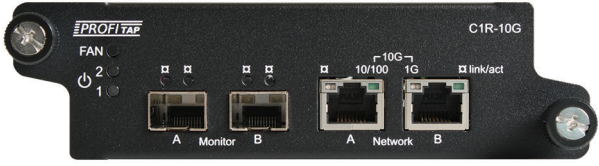
PROFI TAP

10GBASE-T TAP

In-Line 10G Copper Monitoring



USER MANUAL

www.profitap.com

Package contents

- **1 x 10GBASE-T TAP (C1R-10G)**
- **1 x 30W power supply (100–240 VAC to 12 VDC)**
- **1 x user manual**

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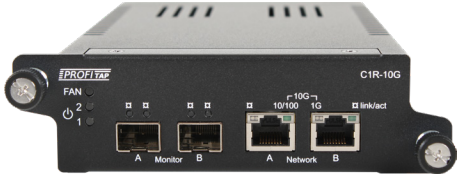
1. General Information



The Profitap 10GBASE-T TAP enables the monitoring of 10M/100M/1G/10G copper networks. Once the TAP is placed in the network, all traffic between the Network A and Network B ports is copied to the Monitor ports.

The 10G Copper TAP seamlessly duplicates full-duplex 10M/100M/1G/10G traffic at wire speed. It provides monitoring devices with an accurate copy of the traffic with no impact on the network. It monitors all 7 OSI layers and mirrors packets of all sizes and types, including errors.

Profitap Copper TAPs are non-intrusive, have no IP address, and isolate monitoring devices from the network to ensure complete stealth and security.

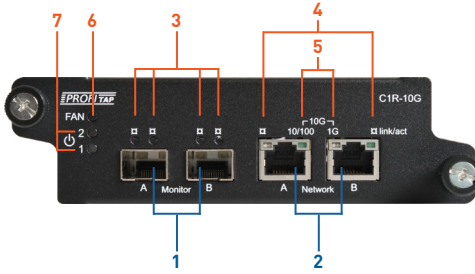
Features

- Non-intrusive in-line monitoring
- Monitor all 7 OSI layers
- Supports link failure propagation (LFP)
- Monitor SFP+ ports support SR, LR, and Copper modules, including passive Twinax cables
- Fully 802.3af, VoIP, and PoE compliant
- Redundant power inputs

Link Failure Propagation

The Profitap 10GBASE-T TAP transmits link failure errors between ports, allowing the network to activate a redundant path, while the TAP stays available for auto-negotiation. LFP reduces downtime and is essential for high-availability networks.

2. Visual Description



1 - Monitor ports (SFP+) connected to the analyzer
2 - Network ports (RJ45 10GBASE-T) connected to the network
3 - Monitor link/activity LEDs
4 - Network link/activity LEDs
5 - Network speed LEDs
6 - Fan status LED
7 - Power status LEDs

8 - Setup/Update Port (RS232 over USB (115200/8-N-1))
9 - Redundant power inputs:
1 input required for operation
2 inputs possible for redundancy

3. Functional Description

3.1 Interface Connectors

The C1R-10G Tap has 2x RJ45 10GBASE-T and 2x 10G SFP+ ports. Network ports A and B are connected to the network; Monitor ports A and B are connected to the analyzer.

3.2 Activity / Link

Two LEDs indicate Activity and Link for the network ports. Four LEDS indicate Activity and Link for the monitor ports. Link LED turns green when a link is detected on the port. Activity LED blinks when a signal is detected on one of the ports.

3.3 LED Behavior

Color	Network A LEDs	Network B LEDs	Monitor LEDs	FAN LED
Orange steady	–	–	–	Faulty FAN
Red	–	–	–	Critical internal error
Red blinking fast	–	–	No link/ SFP	–
Green steady	Link up	Link up	Link up	Operational
Green blinking slow	No link (speed LEDs)	No link (speed LEDs)	–	–
Green blinking fast	Activity LED (left)	Activity LED (right)	Activity LED (left)	–

3.4 Power

The C1R-10G TAP features two redundant power inputs, located on the back. Deploying redundant power increases the uptime of the monitor ports. Two LEDs show the presence of power, one corresponding to each power supply input.

3.5 Power Failure

If power to the TAP fails, the network ports A and B are hardware wired together — the network path continues to forward packets — while the monitor ports are disabled.

3.6 Fast Failover (1G/10G)

When a power transition event occurs, the network devices renegotiate the link. This operation can take up to 5 seconds depending on network endpoints and can cause a network topology reconfiguration. The Fast Failover feature reduces this time by trying to keep the link up without renegotiation when switching into failover mode.

4. Installation

4.1 Connecting the network ports

1. Power both network devices, do NOT power the TAP yet.
Note: A powered TAP will always correct a wrong cable setup.

2. Connect the network using category 6 UTP cables.*
   a. If the two (2) network devices are of DTE and DCE type, use two (2) straight cables.
   b. If the two (2) network devices are of the same type (2 x DTE or 2 x DCE) use one straight and one cross-over cable.

NOTE In case of 1G/10G connections, either cross or straight cables can be used.
NOTE The connected network devices show LINK (or Activity). If there is no LINK, change one of the cables by an opposite type.

4.2 Status check

When two devices are connected on the network ports, the two speed LEDs blink simultaneously to indicate the negotiation of the highest mutual speed. When the connection is established, the Speed LEDs indicates the network speed:

- The left LED light for a 10/100M connection.
- The right LED light for 1G connection.
- Both LEDs light for a mutual 1G/10G connection.

If no mutual speed is detected, the two LEDs blink alternately.
NOTE Network activity is shown on the Activity LEDs of Network A and Network B.

4.3 Connecting the monitoring ports

Connect the (2) Monitor Ports to the analyzer using suitable cables.
The Monitor Ports operate at the same speed as the network ports.
The Monitor Ports LEDs illuminate when link is detected.

NOTE Activity received on Network A and Network B will be mirrored to the respective Monitor Ports and will blink the Activity LEDs.
NOTE The maximum distance between any of the connected devices is 100m, per IEEE specification.

5. Driver Installation

Drivers aren't necessary for standard operation. However, they are required to use the Setup port, for configuration and firmware update purposes.

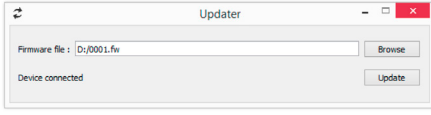
Please visit **www.profitap.com/resource-center/** to download the latest drivers and software.

The *10GBASE-T Updater* package is available for Windows 7 / 8 / 10 (32-bit and 64-bit). It contains both the 10GBASE-T TAP drivers, and the *10GBASE-T Updater* software used for firmware updates.

6. Firmware Update

Please visit **www.profitap.com/resource-center/** to download the latest firmware.

In order to update the Profitap 10GBASE-T TAP firmware, perform the following steps:
- Run the *10GBASE-T Updater* software
- Select the firmware file (****.fw)
- Click the Update button
- Wait for the operation to complete
- Reboot the 10GBASE-T TAP



7. Additional Information

Ordering reference
C1R-10G

Connectors
2 x RJ45 8 pins
2 x SFP+ (10GBASE-LR/SR)
1 x USB 2.0 type B
2 x 12 VDC input

LEDs
6 x Link/Activity
2 x Network speed
2 x Power
1 x Fan

Latency (Net-Net, 10 Gbps)
Max: 2380 ns
Min: 2335 ns

Latency (Net-Net, 1 Gbps)
Max: 776 ns
Min: 744 ns

Typical renegotiation time (10G)
Power ON: up to 7 s*
Power OFF: 1.5 to 4 s*

Typical renegotiation time (1G)
Power ON: up to 6 s*
Power OFF: 0.1 to 3.5 s*

* Renegotiation time varies depending on endpoints type/model.

Dimensions (WxDxH)
120 x 205 x 41 mm
4.72 x 8.07 x 1.61 in

Weight
770 g
1.70 lb

Operating temperature
0°C to +40°C
32°F to 104°F

Storage temperature
-22°C to +70°C
-7.6°F to 158°F

Relative humidity
10 to 95%, non-condensing

Accessories
90-240 V Power Supply

Compliance
RoHS
CE

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