T5C-XG

MULTILAYER 10G ETHERNET AGGREGATION SWITCH

Telco Systems' T5C-XG multilayer Ethernet switch offers high performance and availability in a form factor that makes it ideal for broadband triple-play service aggregation and business Ethernet services. The T5C-XG utilizes Telco Systems' internetworking operating system, BiNOS®, to provide the robust administration, management, QoS, and security performance requirements demanded by Carrier Ethernet networks. T5C-XG's service multiplexing capability enables service providers to deliver multiple isolated services on a per-port and/or a per-flow basis, where provisioning, monitoring, and troubleshooting of each individual service can be done without impacting other services.

The T5C-XG offers carriers an ideal solution, incorporating high capacity in a compact size (only 1.5RU in height, 10" in depth). T5C-XG supports 24 Gigabit Ethernet (SFP) ports, two 10 Gigabit Ethernet XFP ports and an expansion slot that houses two 10 Gigabit Ethernet ports on an expansion module. The T5C-XG supports hot-swappable, redundant power supplies (either AC or DC) and a hot-swappable fan tray.

The T5C-XG boasts a wide variety of resiliency protocols, including link-level mechanisms such as Resilient-link and LAG with LACP, network-wide mechanisms such as STP, RSTP, MSTP, Fast-Ring, G.8032 (ERPS) and end-to-end service level G.8031 Ethernet Linear Protection Switching (ELPS) that delivers carrier grade OAM-based protection per service. G.8031 can perform a switchover from the primary service EVC to the backup service EVC based either on signal-fail (SF) or signal degrade (SD).

The T5C-XG provides a wide set of QoS features that enable service providers to have granular control over the behavior of traffic and services in the network. In addition, the T5C-XG delivers a comprehensive set of security features for authentication, connectivity and access control. This essential combination of QoS, security and multicast features allows service providers to successfully deploy triple-play services.

Telco Systems' T5C-XG supports industry-standard OAM tools including IEEE 802.1ag Connectivity Fault Management (CFM) and IEEE 802.3ah Ethernet in the First Mile (EFM-OAM).The IEEE 802.1ag CFM protocol provides a set of tools allowing service providers to monitor end-to-end services, identify connectivity issues and isolate the problem from a remote location without truck rolls. IEEE 802.3ah EFM allows service providers to monitor the link between customer equipment and the service provider network and uses remote loopbacks and remote failure indications in order to identify a problem and pinpoint its exact location in the first mile.

Another key advantage of the T5C-XG is the BiNOS Service Mediator, a distributed software solution that is embedded in the Telco Systems' T-Marc® demarcation devices and T5C-XG aggregation switches. BiNOS service mediation automates IP management to make the network more secure and scalable.

T5C-XG is fully manageable through simple network management protocols (SNMP) or the command-line interface (CLI) via either in-band (IB) or out-of-band (OOB) management tools using standard SNMP management systems. The CLI complies with the de-facto industry standard to minimize training time. Telco Systems' EdgeGenie Service Management Platform simplifies management of the full lifecycle of network deployment from planning to management, monitoring and maintaining Ethernet services.
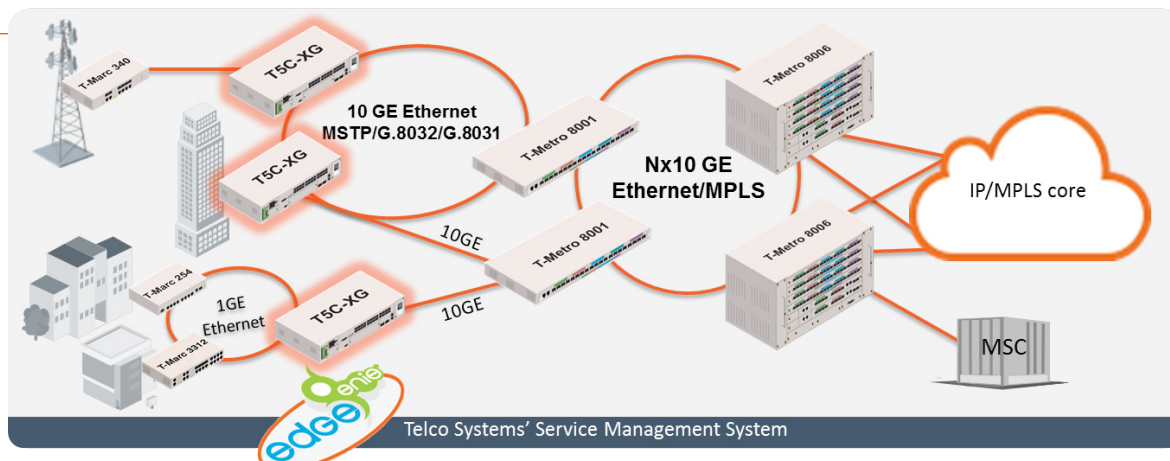
PRODUCT HIGHLIGHTS

- 10 Gigabit Ethernet, wire speed, non-blocking, Carrier Ethernet service switch
- Purpose-built, highly available Carrier Ethernet equipment
- MEF, IEEE, ITU-T and IETF standards compliance for multi-vendor interoperability
- MEF 9 and 14 certified
- NEBS Level 3 certified
- Ethernet service management supported through EdgeGenie Service Management Platform
- Embedded BiNOS® Operating System - learns once for all our platforms
- Enhanced quality of service (QoS) and service granularity support
- Extensive operations, administration and maintenance (OAM) support
- Sub-50ms switchover in Ethernet rings using Telco Systems' Fast-Ring technology
- Ideal for street cabinet installations
- Extended operating temperature

  DC:-40°C to 65°C (-40°F to 149°F)

  AC:-20°C to 65°C (-4°F to 149°F)
- Compact size (ETSI 300 compliant) – 1.5RU height, 10'' deep, 19" rack mountable

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Telco Systems' Service Management System

PRODUCT SPECIFICATIONS

Hardware Characteristics	24 x 100/1000BaseX SFP ports 2 x 10G XFP ports Optional 2 x 10G XFP ports expansion module Non-blocking 64Gbps FD platform Hot-swappable, front-mounted, dual power supplies (AC or DC) Extended temperature
Services	All MEF services, IEEE 802.1Q bridging, IEEE 802.1ad Q-in-Q (TLS)
Resiliency	Sub-50ms ITU-T G.8031 EPS, ITU-T G.8032v2 R-APS and MSTP Fast Ring, xSTP, Resilient Link, LAG (Static/IEEE 802.3ad LACP), Hot swappable, redundant AC/DC power supply
Quality of Service	Per port/EVC/flow single/dual rate limiting SP, WRR and hybrid frames scheduling, CoS marking and mapping per EVC
Multicast Management	IGMP snooping v1/v2, IGMP proxy Multicast VLAN registration (MVR) PIM-SM, PIM-DM
Routing	Static routing, RIP, OSPF, IS-IS, VRRP, VRF, BGP, BFD
OAM	IEEE 802.3ah EFM, IEEE 802.1ag CFM
Testing & Monitoring	ITU-T Y.1731 SM
Management	Console, Telnet, SSHv2, Radius, TACACS+, SNMP v1/2/3, xFTP, NTP, DNS resolver, proxy management / embedded DHCP server
Security	ACLs, RADIUS, SSHv2, SNMPv3, SFTP, port security, broadcast storm prevention, secured access

General Specifications	Dimensions: Width: 440 mm (17.32")(19" with brackets)
	                 Height: 67 mm (2.625")
	                 Depth: 253 mm (10")
	Weight: 5.2 kg (11.5lb)
	Ext. Operating Temperature (DC): -40°C to 65°C (-40°F to 149°F)
	Ext. Operating Temperature (AC): -20°C to 65°C (-4°F to 149°F)
	Altitude range: 0 – 1500 m (0-4,921ft)
	Humidity: 5% to 95% non-condensing
	Input power: 100-240 VAC, 50/60 Hz / -36VDC to -72VDC

Regulatory Compliance	**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
Environmental Compliance	NEBS Level 3 certified, ROHS compliant

KEY APPLICATIONS

- Triple play service and broadband aggregation
- Hub-and-spoke Layer 2 fiber aggregation
- Layer 2 VPN service
- Cost-effective, metro Ethernet access and aggregation rings
- High speed access
- Data center consolidation

ORDERING INFORMATION

Part Number	Description
T5C-XG-AC-x*	Base System inc. fan tray, 1 AC PSU, blanking plates (PSU & Module Slot), accessory pack, console management cable and AC power cord
T5C-XG-DC	Base System inc. fan tray, 1 DC PSU -48Volt with DC feed connector, blank plates (PSU & module slot), accessory pack, console management cable
T5C-XG-2x10G	Plug-in module with 2 10G XFP Ports (1 per T5C-XG system)
T5C-XG-ACPS-x	AC PSU
T5C-XG-DCPS	DC PSU -48Volt with DC feed connector
T5C-XG-FAN	Fan tray

SFP/XFPs not included. Call for options.
Note: 'x' specifies power supply cord types: NA for North America, EUR: for Europe, UK: for United Kingdom

*Future feature