

Telco Systems provides innovative mobile backhaul solutions to help mobile operators handle the data surge. Our solutions offer smooth migration paths to packet-based mobile backhaul by supporting multiple required technologies like CES, 1588v2, SyncE, OAM (Y.1731, Y.1564, RFC2544), and HQoS to enable flexible migration strategies.

By offering both Carrier Ethernet and MPLS to the cell site, Telco Systems provides future-proof solutions that fit both mobile providers and carrier's carriers (like utilities, MSO, and wholesale providers). The EdgeGenie, our unique service management system, can save the provider's OPEX and CAPEX by enabling easy and fast provisioning of new services, comprehensive OAM control, root cause analysis, network analysis, optimization and planning tools.

Our solutions support all legacy 2G and 3G networks and are optimized to meet the new HSPA+, WiMAX and LTE network requirements including support for multiple technologies co-located at the cell site.

Telco Systems' mobile backhaul solutions offer a cost-optimized combination of capabilities including:

- Carrier Ethernet/MPLS support from the cell site demarcation point to the core's edge to support transport for true multi-service networking
- Legacy integration/migration – provides the ability to upgrade the network to more efficient packet-based backhaul infrastructures while maintaining existing






2G/3G TDM site infrastructures and revenues with modules and/or interfaces to support DS1 and DS3 CES (circuit emulation services)

- Time synchronization – multiple synchronization options including: 1588v2, SyncE, ACR, BITS and any-to-any sync interworking to provide an easy migration path for synchronization and maximize the current investment by upgrading the network slice-by-slice
- Device and service management – point and click provisioning, service management, root cause analysis and network planning tools, zero-touch provisioning to ease network deployment and training burdens
- Network resiliency – flexibility in network design supporting a variety of network topologies including ring, tree, and mesh with sub 50ms protection switching
- Future-proof the mobile backhaul – license-free, multiple transport technology support for Carrier Ethernet over Ethernet/MPLS
- Hierarchical QoS – differentiate between various types of traffic to allow best QoE and to help meet SLAs
- Service assurance and maintenance – rapid remote fault isolation for proactive service management including root cause analysis
- Extended temperature and small footprint to support uncontrolled and small environment applications
- Standards-based for multi-vendor interoperability






MOBILE BACKHAUL - MANAGING THE MIGRATION

BACKHAUL TRAFFIC FROM MULTIPLE 2G, 3G AND 4G CELL SITES


CELL SITE DEMARCATON

	T-Marc 254H 2G/3G/4G CES and Ethernet (Fixed)	Telco Systems' T-Marc product line offers a variety of intelligent, remotely managed, multi-port demarcation solutions. The solutions support multiple resiliency mechanisms including enhanced security and advanced OAM capabilities for remote real-time management, monitoring and rapid fault detection. These services are delivered over Carrier Ethernet, MPLS/VPLS and IP networks for any deployment scenario including (2G/3G and 4G -LTE/WiMAX/ HSPA+) macro, metro or small cells. T-Marc products have been optimized for mobile backhaul applications with standards-based synchronization technologies, and are temperature-hardened for outdoor installations. They also offer very high port density on an extremely small footprint, combined with an enhanced set of features. The T-Marc product line integrates extensive OAM service management tools for multi-layer control, monitoring, line testing and loopback for fail-safe operations using hardware-based OAM, including IEEE 802.3ah EFM, IEEE 802.1ag CFM. Backhaul services can be assured using embedded Y.1564 EtherSAM, RFC 2544, and Y.1731 service performance testing for transparent service turn up and troubleshooting. With these features, protected, redundant backhaul services – with sub 50ms recovery time using G.8031/G.8032, xSTP, Fast Ring and Resilient Link – can be offered.
	T-Marc 300 3G/4G Ethernet with Advanced OAM	
	T-Marc 3208SH 2G/3G/4G CES and Ethernet	
	T-Marc 3312SC All-in-one 2G/3G/4G MPLS/Ethernet and CES to the Cell Site	
	T-Metro 7124S 2G/3G/4G 10G NID with CES and Ethernet	

MOBILE BACKHAUL SERVICE AGGREGATION

	T5C-XG 2G/3G/4G Ethernet Services Switch	Our full line of Carrier-Ethernet/MPLS high density service aggregation devices offers very high service scalability, carrier class resiliency, and an industry-leading feature set that supports Hierarchical QoS (HQoS), OAM, and L2VPN capabilities. This best-in class solution set allows carriers to offer cloud-based services, business Ethernet and mobile backhaul. Telco Systems' carrier-class devices offer full MPLS provider edge (PE) solutions with integrated and advanced MPLS/HVPLS capabilities, and full featured high density Ethernet switching, in a compact form factor. Circuit Emulation Service (CES) technology allows service providers to maintain cell sites that have older mobile technology (2G, 3G) and that use TDM backhaul to carry T1/E1, DS3, and OC-3/STM-1 traffic transparently across the packet-switched network (PSN), using various circuit emulation techniques. Advanced networking features allow for full flexibility in deployment, provisioning, and delivery of Ethernet/MPLS services. Physical and virtual networking capabilities provide automated address management and discovery, bandwidth profiles, advanced traffic classes, and complete control over how subscriber traffic is transported across a service provider's network. Its reliable, non-blocking architecture and redundancy features ensure maximum uptime.
	T-Metro 7124S 2G/3G/4G MPLS and Ethernet	
	T-Metro 7224 2G/3G/4G MPLS-PE	
	T-Metro 8006 High Density MPLS/IP Service Aggregation Platform	
	T-Metro 2G/3G/4G CES and Ethernet	

SERVICE MANAGEMENT

	EdgeGenie Service Management Platform	Telco Systems' EdgeGenie service management system offers a complete solution for the full life cycle of network deployment, from planning to managing, monitoring and maintaining Ethernet services. It offers network and service management, resource management and optimization, network planning, and real-time SLA monitoring and statistics through the customer portal. Assuring services end-to-end requires knowing how the services are being delivered across the network. Understanding how network resources are being utilized, and identifying and correcting problems quickly is key to reducing customer churn.
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