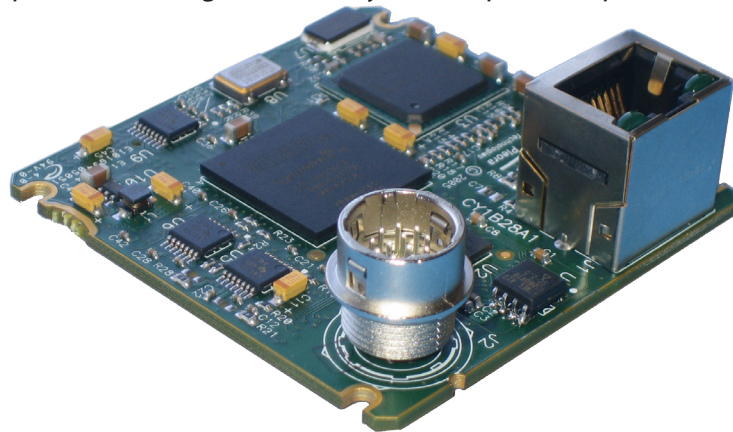


# iPORT™ PT1000-VB IP Engine

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



**GigE™**  
VISION

**GEN<i>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 two innovative and field-proven applications:

- **Pleora's high-performance drivers** – the eBUS™ and iPORT IP Device Drivers – which stream imaging data directly to PC memory at the kernel level, using minimal CPU capacity; and
- **The iPORT Software Development Kit (SDK)**, a mature and feature-rich set of C++ building blocks that allow users to quickly and easily enable third-party or custom vision applications.

The PT1000-VB is fully compliant with the GigE Vision™ and GenCam 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](http://www.pleora.com).*



# iPORT PT1000-VB IP Engine

## iPORT Connectivity Solution

iPORT IP Engine	<ul style="list-style-type: none"> <li>• Purpose-built hardware</li> <li>• Highly reliable, 1 Gb/s data transfer rate with low, end-to-end latency</li> <li>• Optimized for in-camera use</li> </ul>
High-performance device drivers	<ul style="list-style-type: none"> <li>• <b>eBUS Universal Driver</b> – Ideal for most real-time vision applications, using any NIC</li> <li>• <b>eBUS Optimal Driver</b> – Ideal for applications with very heavy processing overhead, using any NIC</li> <li>• <b>iPORT High-Performance IP Device Driver</b> – For existing customers running very demanding real-time applications using the iPORT protocol</li> <li>• <b>iPORT Universal IP Filter Driver</b> – For existing customers running moderately demanding applications using the iPORT protocol on any vendor's NIC</li> </ul>
iPORT SDK	<ul style="list-style-type: none"> <li>• Field-proven, richly featured, and reliable C++ code base designed to support GigE communications</li> <li>• Used to easily build custom applications or interface to third-party applications software</li> <li>• Includes Coyote, a sample application for camera configuration, image acquisition, triggering and more</li> </ul>
GigE Vision	<ul style="list-style-type: none"> <li>• Firmware load for full compliance if desired</li> </ul>

## Characteristics

Package	• 5.5 cm x 5.5 cm x 1.8 cm (L x W x D)
Operating temperature	• OEM: 0°C - 70°C
Power supply	• 4.5 V - 16 V
Power consumption	• Less than 2.25 W

## Connectors

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

## Programmable Logic Controller Features

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

## Data Acquisition Features

Accepts LVCMOS/LVTTL signals	<ul style="list-style-type: none"> <li>• Compatible with internal camera signaling</li> </ul>
Integrated acquisition engine	<ul style="list-style-type: none"> <li>• 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</li> </ul>
Free running or externally triggered	<ul style="list-style-type: none"> <li>• Flexible acquisition modes</li> </ul>

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