

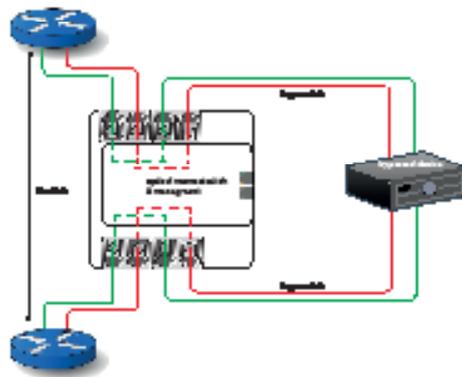
# Cubro 1 Link Optical Bypass SM

## PRODUCT OVERVIEW



The single link Cubro Bypass for 1, 10 & 100 Gbit single mode is realized with two MEMS optical switches. The switching mechanism offers the reliability of a solid state device. The optical switch is a latched version, this means it needs only power during switching operation. Even when power fails the optical switch stays in the programmed state.

The bypass switch can be controlled via RS232 or Ethernet interface, the configuration can be manual or fully automated (example together with a Packetmaster).



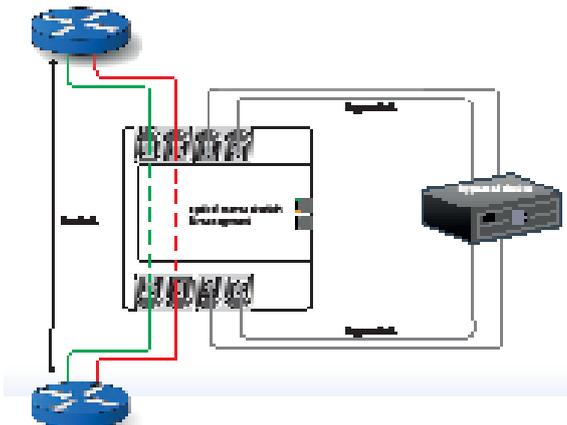
## Bypass At a glance

### Definition

A bypass switch (or bypass TAP) is a hardware device that provides a fail-safe access port for fiber links. A closed optical switch creates a path for light to flow unimpeded through the device when power is absent.

### Advantages of Cubro 1 Link Optical Bypass

- Increased reliability on critical network links
- High-speed optical switching with minimal insertion loss
- Fail-safe inline protection
- Safeguards the network against unanticipated downtime



The illustration shows the general function of the optical switch device, and the switching path in the two modes. The device can also be used stand alone.

**Functions / Benefits:**

- The Cubro 1 Link Optical Bypass offers trouble free access ports to support inline network security and monitoring devices.
- The optical switch stays in the programmed state even the power fails which means the inline traffic continues to flow through the network link but is no longer routed through the device. As a result, the devices can be replaced without network downtime.

## PRODUCT CAPABILITIES / FEATURES

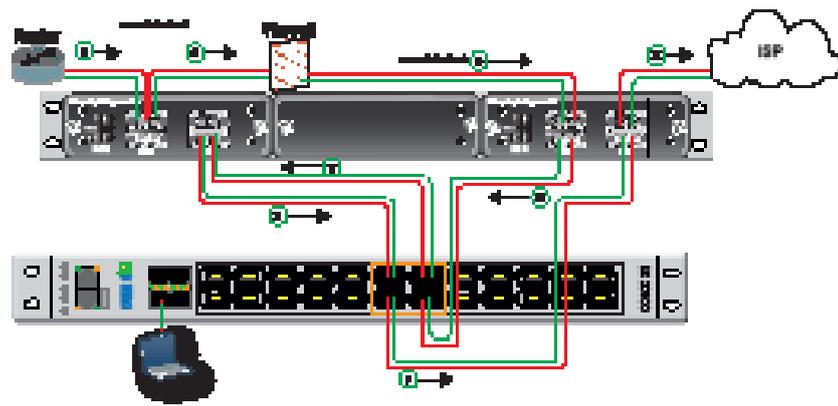
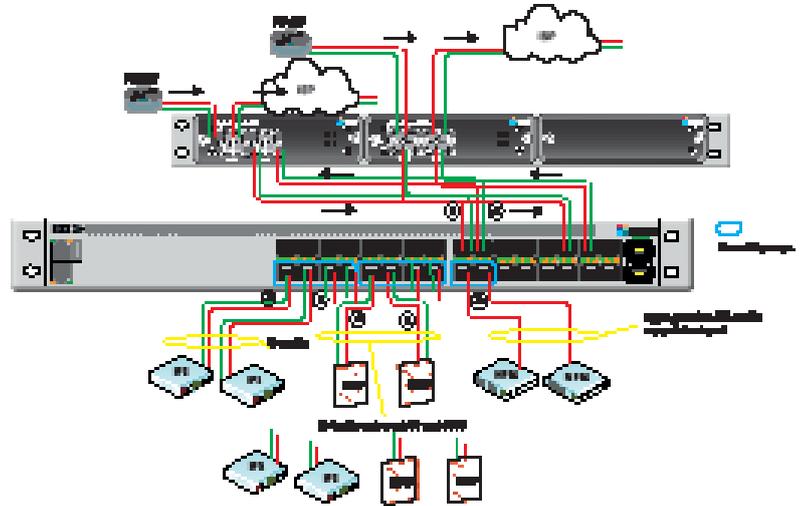
Port	1,10 , 40 & 100 Gbps LC connector
Layer 1 switching with nearly no delay	2 ps
Easy use and operation	Straight-forward operation via WebGUI or directly controlled from Packetmaster
LED Indicators	LEDs on the front panel indicate power, link and activity status.
Rugged 19" Housing	The unit is delivered in a rugged housing with precise connector labeling on the front panel.
Power	12 VDC dual power supply
Optical Parameters	Wavelength 1260 - 1700 nm Insertion Loss 1 - 2 dB Crosstalk 75 dB Return loss 55 dB Polarization Dependent Loss 0.03 dB Switching Time 0.4 ms Durability cycles No Wear
Options to activate the bypass	1) manually via SSH or HTTP 2) power fail 3) smart detection of the bypassed device 4) heartbeat controlled by Packetmaster
Management	HTTP, SSH, RS232

# APPLICATIONS / SOLUTIONS

## Multi link - Multi device - Application with Packetmaster EX32

To integrate spare units there are two options:

- 1) Add the spare units to the LB group, the spare ports are shutdown. In case of a failure the original ports are shut down and the spare ports start working.
- 2) Configure 6 load balancing groups and move the traffic by changing the rules.

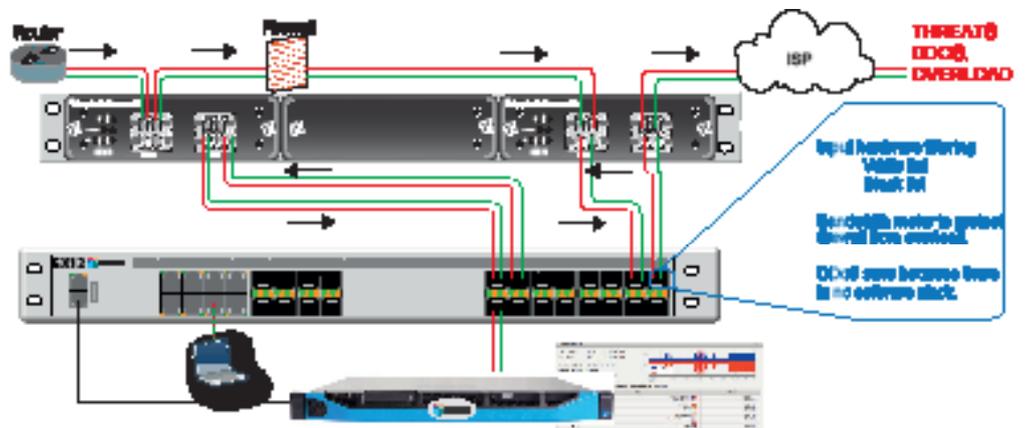


## 100 Gbit (LR4) Bypass Application

100 Gbit firewall bypass with monitoring output - monitoring before and after firewall. In this case two optical switch units are used.

## Firewall bypass with DDoS protection Application

DDoS detection through a dedicated Probe. For example Cubro Probe, Net flow Probe, can detect fraud and send this information to the Packetmaster, where this traffic can be blocked.



## ORDERING INFORMATION

Product Type & Number	Description
CBR.BYSW-SM-1-1-R3	Optical Bypass Switch, SM, 1 Link, LC connector; 1/3 19" rackmount housing (rackmount kit not included)
CBR.BYSW-MM-1-1	Optical Bypass Switch, MM, 1 Link, LC connector; stand alone housing
CBR.BYSW-MM-1-1-R3	Optical Bypass Switch, MM, 1 Link, LC connector; 1/3 19" rackmount housing (rackmount kit not included)
CBR.BYSW-SM-10-1-R3	10G Optical Bypass Switch, SM, 1 Link, LC connector; 1/3 19" rackmount housing (rackmount kit not included)
CBR.BYSW-MM-10-1-R3	10G Optical Bypass Switch, MM, 1 Link, LC connector; 1/3 19" rackmount housing (rackmount kit not included)
CBR.RM19-3	Cubro 19" Rackmount Kit for 3x 1/3 19" units



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