

FSP 150EG-M Series

Scalable Ethernet services over fiber, copper and TDM

Growing business with connectivity services over a diverse infrastructure frequently ends up in fragmented networks with products from multiple suppliers using different management systems. What service providers need is a multi-technology solution applicable over any media, featuring high resilience and scalability.

Our FSP 150EG-M series is a scalable, high-resiliency Carrier Ethernet aggregation and switching platform that delivers performance-assured Carrier Ethernet services over copper (EoC), fiber (EoF) and TDM-infrastructure (EoTDM), with any tree, ring or star topology. Our FSP 150EG-M is the ideal solution to deploy business and cloud services, mobile backhaul, wholesale, and metro infrastructure applications, enabling service providers to deploy reliable Carrier Ethernet 2.0 at the metro edge. Available in three chassis size variants, our FSP 150EG-M series gives you a common solution for every application. Now, without stranding capital, you can respond to new revenue opportunities and realize the true value of your infrastructure.



Your benefits

✓ **One platform for any media**

Deliver differentiated, performance-assured Carrier Ethernet services over fiber, copper and TDM infrastructure.

✓ **Scalable and cost-effective metro edge**

Three chassis variants featuring copper, bonded-copper and fiber interfaces from a few Mbit/s up to 10Gbit/s.

✓ **Market-leading EoC port density**

96 EoC interfaces per card and 768 EoC interfaces per system.

✓ **Zero-downtime architecture**

System redundancy and comprehensive resilience mechanisms with point-to-point and ring topologies.

✓ **Comprehensive CE2.0 feature set**

Designed for service-assured and high-automated Ethernet service delivery over E-Line, E-Lan and E-Tree topologies.

✓ **Wide range of applications**

Central and distributed switching for optimized edge aggregation.

High-level specifications

General

- Hot-swappable cards and redundant design
- 2-, 3- and 8-slot variants
- Interfaces for copper, fiber and TDM
- Point-to-point, ring and tree topologies

Interfaces

- 1GbE and 10GbE fiber interfaces
- Bonded Ethernet over copper interfaces
- Ethernet over TDM and Ethernet over SONET

Resiliency

- Redundant hot-swappable switches
- Equipment protection
- Link aggregation groups and ring protection

Chassis variants

- Compact 2U variant for up to 144 EoC lines
- Large 8U chassis for up to 768 EoC lines
- Mid-sized 4U chassis for intermediate demand

Deployment scenarios

- Edge aggregation in mobile backhaul
- Wholesale and retail Ethernet access services
- Distributed switching for highest resource utilization

One Network Edge

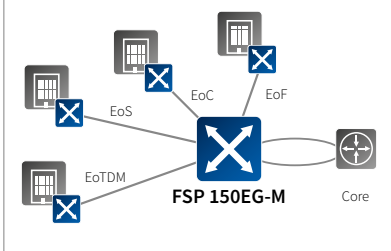
- Common FSP 150 network management suite
- Complementary compact FSP 150 CPE for EoC termination
- Ready for software-defined services

Applications in your network

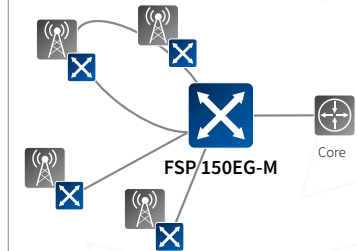
MEF-compliant access services over copper, fiber and TDM lines

- A common multi-technology solution provides carrier-grade access services over any copper, fiber or TDM infrastructure
- A selection of small, medium and large shelf variants perfectly aligns with bandwidth needs and interface requirements in any customer scenario
- Unrestricted flexibility and ease of integration through MEF-compliant Carrier Ethernet retail and wholesale access services
- Distributed switching and aggregation optimizes resource utilization especially with bandwidth-limited media such as twisted pair copper cables

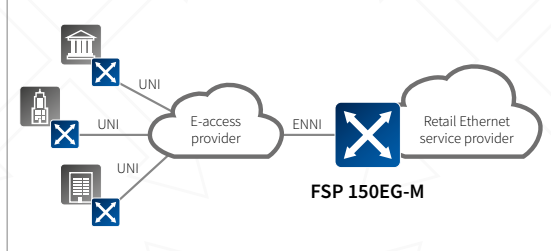
Multiservice aggregation



Pre-aggregation



Wholesale Ethernet/E-access



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Product specifications are subject to change without notice or obligation.

ADVATM
Optical Networking

Ethernet over fiber

- Line rate 100Mbit/s / 1Gbit/s / 10Gbit/s
- 50 ms G.8032v2 rings
- Link aggregation/LACP
- Pluggable SFP/SFP+ optics

Ethernet over SONET

- X.86
- STS3c concatenation
- SONET

Ethernet over copper

- 15 Mbit/s symmetric per pair
- Cross-card bonding
- 24-pair bonding groups
- Ethernet/IP over TDM
- MLPPP, EFM over NxDS1
- X.86, MLPPP over DS3 and nxDS3
- Bonded nxDS3
- IP to VLAN interworking

Ethernet over SONET

- OC-3/OC-12
- 50ms protection SONET 1+1

Interfaces (per line card)

- EoF: 24x1 Gbit/E SFP, 2x10GB SFP+
- EoC: 96 pair EFM or 72 pair EFM (EG-M2 chassis)
- EoTDM: 12 DS3 (336 DS1) channelized on physical DS3 or
- 4 channelized OC3 or 1 channelized OC12

Environmental

- Dimensions (W x H x D):
 - 2 slot: 17" x 3.5" x 11" (432mm x 89mm x 280mm)
 - 3 slot: 17" x 7H" x 11" (432mm x 279mm x 280mm)
 - 8 slot: 17" x 14" x 11" (432mm x 560mm x 280mm)
- Mounting: 2RU, 4RU or 8RU in standard 19" rack
- Operating temperature: -40° to +149°F (-40° to +65°C)
- Humidity: 0-95% non-condensing relative humidity
- Power: Redundant -48VDC
- Max power consumption:
 - FSP 150EG-M8: 1255W
 - FSP 150EG-M4: 610W
 - FSP 150EG-M2: 210W

Ethernet services

- E-Line
- E-LAN
- E-Access
- Classification:
 - Inner/outer VID
 - Inner/outer pbit
 - DSCP

Port operations

- Ingress: Push/pop/swap
- Egress: push/pop/swap
- DEI remark

Queuing and scheduling

- 3-level scheduling/shaping hierarchy (Interface, virtual interface, queue)
- 8 CoS Queues per scheduler
- Strict and WRR

Service assurance and management features

- 802.3ah, 802.1ag, Y.1731, 3072 MEPs
- In-service MAC-swap loopback
- RFC2544
- LLDP, DHCP Server
- Loopback detection
- 1588v2 slave, transparent & boundary clock
- GPS (EG-M2)
- BITS
- SNMPv2/v3
- RADIUS
- Syslog
- NETCONF
- CLI and WEB GUI

Compliance and certification

- Carrier Ethernet 2.0
- CE Mark
- FCC Part 15
- NEBS Level 3, Zone 4
- RoHS
- UL/EN/IEC 60950-1, CB Scheme