

# MiRiCi-E3T3

## Intelligent Miniature Ethernet to E3/T3 Remote Bridge



- Providing T3 connectivity to any Ethernet device with SFP MSA-compatible socket
- Full duplex, T3 wire-speed packet forwarding
- Standard GFP encapsulation
- Fault propagation to LAN link
- Inband and out-of-band management for configuration, monitoring, and diagnostics
- Supporting I<sup>2</sup>C management interface for simple management integration with host devices

MiRiCi-E3T3 forwards Fast or Gigabit Ethernet packets to a TDM-based WAN at full duplex wire-speed, fully utilizing the expensive T3 TDM bandwidth.

MiRiCi-E3T3 uses standard GFP encapsulation.

Housed in a Small Form Factor Pluggable (SFP) package, MiRiCi-E3T3 complies with the Multi-Source Agreement (MSA).

The unit supports the following frame sizes, including VLAN-tagged frames:

- 64–2016 bytes for Fast Ethernet
- 64–10000 bytes for Gigabit Ethernet.

LAN traffic is transparently directed, thus preserving the user LAN settings.

All parameters are software-configurable including transmit timing sources and data formats.

### MANAGEMENT

The unit can be monitored, configured, and tested using the following ports and applications:

- Out-of-band via the I<sup>2</sup>C channel (of the SFP edge connector)
- Inband via the Ethernet port using a Web browser.

### LOS AND FAULT PROPAGATION

The LAN link is deactivated and the link status LED turns off if one of the following user-defined alarms is issued and fault propagation is enabled:

- LOS (Loss of signal)
- RLOL (Receive loss of lock)
- AIS (Alarm indication signal)
- RDI (Remote defect indication).

In addition, the above-listed error type indications are propagated towards the host by sending an electrical signal via the LOS pin on the MSA edge connector. The LOS LED turns ON, visually indicating the LOS only.

Connecting Fast or Gigabit Ethernet LANs over framed T3 links



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### FLOW CONTROL

A flow control mechanism is activated when LAN traffic exceeds the WAN link (T3) capacity and the watermarks of the internal frame buffer. Pause packets are transmitted to the LAN port, halting LAN traffic until the buffer has been emptied to below the watermark limit.

### DIAGNOSTICS

Remote (RLB) and local loopbacks (LLB) are used for physical layer troubleshooting.

MiRiCi-E3T3 can receive T3 "Loop up" and "Loop down" commands via the standard FEAC bit codes.

### CLOCK OPTIONS

MiRiCi-E3T3 supports Tx clock sources for the internal and receive clocks.

Standard statistics for 15-minute time intervals are collected.

### FLEXIBILITY

MiRiCi-E3T3 operates opposite the following devices using standard GFP encapsulation:

- RAD's Egate-100 (central Ethernet gateway)
- RAD's RiCi-16
- Third-party devices that support standard GFP encapsulation.

### SFP ENCLOSURE

MiRiCi-E3T3 complies with the Multi-Source Agreement (MSA).

Running on power derived from the host device, it requires no additional power supply.

MiRiCi-E3T3 is hot swappable and features a special release mechanism for easy extraction from the SFP socket.

### POSSIBLE APPLICATIONS

- Transparent LAN services over leased lines
- Remote branch connectivity over T3 lines
- Connecting LANs over T3 radio links
- Campus applications connecting remote LANs.

### SFP CONFIGURATION ADAPTER

An optional configuration adapter module, SFP-CA, is available for configuring MiRiCi-E3T3 by connecting it to a PC via a USB port.

The configuration adapter is used for preliminary configuration such as assigning an IP address for first use or specifying the mode of operation. It is used as well to download software to the MiRiCi-E3T3 units.

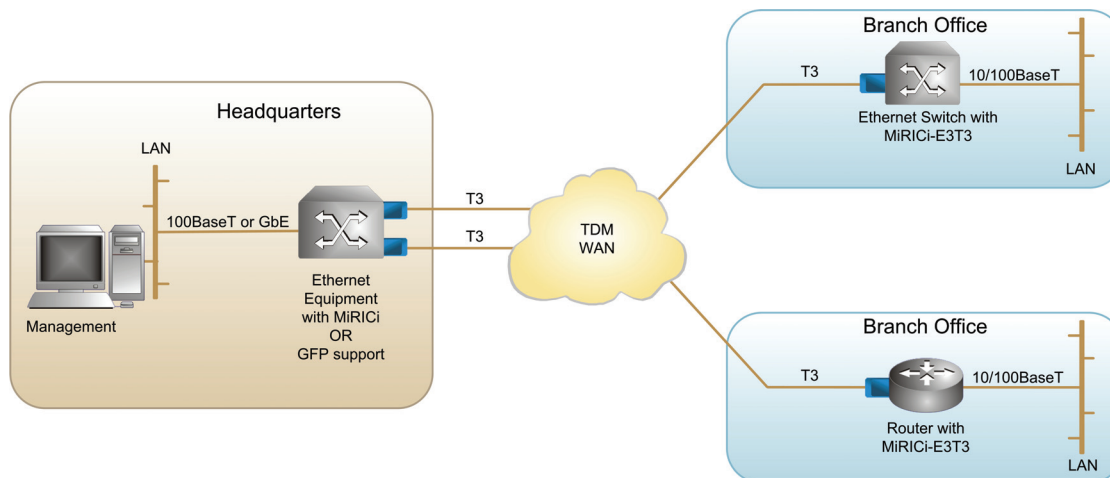


Figure 1. Providing Transparent LAN Services over Leased Lines

## Specifications

### WAN INTERFACE

#### Number of Ports

1 T3 port

#### Tx Clock

Receive or internal clock

#### Connector

DIN 1.0/2.3 connector

### T3 INTERFACE

#### Number of Ports

1

#### Compliance

GR-499-CORE, T1.107, T1.404, G.703, G.704, G.775, G.824

#### Data Rate

44.736 Mbps

#### Line Code

B3ZS, AMI

#### Framing

Framed (C-bit, M23)

#### Line Impedance

75Ω, unbalanced

#### Cable Length (max)

Up to 275m (900 ft)

### LAN INTERFACE

#### Type

Fast or Gigabit Ethernet port

#### Compliance

IEEE 802.3

#### Edge Connector

SFP-based, MSA-compliant

#### Frame Size

FE: 64–2016 bytes  
GbE: Up to 10 Kbytes (Jumbo)

### WAN PROTOCOL

#### Encapsulation

GFP (G.8040, G.7041/Y.1303)

### GENERAL

#### LED Indicators

MiRiCi-E3T3/FE: LINK (green) – Ethernet link status  
MiRiCi-E3T3/GbE: LINK/ACT (green) – Ethernet link status and activity  
LOS (red) – T3 loss of signal

#### Power

3.3V

#### Power Dissipation

1.25W

#### Environment

Temperature: –40 to 65°C (–40 to 149°F)  
Humidity: Up to 90%, non-condensing

#### Physical

Height: 12.4 mm (0.49 in)  
Width: 14 mm (0.55 in)  
Depth: 79 mm (3.11 in)  
Weight: 15.0 g (0.5 oz)

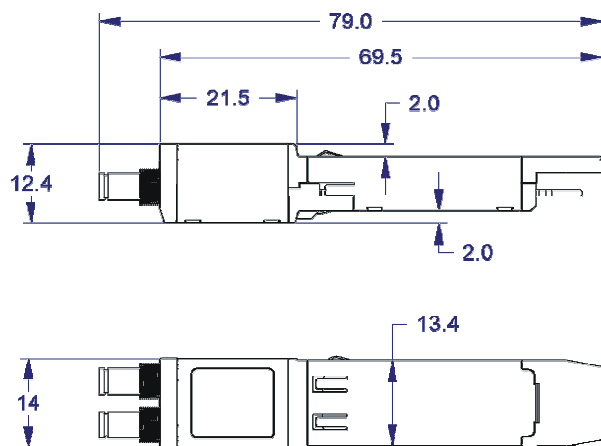


Figure 2. Physical Dimensions

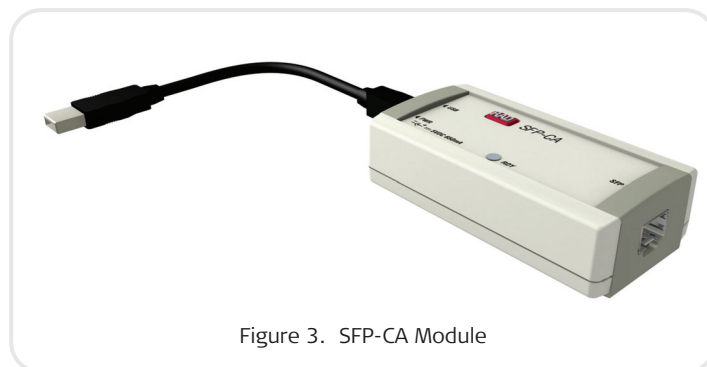


Figure 3. SFP-CA Module

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## Ordering

### MiRiCi-E3T3/+

#### Legend

- + SFP port type
- FE Fast Ethernet
- GbE Gigabit Ethernet

#### SUPPLIED ACCESSORIES

##### **CBL-1023-BNC**

Two 30 cm (11.8 in) DIN 1.0/2.3-to-BNC cable adaptors

#### OPTIONAL ACCESSORIES

##### **SFP-CA**

Configuration adapter module for configuring MiRiCi-E3T3 by connecting it to a PC.

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