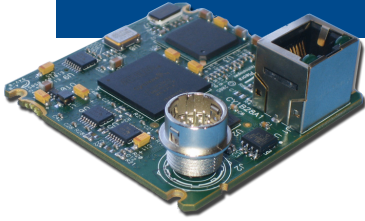
The PT1000-CL uses a sophisticated on-board PLC (Programmable Logic Controller) to manage control signals from the host PC and other system elements. This powerful application allows users to precisely measure, trigger, and control the operation of system components – either independently from or in conjunction with the host PC on the network.

As part of Pleora's end-to-end iPORT Connectivity Solution, the PT1000-VB engine is bundled with field-proven software:

- The high-performance drivers in the **eBUS™ Driver Suite** stream imaging data directly to PC memory at the kernel level, using minimal CPU capacity;
- The feature-rich **iPORT Vision Suite** lets you quickly and easily build your custom vision application. Sample application source code and executables provide working applications for functions like device configuration and control, image and data acquisition, and image display and diagnostics.

The PT1000-VB is fully compliant with the GigE Vision™ and Gen-Cam standards. It operates using Pleora's proven iPORT protocol or the GigE Vision protocol and, in conjunction with the iPORT SDK, gives users a range of options for camera control.

For more information on Pleora's iPORT Connectivity Solution please visit www.pleora.com.



iPORT PT1000-VB IP Engine

iPORT Connectivity Solution

iPORT IP Engine	<ul style="list-style-type: none"> • Purpose-built hardware • Highly reliable, 1 Gb/s data transfer rate with low, end-to-end latency • OEM, in-camera board
eBUS™ Driver Suite	<ul style="list-style-type: none"> • eBUS Universal Driver – Ideal for most real-time vision applications, using any NIC • eBUS Optimal Driver – Ideal for applications with very heavy processing overhead, using any NIC • iPORT High-Performance IP Device Driver – For existing customers running very demanding real-time applications using the iPORT protocol • Driver Installation Tool – lets you choose the driver that best suits your needs
iPORT Vision Suite	<ul style="list-style-type: none"> • iPORT Coyote – image capture application for configuring your IP Engine and begin capturing images on your PC • iPORT SDK – rugged, well-tested, feature-rich C++ classes and methods that let you get your camera's images to your PC. Seamlessly. • iPORT Software Tools – small applets for speeding up your development cycle • iPORT Documentation – helps you get up to speed quickly
GigE Vision	<ul style="list-style-type: none"> • Firmware load for full compliance if desired

Data Acquisition Features

Accepts LVCMOS/LVTTL signals	<ul style="list-style-type: none"> • Compatible with internal camera signaling
Integrated acquisition engine	<ul style="list-style-type: none"> • Can acquire images from a wide variety of sources, with pixel depths up to 16 bits, color or B/W, and multi-tap at up to 66 MHz
Free running or externally triggered	<ul style="list-style-type: none"> • Flexible acquisition modes

Connectors

Power + I/O	<ul style="list-style-type: none"> • Board mount for Hirose HR10A-10R-12PB (connector not included) • OEM: Molex 4-pin 6373 series (22-23 -2041)
Network	<ul style="list-style-type: none"> • RJ-45
Video	<ul style="list-style-type: none"> • 80-pin Samtec AW-40-03-G-D-230-075-A • Mating part: 80 pin Samtec CLE-140-01-G-DV-A

Programmable Logic Controller Features

4 inputs (TTL/LVTTL) to power + I/O connector	<ul style="list-style-type: none"> • Provides a flexible, general-purpose interface • Allows synchronization of multiple devices or system elements
3 outputs (TTL/LVTTL) to power + I/O connector	<ul style="list-style-type: none"> • Flexible triggering capabilities, including Boolean combinations, Camera Link control signals, encoders, and time stamps • Built-in debouncers
4 outputs (LVCMOS/LVTTL)	
1 RS-232 serial link to power + I/O connector	<ul style="list-style-type: none"> • Serial control of external devices via PC application over the GigE link • Can be bridged to an internal UART serial link
2 UART serial links (LVCMOS/LVTTL)	<ul style="list-style-type: none"> • Serial control of camera and other devices via PC application over the GigE link
Delayer, rescaler, general-purpose counter	<ul style="list-style-type: none"> • Allows full synchronization of line scan cameras
Timestamp trigger, counter, and reset	<ul style="list-style-type: none"> • Allows system actions to be triggered based on timestamps • Allows resets to be broadcast to all iPORTs in system from host
Host interrupts	<ul style="list-style-type: none"> • Allows host to be interrupted based on events on any input or internal signal

Networking Features

Gigabit Ethernet-based	<ul style="list-style-type: none"> • Dominant commercial LAN standard; low-cost, easy-to-implement equipment • Compatible with 10/100/1000 Mb/s IP/Ethernet networks • Supports 802.3, Ethernet v2.0, IP, IGMP v.2, UDP and PING • Long reach: 100 m point-to-point, further with Ethernet switches or fiber
iPORT Multimedia Streaming Protocol	<ul style="list-style-type: none"> • Guarantees delivery of all packets • Comprehensive data transfer diagnostics
Multicast capability	<ul style="list-style-type: none"> • Enables advanced distributed processing and control architectures

Characteristics

Package	• 5.5 cm x 5.5 cm x 2.6 cm (L x W x D)
Operating temperature	• 0°C - 70°C
Power supply	• 4.5 V - 16 V
Power consumption	• Less than 2.25 W

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