Product Overview

Juniper Networks 4-port 100GbE PICs enable service providers to deploy high-density 100G services in a wide variety of short-reach, long-reach, and DWDM scenarios. Using modular 100-gigabit pluggable transceiver (CFP2) optics, the 4-port 100GbE PICs are designed for second-generation PTX Series Packet Transport Routers line cards (FPC2) and provide line-rate performance in Ethernet and optical transport network (OTN) applications.

Product Description

Juniper Networks® PTX Series Packet Transport Routers are architected for industry-leading system density in a transport-focused design that delivers the ability to scale, rapidly qualify and deploy, and reliably support the core—all at almost half the power of other core routers. The second generation of PTX Series hardware uses an optimized packaging of the successful Juniper Networks Junos® Express chip for robust, line-rate, and low-latency packet performance at up to 960 Gbps per slot. The 4-port 100GbE PIC family extends the existing PTX Series PIC portfolio by offering cost-optimized flexibility of dense 100GbE solutions to service providers. The mix and match of 4-port 100GbE PICs allows for up to 64 short-reach, long-reach, and tunable 100GbE interfaces per chassis for ultra-high speed interconnect applications. A PTX Series router fully equipped with second-generation line cards can demonstrate efficiency as high as 1.2 W/Gbps.

Architecture and Key Components

The 4-port 100GbE PICs for PTX Series line cards leverage the proven Junos Express technology in octal-Packet Forwarding Engine (PFE) configuration (FPC2). This approach combines proven and qualified hardware with advanced packaging and the latest in modular optical technology. The 4-port 100GbE CFP2 PIC supports Ethernet over short-reach, long-reach, and extended long-reach distances in 100GbE SR10, LR4, and ER4 formats. The 4-port 100GbE Ethernet/OTN CFP2 PIC is designed for the highest flexibility in local, and metro applications with Ethernet and OTN framing.

Features and Benefits

4-Port 100GbE CFP2 PIC

The 4-port 100GbE CFP2 PIC provides the benefits of a pluggable optical module in popular short-reach and long-reach applications, where OTN framing is not required. This includes the following applications:

- Intra-POP connectivity
- 100GbE fanout to 10GbE-optimized edge routers
- Router to DWDM shelf connections

4-Port 100GbE CFP2 Ethernet/OTN PIC

The 4-port 100GbE CFP2 Ethernet/OTN PIC is the most flexible 100GbE quad-port option, with connectivity to a broad range of long-haul equipment. The 4-port 100GbE CFP2 Ethernet/OTN PIC supports OTN performance monitoring, and full control over OTN features via the Juniper Networks Junos operating system.

1Dependent on pluggable transceiver capabilities
Table 1: IEEE Standard Optics Support

<table>
<thead>
<tr>
<th>PIC</th>
<th>SR10</th>
<th>LR4</th>
<th>ER4</th>
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<tr>
<td>4-port 100Gbe CFP2 PIC</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<tr>
<td>4-port 100Gbe CFP2 Ethernet/OTN PIC</td>
<td>X</td>
<td>X</td>
<td>X</td>
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</tbody>
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Specifications

LEDs

Per-port link status and activity LED state map:
- Off: Port is not enabled.
- Green: Port is online with no alarms or failures and port is not sending or receiving any packets.
- Blinking Green: Port is online with no alarms or failures and port is sending or receiving packets.
- Red: Port is detecting failure with alarms.

Physical Dimensions

- 7.75 x 11 in (196.8 x 279.4 mm)

Weight

- Not to exceed 20 lbs (9.07 kg)

Power

- 180 watts (maximum)

Network Management

- SNMP
- Juniper Networks Junos Space CLI

Standards Compliance and Interoperability

Optical Standards

- ITU-T G.709, G.798
- Telcordia GR-63 Issue 4: 2012
- FDA CDRH 21 CFR-1040 Environment
- Operating Temperature: 32° to 104° F, 0° to 40° C
- Storage Temperature: -40° to 158° F, -40° to 70° C
- Relative Humidity: (Operating) 5 to 90% non-condensing
- UL 60950-1 (2nd Ed.) Information Technology Equipment – Safety

Electromagnetic Compatibility

EMI

- BSMI CNS 13438 and NCC C6357 Taiwan Radiated Emissions
- AS/NZS CISPR22:2009

Customer-Specific Requirements

- SR-3580 (2007) NEBS Criteria Levels (Level 3)
- ETSI EN 300 019: Environmental Conditions & Environmental Tests for Telecommunications Equipment
- ETSI EN 300 019-2-1 (2000) – Storage
- ETSI EN 300 019-2-2 (1999) – Transportation
- ETS 300753 (1997) – Acoustic noise emitted by telecommunications equipment
- 1 TR 9 (2005) Deutsche Telekom EMC Specification
- British Telecom EMC Immunity Requirements (2004)
- ITU-T K.21 (2003) Resistibility of telecommunication equipment installed in customer premises to over voltages and over currents
Mandatory Power Supply Markings

- Power Supply integrated in system (with metal enclosure or open frame)
- China CCC
- Argentina IRAM/S-mark

Juniper Networks Services and Support

Juniper Networks is the leader in performance-enabling services that are designed to accelerate, extend, and optimize your high-performance network. Our services allow you to maximize operational efficiency while reducing costs and minimizing risk, achieving a faster time to value for your network. Juniper Networks ensures operational excellence by optimizing the network to maintain required levels of performance, reliability, and availability. For more details, please visit [www.juniper.net/us/en/products-services](http://www.juniper.net/us/en/products-services).

Ordering Information

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Description</th>
<th>Compatibility</th>
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<tbody>
<tr>
<td>P2-100GE-CFP2</td>
<td>PTX 4x100GbE, CFP2, PIC for 2G FPC</td>
<td>PTX5000 FPC2</td>
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<tr>
<td>P2-100GE-OTN</td>
<td>PTX 4x100GbE OTN PIC for 2G FPC</td>
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<tr>
<td>CFP2-100GBASE-LR4</td>
<td>100GBASE-LR4 Ethernet only CFP2 pluggable module</td>
<td>P2-100GE-CFP2</td>
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<tr>
<td>CFP2-100GBASE-SR10</td>
<td>100GBASE-SR10 Ethernet only CFP2 pluggable module</td>
<td>P2-100GE-CFP2</td>
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<tr>
<td>CFP2-100G-LR4-D</td>
<td>100GBASE-LR4 CFP2 dual-rate (Ethernet and OTN rate) pluggable module</td>
<td>P2-100GE-OTN</td>
</tr>
<tr>
<td>CFP2-100G-SR10-D</td>
<td>100GBASE-SR10 CFP2 dual-rate (Ethernet and OTN rate) pluggable module</td>
<td>P2-100GE-OTN</td>
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About Juniper Networks

Juniper Networks is in the business of network innovation. From devices to data centers, from consumers to cloud providers, Juniper Networks delivers the software, silicon and systems that transform the experience and economics of networking. The company serves customers and partners worldwide. Additional information can be found at [www.juniper.net](http://www.juniper.net).

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