



Installation Guide for GigaBit Fiber In-Line Regeneration Tap™



Contents

Introduction	1
Key Features	2
About This Guide	3
Unpacking and Inspection	3
Product Diagrams	4
LED Indicators	4
Connecting to the Network	5
Connecting to the Monitoring Devices	6
Specifications	7
Limitations on Warranty and Liability	9

PLEASE READ THESE LEGAL NOTICES CAREFULLY.

By using a Net Optics Regeneration Tap you agree to the terms and conditions of usage set forth by Net Optics, Inc.

No licenses, express or implied, are granted with respect to any of the technology described in this manual. Net Optics retains all intellectual property rights associated with the technology described in this manual. This manual is intended to assist with installing Net Optics products into your network.

Trademarks and Copyrights

© 2007 by Net Optics, Inc. Net Optics® is a registered trademark of Net Optics, Inc. Additional company and product names may be trademarks or registered trademarks of the individual companies and are respectfully acknowledged.

Additional Information

Net Optics, Inc. reserves the right to make changes in specifications and other information contained in this document without prior notice. Every effort has been made to ensure that the information in this document is accurate.

Introduction

Net Optics GigaBit Fiber Regeneration Taps solve the key physical layer challenges of multi-device monitoring for GigaBit fiber networks. For a complete picture of network health, these Taps connect up to eight different network management and security devices at any single GigaBit network location.

One Tap, No Idle Resources

Keep your intrusion detection and prevention systems, protocol analyzers, RMON probes, and other security devices productive with a single Regeneration Tap. Maximize resources and save on access points when multiple devices can monitor link traffic simultaneously through a single Regeneration Tap. Secure, passive access for multiple devices simply means a better return on monitoring investments.

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.

Reliability

For extra uptime protection, Net Optics 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.

Key Features

Passive, Secure Technology

- Enables real-time, simultaneous monitoring of a single GigaBit link with up to eight monitoring devices
- Provides complete full-duplex visibility at 1000 Mbps without data stream interference or introducing a point of failure
- Passes all 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
- Fully RoHS compliant

Ease of Use

- LED indicators show redundant power, speed, link, and activity status
- Front-mounted connectors support easy installation and operation
- Connectors are perfectly angled to reduce cable strain
- Silk-screened application diagram illustrates all connections for easy deployment
- Optional custom monitoring cables support easy full-duplex monitoring by sending each side of the signal to a separate monitoring device NIC
- 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. FAQs are also available on Net Optics website at www.netoptics.com.

About This Guide

Please read the guide before attempting to install GigaBit Fiber Regeneration Tap. This guide covers the following models:

Part Number	Description
RGN-SX-IL2	2x1 GigaBit Fiber SX Regeneration Tap, 62.5/125 μ m
RGN-50SX-IL2	2x1 GigaBit Fiber SX Regeneration Tap, 50 μ m
RGN-SX-IL4	4x1 GigaBit Fiber SX Regeneration Tap, 62.5/125 μ m
RGN-50SX-IL4	4x1 GigaBit Fiber SX Regeneration Tap, 50 μ m
RGN-SX-IL8	8x1 GigaBit Fiber SX Regeneration Tap, 62.5/125 μ m
RGN-50SX-IL8	8x1 GigaBit Fiber SX Regeneration Tap, 50 μ m
RGN-LX-IL2	2x1 GigaBit Fiber LX Regeneration Tap
RGN-LX-IL4	4x1 GigaBit Fiber LX Regeneration Tap
RGN-LX-IL8	8x1 GigaBit Fiber LX Regeneration Tap

Unpacking and Inspection

Carefully unpack the GigaBit Fiber In-Line Regeneration Tap and check for damaged or missing parts. The Tap ships with the following:

- GigaBit Fiber In-Line Regeneration Tap
- Two power cords
- Installation Guide
- Fasteners for rack mounting

You may have also ordered an extended warranty. Carefully check the packing slip against parts received. If any part is missing or damaged, contact Net Optics' Customer Service immediately.

Product Diagrams

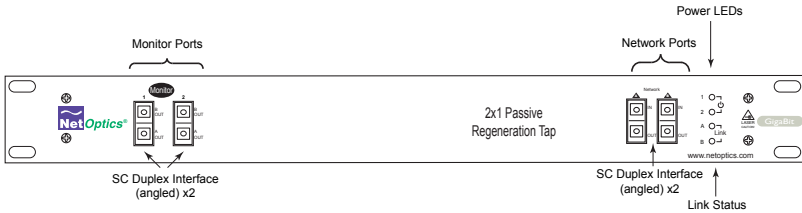


Figure 1: RGN-SX-IL2, RGN-50SX-IL2, RGN-LX-IL2 Front Panel



Figure 2: RGN-SX-IL4, RGN-50SX-IL4, RGN-LX-IL4 Front Panel

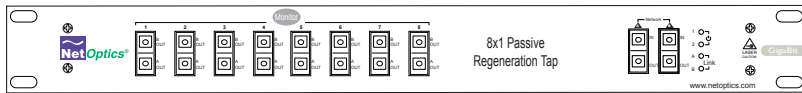


Figure 3: RGN-SX-IL8, RGN-50SX-IL8, RGN-LX-IL8 Front Panel

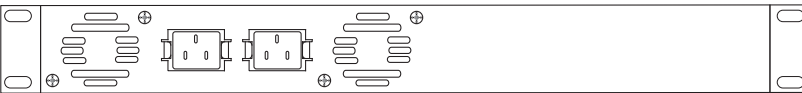


Figure 4: Back Panel (all models)

LED Indicators

- **PWR 1/ PWR 2:** Main and Redundant Power. If the Tap is deployed with both power supplies, both LEDs illuminate white when the Tap is connected to power. An off power LED indicates that the corresponding power supply is not functioning or not connected.
- **Link Port A/B:** Illuminates when link is established with another device connected to the A port and B port respectively.

Connecting to the Network

1. Connect Network Port A to the appropriate switch, server or router device using a duplex SC fiber cable.
2. Connect Network Port B to the appropriate switch, server or router device using a duplex SC fiber cable.
3. Verify that the GigaBit Fiber Regeneration Tap Network Ports are cabled in-line between two devices.

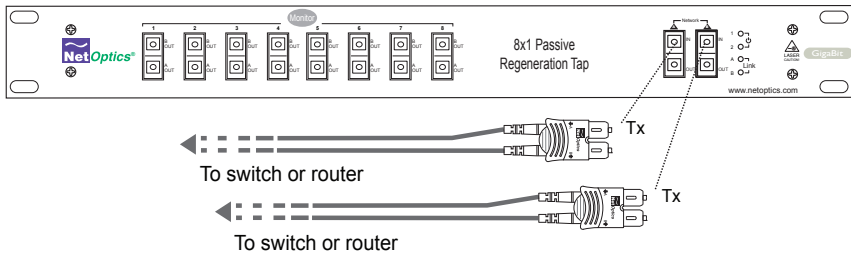


Figure 5: Connecting to the Network

Note:

The use of Singlemode or Multimode (50 or 62.5µm) cable is determined by the model purchased.

Connecting to the Monitoring Devices

1. Supply power to the Tap using the power supply adapter included with the unit. Verify that the power LED illuminates.

Note:

The second power supply is available to support the flow of traffic to the monitoring device should the first power supply fail. If the first power supply is unavailable, the second power supply supplies all power for the Tap.

2. Connect the twin-duplex end of the cable into the appropriate monitoring device port to monitor the link.
3. Connect the twin-duplex end to the appropriate monitoring device port to monitor the link. The SC connectors on the Custom Monitor Cable contain RX connections only.

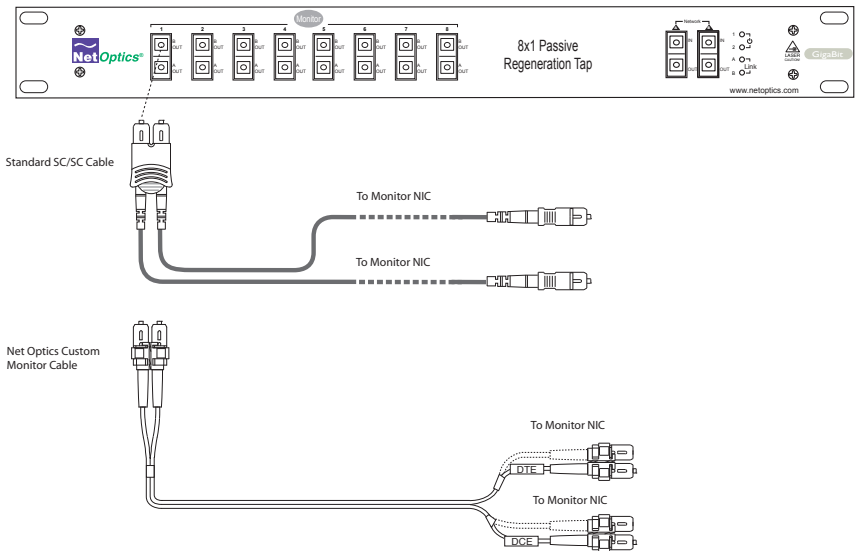


Figure 6: Connecting the Monitoring Devices

4. Repeat Steps 2-3 for each monitoring device you wish to connect to the Regeneration Tap.

Specifications

Environment

Operating Temperature: 0°C to 55°C

Storage Temperature: -10°C to 70°C

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

Power

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

Mechanical

Dimensions: 1.75" high x 10.5" deep x 17" wide

Certifications

Fully RoHS compliant

Optical Interface

Transceivers: 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.

Multimode (SX):

Split Ratio: 50/50, 70/30

Cable Type: Multimode Corning 50 or 62.5/125 μ m, wavelength 850nm

Insertion Loss: Network Port: \leq 4.5 dB

Monitor Port: \leq 4.5 dB

Optical Transmitter Wavelength: 850 nm nominal

Output Power: -9.5 dB min, -4 dB max

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

Singlemode (LX):

Cable Type: Singlemode Corning 8.5/125 μ m, wavelength 1310nm

Insertion Loss: Network Port: \leq 3.7 dB

Monitor Port: \leq 3.7 dB

Optical Transmitter Wavelength: 1310 nm nominal

Output Power: -10 dB min, -3 dB max

Optical Receiver Input Sensitivity: -3 dB min, -20 dB max

Connectors**RGN-SX-IL2 and RGN-50SX-IL2 models:**

- (2) Duplex SC Multimode connectors (monitor ports)
- (2) Duplex SC Multimode connectors (network ports)

RGN-SX-IL4 and RGN-50SX-IL4 models:

- (4) Duplex SC Multimode connectors (monitor ports)
- (2) Duplex SC Multimode connectors (network ports)

RGN-SX-IL8 and RGN-50SX-IL8 models:

- (8) Duplex SC Multimode connectors (monitor ports)
- (2) Duplex SC Multimode connectors (network ports)

RGN-LX-IL2 model:

- (2) Duplex SC Singlemode connectors (monitor ports)
- (2) Duplex SC Singlemode connectors (network ports)

RGN-LX-IL4 model:

- (4) Duplex SC Singlemode connectors (monitor ports)
- (2) Duplex SC Singlemode connectors (network ports)

RGN-LX-IL8 model:

- (8) Duplex SC Singlemode connectors (monitor ports)
- (2) Duplex SC Singlemode connectors (network ports)

Limitations on Warranty and Liability

Net Optics offers a limited warranty for all its products. IN NO EVENT SHALL NET OPTICS, INC. BE LIABLE FOR ANY DAMAGES INCURRED BY THE USE OF THE PRODUCTS (INCLUDING BOTH HARDWARE AND SOFTWARE) DESCRIBED IN THIS MANUAL, OR BY ANY DEFECT OR INACCURACY IN THIS MANUAL ITSELF. THIS INCLUDES BUT IS NOT LIMITED TO LOST PROFITS, LOST SAVINGS, AND ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING FROM THE USE OR INABILITY TO USE THIS PRODUCT, even if Net Optics has been advised of the possibility of such damages. Some states do not allow the exclusion or limitation of implied warranties or liability for incidental or consequential damages, so the above limitation or exclusion may not apply to you.

Net Optics, Inc. warrants this Regeneration Tap to be in good working order for a period of ONE YEAR from the date of purchase from Net Optics or an authorized Net Optics reseller.

Should the unit fail anytime during the said ONE YEAR period, Net Optics will, at its discretion, repair or replace the product. This warranty is limited to defects in workmanship and materials and does not cover damage from accident, disaster, misuse, abuse or unauthorized modifications.

If you have a problem and require service, please call the number listed at the end of this section and speak with our technical service personnel. They may provide you with an RMA number, which must accompany any returned product. Return the product in its original shipping container (or equivalent) insured and with proof of purchase.

THE WARRANTY AND REMEDIES SET FORTH ABOVE ARE EXCLUSIVE AND IN LIEU OF ALL OTHERS, EXPRESS OR IMPLIED. No Net Optics reseller, agent, or employee is authorized to make any modification, extension, or addition to this warranty.

Net Optics is always open to any comments or suggestions you may have about its products and/or this manual.

Send correspondence to
Net Optics, Inc.
5303 Betsy Ross Drive
Santa Clara, CA 95054 USA
Telephone: +1 (408) 737-7777
Fax: +1 (408) 745-7719
Email: info@netoptics.com/[Internet: www.netoptics.com](http://www.netoptics.com)

All Rights Reserved. Printed in the U.S.A. No part of this publication may be reproduced, transmitted, transcribed, stored in a retrieval system, or translated into any language or computer language, in any form, by any means, without prior written consent of Net Optics, Inc., with the following exceptions: Any person is authorized to store documentation on a single computer for personal use only and that the documentation contains Net Optics' copyright notice.

www.netoptics.com