

# Metrobility® Gigabit Ethernet Interface

Managed Distance Extension and Conversion at 1000Mbps



The Metrobility Gigabit Ethernet interface line cards and unmanaged standalone units 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). The Telco Systems® chassis-based line cards, designed for the Metrobility platform, and the unmanaged standalone units deliver high availability and performance.

The Metrobility product family offers one of the most complete lines of Gigabit connectivity products in the industry with support for copper, multimode and singlemode fiber, single-strand bi-directional wavelength multiplexing 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.

## Extended Distance Support with Retiming

The Metrobility Gigabit Ethernet solutions may be cascaded to achieve extended distances over 200km in 70km segments. 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.

## Troubleshooting Remote Connections

Link Loss Carry Forward (LLCF) and Link Loss Return (LLR) 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. (LLCF is available on fiber-to-fiber Gigabit models only.) Link Loss Return (LLR) senses the loss of link on the fiber port and disables the transmit signal on the same port. In turn the local line card loses its receive signal which cause the management module in the chassis to return 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.

## Superior SNMP Management

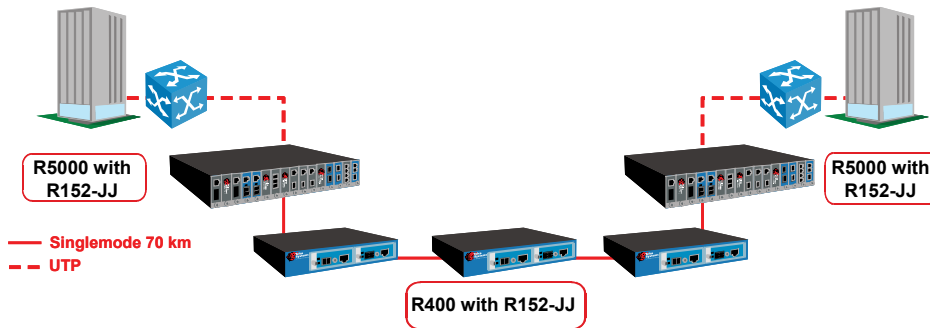
Critical, up-to-the-minute statistics on the line cards are provided by the R502-M Management Card installed in the Metrobility multi-slot platforms. All SNMP information is transmitted via the Management Card which gathers real-time data.

This information may be accessed from the management station through the Metrobility NetBeacon® ESP 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.

- Reliable data transmission over singlemode fiber
- Extensive connection options for flexible network configurations
- Simple to install with minimal configuration requirements
- Complete signal retiming and regeneration to maintain cable segments up to 100km
- Link Loss Carry Forward (on fiber-to-fiber only), and Link Loss Return, aid in troubleshooting remote network connections
- Optional advanced SNMP-based and web-based monitoring and management
- Designed to meet NEBS Level 3 compliance
- Full and half duplex support
- Activity, power and link LEDS
- Distance extension up to 280km

# Metrobility® Gigabit Ethernet Interface

Flexible network configurations for distance extension to 280km



## Key Applications

- Point-to-point, ring and CWDM topologies using SFP optics
- Fiber-to-fiber and copper-to-fiber conversion
- Extensive connection options for flexible network configurations:
  - multimode
  - singlemode
  - single-strand

## Specifications

### Interfaces

#### Data Rate

- 1000Mbps full duplex

#### General

#### Environmental

- Operating Temperature 0°C to 55°C
- Operating Humidity 5% - 95% non-condensing
- Storage Temperature -25°C to 70°C

#### Physical Specifications

- Power - Input 90-250V AC 50/60Hz
- Standalone Dimensions 1.7"H x 3.3"W x 4.8"L  
12.3cm x 8.3cm x 4.3cm
- Weight 1lb (0.45kg)

#### Standards Compliance

- IEEE 802.3z

#### Safety and EMC Compliance

- UL, CSA, CB
- EN60950 (safety)
- FCC Part 15 Class A
- DOCC Class A (emissions)
- EN55022 Class A (emissions)
- EN55024:1998 (immunity)
- IEC 825-1 Classification (eye safety)
- Class 1 Laser Product (eye safety)

## Ordering Information

Line Card	Standalone	Port 1 Description	Max Seg Length	Port 2 Description	Max Seg Length
<b>Copper-to-Fiber</b>					
R152-1A	2152-1A-01	1000BASE-T RJ-45	100m	1000BASE-SX MM-SC	500m
R152-1D	2152-1D-01	1000BASE-T RJ-45	100m	1000BASE-LX SM-SC	10km
R152-1F	2152-1F-01	1000BASE-T RJ-45	100m	1000BASE-LX SM-SC	25km
R152-17	2152-17-01	1000BASE-T RJ-45	100m	1000BASE-LH	40km
R152-1J	2152-1J-01	1000BASE-T RJ-45	100m	1000BASE-EX SM-SC	70km
	2152-1K-01	1000BASE-T RJ-45	100m	1000BASE-SX MM-LC	500m
	2152-1M-01	1000BASE-T RJ-45	100m	1000BASE-LX SM-LC	10km
<b>Fiber-to-Fiber</b>					
R152-AA	2152-AA-01	1000BASE-SX MM-SC	220m	1000BASE-SX SM-SC	500m
R152-AD	2152-AD-01	1000BASE-SX MM-SC	220m	1000BASE-LX SM-SC	10km
R152-AF	2152-AF-01	1000BASE-SX MM-SC	220m	1000BASE-LX SM-SC	25km
R152-A7	2152-A7-01	1000BASE-SX MM-SC	220m	1000BASE-LH SM-SC	40km
R152-AJ	2152-AJ-01	1000BASE-SX MM-SC	220m	1000BASE-EX SM-SC	70km
R152-DD	2152-DD-01	1000BASE-LX SM-SC	10km	1000BASE-LX SM-SC	10km
R152-DF	2152-DF-01	1000BASE-LX SM-SC	10km	1000BASE-LX SM-SC	25km
R152-D7	2152-D7-01	1000BASE-LX SM-SC	10km	1000BASE-LH SM-SC	40km
R152-DJ	2152-DJ-01	1000BASE-LX SM-SC	10km	1000BASE-EX SM-SC	70km
R152-77	2152-77-01	1000BASE-LH SM-SC	40km	1000BASE-LH SM-SC	40km
R152-JJ	2152-JJ-01	1000BASE-EX SM-SC	70km	1000BASE-EX SM-SC	70km
<b>Single-strand BWDM</b>					
R152-1X*	2152-1X-01*	1000BASE-T RJ-45	100m	1000BASE-X SM-SC	20km
R152-1Y*	2152-1Y-01*	1000BASE-T RJ-45	100m	1000BASE-X SM-SC	20km
R152-AX*	2152-AX-01*	1000BASE-T MM-SC	100m	1000BASE-X SM-SC	20km
R152-AY*	2152-AY-01*	1000BASE-T MM-SC	100m	1000BASE-X SM-SC	20km
<b>Line Cards with SFP (Small Form Factor Pluggable) Optics</b>					
R153-1S		1000BASE-T RJ-45	100m	1000BASE-X,SFP** LC	
R153-SS		1000BASE-X SFP** LC		1000BASE-X SFP** LC	

\*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.  
\*\* Unpopulated SFP port. Call for list of available optics



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