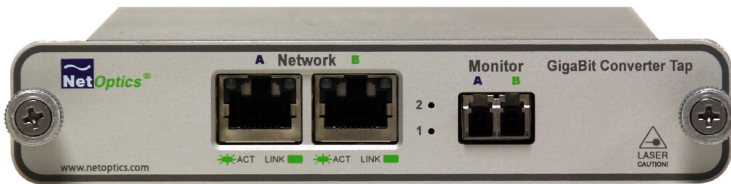




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# Installation Guide for GigaBit TX to SX Tap

*Model CVT-GCU/SX*



Doc. PUBCVTGCUSXU Revised 03/07





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## Introduction

Net Optics GigaBit TX to SX Tap simplifies connecting FX fiber monitoring and security devices to GigaBit copper network links. Convert TX to SX and tap into the link with one device, reducing cost and complexity at the same time. GigaBit TX to SX Taps support passive monitoring of GigaBit links at speeds at 1000 Mbps.

## Transparent Access

GigaBit TX to SX Taps establish permanent passive access ports without introducing a point of failure or disturbing other network connections. These passive Taps deliver full-duplex monitoring with zero impact on network traffic around the clock.

## Security and Visibility

Without an IP address, monitoring devices are isolated from the network, dramatically reducing their exposure to attacks. However, the monitoring device connected to the Tap still sees all full-duplex traffic as if it were in-line, including Layer 1 and Layer 2 errors.

## Simply Plug It In

Full-duplex monitoring is a snap with supplied cables. All networking and monitoring cables necessary for plug and play deployment are included with the Tap

## Reliability

For extra uptime protection, Net Optics GigaBit TX to SX Taps offer redundant power connections. Should the primary power source fail, the Tap automatically switches to the backup power source. Power LEDs on the front of the Tap indicate the current power source – even if power is lost and re-applied, there is always zero delay to network traffic.

## Key Features

### Passive, Secure Technology

- Provides passive access at speeds at 1000 Mbps without data stream interference or introducing a point of failure
- Access GigaBit copper links with SX fiber devices without a separate converter
- Permanent in-line installation without affecting network performance

## Key Features (continued)

### Passive, Secure Technology

- Passes all full-duplex traffic (including errors) from all layers for comprehensive troubleshooting
- No IP address is needed for the Tap or monitoring device, enhancing monitoring security
- Redundant power ensures monitoring uptime
- Fully IEEE 802.3 compliant

### Ease of Use

- LED indicators show redundant power and link status
- Front-mounted connectors make installation and operation quick and easy
- Silk-screened application diagram illustrates all connections for easy deployment
- Optional 19-inch rack frames hold up to 3 or 12 Taps
- Tested and compatible with all major manufacturers' monitoring devices, including protocol analyzers, probes, and intrusion detection/prevention systems

### Support

- Net Optics offers free technical support throughout the lifetime of your purchase. Our technical support team is available from 8 am to 5 pm Pacific Time, Monday through Friday at +1 (408) 737-7777 and via email at [ts-support@netoptics.com](mailto:ts-support@netoptics.com). FAQs are also available on Net Optics website at [www.netoptics.com](http://www.netoptics.com).

## Product Diagram

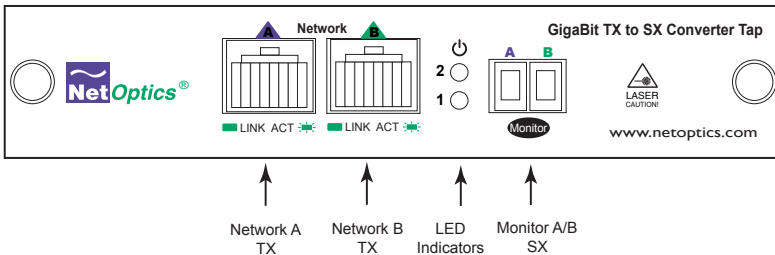


Figure 1.

## Connecting a GigaBit TX to SX Tap to the Network

1. Unpack the Tap and verify that you have all components, and obtain the required cables needed to successfully install the unit.
2. Connect Network Port A to the appropriate switch, server or router using a CAT5E RJ45 straight-thru cable. This will act as your DCE interface.
3. Connect Network Port B to the appropriate switch, server or router using a CAT5E RJ45 straight-thru cable. This will act as your DTE interface.
4. Verify that the Tap Network Ports are cabled in-line between two devices.

## Link Fault Signaling

The Tap negotiates separately with each side of the full-duplex link, detecting if either side fails. In the event of a failure, the Tap ceases negotiation with the remaining side, enabling a clean fail-over to a redundant network connection (if one is available).

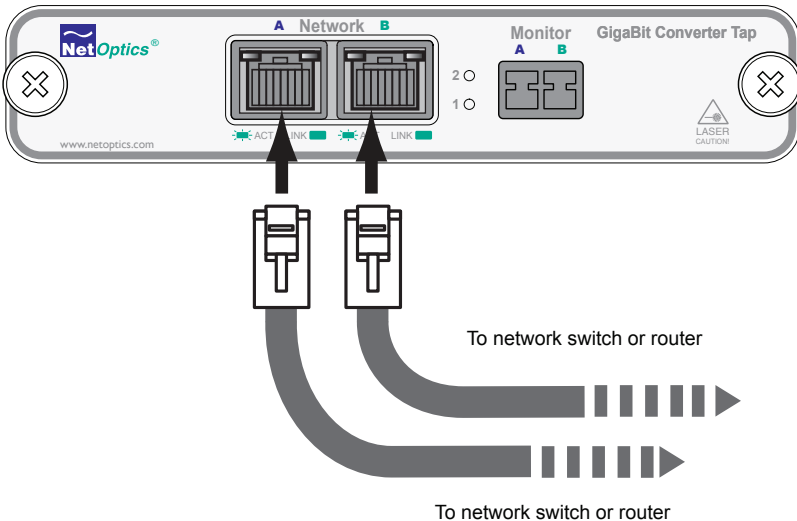


Figure 2.



## Connecting a GigaBit TX to SX Tap to the Monitoring Device

1. Supply power to the Tap using the 2 redundant power supplies included with the unit. Verify that the Power LED illuminates.
2. Using a Net Optics Custom Monitor Cable, connect the single-duplex end to the Tap Monitor Port A/B.
3. Connect the twin-duplex end of the cable labeled DCE into the appropriate monitoring device port to monitor the DCE link.
4. Connect the other twin-duplex end to the appropriate monitoring device port to monitor the DTE link.
5. Compare the LEDs on the Tap to the chart below to verify correct setup:
  - PWR1:** Power 1. This LED illuminates (Green) when device is powered up.
  - PWR2:** Power 2. This LED illuminates (Green) when redundancy is powered up.
  - LK:** Link. This LED illuminates (Green) when link is established with another device
  - Tx:** Transmit. This LED illuminates (Green) when UTP port is transmitting a signal.
  - Rx:** Receive. This LED illuminates (Green) when UTP port is receiving a signal.

**Additional GigaBit TX/SX Tap LEDs are located in the upper left and right hand corners of the RJ45 connectors for Port A and Port B.**

- **Link Indicator:** Located in the upper right hand corner. If a good link is established, the LED illuminates a steady green. If there is current activity on this link, the LED flashes.

*Note: The SC connectors on the Custom Analyzer Cable contain RX connections only.*

### Connecting a GigaBit TX to SX Tap to the Monitoring Device

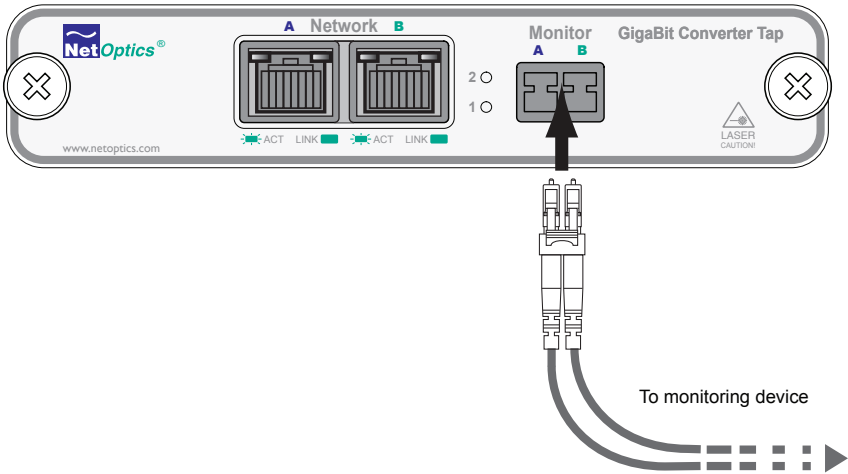


Figure 3.

## Specifications

### Splitter Specifications:

Split Ratio: 50/50

Fiber Type: Multimode Corning 62.5/125 $\mu$ m, wavelength 850nm

Insertion Loss: Network Port:  $\leq$  4.5 dB

Monitor Port:  $\leq$  4.5 dB

### Operating Specifications:

Operating Temperature: 10°C to 55°C

Storage Temperature: 0°C to 70°C

Relative Humidity: 10% min, 95% max, non-condensing

### Mechanical Specifications:

Power Supply: Input: 100-240 VAC, 47-63 Hz, 0.5A

(AC100-125V, 50-60Hz, 30VA for Japan)

Output: 12V, 1.5A (5V, 2.4A for UK and Japan)

Dimensions: 1.125" high x 6.5" deep x 4.5" wide

### Connectors:

(1) Duplex SC connector (monitoring port)

(2) RJ45, 8 pin connectors (network ports)

### Cable Interface:

**Copper Cable Type:** 22-24 AWG unshielded twisted pair cable, CAT5E

### Fiber Optic Interface:

Laser: Class I, eye-safe, laser emitter type. These Class I Lasers conform to the applicable requirements per US 21 CFR (J) and EN 60825-1, also UL 1950 applications.

Optical Transmitter Wave Length: 850 nm nominal

Output Power: -9.5 dB min, -4.0 dB max

Optical Receiver Input Sensitivity: 0 dB min, -17 dB max

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**Notes:**

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