NEOX PRP-OS2-DLL PacketRaven Portable Singlemode Fiber Network TAPs User Guide

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Contents

Introduction and Features

Our Singlemode Fiber TAPs are decoupling elements for the secure and reliable tapping of network data in optical networks. These TAPs are looped into the network line to be monitored and transmit the entire data traffic without interruption and without packet loss, while maintaining data integrity.

Using conventional SPAN ports, also known as mirror ports, on the other hand, can distort the result, as this copying process works in store-and-forward mode and, for example, discards FCS/CRC faulty packets on OSI layer 2 instead of providing these Ethernet frames to the security or monitoring tool.

Our Network TAPs do not have a MAC or IP address, but work entirely on OSI Layer 1 and cannot be traced in the network without special and expensive measuring equipment. Hackers and attackers therefore have no chance. As the integrity of the outgoing data remains unaltered due to this tapping method, our Network TAPs are increasingly used in the areas of network forensics, security and monitoring.

Fiber TAPs do not require their own power supply and are 100% passive in the network.

PacketRaven Fiber Network TAPs in this range are designed as portable TAPs, but can also be installed in a 19“ mounting frame in data centres using a mounting kit, and support network speeds from 1G to 400G.

With PacketRaven Network TAPs you get permanent network access without risk and provide e.g. your monitoring tools with 100% reliable network data – without introducing a single point of failure.

Because your network security tool is only as good as the data source!

-  Up to 400 Gbps
-  Full Network Transparency
-  No impairment of Data Traffic
-  100% Network Data
-  Invisible for Attackers
-  Flexible to Use
-  Plug-n-Play
-  Failure Protection on Power Loss
-  Various Split Ratios
-  Fast and Precise
-  Support Jumbo Frames
-  Made in Germany

Highlights

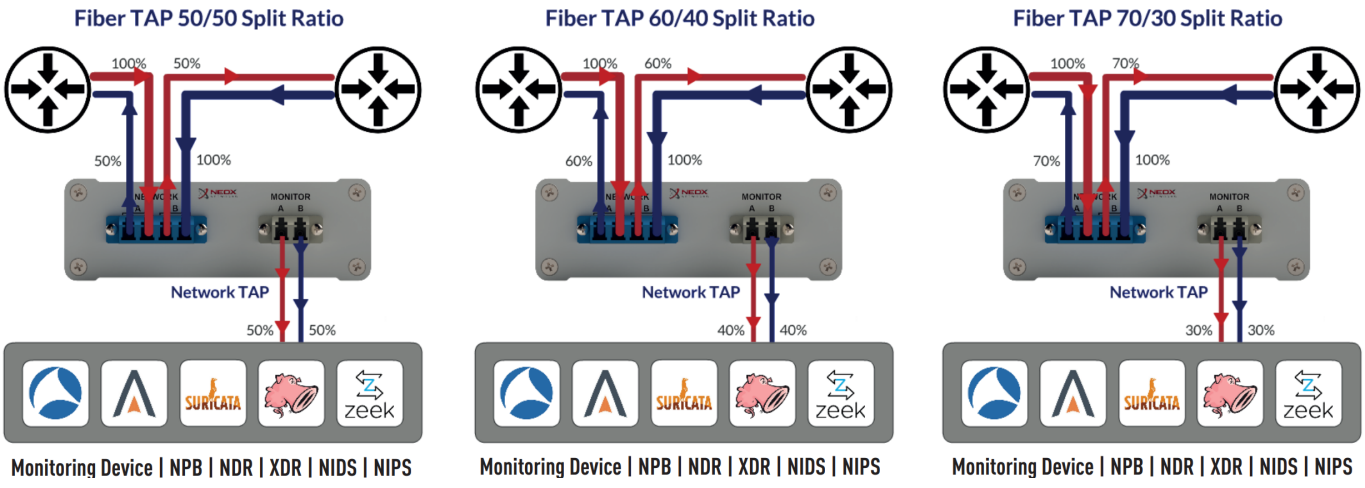
- Supported network speeds: 1G, 10G, 25G, 40G, 50G, 100G, 200G and 400G
- Alternative to SPAN ports – mirror 100% of traffic including FCS/CRC erroneous packets that may be discarded by SPANs.
- Invisible on the network, no IP address, no MAC address, cannot be hacked
- Guaranteed no packet loss
- 100% passive without affecting the active network connection, no additional latency
- Available in different split ratios: e.g. 50:50, 60:40, 70:30, 80:20, 90:10
- No power supply needed, 100% passive
- Plug-n-Play, no configuration required
- Support up to 16k Jumbo Frames
- Designed, assembled, certified and tested in Germany

How does a Split Ratio work?

In order to tap data from an optical network connection, it is necessary to decouple or split off a part of the available light signal.

The split ratio is the ratio of the amount of light that is still available for the fiber network connection in relation to the amount of light that is diverted or split off to the monitoring ports of the Fiber Network TAPs.

A split ratio of e.g. 70/30 means that 70% of the light is still available for the network connection and 30% is split off for the monitoring ports.



Advanced features of the Secure Fiber TAPs

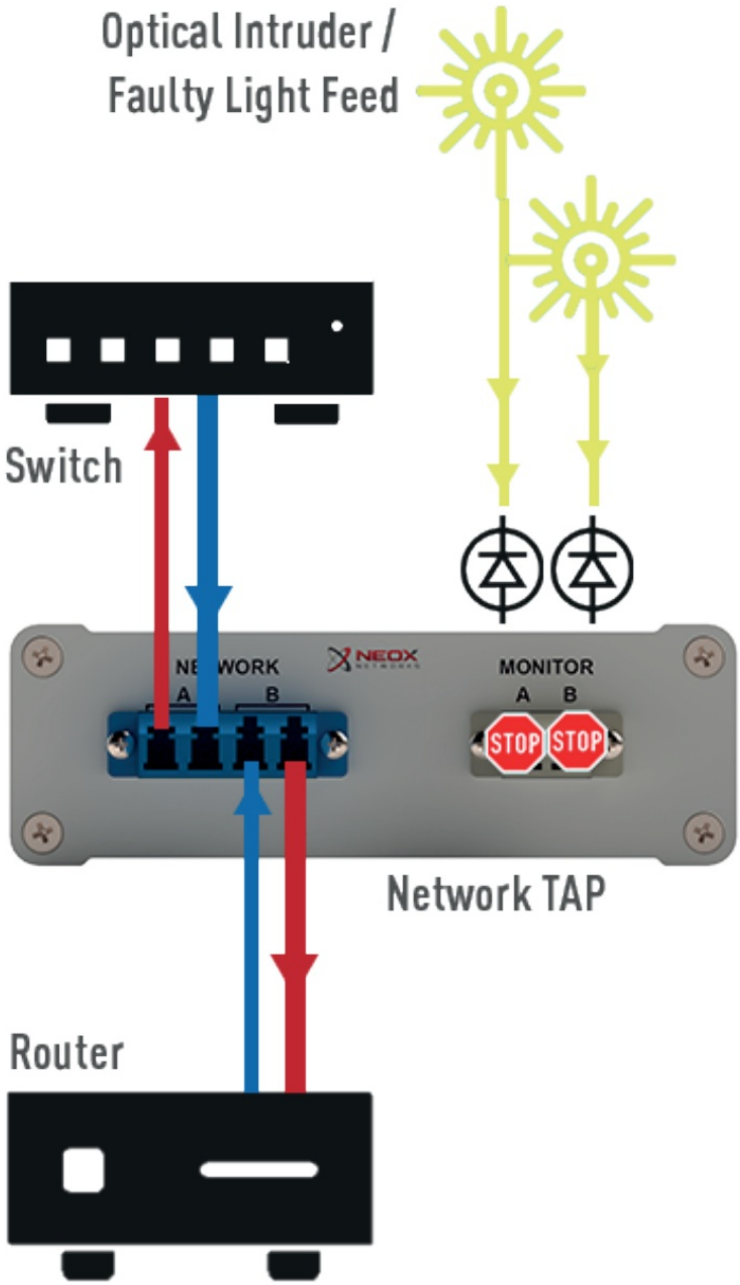
Optical Isolator

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.

Optical Filter

This protects your IT infrastructure from arbitrary or accidental tampering and ensures full data integrity.

They thus provide an additional security layer that offers increased protection against attackers and faulty configurations.



Advantages of Y-Cables

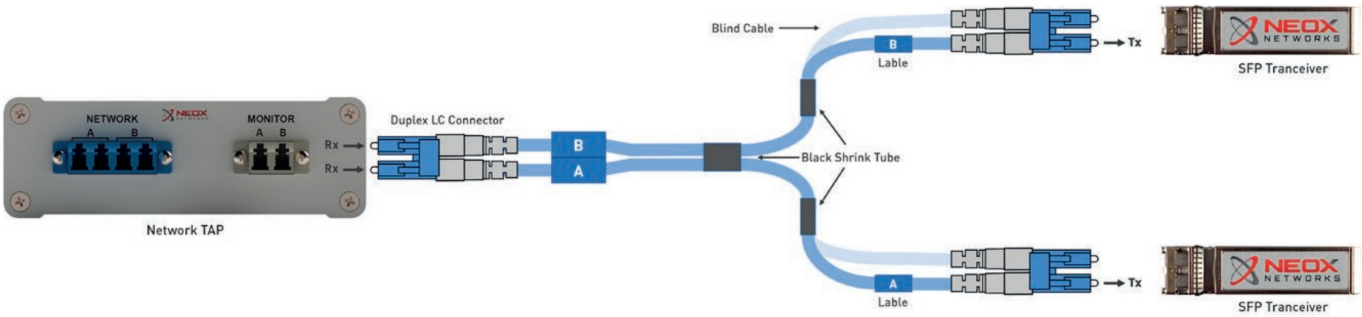
A Network TAP equipped with LC connectors has three duplex connectors, two of which are needed for looping through the network traffic to be analysed and one duplex connector for passively tapping the mirrored data for forwarding to, for example, a Network Packet Broker (NPB), an analysis system, an Intrusion Detection System (IDS), a Network Detection and Response System (NDR) or an Extended Detection and Response System (XDR).

This is the so-called monitoring port on which both the left and the right data traffic is present.

These two outputs must be fed into two monitoring ports using two transceivers in order to receive the bi-directional traffic completely, as only the receive side (Rx) of the transceivers can be used for recording.

This presents a challenge because the output of the TAP is a duplex connector and yet two separate connectors are needed on the receiving side for two individual transceivers.

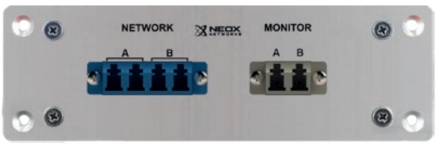
To avoid this problem, it is best to use one of our special Y-cables that convert one duplex connector into two duplex connectors oriented so that the light is fed exclusively into the receive side of the transceivers.



Front Panel – mobile or mounting kit / mounting frame version

Our TAPs are available with a front panel for mobile use – as well as with mounting frames (-ERW versions) for permanent installation in our PRP-1U3 server cabinet mounting frame, which provides space for three of our portable TAPs each.

Server rack mounting frame PRP-1U3 for Portable TAPs



TAP with front panel for server rack mounting frame PRP-1U3

TAP for mobile use

Of course, TAPs with mounting frames can also be used in mobile applications!

Connection Reliability in case of power loss

All our Fiber Network TAPs are 100% passive and do not require a power supply. A power failure in a circuit has no effect on the TAP as it is a physical process that disconnects the network signal.

Thus, there is no impairment of the network and monitoring ports, but neighbouring devices could be affected by the power failure.

Installation

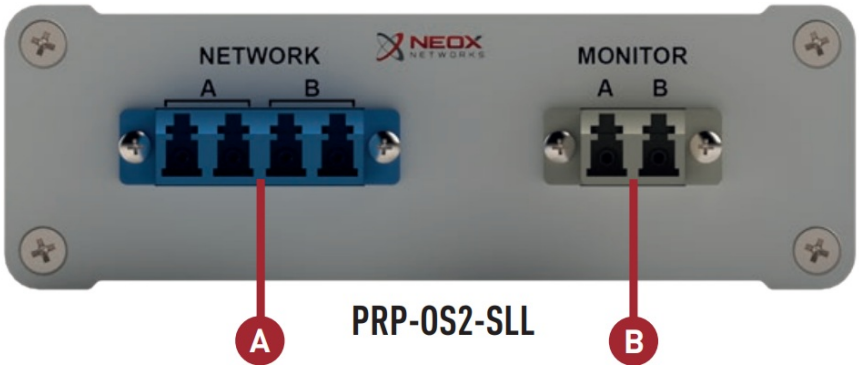
NETWORK port A is a full duplex fibre port that should be connected to one of the two network devices where network monitoring is desired.

NETWORK port B is a full-duplex fibre port that should be connected to the other side or to an adjacent network device where network monitoring is desired.

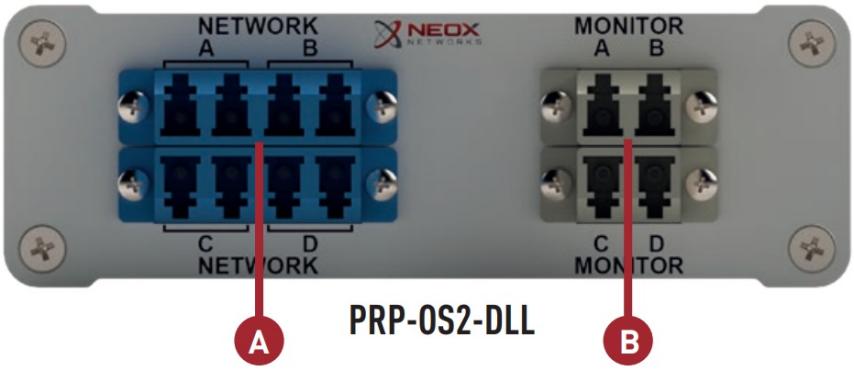
MONITOR port is a directional dual simplex port (both sides are output only) that should be connected to the input or receive side of two interfaces of one or more monitoring devices that are to capture tapped traffic.

These models in the PacketRaven Network TAPs product family are designed as portable TAPs, but can also be installed in a 19“ mounting frame in data centres using a mounting kit.

Front view – Connections and LEDs

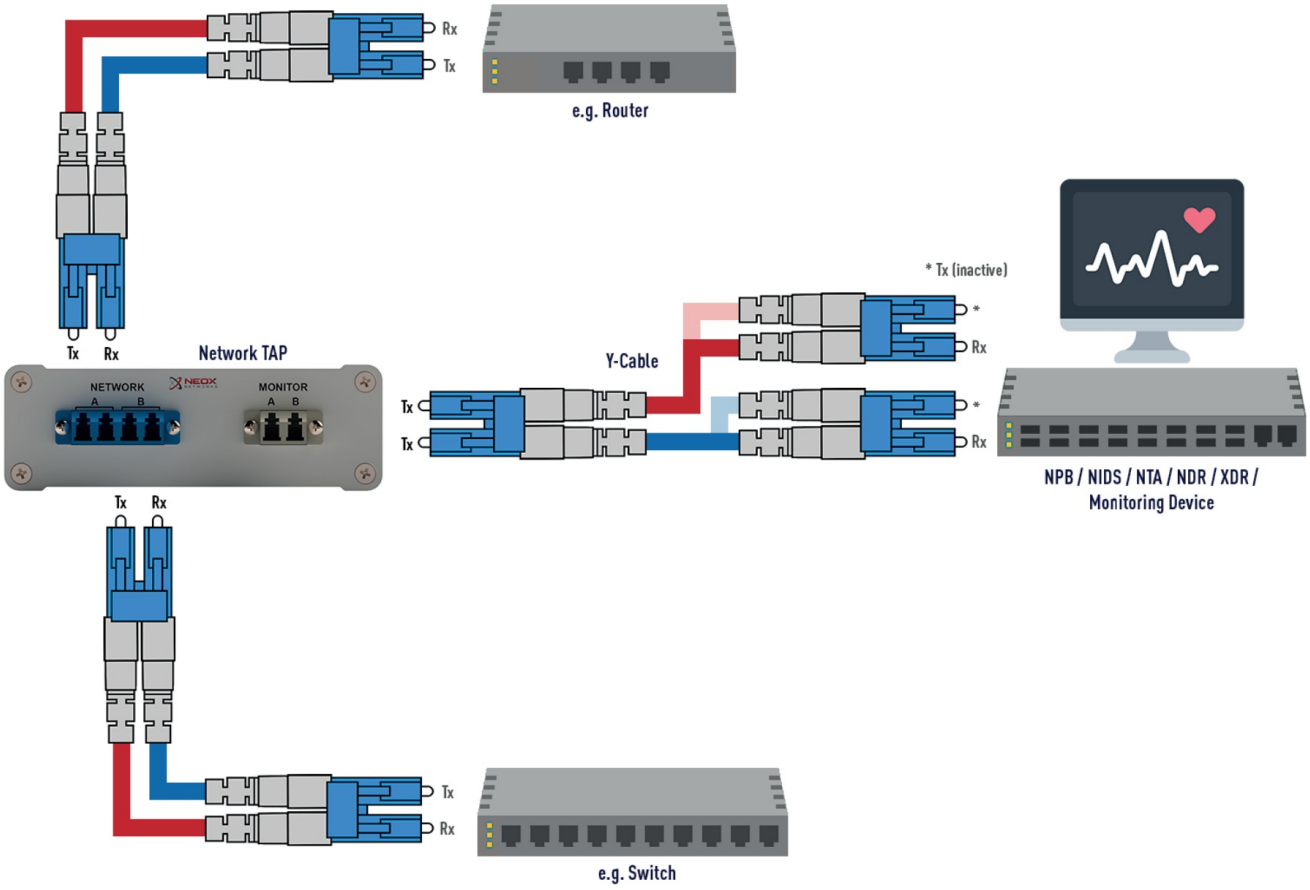


(A) LC Network ports A and B
(B) LC Monitoring ports A and B

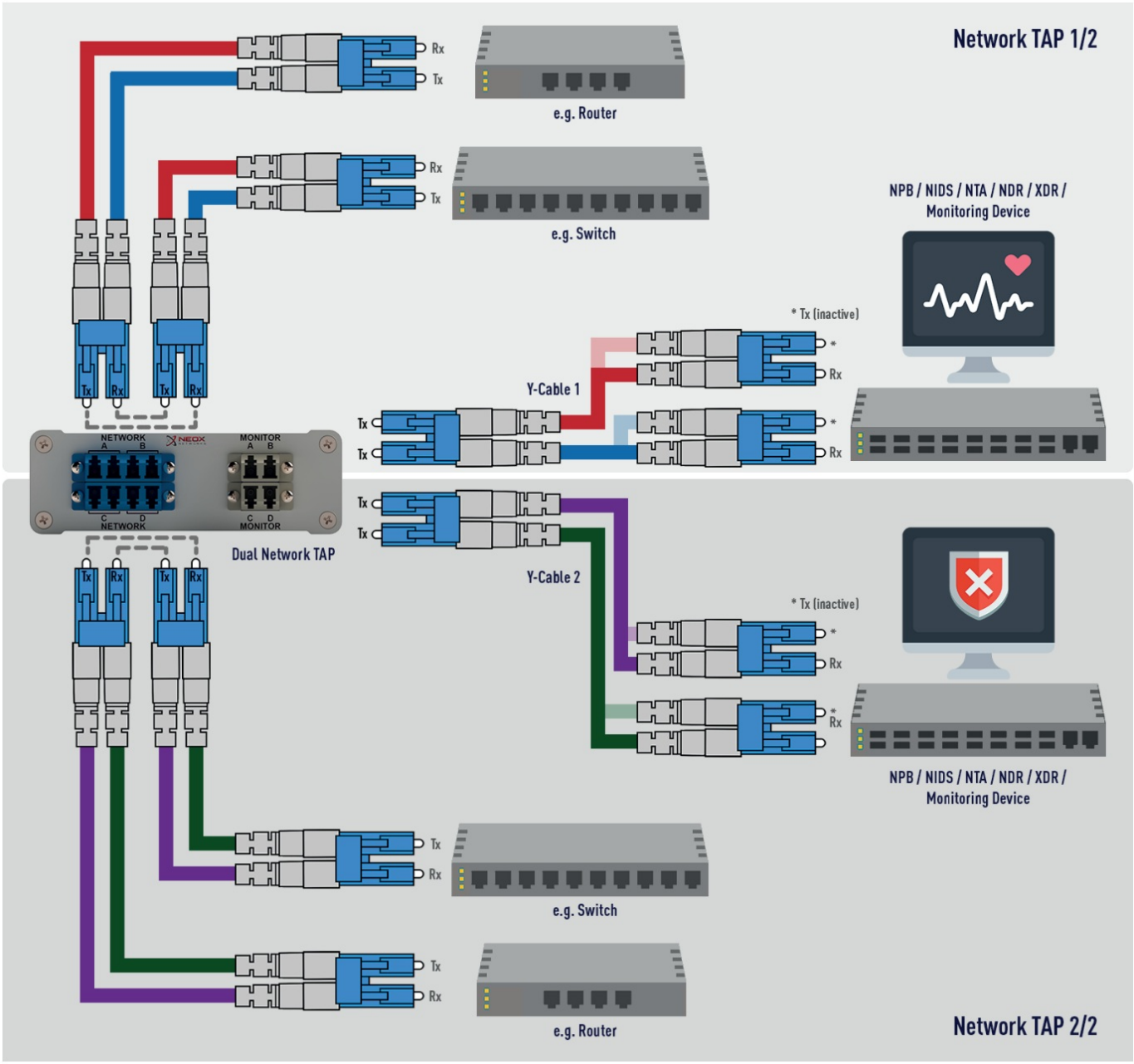


(A) LC Network ports A, B, C and D
(B) LC Monitoring ports A, B, C and D

Single TAP Quad-LC/Duplex-LC:



Dual TAP Quad-LC/Duplex-LC:



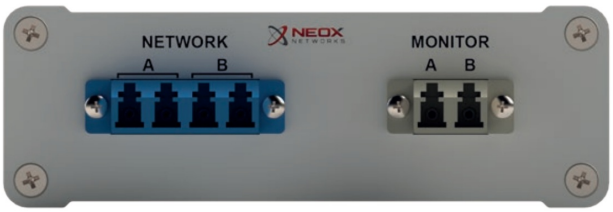
Technical Specifications

SPECIFICATIONS			
Operating Temperature	-40°C – +85°C	Reliability	GR-1221-CORE
Humidity	5% – 85%	Certifications	CE, FCC, RoHS, WEEE

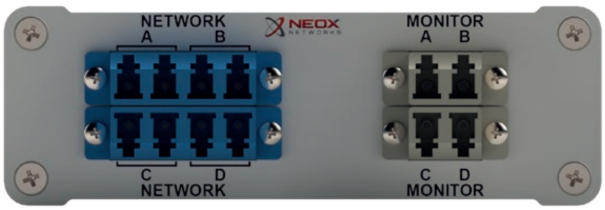
ATTENUATION VALUES			
Split Ratio (more on request)	50:50	60:40	70:30
Singlemode OS1, OS2	3.4 dB / 3.4 dB	2.5 dB / 4.5 dB	1.7 dB / 5.8 dB

DIMENSIONS (WxHxD)	WEIGHT
10.50 cm x 3.60 cm x 16.40 cm	ca. 0.4 kg

Modell Variants



PRP-OS2-SLL-x



PRP-OS2-DLL-x

STANDARD MODELS						
All TAPs for fiber type OS2 are also OS1 compatible! The TAPs whose item numbers end in „-ERW“ have a special front panel to allow them to be installed in our ser ver cabinet mounting frame!						
ITEM NO.	**NETWORK**	**FIBER TYPE**	**WAVE- LE NGTH**	**CONNECTO R NETWOR K**	**CONNECTO R MONITOR.**	**TAP VER SION**
PRP-OS2-SLL-*	1/10/25/40/50/100/200 /400G	OS2	1310 / 155 0 nm	LC Singlemo de	LC Singlemode	Single-TA P
PRP-OS2-SLL-*-ER W	1/10/25/40/50/100/200 /400G	OS2	1310 / 155 0 nm	LC Singlemo de	LC Singlemode	Single-TA P
PRP-OS2-DLL-*	1/10/25/40/50/100/200 /400G	OS2	1310 / 155 0 nm	LC Singlemo de	LC Singlemode	Dual-TAP
PRP-OS2-DLL-*-ER W	1/10/25/40/50/100/200 /400G	OS2	1310 / 155 0 nm	LC Singlemo de	LC Singlemode	Dual-TAP

* respective split ratio – e.g. „70“ for a split ratio of 70:30, „60“ for 60:40, and „50“ for 50:50

SINGLEMODE OS2 FIBER TAPS – SECURE MODELS						
All TAPs for fiber type OS2 are also OS1 compatible! The TAPs whose item numbers end in „-ERW“ have a special front panel to allow them to be installed in our ser ver cabinet mounting frame!						
ITEM NO.	**NETWORK**	**FIBER TYPE**	**WAVE- LE NGTH**	**CONNECTO R NETWOR K**	**CONNECTO R MONITOR.**	**TAP VER SION**
PRP-OS2-SLL-*-13 10S	1/10/25/40/50/100/200 /400G	OS2	1310 nm	LC Singlemo de	LC Singlemode	Single-TA P
PRP-OS2-SLL-*-13 10S-ERW	1/10/25/40/50/100/200 /400G	OS2	1310 nm	LC Singlemo de	LC Singlemode	Single-TA P
PRP-OS2-SLL-*-15 50S	1/10/25/40/50/100/200 /400G	OS2	1550 nm	LC Singlemo de	LC Singlemode	Single-TA P
PRP-OS2-SLL-*-15 50S-ERW	1/10/25/40/50/100/200 /400G	OS2	1550 nm	LC Singlemo de	LC Singlemode	Single-TA P
PRP-OS2-DLL-*-13 10S	1/10/25/40/50/100/200 /400G	OS2	1310 nm	LC Singlemo de	LC Singlemode	Dual-TAP
PRP-OS2-DLL-*-13 10S-ERW	1/10/25/40/50/100/200 /400G	OS2	1310 nm	LC Singlemo de	LC Singlemode	Dual-TAP
PRP-OS2-DLL-*-15 50S	1/10/25/40/50/100/200 /400G	OS2	1550 nm	LC Singlemo de	LC Singlemode	Dual-TAP
PRP-OS2-DLL-*-15 50S-ERW	1/10/25/40/50/100/200 /400G	OS2	1550 nm	LC Singlemo de	LC Singlemode	Dual-TAP

* jeweiliges Split Ratio- z.B. „70“ für ein Split Ratio von 70:30, „60“ für 60:40, „50“ für 50:50

Accessories

ITEM NO.	ACCESSORY
PRP-1U3	Server rack mounting frame for 3 portable TAPs
PRP-1U3-BP	Blank plate for mounting frame PRP-1U3

PRP-1U3-BP

PRP-1U3

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

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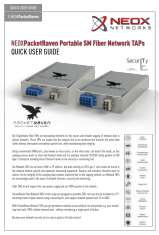
Documents / Resources

	NEOX PRP-OS2-DLL PacketRaven Portable Singlemode Fiber Network TAPs [pdf] User Guide PRP-OS2-DLL PacketRaven Portable Singlemode Fiber Network TAPs, PRP-OS2-DLL, PacketRaven Portable Singlemode Fiber Network TAPs, Singlemode Fiber Network TAPs, Fiber Network TAPs

References

- NEOX NETWORKS - Solution Provider für Netzwerk-Monitoring & -Security Lösungen