

T-Metro® 8100

HIGH DENSITY 100GE SERVICE AGGREGATION PLATFORM AND CLOUD GATEWAY

Telco Systems' T-Metro 8100 is a next generation, high-density service aggregation platform that provides Carrier Ethernet 2.0, MPLS, IP (Layer 3), and SDN (OpenFlow and NETCONF). T-Metro 8100 offers massive service scalability, carrier class resiliency, and an industry-leading feature set that supports QoS, and operations, administration and management (OAM) capabilities. This best-in-class service switch allows carriers to offer cloud-based business Ethernet and mobile backhaul services to the edge. With 680G capacity in a compact 1RU chassis, T-Metro 8100 provides industry-leading throughput, port density, management and resiliency. Offering a wide variety of services and easy migration to a converged service environment, T-Metro 8100 is the platform of choice for wide-scale Carrier Ethernet adoption, implementation, and network transformation.

T-Metro 8100 is designed for service providers who need high reliability and flexibility to aggregate multiple services over 1GE, 10GE and 100GE port rates in a metro Ethernet environment. This carrier-class device offers a full MPLS provider edge (PE) solution with integrated, advanced MPLS/HVPLS capabilities in a compact form factor, and per port network flexibility with 100GE, 10GE or 1GE in each port.

100G MPLS Cloud Services Solution

Cloud-based services pose new challenges for service providers. T-Metro 8100 addresses these challenges using MPLS to provide low latency L2VPN, high availability, end-to-end service assurance using advanced OAM tools and increased scalability.

T-Metro 8100 can drive high capacity 100GE rings into the aggregation layer to support the high bandwidth required for cloud applications and mobile backhaul networks. With the addition of T-Metro 8100 to the T-Metro 8000 Aggregation and Cloud

Gateway Family, Telco Systems offers service providers cloud-to-edge and cloud-to-cloud end-to-end services, assuring an exceptional level of experience for the end-user while optimizing carrier resources.

L3 Support

T-Metro 8100 provides comprehensive solutions and services that support IP environment requirements, including Virtual Routing and Forwarding (VRF), IP static routing, and dynamic routing protocols like OSPF and BGP. T-Metro 8100 also supports Dynamic Host Configuration Protocol (DHCP) for dynamically distributing network configuration parameters, and Virtual Router Redundancy Protocol (VRRP) support.

The T-Metro 8100 leverages Telco Systems' field proven, carrier grade BiNOX operating system – common among all its platforms – to provide a robust and advanced multi-layer software platform to support operations, administration, and maintenance requirements. Hardware-based QoS allows for very high QoS granularity independent of physical ports or services. An embedded test-head supports end-to-end SLA measurement and assurance. T-Metro 8100 supports advanced OAM (operations, administration, and maintenance), with hundreds of ITU-T Y.1731 services, and RFC 2544 / Y.1564 support to measure network performance.

SDN Support

T-Metro 8100 provides full SDN support with comprehensive adoption of NETCONF, the network configuration protocol, and YANG, its data modeling language. It also supports OpenFlow 1.3.1 with a simple software upgrade to ViNOX OS (ordered separately).



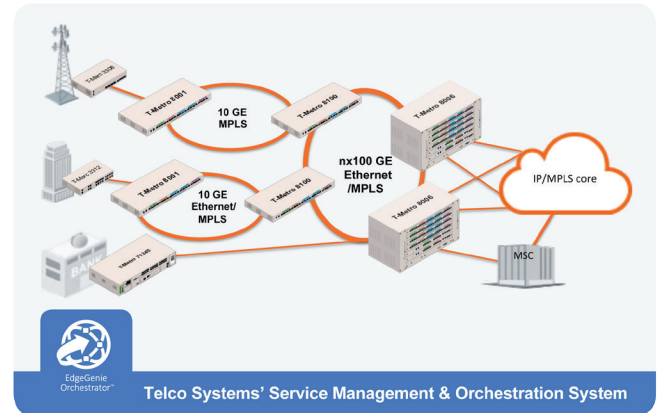
PRODUCT HIGHLIGHTS

- ❑ 2 x 100GE (QSFP28) ports + 48 x 10GE/1GE (SFP+) ports, wire speed non-blocking 680G switching in 1RU
- ❑ Carrier Ethernet over MPLS/ Ethernet transport technologies
- ❑ Full MPLS (VPWS, VPLS, HVPLS) Provider Edge (PE)
- ❑ Highly scalable solution to support large amount of services
- ❑ Enhanced Quality of Service and service granularity
- ❑ Advanced hardware-based OAM
- ❑ MEF CE 1.0/2.0, IEEE, ITU-T and IETF standards compliance for multi-vendor interoperability
- ❑ Integrated with EdgeGenie Orchestrator for full network lifecycle management
- ❑ ITU-T Y.1731 SLM support, RFC 2544 and Y.1564 network performance testing
- ❑ Extensive service redundancy (xSTP, FRR, G.8032, G.8031, dual homing)
- ❑ Enhanced control plane and routing features (OSPF, IS-IS, LDP, RSVP-TE)
- ❑ Low power consumption to reduce OPEX
- ❑ Redundant hot-swappable DC or AC power supplies and fan tray
- ❑ Support for 19" and 23" racks
- ❑ Support for short and long-haul optical interconnect

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PRODUCT SPECIFICATIONS

| | |
|--------------------------|---|
| Hardware Characteristics | 2 x 100GE (QSFP28) and 48x10GE/1GE (SFP+) ports, wire speed non-blocking 680G switching capacity in 1RU, support for short and long-haul optical interconnect |
| Services | E-LAN, E-Line, E-Tree and E-Access MEF services compliance, IEEE 802.1Q bridging, IEEE 802.1ad Q-in-Q (TLS), MPLS L2VPN - Full VPLS PE, MTU HVPLS, VPWS, OpenFlow support |
| Timing | SyncE and IEEE 1588v2 |
| Resiliency | Sub-50ms RSVP-TE FRR, secondary LSP ITU-T G.8032, G.8031, xSTP, resilient link, dual homing VPLS/HVPLS LAG (Static/IEEE 802.3ad LACP/Multi-chassis*) |
| Quality of Service | Per port/EVC/flow single/dual rate limiting Hierarchical rate limit per port/EVC/flow SP, WRR and hybrid frames scheduling, CoS marking and mapping per EVC |
| Multicast Management | IGMP v1/v2/v3 |
| OAM | Hardware-based IEEE 802.3ah EFM, IEEE 802.1ag CFM |
| Testing & Monitoring | ITU-T Y.1564 and RFC2544 test head and service performance analyzer In-service testing capabilities, ITU-T Y.1731 SLM/DMM Per port/EVC/VLAN/COS, hardware-based flexible MAC-based loopbacks |
| Management | Console, Telnet, SSHv2, Radius, TACACS+, SNMP v1/2/3, xFTP, NTP, DNS resolver |
| Security | ACLs, RADIUS, SSHv2, SNMPv3, SFTP, port security, broadcast storm prevention, secured access |
| General Specifications | Dimensions: 1.75"H (1RU) x 19"W x 20"D (44.45 x 482.6 x 508mm) Weight: 12.68lbs. (5.75kg) Power: Dual redundant, hot-swappable AC/DC 100-240VAC Operating temp: 24/-48VDC, Max power consumption: 200W Humidity: 0°C to 45°C Up to 95%, non-condensing Fan: Load sharing, speed controlled, hot-swappable |
| Regulatory Compliance | European CE marking, EN 55022 Class A, CISPR 22 Class A, EN55024:1998+A1, EMC Immunity, Harmonics: EN 61000-3-2/IEC 61000-3-2, Voltage fluctuations: EN 61000-3-3/IEC 61000-3-3, ESD: EN 61000-4-2/IEC 61000-4-2, RFI-AM: EN 61000-4-3/IEC 61000-4-3, EFT: EN 61000-4-4/IEC 61000-4-4, Surges: EN 61000-4-5/IEC 61000-4-5, Conducted: EN 61000-4-6/IEC 61000-4-6, Voltage DIP: EN 61000-4-11/IEC 61000-4-11, EMC Emissions, FCC 47 CFR Part 15 Class A, ICES-003 Issue 4 Class A (Canada), EN 300386, Telcordia GR-1089 issue 4 |
| Environmental Compliance | Full RoHS |
| Safety Requirements | UL 60950, EN 60950, IEC 60950, IEC 60825-1, CSA 22.2 No. 950, Class 1 Laser product safety (eye safety) |



KEY APPLICATIONS

- Multi-service aggregation of Carrier Ethernet networks
- High-density business services and Carrier Ethernet network aggregator
- Mobile backhaul Carrier Ethernet/MPLS aggregator
- SDN networks with NETCONF and OpenFlow support
- Cloud gateway – cloud to cloud and cloud to edge connectivity
- Cost-optimized DSLAM, CMTS and OLTs aggregation
- OAM collector
- Carrier exchange, interconnect

ORDERING INFORMATION

| Part Number | Description |
|----------------|--|
| TM-8100-2AC-x | T-Metro 8100 platform with fixed 2 x 100GE (QSFP28) and 48 x 1GE/10GE (SFP+) unpopulated ports, fan tray, 2 x AC PSUs and power cord. Note: 'x' for power supply cord types, where 'NA' is for North America, 'EUR' is for Europe and 'UK' is for United Kingdom |
| TM-8100-2DC | T-Metro 8100 platform with fixed 2 x 100GE (QSFP28) and 48 x 1GE/10GE (SFP+) unpopulated ports, fan tray, 2x 24/48VDC PEMs |
| VINOX-TM8100-L | Next generation carrier grade networking operating system which supports multiple transport technologies such as Carrier Ethernet, IP/MPLS and OpenFlow 1.3.1. VINOX supports MEF CE2.0 services, high resiliency, QoS, OAM and next generation management protocols like NETCONF and YANG. VINOX-TM-8100-L runs on TM-8100 products |



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