NEOXPacketRaven Modular Fiber Network TAPs

QUICK USER GUIDE

PACKETRAVEN

SECURE MODELS AVAILABLE

BiDi MODELS AVAILABLE

Fiber TAPs are passive mirroring devices for secure and reliable tapping of network data in optical networks.

These TAPs are looped into the fiber optic line to be monitored and route all data traffic without interruption.

Our optical TAPs do not require power, are purely passive components and therefore cannot be detected in the network without expensive measurement equipment. Hackers and other attackers thus have no chance, and since the integrity of the outgoing data remains unaltered due to this tapping method.

But how does it work? Technically, optical TAPs split the light as it arrives and divide it into two fibers. In this case, a large part of the splitted signal remains on the actual network link and the rest is output to a monitoring port for external recording. Highly sensitive prisms are used to couple out the light wave.

Since optical Fiber TAPs are protocol-independent, these devices can be installed in a variety of network media. Thus, these TAPs are available for multimode and also singlemode network types and wavelength as well as network speed do not matter. The data is routed out transparently and loss-free without interfering with the active line.

PacketRaven Fiber TAPs are designed for data centers and allow you to equip up to 30 network segments with LC TAPs or 10 network segments with MTP®/MPO-based TAPs using our innovative, modular 1U chassis. They support network speeds from 100Mbps up to 400Gbps.

Without risk you get permanent network access and provide your monitoring and security tools with 100% reliable network data without introducing a single point of failure.

- Up to 400 Gbps
- Full Network Transparency
- No Impairment of Data Traffic
- 100% Network Data
- Invisible for Attackers
- No Network Access via Monitoring Port
- Plug-n-Play
- No Power Supply necessary
- Various Split Ratios
- Scalable and Modular
- Made in Germany

1. Highlights

- Supported network speeds: 100M, 1G, 10G, 25G, 40G, 50G, 100G, 200G, and 400G
- Alternative to SPAN ports – mirrors 100% of traffic including FCS/CRC errored packets that may be dropped by SPANs
- Invisible in the network, no IP address, no MAC address, cannot be hacked
- No power source necessary, 100% passive
- Guaranteed no packet loss
- Plug & play, simple installation without configuration
- Scalable and modular, supports installation of all TAP models regardless of media type, speed and connector type
- Split ratios of 50:50, 60:40, 70:30, 80:20 and 90:10 are supported
- Does not cause additional latency
- Extra-secure (Secure) and bi-directional (BiDi) models available
- Designed, assembled, certified and tested in Germany

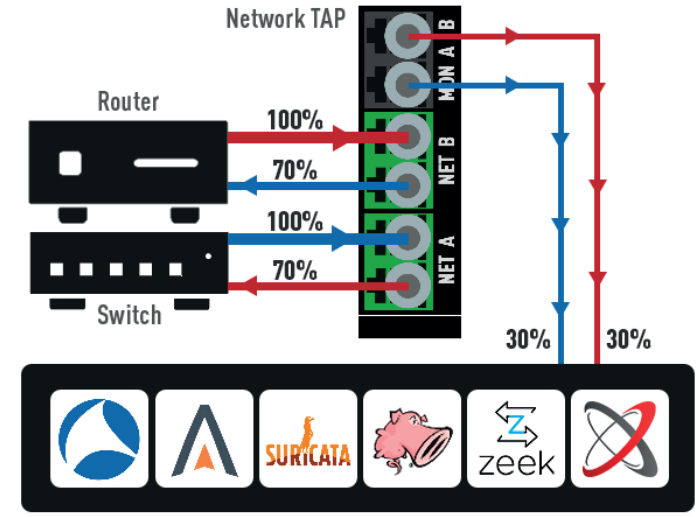
2. How does a Split Ratio work?

Due to its splitting technique using a prism, attenuations naturally occur which must be taken into account when selecting the TAP.

Fiber TAPs are available in 5 different variations and differ in their split ratio. Available are devices with the "split ratio" 50:50, 60:40, 70:30, 80:20, 90:10.

A typical attenuation value of a 70:30 Fiber TAP is about 2dB on the network side and 6dB on the monitoring ports.

Here you can see an example of a 70/30 Split Ratio:



Network Packet Broker / Monitoring Device / XDR / NDR / NIPS / NIDS

3. Connector Colours and Fiber Types

The colours of our connectors allow you to identify the fibre types for which the respective connector is intended:

OS2 = Blue*

OM3 = Aquamarine

OM5 = Lime Green

OS2 = Greeen (APC)

OM4 = Violet

** Our TAPs are supplied with UPC polish as standard. However, TAPs with APC polish are available on request*

4. Connections

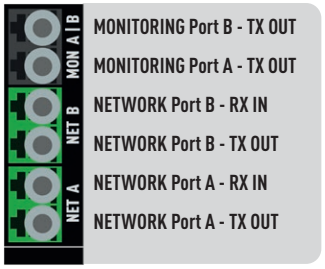
4.1 Singlemode & Multimode Fiber TAPs with LC > LC Connectors

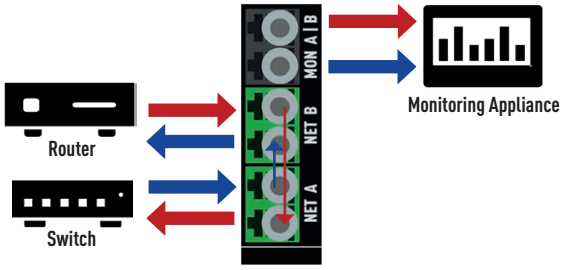
Here is an excerpt of the standards our LC **Singlemode** Fiber TAPs are supporting:*

- 100BASE-FX
- 1000BASE-EX
- 1000BASE-LX
- 1000BASE-LX10
- 1000BASE-ZX
- 10GBASE-ER
- 10GBASE-EW
- 10GBASE-LR
- 10GBASE-LRM
- 10GBASE-LW
- 10GBASE-ZR
- 10GBASE-ZW
- 25GBASE-ER
- 25GBASE-LR
- 40GBASE-ER4
- 40GBASE-FR
- 40GBASE-LR4
- 40GBASE-LX4/LM4
- 50GBASE-ER
- 50GBASE-FR
- 50GBASE-LR
- 100GBASE-DR
- 100GBASE-ER4
- 100GBASE-FR1
- 100GBASE-LR1
- 100GBASE-LR4
- 200GBASE-ER4
- 200GBASE-FR4
- 200GBASE-LR4
- 400GBASE-ER8
- 400GBASE-FR4
- 400GBASE-FR8
- 400GBASE-LR4-6
- 400GBASE-LR8
- 400GBASE-ZR

Here is an excerpt of the standards our LC **Multimode** Fiber TAPs are supporting:*

- 1000BASE-SX
- 10GBASE-SR
- 10GBASE-SW
- 25GBASE-SR
- 50GBASE-SR
- 100GBASE-SR1.2
- 100GBASE-SR SWDM4

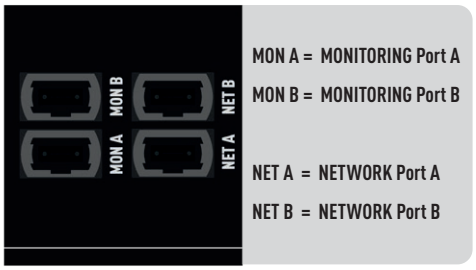


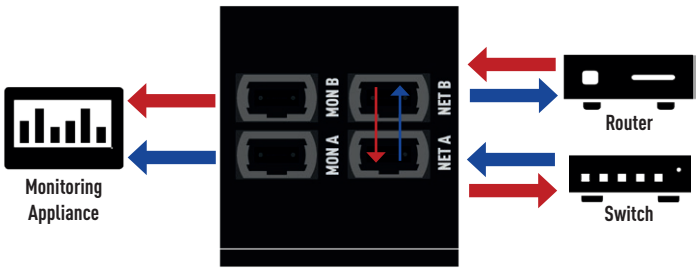


4.2 Multimode Fiber TAP with MTP®/MPO > MTP®/MPO Connectors

Here is an excerpt of the standards our MTP®/MPO Multimode Fiber TAPs are supporting:*

- 40GBASE-SR4
- 100GBASE-SR2
- 100GBASE-SR4
- 200GBASE-SR4
- 400GBASE-SR4.2

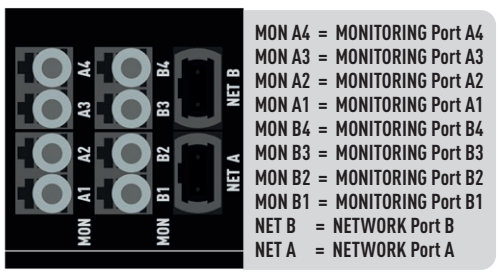


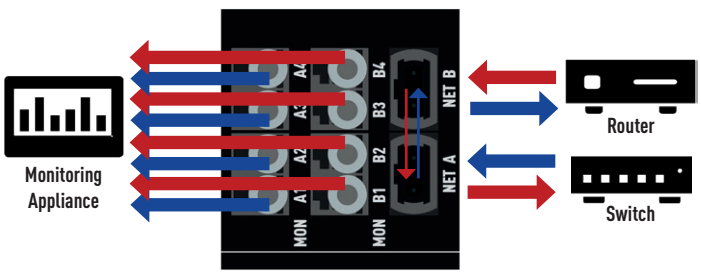


4.3 Multimode Fiber TAP with MTP®/MPO > LC Connectors

Here is an excerpt of the standards our MTP®/MPO Multimode Fiber TAPs are supporting:*

- 40GBASE-SR4
- 100GBASE-SR2
- 100GBASE-SR4
- 200GBASE-SR4
- 400GBASE-SR4.2



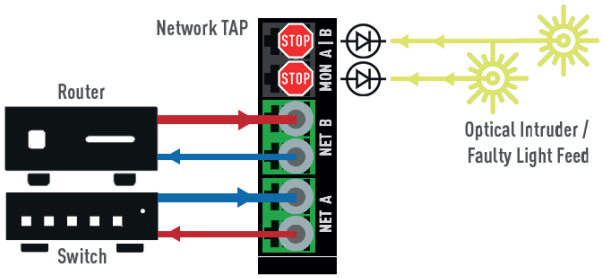


** If you are considering using a standard not listed here, please contact us.*

5. What is a Secure-TAP and its Data Diode Function?

Our Secure Modular TAPs have an optical filter and an optical isolator that add a Data Diode function to the TAP.
These prevent accidental or deliberate injections of unwanted data or light signals into the active network.

Due to a very high insertion loss of up to 35dB on the return channel from the monitoring port into the productive network to be protected, an additional two-level security layer is activated.



The insertion loss of the single-mode models is ~35 dB and for our multimode models ~25 dB.

6. Technical Specifications

SUPPORTED MEDIA TYPE	
Multimode 850 nm / 1300 nm	OM1, OM2
Multimode 850 nm	OM3, OM4
Multimode 850 nm – 950 nm	OM5
Singlemode 1310 nm / 1550 nm	OS1, OS2

SPECIFICATIONS	
Height x Width x Depth (Chassis)	4.80 cm x 19.40 cm x 42.50 cm
Operating Temperature	-40°C – +85°C
Humidity	5% – 85%
Reliability	GR-1221-CORE

MAXIMUM INSERTION LOSS			
Split Ratio (more on request)	50:50	60:40	70:30
Multimode OM1, OM2	4.0 dB / 4.0 dB	3.0 dB / 5.0 dB	2.4 dB / 6.3 dB
Multimode OM3, OM4, OM5	3.8 dB / 3.8 dB	2.8 dB / 4.8 dB	2.2 dB / 6.1 dB
Singlemode OS1, OS2	3.4 dB / 3.4 dB	2.5 dB / 4.5 dB	1.7 dB / 5.8 dB

7.1 Standard TAP Models


PRM-OM3-LL-x


PRM-OM4-LL-x


PRM-OM5-LL-x


PRM-OM4/OM5-ML-x


PRM-OM4/OM5-MM-x


PRM-OS2-LL-x

MULTIMODE OM3/OM4/OM5 FIBER TAPS - STANDARD MODELS							
ITEM NUMBER	NETWORK	FIBER TYPE	WAVE-LENGTH	INTERFACE NET. / MON.		SPLIT RATIO	SLOTS NEEDED
PRM-OM3-LL-*	1G/10G/25G/50G	OM3	850 nm	LC	LC	50:50, 60:40, 70:30	1
PRM-OM4-LL-*	1G/10G/25G/50G	OM4**	850 nm	LC	LC	50:50, 60:40, 70:30	1
PRM-OM5-LL-*	1G/10G/25G/50G/100G	OM5***	850 nm- 950 nm	LC	LC	50:50, 60:40, 70:30	1
PRM-OM4-MM-*	40G/100G/200G/400G	OM4**	850 nm	MTP®	MTP®	50:50, 60:40, 70:30	3
PRM-OM5-MM-*	40G/100G/200G/400G	OM5***	850 nm- 950 nm	MTP®	MTP®	50:50, 60:40, 70:30	3
PRM-OM4-ML-*	40G/100G/200G/400G	OM4**	850 nm	MTP®	LC	50:50, 60:40, 70:30	3
PRM-OM5-ML-*	40G/100G/200G/400G	OM5***	850 nm- 950 nm	MTP®	LC	50:50, 60:40, 70:30	3

** Basic article number plus "-50" for a 50:50 split ratio, "-60" for 60:40 and „-70" for 70:30 ** OM3 compatible *** OM4 and OM3 compatible*

SINGLEMODE OS2 FIBER TAP - STANDARD MODEL							
ITEM NUMBER	NETWORK	FIBER TYPE	WAVE-LENGTH	INTERFACE NET. / MON.		SPLIT RATIO	SLOTS NEEDED
PRM-OS2-LL-*	100M/1G/10G/25G/40G/50G/100G/200G/400G	OS2**	1310 nm / 1550 nm	LC	LC	50:50, 60:40, 70:30	1

** Basic article number plus "-50" for a 50:50 split ratio,"-60" for 60:40 and „-70" for 70:30 ** OS1 compatible*

7.2 SECURE TAP Models


PRM-OM3-LL-x


PRM-OM4-LL-x


PRM-OM5-LL-x


PRM-OS2-LL-x

MULTIMODE OM3/OM4/OM5 FIBER TAPS - SECURE MODELS							
ITEM NUMBER	NETWORK	FIBER TYPE	WAVELENGTH	INTERFACE NET / MON		SPLIT RATIO	SLOTS NEEDED
PRM-OM3-LL-50-S	1G/10G/25G/50G	OM3	850 nm	LC	LC	50:50	1
PRM-OM3-LL-70-S	1G/10G/25G/50G	OM3	850 nm	LC	LC	70:30	1
PRM-OM4-LL-50-S	1G/10G/25G/50G	OM4*	850 nm	LC	LC	50:50	1
PRM-OM4-LL-70-S	1G/10G/25G/50G	OM4*	850 nm	LC	LC	70:30	1
PRM-OM5-LL-50-S	1G/10G/25G/50G/100G	OM5**	850 nm – 950 nm	LC	LC	50:50	1
PRM-OM5-LL-70-S	1G/10G/25G/50G/100G	OM5**	850 nm – 950 nm	LC	LC	70:30	1

** OM3 compatible ** OM4 and OM3 compatible*

SINGLEMODE OS2 FIBER TAPS - SECURE MODELS							
ITEM NUMBER	NETWORK	FIBER TYPE	WAVELENGTH	INTERFACE NET / MON		SPLIT RATIO	SLOTS NEEDED
PRM-OS2-LL-50-1310S	100M/1G/10G/25G/40G/50G/100G/200G/400G	OS2*	1310 nm	LC	LC	50:50	1
PRM-OS2-LL-70-1310S	100M/1G/10G/25G/40G/50G/100G/200G/400G	OS2*	1310 nm	LC	LC	70:30	1
PRM-OS2-LL-50-1550S	100M/1G/10G/25G/40G/50G/100G/200G/400G	OS2*	1550 nm	LC	LC	50:50	1
PRM-OS2-LL-70-1550S	100M/1G/10G/25G/40G/50G/100G/200G/400G	OS2*	1550 nm	LC	LC	70:30	1

** OS1 compatible*

7.3 BiDi TAP Models


PRM-OM5-BD-LL-x

MULTIMODE BIDI OM5 FIBER TAPS					
ITEM NUMBER	NETWORK	FIBER TYPE	WAVELENGTH	INTERFACE NET / MON	SLOTS NEEDED
PRM-OM5-BD-LL-*	40G/100G	OM5**	830 nm - 950 nm	LC / LC	3

** Basic article number plus "-50" for a 50:50 split ratio,"-60" for 60:40 and „-70" for 70:30 ** OM4 and OM3 compatible*

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8. Accessories

CHASSIS	
ITEM NO.	DESCRIPTION
PRM-CH-1U30	Supports the installation of up to 30 TAP modules

Y-CABLES FOR FIBER TAPS				
ITEM NO.	FIBER TYPE	LENGTH	DIAMETER	DESCRIPTION
NX-LC-Y-PC-OS2-1M	OS2	1m	3.0mm	Y-Cable / Special Patchcord LC/PC-LC/PC Duplex
NX-LC-Y-PC-OS2-2M	OS2	2m	3.0mm	Y-Cable / Special Patchcord LC/PC-LC/PC Duplex
NX-LC-Y-PC-OS2-3M	OS2	3m	3.0mm	Y-Cable / Special Patchcord LC/PC-LC/PC Duplex
NX-LC-Y-PC-OS2-5M	OS2	5m	3.0mm	Y-Cable / Special Patchcord LC/PC-LC/PC Duplex
NX-LC-Y-PC-OM4-1M	OM4	1m	3.0mm	Y-Cable / Special Patchcord LC/PC-LC/PC Duplex
NX-LC-Y-PC-OM4-2M	OM4	2m	3.0mm	Y-Cable / Special Patchcord LC/PC-LC/PC Duplex
NX-LC-Y-PC-OM4-3M	OM4	3m	3.0mm	Y-Cable / Special Patchcord LC/PC-LC/PC Duplex
NX-LC-Y-PC-OM4-5M	OM4	5m	3.0mm	Y-Cable / Special Patchcord LC/PC-LC/PC Duplex
NX-LC-Y-PC-OM5-1M	OM5	1m	3.0mm	Y-Cable / Special Patchcord LC/PC-LC/PC Duplex
NX-LC-Y-PC-OM5-2M	OM5	2m	3.0mm	Y-Cable / Special Patchcord LC/PC-LC/PC Duplex
NX-LC-Y-PC-OM5-3M	OM5	3m	3.0mm	Y-Cable / Special Patchcord LC/PC-LC/PC Duplex
NX-LC-Y-PC-OM5-5M	OM5	5m	3.0mm	Y-Cable / Special Patchcord LC/PC-LC/PC Duplex