

PCIe-PoE464at

4-port 5GBASE-T Ethernet 802.3at PoE+ frame grabber card



Key Features

- 4x IEEE 802.3 5GBASE-T Ethernet ports by four Realtek RTL-8126 controllers
- Compliant with IEEE 802.3at to deliver up to 25.5 W for each port
- Supports 5G/ 2.5G/ 1G/ 100M/10M link speed
- x4, Gen3 PCI Express interface
- Per-port PoE+ power on/ off control
- Supports jumbo frame up to 16 KB
- Supports IEEE 1588 PTP v1/v2 and IEEE 802.1AS time synchronization
- Fanless, 0°C to 55°C operation

Introduction

PCIe-PoE464at is a fanless, four-port 5GBASE-T frame-grabber card with 802.3at PoE+, designed for the growing adoption of 5G industrial cameras in machine vision. As 5GBASE-T cameras move into high-resolution inspection, AI vision, multi-camera capture, and high-speed production lines, PCIe-PoE464at provides the bandwidth, power delivery, and synchronization needed for reliable 5G vision deployment.

Compared with USB3 vision systems, 5GBASE-T delivers high-bandwidth image transmission while supporting cable lengths of up to 100 meters over standard Ethernet cabling. The longer reach gives system integrators more flexibility in camera placement, factory layout, and control cabinet design, reducing the deployment limits often caused by shorter USB3 cable runs.

PCIe-PoE464at integrates four Realtek RTL8126 controllers, providing 5 Gb/s per port, 16 KB jumbo frame support, and compatibility with 2.5 GbE and 1 GbE links for flexible camera migration. To optimize both weight and thermal performance, PCIe-PoE464at uses a heat spreader to enhance heat dissipation while helping prevent bracket bending during long-term operation. 802.3at PoE+ reduces external power adapters and wiring cost, while IEEE 1588 PTP keeps image capture, inspection timing, and motion axes accurately synchronized.

Designed for 5G multi-camera machine vision, PCIe-PoE464at is well suited for high-resolution AOI, electronics assembly inspection, AI-based defect detection, multi-angle object inspection, high-speed logistics imaging, and large-field-of-view inspection. Its synchronized 5GBASE-T channels deliver stable, no-frame-loss image acquisition for applications requiring higher resolution, longer cable reach, reliable deployment, and precise timing control.

Specifications

Bus Interface	Gen3 PCI Express x4
# of 5 GbE Port	4x 5GBASE-T Ethernet ports
Network Protocol Support	IEEE 802.3 Ethernet interface for 5G/2.5GBASE-T, 1000BASE-T, 100BASE-TX and 10BASE-Te
PoE Capability	In compliant with IEEE 802.3at-2009 (PoE+), each port delivers up to 25.5 W per port
Ethernet Connector	4x RJ-45 connectors
Cable Requirement	CAT-5e or CAT-6 cable, 100 meters maximum
Power Requirement	Maximum 5.5 A@12V (66W) from PCIe gold finger connector
EMS	CE Class A, according to EN 55032/55035 FCC Class A, according to FCC Part 15, Subpart B
Operating Temperature	0°C to 55°C with airflow
Dimension	167.7 mm (W) x 111.2 mm (H)

Ordering Information

Model No.	Product Description
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