Telco Systems
A BATM Company

T-METRO 7124S
10G ETHERNET/MPLS DEMARCATION AND PRE-AGGREGATION PLATFORM

The T-Metro 7124S pre-aggregation and demarcation device is a member of Telco Systems' field-proven T-Metro family of Carrier Ethernet switches. The T-Metro 7124S supports both Carrier Ethernet and MPLS transport technologies with a diverse set of OAM (operations, administration and maintenance) tools and extensive QoS and resiliency capabilities. This rich combination of technologies allows service providers to deliver assured differentiated service offerings while maintaining competitive pricing.

The T-Metro 7124S supports L2VPN advanced data services such as virtual private wire services (VPWS), virtual private LAN services (VPLS) and hierarchical virtual private LAN services (HVPLS), as well as IEEE 802.1Q and TLS (Q-in-Q) services. As one of the first devices in the industry to be certified as CE 2.0 with all four services and scenarios, the T-Metro 7124S meets the current and future needs of providers' networks.

Advanced Synchronization and Timing

As part of the RAN evolution for LTE and LTE-Advance, and the transition from TDM-based backhaul to packet-based backhaul, the backhaul network has to support strict synchronization demands both on frequency and phase synchronization throughout the path the packets traverse. The T-Metro 7124S provides a comprehensive set of synchronization options optimized for the delivery of mobile backhaul and mobile backhaul wholesale services with support for Synchronous Ethernet (SyncE), IEEE 1588v2, external clock and phase source via BITS interfaces.

Flexible Control of Traffic and Services

As the demand for data bandwidth increases, providers can use the statistical multiplexing nature of packetized traffic to provide more services on the same infrastructure. At the same time, service providers want to differentiate their services and provide a proper QoE for different applications requirements.

A wide set of QoS and Hierarcial QoS (HQoS) features allow service providers to have higher granularity and hierarchal levels of QoS to control the behavior of traffic and services in the network and to provide this differentiation.

Advanced Hardware-based OAM

T-Metro 7124S incorporates hardware-based OAM to enable the highest level of service assurance. Engineered to the latest standards for Carrier Ethernet, the T-Metro 7124S, together with Telco Systems' EdgeGenie Service Management System and demarcation devices, creates a complete network edge solution that supports the most stringent SLAs, ensuring that providers can offer a high quality of service which will increase their revenue, while reducing their OPEX. The T-Metro 7124S supports link-level EFM industry standards, including IEEE 802.1ag Connectivity Fault Management (CFM), ITU-T Y.1731 for loss and delay measurement, Y.1731 SLM for E-LAN testing, RFC2544 for service testing and Y.1564 for service activation testing, making it one of the leading OAM supported devices on the market.

Carrier Grade Resiliency

T-Metro 7124S was designed to provide a carrier grade level of resiliency, both in physical design and by implementing a wide variety of resiliency protocols. With a high port count, the T-Metro 7124S allows for the use of LAG and LACP as a port resiliency option as well as support for link-level protection mechanisms, network-wide mechanisms and service-level mechanisms.
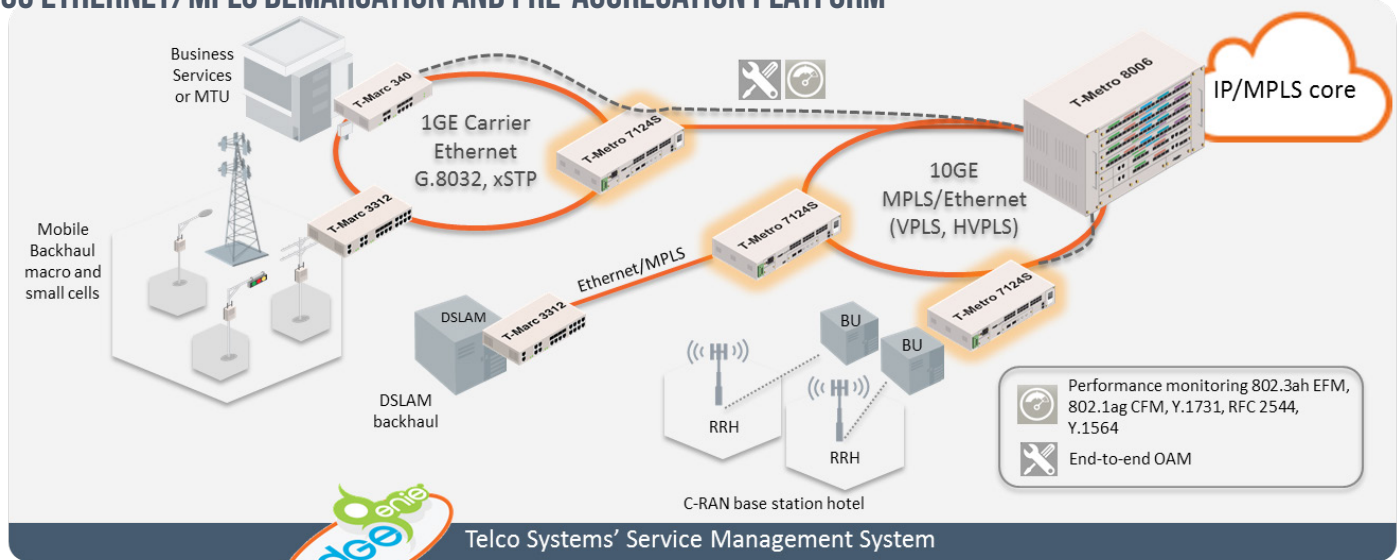
PRODUCT HIGHLIGHTS

- 10GE, wire speed non-blocking MPLS/Carrier Ethernet demarcation, pre-aggregation and aggregation device
- Carrier-grade and highly resilient, including dual-homing, FRR, G.8031, G.8032, xSTP
- MPLS capabilities to provide access to VPWS, VPLS and HVPLS
- MPLS provider edge (PE)
- Hierarchical Quality of Service (HQoS) and high service granularity support
- Extensive field-proven operations, administration and maintenance (OAM) support including embedded RFC2544 test head and Y.1564
- Extended operation temp
- ETSI 300 compliant, 1.5RU height, 10'' deep, 19" rack mountable
- MEF, IEEE, ITU-T and IETF standards compliance for multivendor interoperability
- EdgeGenie Service Management for full lifecycle support of Ethernet services
- NEBS Level 1 certified

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PRODUCT SPECIFICATIONS

Hardware Characteristics	24 x 100BaseFX/1000BaseX ports Optional: 2 x 10GE XFP expansion module Non-blocking 44Gbps full-duplex (FD) platform Dual AC or dual wide range -48V, -60V, +24V DC nominal power supplies
Services	All MEF services, IEEE 802.1Q bridging, IEEE, 802.1ad Q-in-Q (TLS), MPLS L2VPN, VPWS, VPLS, HVPLS, OSPF, IS-IS, Virtual OSPF, LDP, RSVP-TE
Resiliency	Sub-50ms ITU-T G.8031 EPS, ITU-T G.8032v2 RAPS and MSTP Fast Ring, Sub-50ms RSVP-TE FRR, HVPLS dual homing, secondary LSP, xSTP, resilient link, LAG (static/IEEE 802.3ad LACP) Hot swappable, redundant AC/DC power supply
Timing	SyncE, IEEE 1588v2 PTP, BITS and phase clock
Quality of Service	Per port/EVC/flow single/dual rate limiting, Hierarchical rate limit per EVC, SP, WRR and hybrid frames scheduling, CoS marking and mapping per EVC, IPv6 data path support
Multicast Management	IGMP snooping v1/v2/v3, IGMP proxy, Multicast VLAN registration (MVR)
OAM	Hardware-based OAM - IEEE 802.3ah EFM, IEEE 802.1ag CFM, OAM over VPLS (OAMoVPLS)
Testing & Monitoring	ITU-T Y.1564 and RFC2544 test head and service performance analyzer In-service testing capabilities*, ITU-T Y.1731 PM, SM and SLM Per-port/EVC/VLAN/COS, hardware-based flexible MAC-based loopbacks*
Management	Console, Telnet, SSHv2, Radius, TACACS+, SNMP v1/v2/v3, xFTP, NTP, DNS resolver, DHCP client and Zero-Touch provisioning*
Security	ACLs, RADIUS, SSHv2, SNMPv3, SFTP, port security, Broadcast storm prevention, secured access
General Specifications	Dimensions (W x H x D): 440mm (19" racks) x 67mm (2.625") x 253mm(10") Weight: 5.2 kg (11.5lb) Operating Temperature: TM-7124S-AC-x: -20°C to 65°C (-4°F to 149°F) TM-7124S-DC and TM-7124S-DC-W: -40°C to 65°C (-40°F to 149°F) Humidity: 5% to 95% non-condensing Input power: 100-240VAC, 50/60 Hz, -48VDC, -60VDC and +24VDC nominal
Regulatory Compliance	NEBS Level 1 certified Safety: NRTL certified: C-UL 60950, CSA 22.2, No.950, EN/IEC 60950, TUV/GS (EN60950),CB, EN, 60825-1/2 EMC: CE Mark: EN50081-1: EN55022 Class A, EN60555-2/3; North America: FCC 47 CFR, Part 15 Class A; ICES-003 Issue 4 Class A (Canada); Japan: VCCI Class A;, Australia/NZ: CISPR 22 Class A Immunity: EN50082-1, EN/IEC 61000-4-2/3/4/6/11 RoHS compliant

KEY APPLICATIONS

- Mobile backhaul and mobile backhaul wholesale as an aggregator or cell site demarcation device
- Small cell backhaul aggregator
- MEF CE 2.0 certified (E-Line, E-LAN, E-Tree, E-Access)
- 10GE NID (E-NNI application)
- Hub & Spoke Layer 2 aggregation or pre-aggregation device
- Multi-tenant, multi-service HVPLS spoke (using MPLS or Q-in-Q)
- Data center consolidation
- C-RAN base station hotel demarcation

ORDERING INFORMATION

Part Number	Description
TM-7124S-AC-x	Base system including fan tray, one (1) AC PSU, blank plates (PSU & module slot), AC power cord
TM-7124S-DC	Base system including fan tray, one (1) -48V nominal DC PSU, blank plates (PSU & module slot)
TM-7124S-DC-W	Base system including fan tray, one (1) wide range DC PSU -48VDC, -60VDC , +24VDC nominal PSU, with DC feed connector, blank plates (PSU & module slot)
LC-7124-2XFP-B	Plug-in line card with 2x10GE XFP ports, sync clock and phase clock
TM-7124S-ACPS-x	AC PSU
TM-7124S-DCPS-W	Wide range -48V, -60V, +24V nominal DC PSU with DC feed connector
TM-7124S-DCPS	-48V DC nominal PSU, with DC feed connector

*Future feature