

# Optical Switch

## Features

### Switching policies

The Optical Switch has the following policies/criteria switching in case of fail in the main fiber (event LOS, Loss Of Signal):

- **Reversible** switching: switches to the secondary route in case of appearance of LOS in the main route. Return to the main route in case of disappearance of the LOS in the main route.
- **Non Reversible** Switching: In an event of LOS in the main road, commute to secondary one and remains there even when LOS disappears in the main route. The Optical Switch will return to the main route if the LOS event is declared in the secondary path and LOS has disappeared from the main route.
- **Forced** switching: the user manually selects the primary or secondary route. LOS events are ignored when switching.

These policies, as well as the interface defined as main are defined through a SNMP management console. .

### Remote SNMP Management

The optical switch can be managed through a SNMP console, provided by a SNMP card inserted into a TeraSAE or TriSAE chassis.

Thought this console, the following operations can be performed:

- Define switching policy.
- Define which network interface (plant) is the main, in the case of reversible switching policy.
- Define the selected interface in the case of forced switching policy.
- Visualize and classify the traps reporting LOS events in both interfaces, and switching between network interfaces.

### Switching time

The response time to a LOS event requiring switching interfaces is less than 50ms.

### Insertion/extraction in-hot

The Optical Switch supports hot insertion and extraction in the TriSAE and TeraSAE chassis.



## Description

The **Optical Switch** of Telnet Redes Inteligentes is a optical switching equipment that allows developing 1+1 redundancy schemes full duplex (one fiber in each direction of traffic) in scenarios where is required a backup fiber circuit.

Allows working with wavelengths between 1270 and 1610nm, whether individual (second and third windows) or in DWDM and CWDM-type scenarios with different wavelengths simultaneously.

The Optical Switch has three optical interfaces: two located at the top of the front pannel corresponding to the redundant network interfaces (also called plant interfaces) and lower interface that corresponds to the local interface. In turn each interface has a reception (Rx: Optical Switch input) and a transmission interface (Tx: Optical Switch output).

### Local Interface Reception

Reception at the local interface is duplicated by an optical splitter (Splitter 50-50), whose two outputs are rerouted to the transmission of the two Network interfaces insertion. Losses due to the splitter are between 3.5 and 4dB for each interface.

### Network Interface (plant) Reception

The transmission on the local interface corresponds to the reception of one of two network interfaces. Such selection is made by an optical switch that switches based on the statement or cessation of LOS (Loss Of Signal) on both interfaces, and based on the switching policy set by the user. The insertion loss due to the switch are between 1 and 1.5dB.

## Technical Specifications

### Main Features

Switching time: Less than 50ms.

Wavelengths between 1270 and 1610nm individually or simultaneously in DWDM and CWDM-type scenarios.

2x Plant optical interface.

1x Local optical interface.

SNMP Remote management.

Insertion/extraction in-hot.

Max consumption: 7W.

Supported chassis: TriSAE, MetroSAE.



### Technical Specifications

| Parameter                | Value                              |
|--------------------------|------------------------------------|
| Wavelength range         | 1270nm - 1610nm                    |
| Optical switch crosstalk | Better than 50dB (75dB Typ.)       |
| Size                     | 128mm (H) x 25.1mm (W) x 182mm (D) |

### Insertion losses

| Route                  | Value       |
|------------------------|-------------|
| Rx Local to Tx Plant 1 | 3.5dB - 4dB |
| Rx Local to Tx Plant 2 | 3.5dB - 4dB |
| Rx Plant 1 to Tx Local | 1dB - 1.5dB |
| Rx Plant 2 to Tx Local | 1dB - 1.5dB |

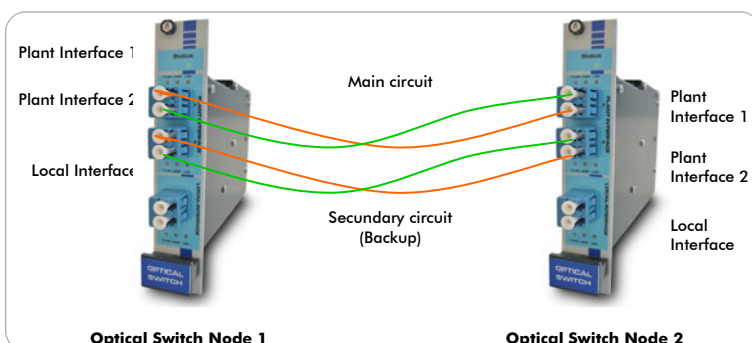
### Fibers interconnection

Rx plant interface 1 of node 1 with Tx plant interface 1 of node 2

Tx plant interface 1 of node 1 with Rx plant interface 1 of node 2

Rx plant interface 2 of node 1 with Tx plant interface 2 of node 2

Tx plant interface 2 of node 1 with Rx plant interface 2 of node 2



### Contact Information

#### Headquarters

Polígono Industrial Centrovía  
c/ Buenos Aires, 18  
50196 La Muela, Zaragoza  
Spain

Tel.: (+34) 976 14 18 00

Fax: (+34) 976 14 18 10

comercial@telnet-ri.es

#### Commercial office in Madrid

Avda. Menéndez Pelayo, 85 - 1º A  
28007 Madrid  
Spain

Tel.: (+34) 91 434 39 92

Fax: (+34) 91 434 40 84

#### Commercial office in Lisbon

Avenida da Liberdade, 110  
1269- 046 Lisbon  
Portugal