METRObility
optical systems
Simply Brilliant Optical Ethernet

Radiance Access Line Cards
WAN-enabled optical Ethernet management

NetBeacon™ bandwidth useage

- *Remotely controlled loopback testing of optical links*
- *Real-time statistics to enable QoL monitoring*
- *Real-time analog monitoring for optical power*
- *Remote, "point-and-click" bandwidth provisioning*
- *Optional ITU Grid CWDM wavelength-specific optics*
- *NEBS Level 3 certified*

The NEBS Level 3 certified Radiance Access Line Cards from Metrobility Optical Systems® provide the ability to reach across a metropolitan area network to communicate, test and reconfigure an unmanaged remote device, without reducing the available bandwidth to the customer site. Radiance Access Line Cards provide the highest level of manageability — including dynamic bandwidth provisioning, remote loopback testing, and real-time analog and RMON statistics — without consuming any valuable user bandwidth.

Metrobility's Radiance technology supports the proposed IEEE 802.3ah operations, administration and maintenance standards for placing Ethernet in the first mile by enabling the following functions:

- Real-time collection of power levels with notification of alarm conditions
- Receive Path Failure
- Line Quality through RMON Group 1 statistics
- Remote loopback

The Access Line Card is specifically designed to maintain the maximum isolation between the public and private network and offers an innovative solution to the management access problem and enables the following functions:

- Dynamic bandwidth provisioning
- Remote troubleshooting with full loopback capabilities
- Real-time collection of Quality of Line (QoL) statistics for determining the health and performance of the link
- Real-time collection of chassis temperature and power.

- Real-time collection of optical power without inserting an optical power meter.

The Access Line Card gathers real-time data to provide critical, up-to-the-minute QoL information on an Ethernet fiber link including optical receive power level measurement, optical transmit power level measurement, and voltage and temperature measurements.

Access Line Cards are supported in Metrobility's Radiance R5000, R1000, R400 and R200 platforms.

The Radiance R5000 Central Service Platform is a carrier-class intelligent platform that is installed at the central office or the point of presence. The Radiance R5000 Central Service Platform connects to the switch or router at service provider's network. Up to four chassis can be stacked and managed with a single IP address.

The R5000 Central Service Platform is a 17-slot, 19" or 23" rack-mountable 2U platform with redundant, load-sharing, hot-swap AC or DC power, management line card, and 16 slots for connectivity.

The optical Ethernet service access and management point at the customer premise is accomplished with the Radiance R1000, R400 or R200 Premise Service Platform

The R1000 is a 2-slot, 1U rack-mountable platform with internal redundant, load-sharing, AC or DC power. The R400 is a standalone unit which supports two access line cards and external single or dual AC power. The R200 is a single slot chassis with a single internal AC or DC power.

The Metrobility® Difference

Remote real-time management and testing eliminates truck rolls and maximizes customer satisfaction

Remote real-time monitoring of optical power budgets (R231-14, -16, 17 and 1J)

Remote, bandwidth provisioning in 1 Mbps increments provides billable usage statistics

NetBeacon® Metrobilty's Java-based GUI provides proactive management including automatic pager and email notification of alarm conditions

Remote monitoring via the web using the WebBeacon™ management kernel allows quick and easy access to link status

NEBS Level 3 certified for maximum reliability and uptime

Product Highlights

100Mbps, copper to multimode and singlemode fiber and wavelength-specific CWDM

Supported distances up to 100km

High MTBF ensures long life and lower cost of ownership

Features (requires NetBeacon)

- **Quality of Equipment Monitoring**
  Monitors both ends of optical link
  Monitors temperature and logic voltage level in each Access Line Card

- **Quality of Line Monitoring**
  Remote loopbacks through optical link
  Far End Fault
  Uses no user bandwidth and requires no IP address or SNMP stack

- **Quality of Optical Amplitude (not available for CWDM optics)**
  Realtime measurement of the receive and transmit levels of the optical transceivers
  Integral power meter eliminates disabling link for testing and enables proactive maintenance

- **Dynamic bandwidth provisioning in 1Mpbs increments**

Models

100Mbps TX to FX

Model #	Port 1	Port 2	Max. Supported Segment Length Port 1	Port 2
R231-13	100BASE-TX RJ-45	100BASE-FX multimode SC	100m	2km
R231-14	100BASE-TX RJ-45	100BASE-FX singlemode SC	100m	20km
R231-15	100BASE-TX RJ-45	100BASE-FX multimode ST	100m	2km
R231-16	100BASE-TX RJ-45	100BASE-FX singlemode ST	100m	20km
R231-17	100BASE-TX RJ-45	100BASE-FX singlemode SC	100m	40km
R231-1J	100BASE-TX RJ-45	100BASE-FX singlemode SC	100m	100km
R231-1X	100BASE-TX RJ-45	100BASE-FX singlemode SC 1550/1310 (BWDM)	100m	20km
R231-1Y	100BASE-TX RJ-45	100BASE-FX singlemode SC 1310/1550 (BWDM)	100m	20km

100Mbps TX to CWDM[1]

Model #	Port 1	Port 2	Max. Supported Segment Length Port 1	Port 2
R231-47	100BASE-TX RJ-45	100BASE-FX 1470nm SM LC	100m	80km
R231-49	100BASE-TX RJ-45	100BASE-FX 1490nm SM LC	100m	80km
R231-51	100BASE-TX RJ-45	100BASE-FX 1510nm SM LC	100m	80km
R231-53	100BASE-TX RJ-45	100BASE-FX 1530nm SM LC	100m	80km
R231-55	100BASE-TX RJ-45	100BASE-FX 1550nm SM LC	100m	80km
R231-57	100BASE-TX RJ-45	100BASE-FX 1570nm SM LC	100m	80km
R231-59	100BASE-TX RJ-45	100BASE-FX 1590nm SM LC	100m	80km
R231-61	100BASE-TX RJ-45	100BASE-FX 1610nm SM LC	100m	80km

[1] Requires connection to Metrobility's R4000 Multiplexer and OAM modules.

Note: Actual segment length is dependent on the quality of fiber cable plant and loss budget of each device. See manual for cable type and product specifications. Singlemode enhanced fiber is recommended for optimum transmission integrity.

Platform Options

R5000	17-slot platform two bays for optional AC/DC power supplies
R1000	2-slot platform with two front-facing AC power supplies
	2-slot platform with two rear-facing AC power supplies
	2-slot platform with one AC and one DC front-facing power supplies
	2-slot platform with one AC and one DC rear-facing power supplies
	2-slot platform with two front-facing DC power supplies
	2-slot platform with two rear-facing DC power supplies
R400	2-slot platform with single external AC power supply
R200	1-slot platform with single internal AC or DC power supply

Management

NetBeacon Element Manager
Management Card (enables NetBeacon and WebBeacon)

Specifications

Environmental

Operating Temperature	0°C to 55°C
Operating Humidity	5% - 95% non-condensing
Storage Temperature	-30°C to 70°C

Weight   15 oz (0.14kg)
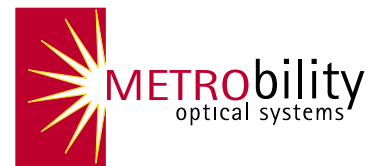
Input Power   5 V @1.0A, 5 W average

Safety and EMC Compliance
UL, CSA, FCC Part 15 (Class A), EN60950 (safety CE), EN55022 Class A (emissions CE), EN55024: 1998 (immunity), DOC Class A (emissions), Class 1 Laser Product

Standards Compliance
Compliance   IEEE 802.3, 802.3u, 802.3x, 802.3ad

NOTE: Blue denotes NEBS-certified

Metrobility Optical Systems is an innovative next generation optical networking company whose focus is on delivering optical access platforms and to harness the power of Ethernet and fiber optics to deliver superior network edge access, connectivity wavelength multiplexing solutions.

Metrobility Optical Systems, Inc.