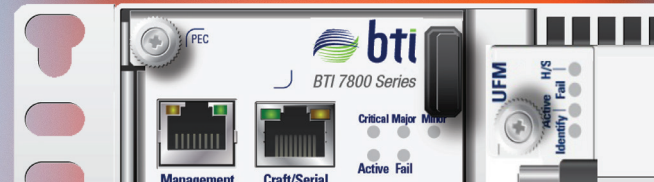# BTI7801 Packet Optical Transport System

## Product Overview

Legacy wavelength-division multiplexing (WDM) systems can't meet the capacity and price/performance demands of today's metro networks. Today's content providers, colocation providers, and service providers require a new generation of extremely compact and simple-to-manage 100/200 Gbps optical platforms to interconnect data centers and support contemporary applications.

The BTI7801 Packet Optical Transport System provides large-scale 10 Gbps, 100 Gbps, and 200 Gbps wavelength capacities with industry-leading density and performance.

## Product Description

The Juniper Networks® BTI7801 Packet Optical Transport System is specifically designed to meet the unique power, space, and manageability requirements of small, unattended sites. Optimized for space-constrained environments, the compact platform supports up to twelve 10 Gbps interfaces, four 100 Gbps interfaces, and two 200 Gbps interfaces in a 1 U footprint. The BTI7801 is ideal for content provider, colocation provider, or hosting provider deployments where space and power are at a premium.

An integral member of the BTI7800 line of packet optical transport systems, the BTI7801 leverages common service modules, software and management interfaces for unified sparing, logistics, and operations. The platform supports redundant AC or DC power options and field-replaceable management modules.

## Architecture and Key Components

The BTI7801 provides a seamless upgrade path from 10 Gbps, 100 Gbps, and 200 Gbps, as well as an easy migration path to future higher bandwidth interfaces. The platform supports a wide range of interfaces, including 10 Gbps, 100 Gbps, 200 Gbps, OTU2, OTU4, and OC-192/STM-64.

The SDN-enabled BTI7801 is supported by the comprehensive Juniper Networks proNX software product line to streamline network operations. The proNX Control software enables easy integration with back-office systems and applications through open RESTful APIs. The proNX Service Manager provides point-and-click service provisioning, fault and performance monitoring, and troubleshooting for the BTI7801. The proNX Dashboard delivers a concise view of the health and performance of all BTI7800 networking platforms, enabling more proactive and efficient network management. Ideal for unattended sites, the BTI7801 supports management via SNMP, NETCONF, and a CLI.

## Features and Benefits

- **Optimized for small sites:** The BTI7801's compact form factor minimizes rack space and power requirements.
- **Ideal for unattended locations:** The BTI7801 supports remote provisioning and management, greatly simplifying support and making it the ideal solution for locations lacking technical support.
- **Easy to deploy:** The BTI7801 is simple to install and configure.
- **Cost-effective operations:** The BTI7800 chassis-based solutions share a common set of service modules, software, and management interfaces.
- **Multipurpose platform:** The BTI7801 supports 10GbE and 100GbE options equally.
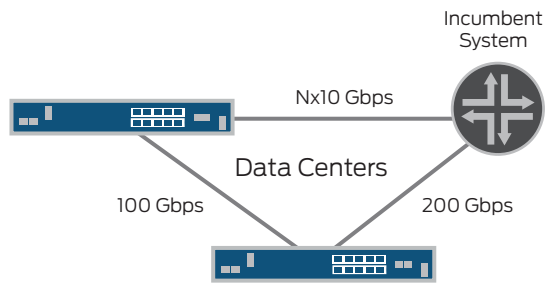
Figure 1: BTI7801 flexible configuration options

## BTI7801 Technical Specifications

### Physical Specifications

- Rack units: 1
- Module slots: 1
- Dimensions (HxWxD): 1.75 x 17.4 x 24.2 in (4.4 x 44.0 x 61.5 cm)
- Power consumption: –48 V DC, 15 A (max); AC power options available; power per 10 Gbps = 10 W (typical)
- Normal operating temperature range: 0º to 32ºC
- Environmental and safety certifications: Telcordia GR-3160 Generic; requirements for data center equipment and spaces, FCC Part 15 Class A; IEC/UL/CSA 60950; IEC 60825

### Protocol Support

- 10 Gbps small form-factor pluggable plus transceiver (SFP+)
- 10 Gbps LAN/WAN, OC-192, STM-64, OTU2
- 100 Gbps, OTU4
- 200 Gbps, OTU4

### Universal Forwarding Module (UFM) Type 3 Configuration

- 10x10 Gbps to OTU4
- 1x100 Gbps to OTU4

### Universal Forwarding Module (UFM) Type 6 Configuration

- 10 quad small form-factor pluggable transceiver (QSFP) ports

### Pluggable Optics

- SFP+, 850 nm
- SFP+, 1310 nm
- SFP+, dense wavelength-division multiplexing (DWDM)
- C form-factor pluggable transceiver (CFP), 100G-BASE-SR10
- CFP, 100 Gbps Coherent
- CFP, 100G-BASE-LR4
- QSFP+, 4x10G, LR

### Management

- CLI, SNMP, and NETCONF/YANG

### Line Side Protection

- Optical protection switch

## 400G Coherent MSA XCVR (2x200G)

### Transmitter Specifications

| Parameter | Min. | Max. | Unit |
|---|---|---|---|
| Frequency range | 191.35 | 196.1 | THz |
| Laser frequency stability | –1.8 | 1.8 | GHz |
| Output power range | 1.5 | — | dBm |
| Transmitter optical signal-to-noise ratio (OSNR) (in-band) | 36 | — | dB/0.1 nm |
| Optical return loss tolerance | 27 | — | dB |

### Receive Specifications

| Parameter | Min. | Max. | Unit |
|---|---|---|---|
| Frequency range | 191.35 | 196.1 | THz |
| Input power range | –18 | 0 | dBm |
| OSNR tolerance | — | 19.5 | dB/0.1 nm |
| Polarization mode dispersion (PMD) tolerance | 15 | — | ps |
| Polarization dependent loss (PDL) tolerance | 3 | — | dB |
| Dispersion tolerance | –30,000 | 30,000 | ps/nm |
| Optical return loss from receiver | 27 | — | dB |

## Coherent Optics—CFP

### Transmitter Specifications

| Parameter | Min. | Max. | Unit |
|---|---|---|---|
| Frequency range | 191.35 | 196.1 | THz |
| Laser frequency stability | –1.8 | 1.8 | GHz |
| Output power range | –15 | 1 | dBm |
| Transmitter optical signal-to-noise ratio (OSNR) (in-band) | 27 | — | dB/0.1 nm |
| Optical return loss tolerance | 27 | — | dB |

### Receive Specifications

| Parameter | Min. | Max. | Unit |
|---|---|---|---|
| Frequency range | 191.35 | 196.1 | THz |
| Input power range | –18* | 0 | dBm |
| OSNR tolerance | 17.1 | — | dB |
| Polarization mode dispersion (PMD) tolerance | — | 15 | ps |
| Polarization dependent loss (PDL) tolerance | — | 3 | dB |
| Dispersion tolerance | –22,000 | 22,000 | ps/nm |
| Optical return loss from receiver | 27 | — | dB |

* –21 dBm in unamplified systems

## Ordering Information

For ordering information, please consult the Juniper Networks price list or contact your local Juniper sales representative.

## About Juniper Networks

Juniper Networks challenges the status quo with products, solutions and services that transform the economics of networking. Our team co-innovates with customers and partners to deliver automated, scalable and secure networks with agility, performance and value. Additional information can be found at Juniper Networks or connect with Juniper on Twitter and Facebook.

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