Product Overview

Our FSP 150CC-XG210 provides a high-capacity 10 Gigabit Carrier Ethernet aggregation solution enabling cost-effective delivery of Carrier Ethernet 2.0 services and highly accurate synchronization over fiber-based access networks. The non-blocking design supports traffic aggregation for up to 16 GbE ports and/or two 10GbE ports provided on hot-swappable access interface modules. Network interface protection, redundant power supplies and the temperature-hardened design ensure highest service availability.

Flexible Deployment Option

Designed for flexibility and scalability, our FSP 150CC-XG210 can be deployed in point-to-point, hub-and-spoke and resilient access ring topologies. It can be used to provide an intelligent Ethernet service demarcation point and can act as a scalable central aggregation solution for other FSP 150CC devices. With its multitude of carrier-class protection and resiliency options, the FSP 150CC-XG210 supports the delivery of differentiated and highly reliable Carrier Ethernet 2.0 services across all access network topologies. Both LAN PHY and WAN PHY modes support deployment in Ethernet, SONET/SDH and OTN networks.

ADVA ConnectGuard™ Security

Our FSP 150CC-XG210 meets stringent privacy and confidentiality requirements by encrypting traffic already at the network edge. ADVA ConnectGuard™ Ethernet technology gives service providers plenty of opportunity for differentiation through service security in addition to end-to-end service level agreements and bandwidth on demand. It supports the increased security requirements imposed on access networks by NFV and meets the privacy requirements of open protocol, NFV-centric networks. For enterprises and government institutions, ADVA ConnectGuard™ Ethernet enables the transformation of traditional leased lines into secure and encrypted connectivity.

Syncjack™ Timing Excellence

Its comprehensive Syncjack™ technology for timing distribution, monitoring, testing and timing service assurance opens new revenue opportunities from the delivery of SLA-based synchronization services. Offering unique flexibility, our FSP 150CC-XG210 simultaneously supports Synchronous Ethernet and IEEE 1588v2 across packet backhaul networks. With its comprehensive Syncjack™ technology for timing distribution and delivery of SLA-based synchronization services.
Technical Information

Access Capacity
• Two slots for access interface modules with hot swap support
• 1 x 10GbE XFP module
• 1 x 10GbE SFP+ module
• 8 x 1GbE (SFP) module
• 8 x 1GbE (RJ45) module

Network Interface
• Two 10GbE (XFP) ports

Network Interface Redundancy
• IEEE 802.3ad Link Aggregation – active/standby mode with optional load balancing
• ITU-T G.8031 Network Path Protection Switching
• ITU-T G.8032 Ethernet Ring Protection Switching

Synchronization (Optional)
• ITU-T G.8261/G.8262/G.8264 Synchronous Ethernet on all interfaces
• Sync Status Message support
• IEEE 1588v2 Precision Time Protocol (G.8265.1 and G.8275.1 PTP Telecom Profiles, G.8273.2 Telecom Boundary Clock)
• BITS-in and BITS-out
• BITS Sync Status Messaging

Input/output selectable ports for Time of Day, 10MHz clock and Pulse-Per-Second signals (1PPS)

Internal Stratum-3E clock with holdover

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
• 1024 Ethernet Virtual Circuits (EVC)

Traffic Management
• Acceptable client frame policy: tagged or untagged
• Service classification based on 802.1p, 802.1Q and IP-TOS/DSCP
• MEF-compliant 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

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 with MEF-compliant SAT PDUs

Terminal and facility loopbacks on port- and EVC-level for all interfaces

Embedded RFC 2544 test generator and analyzer (ECPA)

MEF-compliant Layer 2 Control Protocol Disposition and extensive filter options for Layer 2 packet types

Link Loss Forwarding to signal local link and network path failures

Dying gasp message for power failure alarming

(EFM-OAM and SNMP trap option)

Environmental alarm inputs (dry contacts)

ConnectGuard™ Security

L2 MACsec encryption at line rate on a per-EVC basis
End-to-end encryption mode with one or two VLAN tags transmitted in the clear

Robust AES encryption algorithm

Key distribution based on IEEE 802.1X

Diffie-Hellmann key exchange process

Tamper resistant and evident enclosure

Full interoperability with all FSP 150 ConnectGuard™-enabled products

Low-Touch Provisioning

DHCP/BOOTP auto-configuration
IEEE 802.1x port authentication

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 4096 simultaneous flows

Threshold-setting and threshold-crossing alerts

Physical parameter monitoring for XFP/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

• Fully interoperable with FSP 150CM and FSP 150CC products

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)

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)

IP Routing

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

System Logging

Alarm log, audit log and security log

Regulatory and Standards Compliance

• MEF CE 2.0 certified

• IEEE 802.1Q (VLAN), 802.1p (Priority), 802.1aq (CFM), 802.3ah (EFM), 802.1x

• ITU-T Y.1731, G.8010/Y.1306, G.8011.1+2, G.8012, G.8031 (APS)

• MEF-6.1, 9, 10, 11, 14, 20, 21, 22.1, 23.1, 25, 26.1, 30, 33, 35

• IETF RFC 2544 (Frame Tests), RFC 2863 (IF-MIB), RFC 2865 (RADIUS), RFC 2819 (RMON)

• MEF-compliant 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

• NEBS Level 3 certified

• 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/C14

• EMI EN 300-386, GR-1089-CORE, ETS 300-132, FCC Part 15, Class A, Industry Canada

Environmental

• Dimensions: 1U compact chassis, 439mm x 43mm x 269mm/17.3” x 1.75” x 10.6” (W x H x D), ETSI-compliant

• Operating temperature: -40 to +65°C (hardened environment)

• Storage temperature: -40 to +70°C (GR-63-CORE)

• Humidity: 5 to 95%, B1 (non-condensing)

• Modular AC-PSU: 90 to 264VAC (47 to 63Hz) with over-voltage and over-current protection

• Modular DC-PSU: -36 to -72VDC or +18 to +30VDC with over-voltage and over-current protection

• Maximum power consumption: 100 Watts

FSP 150CC-XG210(C)

For more information please contact an ADVA Optical Networking consultant or visit us at www.advaoptical.com

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Product specifications are subject to change without notice or obligation.