NEOXPacketRaven Secure Modular Fiber TAPs

WITH DIODE FUNCTION FOR ENHANCED SECURITY

Fiber TAPs are passive decoupling elements for the safe and reliable tapping of network data in optical networks. These TAPs are looped into the fiber optic line to be monitored and transmit the entire data traffic without interruption.

Secure Fiber TAPs have both an additional optical isolator (Data Diode functionality) and an optical filter to ensure that unwanted incoming light signals are blocked at the monitoring port to protect the network from compromise. It thus provides another layer of security that offers increased protection against attackers and faulty configurations.

Our optical TAPs do not require power, they are purely passive components and therefore cannot be detected in the network without expensive measuring equipment. Hackers and other attackers therefore do not stand a chance, and since the integrity of the outgoing data remains unaltered due to this tapping method, Network TAPs are increasingly used in the areas of network forensics, security and monitoring.

PacketRaven Fiber TAPs are designed for data centres and allow you to equip up to 30 network segments with 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.

This makes our Secure TAPs especially suitable for business-critical applications and high-security areas and CRITIS infrastructures with high requirements for securing sensitive data.

They are 100% compatible with our modular standard TAPs without Data Diode Function and can be installed together in the same chassis. On top of that, they are protocol-agnostic and compatible with all monitoring systems from leading suppliers.

HIGHLIGHTS
Supported network speeds: 100M, 1G, 10G, 25G, 40G, 50G, 100G, 200G and 400G.
Mirrors 100% of traffic including FCS/CRC errored packets
Isolator + filter protect the network from extraneous light injection through the monitoring port
Invisible in the network, no IP address, no MAC address, cannot be hacked
Monitoring of all OSI layers
100% passive, no power source needed
Guaranteed no packet loss, no additional latency
Plug & play, easy 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 and 70:30 are supported*
Singlemode and multimode models available
Can be used together with our standard modular TAPs in the same chassis
Supported fiber type identifiable by TAP colour - no need to pull out
Tamper proof seals
Assembled, certified and tested in Germany

** Other split ratios on request*

Use cases for Fiber TAPs with optical isolators

- Avoid accidentally connecting a passive TAP to an output port of the monitoring tool so that data is injected back into the monitored network.
- Avoid misconfiguration of monitoring tools. These can, for example, send data back into the network during legal surveillance measures by a public authority, which may lead to the discovery of the surveillance measure.
- Prevent people with access to unsecured parts of a data centre from using conventional Fiber TAPs to cripple the network or inject malicious code.

Connector colours & fiber types

From the colours of our connectors you can see for which fibre types the respective connector is intended:

OS2 = Blue **OM3** = Aquamarin **OM4** = Violett **OM5** = Lime green

Supported standards

Here is an excerpt of the standards supported by our LC Singlemode Fiber TAPs:*

- 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 supported by our LC Multimode Fiber TAPs:*

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

** If you would like to use a standard that is not listed here, please contact us.*

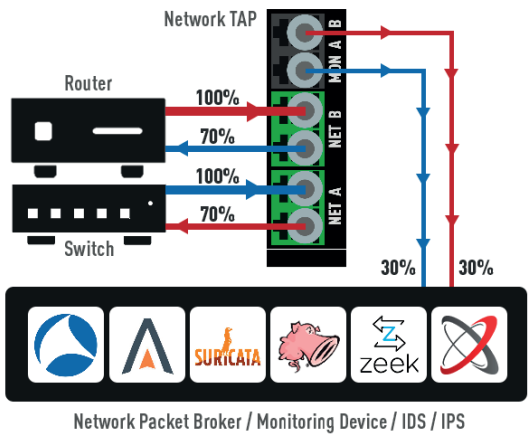
How does a split ratio work?

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

NEOX Secure Modular Fiber TAPs are available in 2 different versions and differ in their split ratio. TAPs with a „split ratio" of 50:50 and 70:30 are available (others on request).

A typical attenuation value of a 70:30 Fiber TAPs 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:

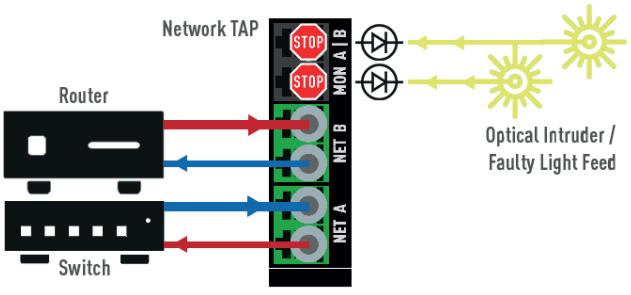


What is the Data Diode Function?

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.



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Specifications

SUPPORTED MEDIA TYPE		SPECIFICATIONS	
Multimode 850 nm:	OM3, OM4	Operating temperature:	-20°C - +85°C
Multimode 850 nm - 950 nm:	OM5	Humidity:	5% - 85%
Singlemode 1310 nm / 1550 nm:	OS1, OS2	Reliability:	GR-1221-CORE

MAXIMUM INSERTION LOSS		
Split Ratio (more on request)	50:50	70:30
Multimode OM3, OM4, OM5	3.8 dB / 4.8 dB	2.2 dB / 7.1 dB
Singlemode OS1, OS2	3.4 dB / 4.4 dB	1.7 dB / 6.8 dB

Models & Accessories

PacketRaven MULTIMODE TAP MODELS

All TAPs for fiber type OM5 are also OM4 compatible! All TAPs for fiber type OM4 are also OM3 compatible!

ITEM NUMBER	NETWORK	FIBER TYPE	WAVELENGTH	INT. 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

PacketRaven SINGLEMODE TAP MODELS

All TAPs for fiber type OS2 are also OS1 compatible!

ITEM NUMBER	NETWORK	FIBER TYPE	WAVE-LENGTH	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

PacketRaven CHASSIS

ITEM NUMBER	DESCRIPTION
PRM-CH-1U30	Supports the installation of up to 30 TAP modules (30 slots)

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SecurITy made in Germany
Trust Seal www.teletrust.de/itsmig