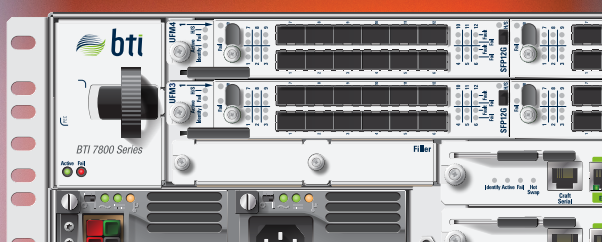
BTI7802 Packet Optical Transport System



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 BTI7802 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® BTI7802 Packet Optical Transport System is specifically designed to meet the unique power, space, and manageability requirements of access networks and small sites with limited space. Ideal for end-customer deployments and edge aggregation applications, this compact platform supports up to eighty 10 Gbps, eight 100 Gbps, or four 200 Gbps interfaces in a cost-effective 3 U footprint. The BTI7802 leverages a modular, flexible, pay-as-you-grow architecture.

Architecture and Key Components

At the heart of the BTI7802 are flexible Universal Forwarding Modules (UFMs), each capable of switching up to 400 Gbps. UFMs can be equipped with 10 Gbps, 100 Gbps, or 200 Gbps interfaces, providing the flexibility to support a wide variety of muxponder and transponder connectivity. Optimized for metro and regional networks, the BTI7802 supports a wide range of interfaces, including 10 Gbps, 100 Gbps, 200 Gbps, OTU2, OTU4, and OC-192/STM-64.

The BTI7802 provides a seamless upgrade path from 10 Gbps to 200 Gbps, as well as an easy migration to future higher bandwidth interfaces. Integrated reconfigurable optical add-drop multiplexer (ROADM)-on-a-blade modules, optional amplifiers, and protection switches satisfy diverse capacity, span and reach requirements. The BTI7802 cost-effectively optimizes equipment expenses to enable increases in the capacity of existing networks and support new service deployments.

The SDN-enabled BTI7802 is supported by the comprehensive Juniper Networks proNX software product line that streamlines network operations, as well as open APIs that simplify integration with external operations and business support systems (OSS/BSS). The proNX software enables easy integration with back-office systems and applications through open RESTful APIs. It provides point-and-click service provisioning, fault and performance monitoring, and troubleshooting for the BTI7802. It also delivers a concise view of the health and performance of all BTI7800 networking platforms, enabling more proactive and efficient network management.

A carrier-grade solution, the BTI7802 supports redundant processors, power supplies, and service modules. The BTI7802 features a multi-slot, multichassis architecture for ultimate flexibility and scalability. Ideal for small site and end-customer deployments, the platform also supports AC and DC power options and in-band monitoring.

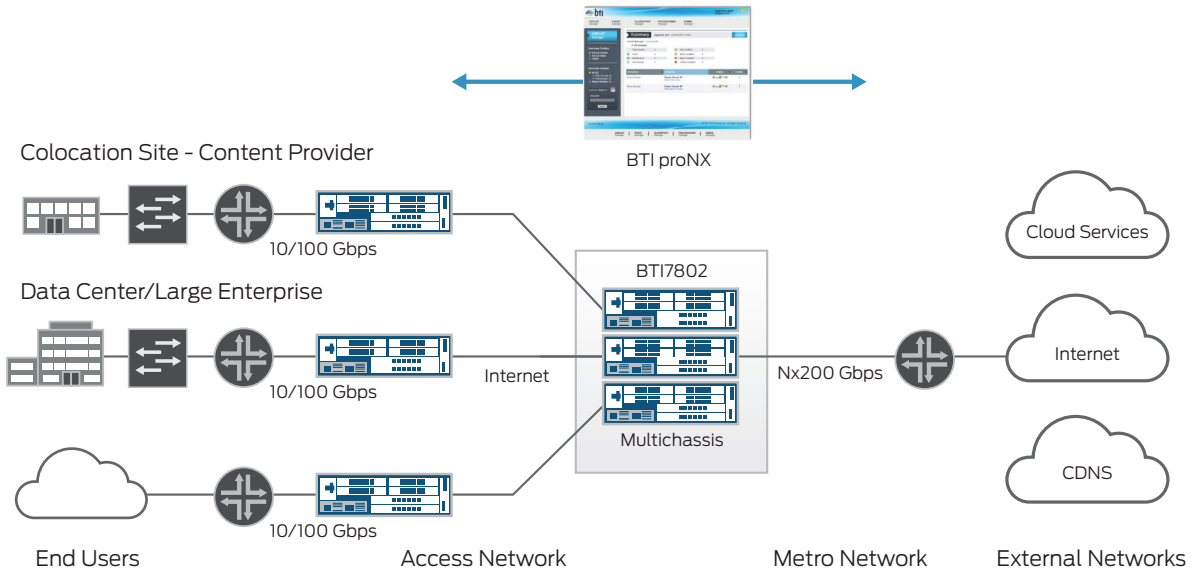


Figure 1: BTI7802 flexible, scalable deployment options

Features and Benefits

- **High density**: The BTI7802 supports up to eighty 10 Gbps, eight 100 Gbps, or four 200 Gbps ports in a compact 3 U footprint.
- **Flexible and scalable**: The BTI7802 features a multi-slot, multichassis design.
- **Carrier grade**: Fully redundant processors, power supplies, and service modules deliver a carrier-grade solution.
- **Simplified operations**: The BTI7802 includes an easy-to-use management system and open APIs for integrating with back-office systems.
- **Investment protection**: The BTI7802 is fully upgradeable, with higher bandwidth interfaces and integrated ROADM.

BTI7802 Technical Specifications

Physical Specifications

- Rack units: 3
- Module slots: 2
- Dimensions (HxWxD): 5.2 x 17.5 x 12.0 in (13.3 x 44.4 x 30.5 cm)
- Power consumption: -48 V DC, 20 A (max); AC power options available; power per 10 Gbps = 9 W (typical)
- Normal operating temperature range: 0º to 40ºC
- Environmental and safety certifications: Telecordia NEBs Level 3, Earthquake; Zone 4, GR-63-CORE, GR-78-CORE; FCC Part 15 Class A, GR-1089-CORE; IEC/UL/CSA 60950, IEC 60825

Protocol Support

- 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 transceivers (QSFP) ports

	BTI7802
UFM3	✓
UFM6	✓
RDM2	✓
AMP1	✓
AMPL	✓
WPS4	✓

Optical Layer Supported Span Loss

- ROADM-on-a-blade/ILA module only: 23 db
- ROADM-on-a-blade/ILA module with pluggable pre-amp: 32 db

Pluggable Optics

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

Management

- CLI, SNMP, and NETCONF/YANG

Line Side Protection

- Optical protection switch
- Wavelength protection switch (WSP4)

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			
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/0.1nm
Optical return loss tolerance	27	—	dB
Receive Specifications			
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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