



## CHALLENGER 8000 OPTICAL PROTECTION SWITCH

### Key Benefits/Features:

- 1RU Chassis for 19" (or 23") rack-mount
- Four pluggable switch cards, each card can protect 2 channels, for up to 8 channels protection in one 1RU chassis
- Up to 10 chassis can be cascaded together to provide protection for 80 channels
- Latching Optical Switch
- SC/APC optical interface
- Support both 1310nm and 1550nm window
- Optical dynamic range: -30dBm to +10dBm
- Monitor primary link & switch to redundant feed if power falls below pre-selected level.
- Simultaneous monitoring of incoming optical signal powers for both primary and redundant paths
- Settable switch thresholds, hysteresis and wait-to-restore-time
- Automatic protection and manual switch capability
- Less than 50ms switching time
- Dual DC power supply for redundancy
- Pluggable fan card
- TTL alarm
- Dual Ethernet ports RJ 45 (10M/100M)
- RS-232 (craft interface RJ11)
- SNMP, Web GUI, CLI
- User security management
- Event tracking and log

Challenger 8000 Optical Protection Switch is used to protect fiber cuts or optical signal failures. Typical applications include protection of CATV transportation system and SAN network protections.

Challenger 8000 Optical Protection Switch features 4 optical switch cards in one 1RU chassis. Each card can protect 2 channels, thus one fully populated chassis can protect 8 channels.

Challenger 8000 Optical Protection Switch can be cascaded up to 10 chassis for a total protection of 80 channels.

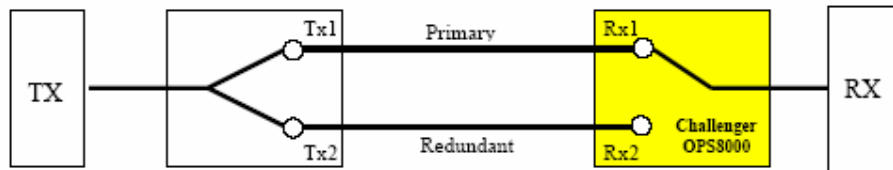
Challenger 8000 Optical Protection Switch is designed to support both 1310nm and 1550nm windows. The switch has a wide dynamic range for input optical signals (-30dBm to +10dBm). Optical power of each input is monitored against pre-selected power level. If the optical power of the primary fiber is found to be below the pre-selected value, the receiving signal switches automatically to the redundant fiber. Under automatic switch mode, the system can be set to be Revertive or Non-Revertive modes. Under Revertive Mode, the system switches back to the primary fiber automatically after the fault condition is cleared for a preset Wait-To-Restore time. Under Non-Revertive mode, the system does not switch back automatically.

Challenger 8000 Optical Protection Switch provides remote system configuration and management through SNMP and Web GUI via Ethernet ports (10M/100M), and CLI via RS-232 interface on the system control card.

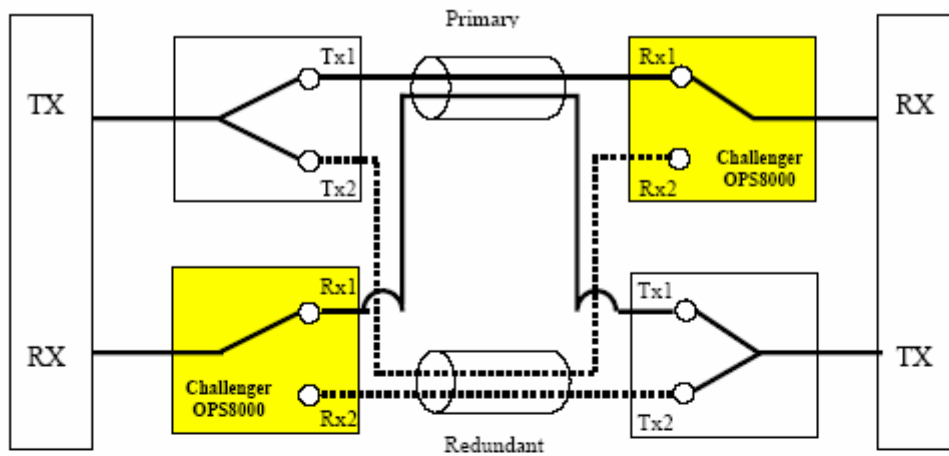
Challenger 8000 Optical Protection Switch provides dual DC power redundancy through a pluggable power card.

Challenger 8000 Optical Protection Switch provides a pluggable fan card for ease of maintenance.

Challenger 8000 Optical Protection Switch also provides a TTL alarm port that is convenient for centralized alarm monitoring.



Protection for uni-directional transmission



Protection for bi-directional transmission

## Optical Performance

Parameter	Symbol	Min	Typical	Max	Unit	Notes
Operating wavelength range	$\lambda_{Op}$	1260~1620			nm	
Insertion loss (within $\lambda_{Op}$ , $T_{Op}$ , All SOP, include one mating pair of connector IL)	IL			1.8	dB	
Directivity		55			dB	
Polarization dependent loss	PDL			0.15	dB	
Return loss (all ports, with connector)	RL	45			dB	
Input power range	P1	-30		10	dBm	
Tap monitor range	P2	-35		15	dBm	
Maximum optical (absolute max rating)				500	mW	
Switch type	Latching					
Switch repeatability				$\pm 0.1$	dB	
Switch durability		$10^6$			cycle	
Switching time				50	ms	

## Environmental Characteristics

Description	Units	Specifications			Conditions / Comments
		Min.	Typ.	Max.	
Operating temperature	°C	0		50	
Storage temperature	°C	-20		70	
Operating humidity	%RH			90	non-condensing

## Electrical Characteristics

Description	Units	Specifications			Conditions / Comments
		Min.	Typ.	Max.	
Dual DC Power Supply					
Power consumption	Watt		13	20	
DC Input power:	Vdc	-72	-48	-38	

### Visual Interface:

Two-Color (Green and Red) Module status LED

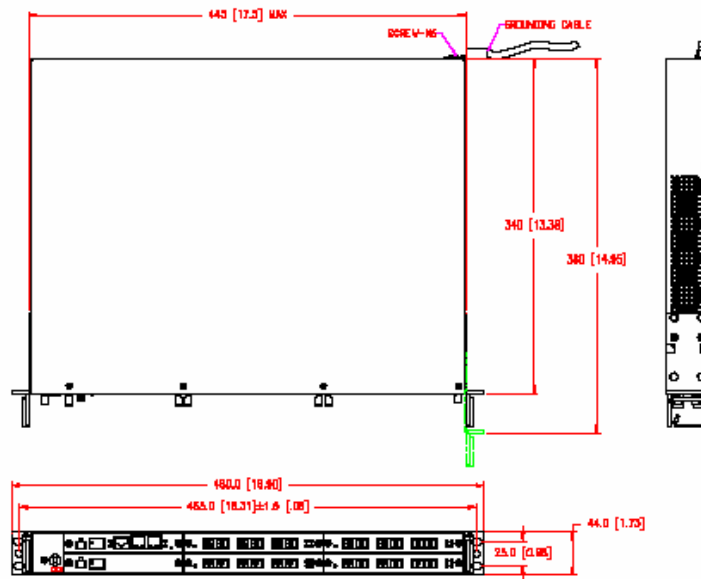
### Status Monitoring:

SNMP and Web GUI through Ethernet ports (10M/100M) and CLI through RS-232 port on system control card

## Physical Characteristics

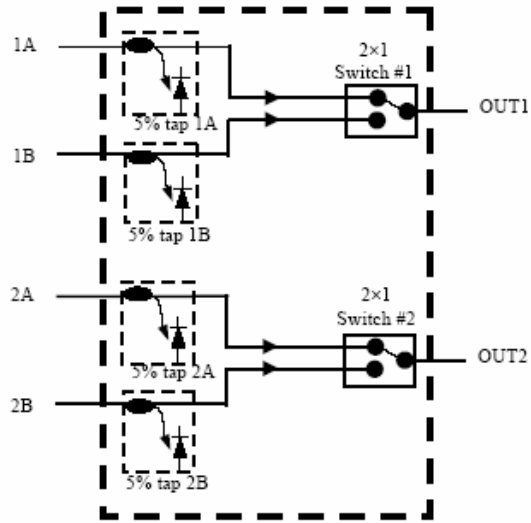
Dimensions: 480x380x44 mm (18.90 x14.95x1.73 inches)

Weight: TBD



## Characteristics of Pluggable Switch Card

Each switch card has two independent 2x1 optical switches. The two inputs of each switch are monitored constantly.



Optical Schematic of Switch Card