

# Metrobility R821

## 10/100Mbps Services Line Cards

### Multi-service Optical Ethernet Demarcation Point



The R821-11 and R821-1S Services Line Cards are supported in the Metrobility R5000, R1000, R400 or R200 (shown) platforms.

The Metrobility® R821 Services Line Card by Telco Systems provides an intelligent optical Ethernet demarcation point for service providers who are deploying Ethernet in the First Mile. As a carrier-class device, the Services Line Card enables multi-service delivery across a provisioning framework. Applications are prioritized over different traffic-engineered paths; multi-level operations, administration and maintenance (OAM) is used to measure and ensure provisioned SLAs; and embedded security controls ensure protection against denial-of-service attacks.

The 10/100Mbps Services Line Card offers multiple management schemes to provide service providers with a choice of direct internet-standard management using SNMP, remote CLI, IEEE 802.3ah, or a more robust, secure, scalable and flexible proxy-based management through the NetBeacon® ESP Element Manager.

#### Transport OAM via IEEE 802.3ah

The IEEE 802.3ah OAM protocol is used to provide proactive health and status information on individual links. Transport OAM management features provide keep-alives for transparent service monitoring, MIB statistics, errored frame events, and "Dying Gasp" capabilities.

Vendor extensions to the IEEE standard provide monitoring of optical amplitude, line card voltage and power, equipment temperature, rate limiting and RMON statistics. The Services Line Card will respond to these vendor-specific

requests from another 802.3ah device that would proxy to an EMS System. Since the device has no IP address, the device is less vulnerable to denial of service attacks than traditional IP-based management such as PING and SNMP and prevents against the propagation of management IP addresses.

#### Interconnectivity OAM via SNMP and PING

Standards-based frameworks and protocols provision and manage the services line card. This provisioning enables service providers to use any off-the-shelf management system to manage the device as an independent network element with its own IP address by using SNMP, Telnet/CLI, and IP PING.

The Services Line Card may be assigned an IP address, or it may be obtained dynamically through DHCP or using 'zeroconf.' A set of MIB-II and vendor-specific managed objects are accessible by and available to any SNMP-based management stations over UDP/IP.

#### Services OAM

Advanced Layer 2 networking allows service providers total flexibility in the deployment, provisioning and delivery of Ethernet services. With configurable traffic transparency, including single and double VLAN-tagged Ethernet frames, four service classes, four EVCs, and dynamic bandwidth allocation, the R821 supports both traffic control and security at the customer edge. ■

## Product Highlights

- Advanced VLAN Aware Bridging
- Q-in-Q VLAN Tagging
- Traffic Prioritization
- Bandwidth Provisioning and Rate Limiting
- Patent-pending Logical Services Loopback
- Copper Line Quality
- SFP Optics Support CWDM and BWDM options
- MEF 9 Certified
- NEBS Level 3 Certified



