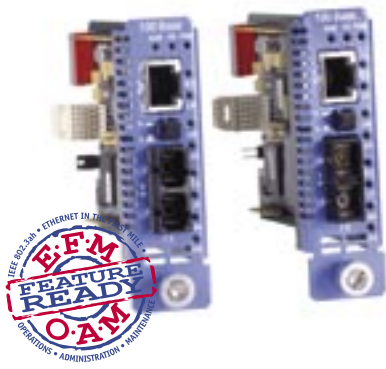


# Radiance Access Line Cards

## *WAN-enabled optical Ethernet management*



NetBeacon™ bandwidth usage

- *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 remote management over Ethernet Access technology provides the high-level of manageability without an IP address or SNMP agent. This patented technology utilizes a management channel embedded in the inter-packet gap (IPG) between Ethernet frames to send management information in real time across a network. Radiance technology supports the 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 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.

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.

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® Metrobility'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 1Mbps 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<sup>1</sup>

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	60km
R231-49	100BASE-TX RJ-45	100BASE-FX 1490nm SM LC	100m	60km
R231-51	100BASE-TX RJ-45	100BASE-FX 1510nm SM LC	100m	60km
R231-53	100BASE-TX RJ-45	100BASE-FX 1530nm SM LC	100m	60km
R231-55	100BASE-TX RJ-45	100BASE-FX 1550nm SM LC	100m	60km
R231-57	100BASE-TX RJ-45	100BASE-FX 1570nm SM LC	100m	60km
R231-59	100BASE-TX RJ-45	100BASE-FX 1590nm SM LC	100m	60km
R231-61	100BASE-TX RJ-45	100BASE-FX 1610nm SM LC	100m	60km

<sup>1</sup> Requires connection to Metrobility's R4000 Multiplexer and OADM 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)

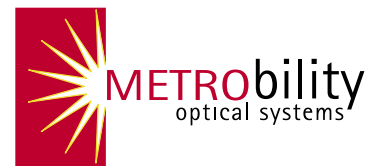
**Input Power** 5 V @1.0A, 5 W average

### Safety and EMC Compliance

UL, CSA, CB, FCC Part 15 (Class A), EN60950 (safety CE), EN55022 Class A (emissions CE), EN55024: 1998 (immunity), DOC Class A (emissions), Class 1 Laser Product, NEBS Level 3

### Standards Compliance

Compliance Applicable sections of IEEE 802.3



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**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 wave-length multiplexing solutions.**

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