

TraverseEdge™ 2020 (Refurbished only)

Multiservice Edge Multiplexer

Highlights

- Protected OC-192 node in a single 2-RU-high shelf
- Lowest Cost, Space and Power Solution with Carrier-class features today
- Full equipment and facility-level protection
- Redundant management and system power
- Integrated BERT testing, loopback, and DTAU support
- Automatic end-to-end path creation
- Automatic equipment and facility provisioning
- Hot-swappable field-replaceable units
- Integrated subtending rings
- Complements Traverse® platform, and other TraverseEdge™ solutions



FLEXIBLE AND SCALABLE PRODUCTS

TraverseEdge™ 2020 (TE-2020) is a flexible, OC-192-capable Micro-MSPP (Multiservice Provisioning Platform) that uses a unique “building-block” approach to meet ever-increasing needs for cost-effective, high-volume bandwidth by evolving your network, not scrapping it.

BUILDING-BLOCK DESIGN

The TE-2020's building-block design allows you to select the capabilities you do want, without incurring costs or wasting space for the capabilities you don't want. The building-block design consists of:

- **TE-2020 Main Shelf** (2 RU high)
OC-3/12/48/192 SONET platform with integrated line-rate and variable-rate Gigabit Ethernet (GbE) including Layer 2 switching and VLANs
- **DS3/EC1 Tributary Shelf** (ETS1) (3 RU high)
For high-density DS3/EC-1 (STS-1) tributaries (optional)
- **ETS2 Shelf** (3 RU high)
For DS3/EC-1 and high-density DS1 and 10/100 Ethernet tributaries (optional)
- **OTS2 Shelf** (2 RU high)
For additional OC-48, OC-12, OC-3, and GbE interfaces (optional)

ADVANCED ETHERNET AND TDM CONVERGENCE

Integrated VLAN support and Layer 2 Ethernet switching allow flexible transport options for point-to-point, point-to-multi-point, and shared ring Ethernet services along with traditional DS1 and DS3 TDM circuits on the same protected fiber ring. This eliminates separate overlay networks, optimizes network resources, and reduces operations and management costs. Carrier-class Ethernet delivery is provided using ring-level protection for Ethernet transport and equipment-level protection on GbE interfaces.

EASE OF PROVISIONING

An intelligent GMPLS control plane provides capabilities such as automatic topology discovery and automatic end-to-end connection creation without requiring an external management system.

HYPER-FAST, NO-STRESS TURN-UP

Automated provisioning enables fast and accurate turn-up:

- Auto-discovery and auto-provisioning of PLMs (Physical Layer Modules) and tributary shelves
- Auto-signal-detect and auto-provisioning of PLM interface ports
- Auto-discovery of new ring nodes with pass-through cross-connect creation

One-Step End-to-End Connection Setup

Gone are the days of logging in and manually provisioning each cross-connect at every node in the network. the intelligent control plane:

- Single command automated end-to-end provisioning
- Does not require an external vendor-specific management system
- Facilitates multi-vendor interoperability for end-to-end flow-through provisioning

AS TECHNOLOGY EVOLVES, SO WILL YOUR NETWORK

Your network will never be anchored down with outdated equipment or a product with limited growth potential. Our unique building-block design allows the TE-2020 to continuously take advantage of the latest technology and component miniaturization. Individual building blocks can be enhanced without impacting or being constrained by other system components. Whatever direction the future takes, the TE-2020 will migrate with it.

TE-2020 Multiservice Edge Multiplexer Product Specifications

Network Architectures

	OC-3	OC-12	OC-48	OC-192
• 2F-BLSR			✓	✓
• UPSR	✓	✓	✓	✓
• Terminal	✓	✓	✓	✓
• Linear ADM	✓	✓	✓	✓
• Tributary	✓	✓	✓	✓

*Architectures can be supported simultaneously for multi-purpose usage

Cross Connect Matrix and Capabilities

- STS: Bi-directional ports, non-blocking, full-TSI for STS-1, STS-3c, STS-12c, STS-48c, and STS-192c payloads
- Virtual Concatenation (STS-1-Xv and STS-3c-Xv) for Ethernet
- VT1.5: Optional 2.5G (1344) or 5.0G (2688) bi-directional ports
- Any-port-to-any-port, DCS-style connectivity including:
 - Add/drop
 - Hairpinning
 - Pass-through
 - Drop-and-continue
- Optional GbE Layer 2 switching and VLAN capability

Interfaces and Connector Types

OC-192	SC, front mounted
OC-48 (1-port)	LC, front mounted
OC-48 (2- or 4-port)	MPO*, front mounted
OC-12	MPO*, front mounted
OC-3	MPO*, front mounted
GbE	MPO*, front mounted

*Multi-path Push-On, high-density, multi-fiber, push/pull, positive-latching optical connector

Ports per Physical Layer Module (PLM)

Module	OC-3	OC-12	OC-48	OC-192
GbE	4	2 or 4	1, 2, or 4	1

PLMs per TE-2020 Main Shelf

OC-192	2 per shelf	1+1, UPSR, BLSR, unprotected
OC-48	6 per shelf	1+1, UPSR, BLSR, unprotected
OC-12	4 per shelf	1+1, UPSR, unprotected
OC-3	4 per shelf	1+1, UPSR, unprotected
GbE	4 per shelf	unprotected

Protection option is provisionable per port

The same card type is used for both working and protect units

Maximum Ports per TE-2020 Shelf*

OC-192	1 protected	2 unprotected
OC-48	8 protected	16 unprotected
OC-12	8 protected	16 unprotected
OC-3	8 protected	16 unprotected
GbE	4 protected	8 unprotected

*Additional optical ports can be added with 2-RU-high OTS2 shelf

*You can add additional DS3/EC-1, DS1, and 10/100 Ethernet ports with the 3-RU-high DS3/EC1 Tributary Shelf (ETS1) and 3-RU-high ETS2 shelf (see datasheets for details)

Standards Compliances

- NEBS Level 3 Certified
- Telcordia GR-253-CORE, GR-1089-CORE and GR-63-CORE
- FCC Part 15
- UL 1950 (Third Edition) also covers CSA (C22.2 Nos. 950 - M 95)
- CDRH Laser Certification (21 CFR 1040.10)

Optical Characteristics

OC-192	1550 nm, LR, SMF 1550 nm, IR, SMF 1310 nm, SR, SMF DWDM, Software tunable (88 ?) ITU-grid at 50 GHz spacing, LR, SMF
OC-48	1550 nm, LR, SMF 1310 nm, Extended LR, SMF 1310 nm, LR, SMF 1310 nm, IR, SMF DWDM, SFP based (44 ?), ITU-grid at 100 GHz spacing, LR, SMF
OC-3 and OC-12	1310 nm, LR, SMF 1310 nm, IR, SMF 1310 nm, SR, MMF
GbE	1000Base-ZX, 1550 nm, SMF 1000Base-LX, 1310 nm, SMF 1000Base-SX, 850 nm, MMF

Ethernet Ring Restoration Options

- Ethernet Rapid Ring Protection (ERRP) [<50 ms switching]
- Ethernet Rapid Spanning Tree Protocol (RSTP)

Operations Management

- TN-Xpert Element Management System – Unix-based, multi-user, server platform supporting PC (Windows® NT®, Windows 2000®, or Windows XP) and Unix GUI clients for larger networks
- TN-Xpert PC Element Management System – PC-based (Windows® NT®, Windows 2000®, or Windows XP), GUI platform for small networks
- TN-sight NE-embedded, craft GUI accessed with an external browser
- TL-1 network element management protocol
- SNMP alarm traps, sets, and gets (in addition to TL-1)
- Management Interfaces
 - 1 front Ethernet craft port
 - 2 rear Ethernet management ports
 - 1 rear serial craft port
- Network Timing Protocol (NTP) support

Synchronization

Any SONET optical interface	Line and loop timing
DS1 BITS input and output	Primary and Secondary SF and ESF
Internal Stratum 3 clock	
Synchronization Status Messaging	

Power Requirements

Voltage (A and B feeds)	-42.5 to -56.5 Vdc
Maximum Load Configuration	384 Watts

Operating Environment

Temperature	-5 to 55°C (23 to 131°F)
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Physical Characteristics

Size	3.5" H x 17.72" W x 11.25" D
Weight (max)	10.3 kg (22.7 lbs)
	19" or 23" EIA rack-mountable

Alarms

Housekeeping	Inputs: 16 Outputs: 2
Central Office Alarm Outputs	Critical, Major, Minor Audible and visual Alarm Cut-off (ACO)



To learn more about our Extended Life product family, contact us today:

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