

QEPT® ON-BOARD TRANSCEIVER

100Gbps High-Speed 4-TRX Optical Module

PDS - 531



Amphenol Military High Speed's 100Gbps QEPT® High -Speed 4-TRX Optical Module - Quad Embedded Pluggable Transceiver is designed for extended temperatures, rugged applications, and highly challenging implementations where both reliability and performance are critical. Aggregates 100Gbps over its 4 channels (25Gbps/channel), hot-pluggable and quick to install, a versatile product with an easy path to 200Gbps PAM4.

KEY FEATURES:

- Removable optical fiber connection to set your mind free to design the way you want. Replace the cable only, keep the transceiver.
- Less than 2 W of power consumption to enable the whole power of the QEPT at 100Gbps, including CDR, transceiver optimization and monitoring connection discovery, channel diagnostics, and signal status monitoring.
- Upgrade to 200 Gbps PAM4 without board design change by using the same footprint connector. A easy swap to the next generation.

- Keep your system cool with many options of heat sink that dissipates the hot air upwards, or plenty choices of cold plates to transfer the unwanted heat, also water cooled compatible versions available.
- Smallest footprint board area usage in the market. Only takes up 180 mm² of board space, enabling board routing and component placement underneath.
- Hot Pluggable install cable and transceiver in less than 1 minute - reaches 100Gbps up to 70m, over its 4 channels.

APPLICATIONS

- Network Systems Commercial Cabin
- Ground Communication • In Flight Entertainment
- Systems

- Geostationary Orbit Electronic Warfare **Vehicles**
- Al Supercomputers
- Datacom/Telecom
 - Networking
- Industrial Control
 Cockpit Management
 Industrial Instrumentation
 Space Launch and Control
- Ground Stations Ground Vehicle
- Radar
- Satellites
 - Vehicles
- Maritime
- Avionics
- Missiles

MIL-AERO GRADE

MIL-STD-883 SHOCK & VIBE

BUILD A PART NUMBER:

QEPT On-Board Transceiver



Part Number	Description
CF-170021-113	QEPT-25G NRZ - 4TRX, -40°C to +85°C Mil/Aero Temperature

FEATURES:

- 4-channel: 25Gbps/channel
- 29x18mm² effective PCB 180 mm²
- Mil-Aero Operating Temperature: -40°C to 85°C
- Optically pluggable via standard MT ferrule
- Mezzanine-type connection
- · Screw-locking feature for board mounting
- Two-wire control and diagnostic interface
- Data rate transparent from 1.25 to 28 Gbps
- Flat-top design
- Integrated Clock & Data recovery with bypass mode
- Programmable equalization
- Programmable output amplitude and emphasis
- All chipsets qualifed to NASA/SpaceX requirements
- Total Ionizing Dose = 100krad (unbiased)
- Memory structure organized by SCFF-8636

SUPPORT STANDARDS:

- 100GBASE-SR4
- EDR InfiniBand
- 8G/16G/32G FiberChannel
- 40GBASE-SR4
- SFF-8636 Management Interface
- And Much More!

ELECTRICAL PERFORMANCE:

- Power supply voltages: 3.3V and 1.8V
- Bit Error Rate: Below 10⁻¹² @ 25GbE
- Lanes per device: 4 Transmit / 4 Receive
- Power Consumption: 2.0W (typ.)
- Transmitter Type: 850nm VCSEL
- Receiver Type: PIN Diode

EVALUATION KIT:

Try out the power of the QEPT through our evaluation kits. Ships together with Application Notes and a Graphical User Interface (GUI) to to simulate various scenarios in a very simply and effective way.

BENEFITS:

- Half the size of a QSFP28 transceiver
- Enables easy and efficient PCB routing
- Facilitates temperature-challenging system designs
- Replaceable patch cord
- Cost-effective solution
- Easy-to-install
- Interchangeable solution
- Mechanical shock and vibration resistant per MIL-STD-883
- · Allows for transceiver optimization and monitoring
- Supports standard and non-standard protocols
- Enables use of heat-sink for enhanced thermal performance
- Water-cooled compatible heatsink option
- Jitter mitigation
- Low power consumption
- Capable of compensating for more than 14dB trace loss at14GHz

INTERFACE:

- Electrical mezzanine-type connector
- Optical interface mates with standard MT ferrule

ENVIRONMENTAL:

- RoHS 6/6 compliance
- Operating case temperature: -40° to 85°C
- Conformal coating option

