

Gigabit Ethernet Interface

Managed Distance Extension and Conversion at 1000Mbps



- Complete signal retiming and regeneration to maintain cable segments up to 100km
- Link Loss Carry Forward and Link Loss Return for remote troubleshooting
- Fiber-to-fiber and copper-to-fiber conversion
- SFP optics for maximum versatility and CWDM support
- Extensive proactive element management

Flexible Media, Distance and Speed

Metrobility's Gigabit Ethernet interface line cards for the R5000 managed 17-slot chassis and standalones models meet the demands of today's high-speed networks as they migrate from copper to fiber infrastructures and from low-cost SX (short wavelength) to the longer distances supported by LX (long wavelength). These products deliver high availability, performance and manageability, maximizing network uptime through proactive and intuitive network management.

Metrobility® offers one of the most complete lines of Gigabit connectivity products in the industry with support for copper, and both multimode and singlemode fiber, and wavelength conversions from 850nm to 1310nm and 1550nm.

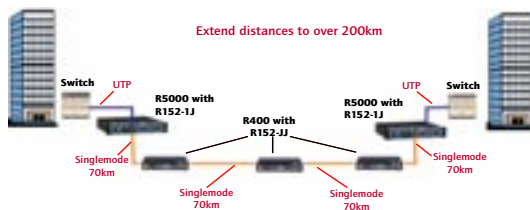


Gigabit line cards are also available with small form-factor pluggable (SFP) optics that can support up to 16 distinct wavelengths for CWDM applications. (See Metrobility's CWDM datasheet for additional information on Coarse Wave Division Multiplexing products).

Extended Distance Support with Retiming

Metrobility's Gigabit Ethernet solutions support copper to fiber, multimode to singlemode, and singlemode to singlemode to extend Gigabit Ethernet distances up to 70km per segment. Gigabit Ethernet units may be cascaded to achieve extended distances over 200km.

All models incorporate signal retiming to ensure that crucial data travels the maximum cable distance without degradation.



Signal retiming restores incoming data and clock information allowing retransmission of data with improved signal quality. This important feature is a cost-effective method for extending the distance capabilities of the network by allowing the cascading of units.

Troubleshooting Remote Connections

Metrobility's Link Loss Carry Forward (LLCF) and Link Loss Return (LLR) features also assist in troubleshooting remote connections. When LLCF is enabled, ports do not transmit a signal until they receive a signal from the opposite port. So, if the connection breaks, the line card carries the lost link information to the switch or hub which generates a trap to the management station. Link Loss Return (LLR) senses the loss of link on the fiber port and returns a trap to the management station. This feature rapidly notifies IT managers of a failed link to a remote site, even if the remote site is unmanaged.

The copper-to-fiber Gigabit models incorporate Copper Loss Carry Forward (CLCF) for identifying a lost copper connection. When CLCF is enabled, the copper port continually transmits link signals even if the fiber port loses the signal.

SFP optics include digital diagnostics to enable real-time monitoring of internal temperature and optical receive and transmit levels.

Superior SNMP Management

All SNMP information is transmitted via a Management Card installed in the Radiance platform.

The Management Card gathers real-time data to provide critical, up-to-the-minute statistics. This information may be accessed from the management station through Metrobility's NetBeacon® Element Management System or most SNMP-based management systems. Using the WebBeacon™ kernel embedded in the management card, all data may also be accessed via the web using a standard web browser.

The Metrobility Difference

Signal retiming and regeneration ensures maximum network distance
Link Loss Return and Link Loss Carry Forward aid in troubleshooting remote network connections

Real-time monitoring of SFP's internal temperature and optical receive/transmit laser levels

Supports point-to-point, ring and OADM topologies using SFP optics
High MTBF for reliable, long-term operation

Optional advanced SNMP-based monitoring and management features for interface line cards

Designed to meet NEBS Level 3 compliance

Product Highlights

Reliable data transmission over singlemode fiber up to 100km

Extensive connection options for flexible network configurations

Full and half duplex support
Activity, power and link LEDs

Simple to install with minimal configuration requirements

1000Mbps Interface

Line Card	Standalone	Port 1 Description	Max Seq Length**	Port 2 Description	Max Seq Length**
R152-1A	2152-1A-01	1000BASE-T RJ-45	100m	1000BASE-SX multimode-SC	500m
R152-1D	2152-1D-01	1000BASE-T RJ-45	100m	1000BASE-LX singlemode-SC	10km
R152-17	2152-17-01	1000BASE-T RJ-45	100m	1000BASE-LH singlemode-SC	40km
R152-1F	2152-1F-01	1000BASE-T RJ-45	100m	1000BASE-LX singlemode-SC	25km
R152-1J	2152-1J-01	1000BASE-T RJ-45	100m	1000BASE-EX singlemode-SC	70km
	2152-1K-01	1000BASE-T RJ-45	100m	1000BASE-SX multimode-LC	500m
	2152-1M-01	1000BASE-T RJ-45	100m	1000BASE-LX singlemode-LC	10km
R152-AA	2152-AA-01	1000BASE-SX multimode-SC	220m	1000BASE-SX multimode-SC	500m
R152-AD	2152-AD-01	1000BASE-SX multimode-SC	220m	1000BASE-LX singlemode-SC	10km
R152-A7	2152-A7-01	1000BASE-SX multimode-SC	220m	1000BASE-LH singlemode-SC	40km
R152-AF	2152-AF-01	1000BASE-SX multimode-SC	220m	1000BASE-LX singlemode-SC	25km
R152-AJ	2152-AJ-01	1000BASE-SX multimode-SC	220m	1000BASE-EX singlemode-SC	70km
R152-DD	2152-DD-01	1000BASE-LX singlemode-SC	10km	1000BASE-LX singlemode-SC	10km
R152-D7	2152-D7-01	1000BASE-LX singlemode-SC	10km	1000BASE-LH singlemode-SC	40km
R152-DF	2152-DF-01	1000BASE-LX singlemode-SC	10km	1000BASE-LX singlemode-SC	25km
R152-DJ	2152-DJ-01	1000BASE-LX singlemode-SC	10km	1000BASE-EX singlemode-SC	70km
R152-77	2152-77-01	1000BASE LH singlemode-SC	40km	1000BASE-LH singlemode-SC	40km
R152-JJ	2152-JJ-01	1000BASE-EX singlemode-SC	70km	1000BASE-EX singlemode-SC	70km
R152-1X*	2152-1X-01 *	1000BASE-T RJ-45	100m	1000BASE-X singlemode SC 1550nm/1310nm BWDM	20km
R152-1Y*	2152-1Y-01 *	1000BASE-T RJ-45	100m	1000BASE-X singlemode SC 1310nm/1550nm BWDM	20km
R152-AX*	2152-AX-01 *	1000BASE-T MM-SC	100m	1000BASE-X singlemode SC 1550nm/1310nm BWDM	20km
R152-AY*	2152-AY-01 *	1000BASE-T MM-SC	100m	1000BASE-X singlemode SC 1310nm/1550nm BWDM	20km

*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.

Line Cards with SFP (Small Form Factor Pluggable) Optics

R153-1S	1000BASE-T RJ-45	100m	1000BASE-X SFP LC	see optics
R153-SS	1000BASE-X SFP LC	see optics	1000BASE-X SFP LC	see optics



SFP Optics

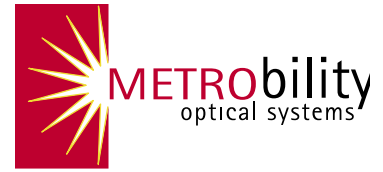
SFP Optics	Port 1 Description	Max Seq Length**	Port 2 Description	Max Seq Length**
O211-M5	SFP LC multimode	500m	O411-80-35 SFP LC 1350nm	O411-80-51 SFP LC 1510nm
O211-10	SFP LC singlemode	10km	O411-80-37 SFP LC 1370nm	O411-80-53 SFP LC 1530nm
O211-25	SFP LC singlemode	25km	O411-80-43 SFP LC 1430nm	O411-80-55 SFP LC 1550nm
O211-40	SFP LC singlemode	40km	O411-80-45 SFP LC 1450nm	O411-80-57 SFP LC 1570nm
O211-1A	SFP LC singlemode	100km	O411-80-47 SFP LC 1470nm	O411-80-59 SFP LC 1590nm
			O411-80-49 SFP LC 1490nm	O411-80-61 SFP LC 1610nm

SFP Optics, Wavelength-Specific (CWDM)***

O411-80-35	SFP LC 1350nm	O411-80-51	SFP LC 1510nm
O411-80-37	SFP LC 1370nm	O411-80-53	SFP LC 1530nm
O411-80-43	SFP LC 1430nm	O411-80-55	SFP LC 1550nm
O411-80-45	SFP LC 1450nm	O411-80-57	SFP LC 1570nm
O411-80-47	SFP LC 1470nm	O411-80-59	SFP LC 1590nm
O411-80-49	SFP LC 1490nm	O411-80-61	SFP LC 1610nm

***Use in conjunction with Metrobility's R4000 CWDM Multiplexer and OADM. Supports distances up to 80km.

** 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
See Line Protection and Restoration data sheet for redundant link options.



Metrobility Optical Systems, Inc.
 25 Manchester Street
 Merrimack, NH USA 03054
 phone 1.603.880.1833
 fax 1.603.594.2887
 www.metrobility.com

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 information in this publication is accurate as of its publication date; such information is subject to change without notice. Metrobility Optical Systems is not responsible for any inadvertent errors. Metrobility, Metrobility Optical Systems, Lancast, AutoTwister, MicroChassis, "twister," and NetBeacon are registered trademarks, and "redundant twister" and WebBeacon are trademarks of Metrobility Optical Systems. All other trademarks are the property of their respective owners.

Copyright 2003 Revised February 2004
 Metrobility Optical Systems, Inc.

Printed in U.S.A.

Specifications

Environmental

Oper. Temp.	0°C to 55°C
Oper. Humidity	5% to 95% non-condensing
Storage Temp.	-25°C to 70°C

Safety and EMC Compliance

UL, CSA, EN60950 (safety), FCC Part 15, Class A, EN55022 Class A (emissions), EN55024: 1998 (immunity), IEC 825-1 Classification, Class 1 Laser Product, DOC Class A (emissions)
Standards Compliance IEEE 802.3z

Standalone

Dimensions	1.7"H x 3.3"W x 4.8"L 12.3cm x 8.3cm x 4.3cm
Weight	1 lb; 45 kg
Power	90-250V AC 50/60Hz

Refer to user manual for additional technical specifications.



Metrobility Optical Systems, Inc.