METRObility optical systems

Simply Brilliant Optical Ethernet

Radiance Access Optical Network Unit

Managed Remote Site Standalone

- *Remotely controlled loopback testing of optical links*
- *Real-time statistics to enable Quality of Line monitoring*
- *Real-time analog monitoring for optical power, temperature and voltage*

The Radiance Access Optical Network Unit (ONU) from Metrobility Optical Systems® provides a copper-to-fiber and fiber-to-fiber service demarcation point at the customer premise for the delivery of optical Ethernet services. The ONU communicates to a Radiance Access Line Card in a managed Radiance chassis at the central office.

Utilizing Metrobility's Radiance technology, the service provider can reach across a metropolitan area network to communicate, test and reconfigure the ONU, without reducing the available bandwidth to the customer site, and without managing an additional IP address.

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

Radiance also provides the following additional capabilities:

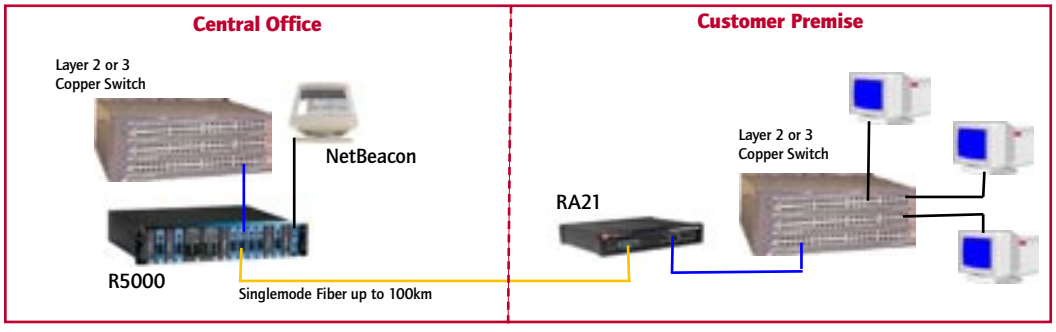
- Real-time collection of temperature levels
- Optical power monitoring
- 10/100Mbps auto-negotiation (RA21 only)

Utilizing Radiance technology, configuration updates, maintenance, and diagnostics can be performed remotely. These features enable service providers to cost effectively troubleshoot remote optical Ethernet links to lower the overall cost of ownership and provide greater customer satisfaction. The solution also reduces the costs associated with activating optical services by minimizing the need for new equipment.

Remote Site Management

Network managers can manage each ONU remotely, adjust operating parameters quickly and even switch hardware settings across the network using Metrobilty's NetBeacon® Element Management System. NetBeacon is an SNMP element and service provisioning software that supports functional, operational and environmental monitoring and management of Metrobilty managed devices.

All data is gathered from a managed Metrobility chassis, generally the Radiance R5000, at the central office. The Radiance R5000 Central Service Platform is a NEBS-certified, 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 Layer 2 or 3 switch or router at service provider's network.



The Metrobility® Difference

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

Remote real-time monitoring of optical power budgets (RA21-14, -16, -17 and -1J)

ITU Grid CWDM wavelength-specific option

NetBeacon, Metrobility's management software, 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

Product Highlights

10/100Mbps, copper to multimode and singlemode fiber with auto-negotiation

10Mbps multimode fiber to 100Mbps singlemode fiber

100Mbps multimode fiber to 100Mbps singlemode fiber

Single-strand bi-directional wavelength division multiplexing (BWDM)

Supported distances up to 100km

High MTBF ensures long life and lower cost of ownership

Radiance Access Optical Network Unit Management Features

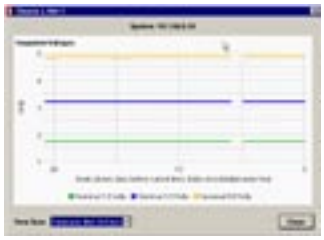
NetBeacon chassis view

Quality of Equipment Monitoring

Voltage and Temperature

Quality of Line Monitoring

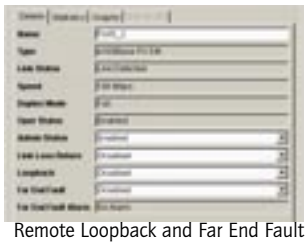
RMON Group 1 Statistics



Quality of Optical Amplitude

Realtime measurement of the receive and transmit levels of the optical transceivers

Receive Path Failure Indicators



Remote Loopback and Far End Fault

Database option provides a history of up to 28 days for power, temperature, voltage, optical power, and RMON Group 1 statistics.

Available Models

Model #	Port 1	Port 2	Max. Supported Segment Length Port 1	Port 2
10/100Mbps Copper-to-Fiber				
RA21-13	10/100BASE-TX RJ-45	100BASE-FX multimode SC	100m	2km
RA21-14	10/100BASE-TX RJ-45	100BASE-FX singlemode SC	100m	20km
RA21-15	10/100BASE-TX RJ-45	100BASE-FX multimode ST	100m	2km
RA21-16	10/100BASE-TX RJ-45	100BASE-FX singlemode ST	100m	20km
RA21-17	10/100BASE-TX RJ-45	100BASE-FX singlemode SC	100m	40km
RA21-1J	10/100BASE-TX RJ-45	100BASE-FX singlemode SC	100m	100km
RA21-1X**	10/100BASE-TX RJ-45	100BASE-FX singlemode SC	100m	20km 1550/1310 (BWDM)
RA21-1Y**	10/100BASE-TX RJ-45	100BASE-FX singlemode SC	100m	20km 1310/1550 (BWDM)

**Each end of the link must be configured with a different receive and transmit wavelength. Order a -1X for one end and a -1Y for the opposite end, e.g. R231-1X ---------> RA21-1Y.

Model #	Port 1	Port 2	Max. Supported Segment Length Port 1	Port 2
10Mbps Fiber-to-Fiber				
RA11-34	10BASE-FL multimode SC	100BASE-FX singlemode SC	2km	20km
10Mbps Fiber-to-Fiber				
RA31-34	100BASE-FX multimode SC	100BASE-FX singlemode SC	2km	20km

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.

10/100Mbps CWDM[1]

Model #	Port 1	Port 2	Max. Supported Segment Length Port 1	Port 2
RA21-47	10/100BASE-TX RJ-45	100BASE-FX 1470 nm SM LC	100m	80km
RA21-49	10/100BASE-TX RJ-45	100BASE-FX 1490nm SM LC	100m	80km
RA21-51	10/100BASE-TX RJ-45	100BASE-FX 1510nm SM LC	100m	80km
RA21-53	10/100BASE-TX RJ-45	100BASE-FX 1530nm SM LC	100m	80km
RA21-55	10/100BASE-TX RJ-45	100BASE-FX 1550nm SM LC	100m	80km
RA21-57	10/100BASE-TX RJ-45	100BASE-FX 1570nm SM LC	100m	80km
RA21-59	10/100BASE-TX RJ-45	100BASE-FX 1590nm SM LC	100m	80km
RA21-61	10/100BASE-TX RJ-45	100BASE-FX 1610nm SM LC	100m	80km

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

Specifications

Environmental

Operating Temperature	0°C to 50°C
Operating Humidity	5% - 95%
Storage Temperature	-30°C to 70°C

Regulatory

Compliance	IEEE 802.3, 802.3u, 802.3x, 802.3ad
Safety and EMC	FCC, Class B, UL, CE, CSA
Dimensions	4.5"L x 5.75"W x 1.5" 11.4cm x 14.6cm x 3.8cm
Weight	1.26 lb; .57 kg
Input Power	120-240V AC 50/60Hz
Output Power	5V DC @ 2A, 10W average

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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 and wavelength multiplexing solutions.

The Leader in Quality and Reliability

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