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## Installation Guide for 10/100BaseT Span Regeneration Tap™

*Models RGND-CU-S2, RGND-CU-S4, RGND-CU-S8*



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***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.

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## **Introduction**

Net Optics 10/100BaseT Span Regeneration Taps solve the key physical layer challenges of access to scarce spanning resources. For a complete picture of network health, these Taps connect two switch Span ports to up to sixteen different network management and security devices. Each Span session can be independently monitored by up to eight devices.

### **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.

### **Span Port Sharing**

When a span session is connected into the Network A port, this data can be monitored simultaneously on all Monitor A ports. A second span session can be monitored simultaneously on all Monitor B ports. The data on the Network A and Network B ports remains completely separate. Each monitoring device receives the same traffic in real time, providing a detailed picture of network health.

### **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 each 10 or 100 Mbps span session, with up to eight monitoring devices
- Supports monitoring of all traffic forwarded by network switch span ports, including VLANs
- 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
- DIP switches select auto-negotiation or fixed speed and duplexing settings for the Tap
- Front-mounted connectors support easy installation and operation
- Silk-screened application diagram illustrates all connections for easy deployment
- 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).

## About This Guide

Please read the guide before attempting to install 10/100BaseT Span Regeneration Tap. This guide covers the following models:

Part Number	Description
RGND-CU-S2	2x1 10/100 Span Regeneration Tap
RGND-CU-S4	4x1 10/100 Span Regeneration Tap
RGND-CU-S8	8x1 10/100 Span Regeneration Tap

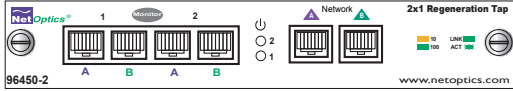
## Unpacking and Inspection

Carefully unpack the 10/100 Span Regeneration Tap and check for damaged or missing parts. The Tap ships with the following:

- 10/100 Span 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**



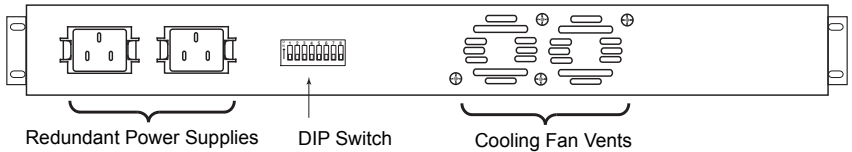
**Figure 1: RGND-CU-S2 Front Panel**



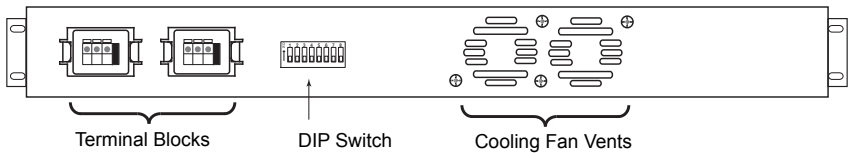
**Figure 2: RGND-CU-S4 Front Panel**



**Figure 3: RGND-CU-S8 Front Panel**



**Figure 4: Rear Panel AC Power models**



**Figure 5: Rear Panel DC Power models**

## **LED Indicators**

- **Link Indicators:** Located on the right corner of each RJ45. If a good link is established, the LED illuminates a steady green.
- **10/100 Indicators:** Located on the left corner of each RJ45. If the Port is set to 10 Mbps, the LED illuminates yellow. If the Port is set to 100 Mbps, the LED will illuminate green.
- **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.

## **Cabling Guidelines**

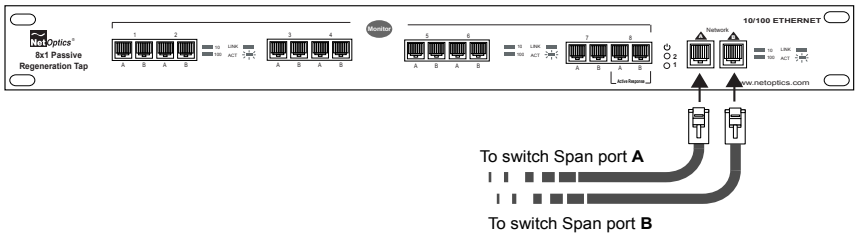
- If connecting to Switches or Hubs, use CAT5 RJ45 cross-over cabling.
- If connecting to Routers or NICs, use CAT5 RJ45 straight-through cabling.

## Connecting to the Span Ports

Span Port Regeneration Taps allow customers to passively monitor two Network Switch Span Ports independent of each other. For example, if a Span session is connected into Network A port, data can be monitored simultaneously on all Monitor A Ports. A second Span session can be connected into Network B port and data can be monitored simultaneously on all Monitor B ports. The data on Network Ports A and B will remain separate data streams at all times.

### To connect the Regeneration Tap to switch Span Ports:

1. Connect Network Port A to the appropriate switch Network port using a CAT5 RJ45 cable.
2. Connect Network Port B to the appropriate switch Network port using a CAT5 RJ45 cable.
3. Check the RJ45 connector LEDs to verify that the Regeneration Tap is receiving traffic from the in-line ports.



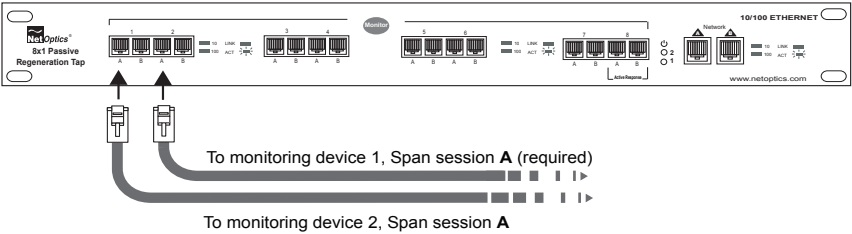
**Figure 6: Connecting the Span Ports**

**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.*

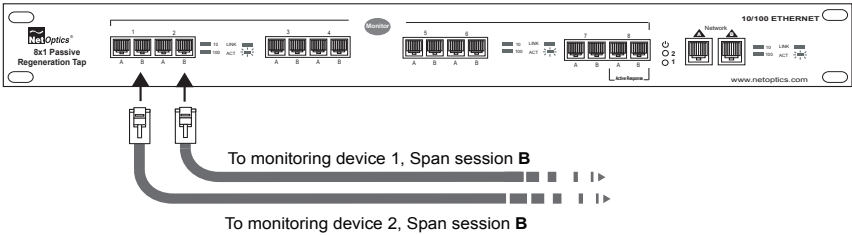
**Connecting to the Monitoring Devices**

1. Connect Monitor A ports to the appropriate monitoring devices using a CAT5 RJ45 cable. These devices will monitor Span port traffic from Span A port.



**Figure 7: Connecting the Monitors to Span Session A**

2. To monitor a second Span port link, connect Monitor B ports to the appropriate monitoring devices using a CAT5 RJ45 cable. These devices will monitor Span port traffic from Span B port.

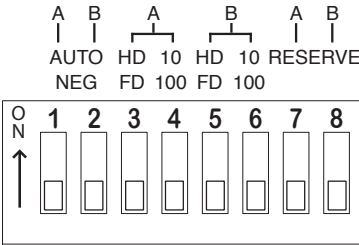


**Figure 8: Connecting the Monitors to Span Session B**

### DIP Switch Settings

Eight dual in-line package (DIP) switches are located on the back of the unit, allowing the user to select from multiple monitoring and network settings. When the bottom half of the switch is down, the Port is “Off.” When the top half of the switch is down, the Port is “On.” You must ensure that both Network Ports A and B match your network devices speed and duplex settings.

Switch	Function	Description
1	Turns Port A Auto-negotiation ON or OFF. Factory default setting is Auto-negotiation.	If turned ON, port A will automatically negotiate the link and positions 3 and 4 will become inactive. To manually configure port A, turn switch to the OFF position. Positions 3 and 4 are active.
2	Turns Port B Auto-negotiation ON or OFF.	If turned ON, port B will automatically negotiate the link and positions 5 and 6 will become inactive. To manually configure port B, turn switch to the OFF position. Positions 5 and 6 are active.
3	Set Port A Duplex	ON for Half-Duplex; turn OFF for Full-Duplex
4	Set Port A Speed	ON for 10 Mbps; turn OFF for 100 Mbps
5	Set Port B Duplex	ON for Half-Duplex; turn OFF for Full-Duplex
6	Set Port B Speed	ON for 10 Mbps; turn OFF for 100 Mbps
7	Reserved	Leave in the OFF position
8	Reserved	Leave in the OFF position



NOTE: To activate, push buttons UP.  
(This diagram shows all segments in the OFF position)

**Figure 9: DIP Switch Settings**

## 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

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

DC Power Input: -48 VDC typical, -36 VDC min, -75 VDC max

### Mechanical

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

### Cable Interface

Copper Cable Type: 22-24 AWG unshielded twisted pair cable,  
CAT5/CAT5e

Link Distance Supported: 100 meters

### Connectors

#### RGND-CU-S2 model:

(4) RJ45, 8-pin connectors (monitor ports)

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

#### RGND-CU-S4 model:

(8) RJ45, 8-pin connectors (monitor ports)

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

#### RGND-CU-S8 model:

(16) RJ45, 8-pin connectors (monitor ports)

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

### Certifications

Fully RoHS compliant

## **Limitations on Warranty and Liability**

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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.

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

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