FSP 150CC-T3204

Carrier Ethernet 2.0 services delivery over TDM infrastructure

In order to keep costs to a minimum, service providers are looking to deliver Carrier Ethernet services using current infrastructures wherever possible. Our FSP 150CC-T3204 is ideally suited to address this challenge by extending Carrier Ethernet services over one or two bonded T3/E3s, prolonging the life of legacy network infrastructure.

Our FSP 150CC-T3204 provides Carrier Ethernet 2.0 service extension over one or two bonded T3 or E3 facilities with up to 89Mbit/s or 68Mbit/s respectively. With four Ethernet service ports and advanced service-definition capabilities, the FSP 150CC-T3204 is capable of supporting multiple services over a shared network connection. The support for both VCAT and LCAS encapsulation ensures interoperability with a wide range of platforms. Our FSP 150CC-T3204 is ideal for applications such as mobile backhaul and enables the reuse of existing infrastructure that does not have Ethernet ports to deliver intelligent Carrier Ethernet 2.0 services. What's more, the sophisticated and MEF-certified UNI function is designed for highest performance and provides the service intelligence necessary to offer a differentiated Carrier Ethernet 2.0 service portfolio.

Your benefits

Designed for highest scalability
Up to 32 Ethernet virtual circuits (EVC) supporting E-Line, E-LAN, E-Tree and E-Access applications

Low-touch provisioning
With an extensive set of remote OAM capabilities even unskilled craft personnel can install and turn up services without onsite provisioning

In-service and out-of-service loopback testing
Service verification can be performed at turn-up and on demand without service interruption

VCAT/LCAS bonding
Supports X.86 LAPS and GFP encapsulation with VCAT/LCAS

End-to-end service assurance
Advanced demarcation technology for support of stringent SLAs and integration with a wide range of back-office support tools

Service intelligence
Sophisticated, MEF-certified UNI function for service intelligence necessary to offer a differentiated CE2.0 portfolio

High-level specifications

Interfaces

- Access I/F: 2x 10/100BaseT ports and 2x 10/100/1000BaseT or 100/1000BaseX (SFP) ports
- Network I/F: 2x T3/E3 (BNC) ports, VCAT/LCAS bonding technology

Ethernet OAM

- Compliant with the latest OAM standards such as 802.3ah, 802.1ag, Y.1731
- Terminal and facility loopbacks
- Embedded RFC 2544 test generator and analyser

VLAN support

- 4096 VLANs and stacked VLANs, 32 EVCs
- 2-tag mgmt. for c- and s-tag
- IEEE 802.1ad provider bridging
- Ethertype translation
- Jumbo frames up to 9612 bytes

Performance monitoring

- RFC 2819 RMON Etherstats
- GR-820-CORE/ITU-T G.826 PDH performance statistics
- ITU-T Y.1731 single-and dual-ended frame loss measurement

Traffic management

- Service classification based on IEEE 802.1p, 802.1Q and IP-TOS/DSCP
- VLAN tag priority mapping
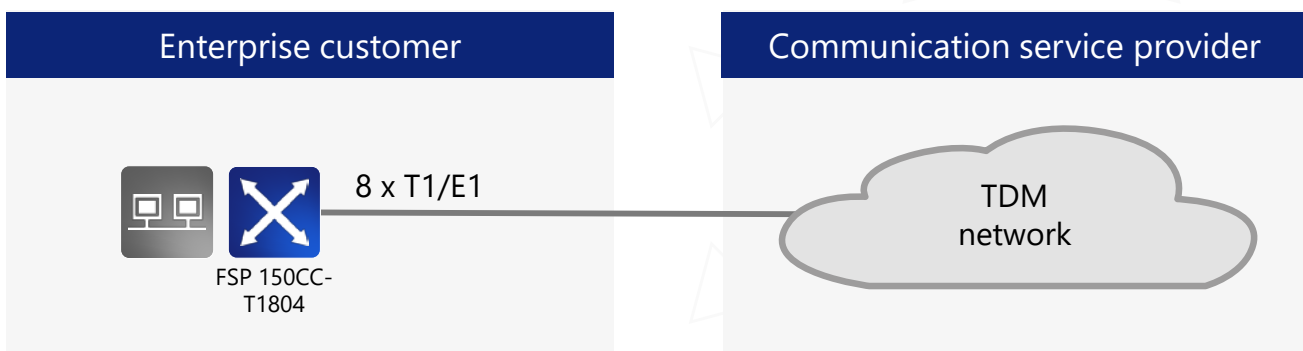- MEF-compliant policing (CIR/CBS/EIR/EBS)

Environmental

- 1RU compact chassis, ETSI compliant
- Integrated AC- or DC-PSU
- Operating temp.: -40 to +65°C (hardened environment)
- Max. power consumption: 20W

Applications in your network

Intelligent Carrier Ethernet 2.0 service demarcation over legacy TDM infrastructure

- Adds Ethernet capability to existing add/drop multiplexers and microwave radios to extend the life of existing network infrastructure, such as mobile backhaul infrastructure.
- The sophisticated and MEF-certified UNI function provides the service intelligence necessary to offer a differentiated Carrier Ethernet 2.0 service portfolio.
- Ethernet services can be remotely configured, monitored and managed. With the extensive set of remote OAM capabilities built into the FSP 150CC-T3204, unskilled craft personnel can install and turn up services without onsite provisioning.

Enterprise customer	Communication service provider
FSP 150CC-T1804 8 x T1/E1	TDM network

ADVA Optical Networking

Access capacity

- Two 10/100BaseT ports and two 10/100/1000BaseT or 100/1000BaseX (SFP) ports

Network interface

- Two T3/E3 (BNC) ports

Network interface bonding

- Virtual concatenation with link capacity adjustment scheme (VCAT/LCAS)

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
- 32 Ethernet virtual circuits (EVC)
- Jumbo frames up to 9612 bytes

Traffic management

- Acceptable client frame policy: tagged or untagged
- Service classification based on IEEE 802.1p, 802.1Q and IP-TOS/DSCP
- VLAN tag priority mapping (IEEE 802.1ad PCP encoding)
- MEF-compliant policing (CIR/CBS/EIR/EBS) with three-color marking and eight classes of service
- Port shaping on transmit for both client and network ports

Ethernet OAM

- IEEE 802.3ah EFM-OAM link management
- IEEE 802.1ag connectivity fault management (CFM)
- ITU-T Y.1731 performance monitoring
- Terminal and facility loopbacks on port- and EVC-level for all interfaces
- Cable diagnostics with benchmarks (electrical interfaces only)
- 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)

Performance monitoring

- RFC 2819 RMON Etherstats on a per-port and per-service basis
- GR-820-CORE/ITU-T G.826 PDH performance statistics
- 15-minute and 1-day performance data bins
- ITU-T Y.1731 single- and dual-ended Frame Loss Measurement
- Multi-CoS monitoring on EVCs scaling up to 128 simultaneous SOAM flows
- Threshold-setting and threshold-crossing alerts
- Physical parameter monitoring for SFP optics, including TCAs
- Temperature monitoring and thermal alarms

Low-touch provisioning

- Text-based configuration files
- TFTP for configuration file copy

Management and security

Local management

- Serial connector (RJ45) using CLI
- Local LAN port (RJ45) using CLI, SNMP and Web GUI interfaces
- 3G/LTE USB interface

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)

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 and static routes, ARP cache access control

System logging

- Alarm log, audit log and security log

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Regulatory and standards compliance

- MEF CE 2.0 certified
- 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
- MEF-6.1, -9, -10.2, -11, -14, -20, -21, -22.1, -23.1, -25, -26.1, -30, -33
- IETF RFC 2544 (Frame Tests), RFC 2863 (IF-MIB), RFC 2865 (RADIUS), RFC 2819 (RMON)
- MEF-compliant ITU-T Y.1564 Service Activation Testing
- ITU-T G.703/704, GR-499-CORE, ITU-T G.775, ANSI T1.107, ITU-T G.826, ANSI T1.231, GR-820-CORE, ITU-T G.832, ITU-T G.7042/7043, ITU-T G.7041/8040
- 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 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/C14
- EMI EN 300-386, GR-1089-CORE, ETS 300-132, FCC Part 15, Class A, Industry Canada

Environmental

- Dimensions: 1RU compact chassis, 220mm x 44mm x 240mm / 8.7" x 1.75" x 9.4" (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)
- Integrated PSU: 110/240 VAC or -48 to -72VDC with over-voltage and over-current protection
- Maximum power consumption: 20 Watts

Product specifications are subject to change without notice or obligation.

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