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## Installation Guide for 10/100BaseT Slim Tap





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## About This Guide

This guide explains how to install the 10/100BaseT Slim Tap. Please read the Guide before attempting to install the 10/100BaseT Slim Tap. This guide covers the following models: Model TP-CUSLM

## Introduction

Net Optics 10/100BaseT Taps supply mission-critical networks with superior network visibility and security access. The breakthrough design of the Net Optics 10/100BaseT Tap ensures zero impact on network traffic while maintaining uninterrupted access for monitoring and security devices. These are the world's only 10/100BaseT Taps offering "zero delay" technology and other innovative features. If power is lost to other 10/100 Taps, the connected devices may introduce delays as they detect the power loss and try to re-establish their link. Net Optics' pioneering design ensures that any loss of power to the Tap is transparent to the network, and does not affect the flow of traffic through the Tap – eliminating packet delay and loss as potential security issues.

All network and monitoring cables are included with the 10/100BaseT Tap for plug-and-play deployment.

## Communication To and From the Tap

An RS232 port on the back of the unit is provided for connecting the Tap to a computer; complete the setup of the Tap with a computer program such as HyperTerminal and the Tap's Command Line Interface (CLI). Information from the Tap can be obtained two ways. Either use the CLI commands to get information, or check the numeric utilization display and LEDs on the front of the unit (see below).

Full-duplex monitoring cables send each side of the network signal to a separate NIC on the monitoring device. The current percentage of each link utilization is available at-a-glance from digital numbers displayed on the front of the unit as shown below.



**Figure 1 : 33% Utilization of One Side of the Link and 42% Utilization of the Other Side**

**Security and Visibility**

The monitoring device connected to the Tap sees all full-duplex traffic as if it were in-line, including Layer 1 and Layer 2 errors. Since a Slim Tap has no IP address, access to traffic information is also unavailable from within the network. Only the connected computer can request information.

**Reliability**

For extra uptime protection, Net Optics 10/100BaseT 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 reapplied, there is always Zero Delay to network traffic.

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## Key Features

### Passive, Secure Technology

- Provides passive access at 10 or 100 Mbps without data stream interference or introducing a point of failure
- Unique Zero Delay technology ensures no packet delay from loss of power to the Tap
- Passes all full-duplex traffic (including errors) from all layers for comprehensive troubleshooting
- Command Line Interface (CLI) configures threshold alarms and monitors utilization, link, and speed
- Redundant power ensures monitoring uptime
- Fully IEEE 802.3 compliant
- Fully RoHS compliant

### Ease of Use

- Front-mounted connectors support easy installation and operation
- LED indicators show redundant power status
- Silk-screened application diagram illustrates all connections for easy deployment
- Front-mounted digital display provides real-time link utilization
- Optional 1 RU 19-inch rack frames hold 6 Slim Taps
- 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).

## **Steps to Install the 10/100BaseT Slim Tap**

To install and configure the Slim Tap, you will do the following:

- Unpack and inspect the Slim Tap.
- Connect the Slim Tap to the network.
- Power on the Slim Tap .
- Connect a DB-9 cable from the Slim Tap to a computer and set configuration thresholds. (See pages 7-8 for CLI settings)
- Check utilization on Ports A & B from the CLI and from the Slim Tap, and display the highest recorded utilization since the last reset.
- Display link status for Ports A & B from the CLI.
- Use the Reset Button to clear the highest recorded utilization and turn off alarm LEDs. To use the reset button users must be logged in to the unit via the RS232 connection.
- Connect a monitoring device to the Slim Tap.

## **Unpack and Inspect the Slim Tap**

Unpack the 10/100BaseT Slim Tap and check for damaged or missing parts. The Tap ships with the following:

- 10/100BaseT Slim Tap
- 2 power supplies
- 2 power cords
- 2 network cables
- 2 monitor cables
- RS232 DB-9 cable for use with the Command Line Interface
- This Installation Guide

You may have also ordered a panel for rack mounting and 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

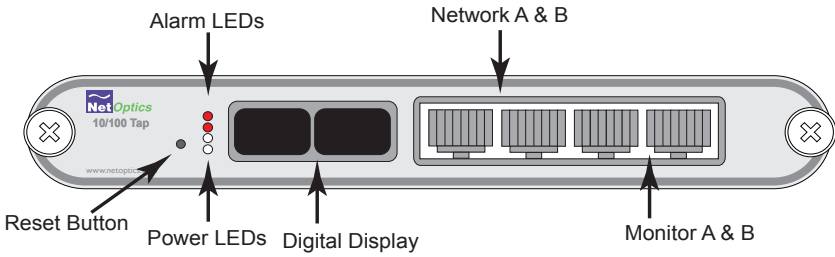


Figure 2: TP-CUSLM Front Panel

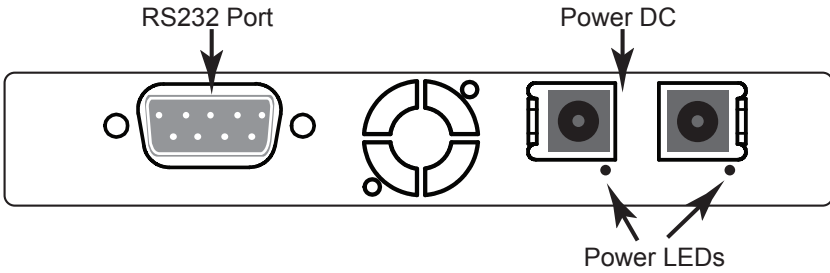


Figure 3: TP-CUSLM Rear Panel

**Cabling Guidelines**

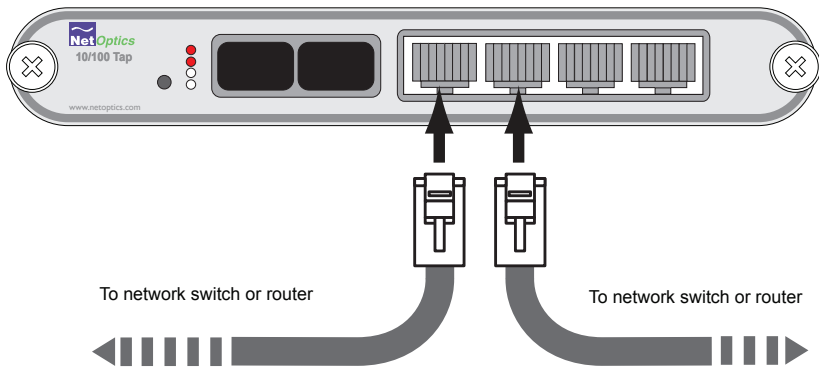
- If connecting to Switches or Hubs, use CAT5 RJ45 cross-over cabling.
- If connecting to Routers or NICs, use CAT5 RJ45 straight-through cabling.

**Connect the Slim Tap to the Network**

If you are connecting to switches or hubs, use CAT5 RJ45 straight-through cabling. If you are connecting to routers or NICs, use CAT5 RJ45 straight-through cabling.

To connect to the network:

1. Connect Network Port A to the appropriate switch, server or router.
2. Connect Network Port B to the appropriate switch, server or router.

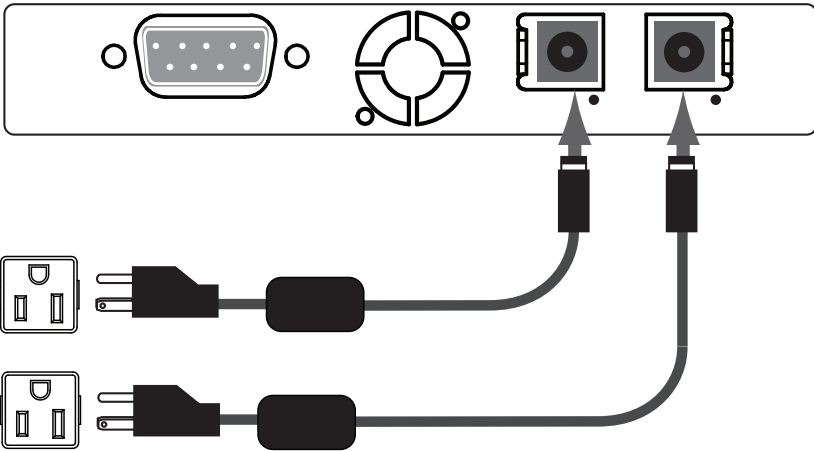


3. Verify that the Tap Network Ports are cabled in-line between two devices.

**Figure 5: Connecting Port A and Port B to the Network**

**Connect the Slim Tap Power**

1. Supply power to the Tap using the two redundant power supplies included with the unit.
2. Verify that the appropriate Power LED(s) are illuminated.
3. Turn off power to the unit.



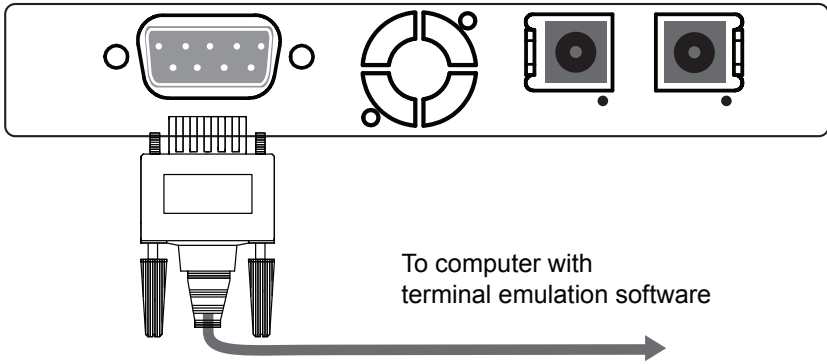
**Figure 6: Connecting dual power supplies**

The second power supply is available to support the flow of traffic to the monitoring device in the event that the first power supply becomes unavailable.

**Connect the Slim Tap to a Computer and access the CLI**

Be sure that power is disconnected before you begin. To access the CLI:

1. Connect a PC with terminal emulation software to the Tap using the supplied RS232 DB-9 Cable (Figure 7)



**Figure 7: RS232 DB-9 connecting to computer**

2. Launch the terminal emulation and set communication parameters to:

- 19200 baud
- 8 data bits
- No parity
- 1 stop bit
- No flow control

3. Power on the Tap. The CLI banner prompt appears (see below).

```

[ :NORMAL_POWER_UP:]

Compiled on 18-Apr-07 16:23:28
Net Optics Inc., 10/100 Ethernet Tap(TP-CUSLM) (Rev.A)

~~~~~
~ Net Optics Incorporated ~
~ 5303 Betsy Ross Drive ~
~ Santa Clara, CA 95054-1102 USA ~
~ ~
~ Phone:(408)737-7777 ~
~ http://www.netoptics.com ~
~~~~~

MAIN MENU
~ Net Optics Inc. 10/100 Ethernet TAP(TP-CUSLM) RS232 Interface ~
~~~~~
~ FUNCTION | PRESS THE FOLLOWING LETTER ~
~~~~~
~ Network Port A Utilization.....A ~
~ Network Port B Utilization.....B ~
~ Link and Speed of Network Ports.....C ~
~ Network Ports Alarm Status.....D ~
~ Configure Port A Alarm Threshold.....E ~
~ Configure Port B Alarm Threshold.....F ~
~ Highest Utilization Recorded.....G ~
~ RESET Network Port A Alarm.....H ~
~ RESET Network Port B Alarm.....I ~
~ RESET Network Ports A and B Alarms.....RESET Button ~
~~~~~
Net Optics:\>Waiting For User Input>
    
```

You now have seven options, listed in the chart below:  
 (The following commands are not case sensitive)

Press this:	To accomplish this:
A on the keyboard	Display Port A Utilization
B on the keyboard	Display Port B Utilization
C on the keyboard	Display Link Speed of Ports A and B
D on the keyboard	Display the Network ports alarm status
E on the keyboard	Configure Port A alarm threshold
F on the keyboard	Configure Port B alarm threshold
G on the keyboard	Display the highest recorded utilization
H on the keyboard	RESET Network Port A Alarm
I on the keyboard	RESET Network Port B Alarm
RESET Button	RESET Network Port A and B Alarms

4. Enter **a** to display Port A utilization (see below).

```

Net Optics:\>Waiting For User Input> A
DISPLAYING INFO FOR PORT: [A]
Network Port A Utilization at speed of 100 Mbps: [0]
    
```

5. Enter **b** to see Port B utilization (see below).

```

Net Optics:\>Waiting For User Input> B
DISPLAYING INFO FOR PORT: [B]
Network Port B Utilization at speed of 100 Mbps: [0]
    
```

6. Enter **c** to display link speed for Ports A and B (see below).

```

Net Optics:\>Waiting For User Input> C
DISPLAYING LINK STATUS AND SPEED FOR PORTS A & B:
Network Port A: [Link: UP] [Speed: 100Mbps]
Network Port B: [Link: UP] [Speed: 100Mbps]
    
```

7. Enter **d** to display network port alarm status (see below).

```

Net Optics:\>Waiting For User Input> D

Network Port A's Alarm is:  [OFF]
Network Port B's Alarm is:  [OFF]
    
```

8. Enter **e** to configure Port A alarm threshold (see below).

```

Net Optics:\>Waiting For User Input> E

Network Port A: Current Threshold Level:  [50]
Enter new value for Network Port A Threshold (1 to 100): 49
New Threshold for Network Port A is set to:  [49]
    
```

9. Enter **f** to configure Port B alarm threshold (see below).

```

Net Optics:\>Waiting For User Input> F

Network Port B: Current Threshold Level:  [50]
Enter new value for Network Port B Threshold (1 to 100): 49
New Threshold for Network Port B is set to:  [49]
    
```

10. Press **g** to display the highest recorded utilization (see below).

```

Net Optics:\>Waiting For User Input> G

The Highest Utilization Recorded at Network Port A:  [0]
The Highest Utilization Recorded at Network Port B:  [0]
    
```

11. Press **h** to reset network port A alarm (see below).

```

Net Optics:\>Waiting For User Input> H

Current Peak-A: 0. The Highest Utilization Recorded at Network Port A.
Peak-A RESET to:  [0]
    
```

11. Press **i** to reset network port B alarm (see below).

```
Net Optics:\>Waiting For User Input> I  
Current Peak-B: 0. The Highest Utilization Recorded at Network Port B.  
Peak-B RESET to: [0]
```

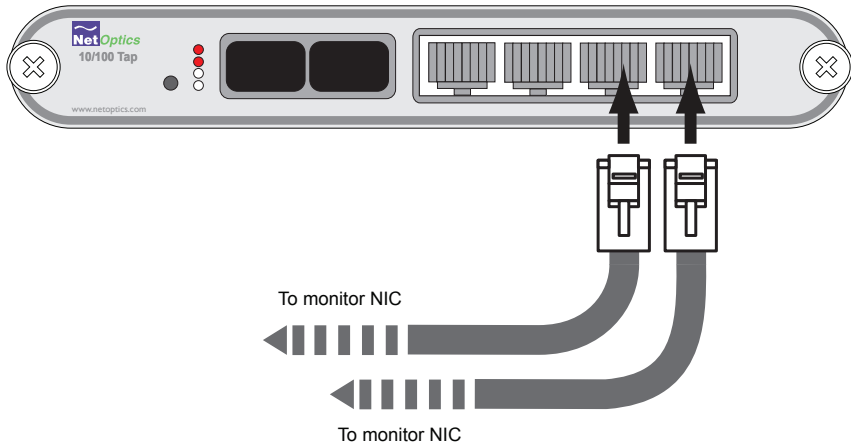
12. To reset both network ports simultaneously press the reset button on the front of the unit.

**NOTE:**

*If auto-negotiation is turned off on one of the network device, then it must also be turned off on the other network device.*

**Connect the Monitoring Device to the Slim Tap**

1. Connect Monitor Port A to the appropriate port on the monitoring device using a CAT5 straight-through cable.
2. Connect Monitor Port B to the appropriate port on the monitoring device using a CAT5 straight-through cable.



**Figure 8: Connecting the Slim Tap to the monitoring device**

## Specifications

### Environment

Operating Temperature: 0°C to 55°C

Operating Temperature: -10°C to 70°C

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

### Power

Power Supply

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

Output: 12V 1.5A

### Mechanical

Dimensions: .81" high x 6" deep x 5.5" wide

### Cable Interface

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

Link Distance Supported: 100 meters

### Connectors

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

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

### Certifications

- 10/100BaseT Slim Tap is compliant with IEEE 802.3
- Fully RoHS compliant

## 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 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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