FSP 150-XG108 Series

1 and 10Gbit/s fanless Ethernet service demarcation

With the commoditization of 1Gbit/s and even 10Gbit/s services, communication service providers need a new class of Ethernet demarcation devices. This requires a way to connect new sites to the network and activate high-bitrate services with a high degree of automation. Low power consumption, extended temperature range and fan-less operation are key to operational efficiency.

Our FSP 150-XG108 is a low-power 1/10GbE demarcation solution for fast and seamless mass deployment of Carrier Ethernet high-bandwidth services. With zero-touch provisioning, services are activated without the need for onsite visits of technically trained staff. MEF 3.0 compliant CE services using established OAM procedures simplify operations, while the fan-less design in combination with low power consumption further minimizes operational costs. The FSP 150-XG108 Series is a perfect fit for space-restricted applications and product variants with redundant power supplies are ideal for high service availability. The FSP 150-XG108 Series is key to the commoditization of high-bandwidth Ethernet services to meet the fast-growing demand of private as well as public enterprises. Leveraging the latest technology, this demarcation solution is the benchmark for Ethernet service delivery in terms of cost-efficiency and operational ease.

Your benefits

- **1G/10G Ethernet service demarcation**
  Seamlessly moving from 1Gbit/s to 10Git/s services, supported by powerful 40Gbit/s architecture
- **MEF3.0 compliant CE services**
  Well established interfaces and protocols for ease of network integration and operation
- **Synchronization**
  Well prepared for emerging timing needs with BITS, software-upgradable PTP and SyncE
- **Compact design**
  No need to compromise on performance even for space-restricted applications
- **Automated activation**
  Zero-touch provisioning for fast and easy service activation without the need for onsite visits
- **Fan-less operation at high temperature**
  Temperature-hardened design eliminates the need for expensive air-conditioning

High-level specifications

Interfaces

- Client/network interfaces
  - 2x 100M/1GbE SFP
  - 2x 1GbE SFP or RJ45 module
  - 4x 1/10GbE SFP/SFP+
- 40G throughput

Ethernet services

- Up to 256 EVCs
- L2-L4 access control lists
- Hierachical-COS shaping
- Port and service shaping
- split-horizon (E-tree)
- Multicast/broadcast rate limiting
- Elephant-flow policing
- EoMPLS encapsulation

Resilience

- LAG port protection and aggregation on client ports
- LAG port protection and aggregation as well as G.8032 on network ports
- Redundant power supply with (H) and (SH) variant

Variants

- AC and DC variants
- Half-rack width solution
- Redundant power supply
- Timing-aware variant featuring BITS, prepared for PTP and SyncE

Management

- MEF-compliant SOAM and SAT
- Zero touch / low touch provisioning
- Fully integrated into Ensemble Controller
- Secure management access featuring RADIUS/TACACS+

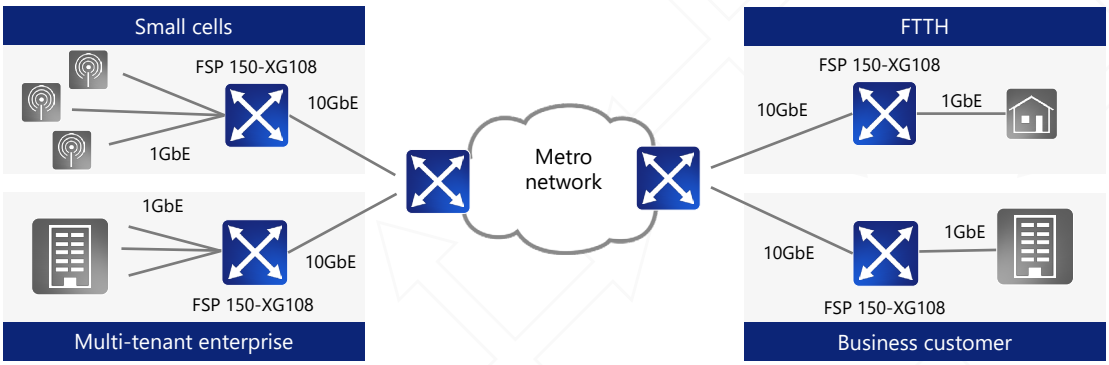
Environmental

- ½ RU and 1RU chassis, ETSI compliant
- Fanless operation
- Operating temp.: -40 to +65°C (hardened environment)

Applications in your network

Easy migration from 1G to 10G Carrier Ethernet services

- Compact MEF 3.0 CE demarcation featuring automated service activation
- Seamlessly migrating from 1G to 10G services using proven and established operational processes
- Offering higher-bandwidth services without the need for more space or more power



For more information please visit us at www.adva.com

Product specifications are subject to change without notice or obligation.

FSP 150-XG108 overview

	Access capacity (ports)	Network capacity (ports)	Synch.	Operating temperature	Power supply	Size	Power consumption (nominal)
XG108	2x10GE 4x1GE	2x10GE	–	-40°C to +65°C	Integrated DC or AC	1 RU (H) half width	45W
XG108 (H)	2x10GE 4x1GE	2x10GE	–	-40°C to +65°C	Modular DC or AC	1 RU (H) full width	45W
XG108 (SH)	2x10GE 4x1GE	2x10GE	SyncE, PTP	-40°C to +65°C	Modular DC or AC	1 RU (H) full width	45W

Access interface

XG108 & XG108 (H)

- 2x 10GbE SFP+ ports – dual-rate, 1G or 10G capable
- 2x 1GbE SFP ports
- 2x dual-media 1G ports
  - 1GbE SFP
  - 10/100/1000Base-T

XG108 (SH)

- 2x 10GbE SFP+ ports – dual-rate, 1G or 10G capable
- 4x 1GbE SFP ports

Network interface

- 2x 10GbE (SFP+) ports – dual-rate, 1G or 10G capable

Network interface redundancy

- IEEE 802.3ad link aggregation – active/standby mode with optional load balancing
- ITU-T G.8032 Ethernet ring protection switching

Synchronization

XG108 (SH)

- ITU-T G.8261 / G.8262 / G.8264 Synchronous Ethernet on all interfaces
- Sync status message support
- IEEE 1588v2 Precision Time Protocol
- ITU-T G.8265.1 and G.8275.1 PTP telecom profile
- BITS-in and BITS-out
- BITS sync status messaging
- 1 PPS in/out
- 10MHz

VLAN support

- 4096 VLANs (IEEE 802.1Q customer-tagged) and stacked VLANs (Q-in-Q service provider tagged)
- 2-tag management (push/pop/swap) for c-tag and s-tag
- IEEE 802.1ad provider bridging (c-tag, s-tag)
- Ethertype translation
- 512 Ethernet virtual circuits (EVC)
- 9612 byte per frame MTU transparency

Layer 2 traffic management

- Acceptable client frame policy: tagged or untagged
- Service classification based on 802.1p, 802.1Q and IP-TOS /DSCP
- MEF-compliant token-share policing (CIR / CBS / EIR / EBS) with three- color marking and eight classes of service
- Hierarchical queuing and shaping
- Rate shaping on transmit for both client and network ports
- Broadcast / multicast rate limiting
- MEF 10.3 hierarchical policing with token-share envelopes
- DiffServ supporting WFQ/SP mix

Ethernet OAM

- IEEE 802.3ah EFM-OAM link management
- IEEE 802.1ag connectivity fault management (CFM) with hardware assistance
- ITU-T Y.1731 performance monitoring
- ITU-T Y.1564 service activation testing compliant with MEF 48/49
- Terminal and facility loopbacks on port- and EVC-level for all interfaces
- Embedded RFC 2544 test generator and analyzer
- MEF-compliant Layer 2 control protocol disposition
- Link loss forwarding to signal local link and network path failures
- Dying gasp message for power failure alarming (EFM-OAM and SNMP trap option)
- Port mirroring

Low-touch provisioning

- DHCP / BOOTP auto-configuration
- Text-based configuration files
- TFTP / SCP for software image upgrade and configuration file copy

Performance monitoring

- RFC 2819 RMON Etherstats on a per-port and per-service basis
- 15-minute and 1-day performance data bins
- IEEE 802.3ah / ITU-T G.8021 PHY level monitoring
- ITU-T Y.1731 single- and dual-ended frame loss measurement
- Synthetic frame loss and delay measurement for multi-point service monitoring
- Multi-CoS monitoring on EVCs scaling up to 512 simultaneous SOAM flows
- TWAMP sender / reflector
- Threshold-setting and threshold-crossing alerts
- Physical parameter monitoring for SFP+ optics, including TCAs
- Temperature monitoring and thermal alarms
- MEF-35/36 SOAM PM collection

Management and security

Local management

- Serial connector (RJ45) using CLI
- Local LAN port (RJ45) using CLI, SNMP and Web GUI interfaces

Remote management

- Maintains in-band VLAN and MAC-based management tunnels

Management protocols

- IPv4 and IPv6 DCN protocol stacks, including dual-stack operation and 6-over-4 tunnels
- Telnet, SSH (v1 / v2), HTTP / HTTPS, SNMP (v1 / v2c / v3)
- NETCONF/YANG

Secure administration

- Configuration database backup and restore
- System software download via FTP, HTTPS, SFTP or SCP (dual flash banks)
- Remote authentication via RADIUS / TACACS
- SNMPv3 with authentication and encryption
- Access control list (ACL)

DCN IP routing

- DHCP, RIPv2 and static routes, ARP cache access control

System logging

- Alarm log, audit log and security log

Regulatory and standards compliance

- MEF 3.0 compliant, certification pending
- IEEE 802.1Q (VLAN), 802.1p (Priority), 802.1ag (CFM), 802.3ah (EFM), 802.1x
- ITU-T Y.1731, G.8010/Y.1306, G.8011.1+2, G.8012, G.8031 (APS)
- IETF RFC 2544 (frame tests), RFC 2863 (IF-MIB), RFC 2865 (RADIUS), RFC 2819 (RMON), RFC 5357 (TWAMP)
- MEF 48/49compliant ITU-T Y.1564 service activation testing
- ANSI C84.1-1989
- ETSI 300 132-2, BTNR2511, ETS 300-019, ETS 300-019-2-
- [1,2,3], ETS 300-753
- ETSI 300 132-2, ETS 300-019-2
- NEBS Level 3 compliant
- Telcordia GR-499, GR-63-CORE, SR-332
- Safety IEC / UL / EN 60950, 21CFR1040.10, EN 60825, EN 50371, EN 300-386, EN 50160,
- IEC 60320 / C16
- EMI EN 300-386, GR-1089-CORE, ETS 300-132,
- FCC Part 15, Class A3-10, Class B 1,2, Industry Canada

Environmental

XG108

- Dimensions (W x H x D): 220mm x 44mm x 215mm
- Operating temperature: -40 to +65°C
- Storage temperature: -40 to +70°C (GR-63-CORE)
- Humidity: 5 to 95%, B1 (non-condensing)
- Power supply: Integrated PSU, 110/240VAC or -48 to -72VDC
- Power consumption: typical 35W, max 45W

XG108 (H) & XG108 (SH)

- Dimensions (W x H x D): 443mm x 44mm x 215mm
- Operating temperature: -40 to +65°C (hardened environment)
- Storage temperature: -40 to +70°C (GR-63-CORE)
- Humidity: 5 to 95%, B1 (non-condensing)
- Power supply: Redundant modular hot-swappable PSU 110/240VAC or -48 to -72VDC
- Power consumption: Typical 35W, max 45W