

# CUSTOM OPTICAL SWITCH FABRIC

## OFMS Series

### Applications

- ◆ Optical Networking re-configurable
- ◆ Optical Channel Dedicated (O-UPSR) or Shared (O-BLSR) Protection
- ◆ Testing and Measurement

### Custom Optical Switch Fabric

Oplink custom switch fabrics are built to meet each customer's specific system requirements for fiber optical communications. Oplink offers variety of selections from its fiber optical switch family and provides complete solutions in optical, mechanical, electrical and firmware design.



### Performance Specifications

The module level performance is a composite of key component specifications. For individual component datasheets, please refer to the Oplink switch product family (OFMS) specifications. The following table lists a reference performance spec of Oplink C-band switch fabric. All band (1260~1620nm) Ultra-flat 1x2 Switch and Ultra-flat 50/50% Splitter are also available.

#### C-Band Protection (O-UPSR) Module Spec

Parameter	Value	Units
Operating Wavelength Range ( $\lambda_{op}$ )	1525~1570 nm	nm
<b>1x2 Switch</b>		
Insertion Loss @ 23°C, $\lambda_{op}$	<0.5	dB
Wavelength Dependent (WDL)	<0.1	dB
Temperature Dependent Loss (TDL 0~70°C)	<0.2	dB
Polarization Dependent Loss (PDL)	<0.1	dB
Return Loss	>55	dB
Channel Cross Talk	>60	dB
Repeatability	$\pm 0.02$	dB
Switching Time	<10	ms
Durability	$10^7$	cycles
<b>50/50% Splitter</b>		
Insertion loss (over all $\lambda$ , Top and SOP)	<3.4	dB
Wavelength Dependent Loss at a Given Temperature (WDL)	<0.15	dB
Polarization Dependent Loss (PDL)	<0.08	dB
Directibility	>50	dB
Return Loss	>50	dB
Optical Power Handling	500	mW
Operating Temperature (Top)	0~70	°C
Storage Temperature	- 40~85	°C
Switch Type	Latching or Non-latching	
Pigtail Type	Ribbon Fiber or Individual Pigtail	
Module Size (8-Channel)	(L) 105 x (W) 105 x (H) 14	mm
Electric Interface	Digital Control	

### Oplink Fiber Optic Product Lines

- ◆ Amplifier Components
- ◆ Amplifier Modules
- ◆ DWDMs
- ◆ Switching/Routing/ Monitoring/Conditioning
- ◆ Transmission
- ◆ RGB Laser Modules

# CUSTOM OPTICAL SWITCH FABRIC

## Service Provided

### Optical Design

- ◆ Application Specific Network System Level Analysis
- ◆ Optical Module/Subsystem Design
- ◆ Optical Functional Testing
- ◆ Performance and Cost Optimization

### Electrical Design

- ◆ CPLD, FPGA and Micro-controllers (8, 16, 32 bit)
- ◆ Custom Communication interface
- ◆ Switch Drivers
- ◆ Optical Power Monitoring Circuitry

### Mechanical Design

- ◆ Optimum Fiber Management
- ◆ 3-D Tools
- ◆ Fast Prototyping

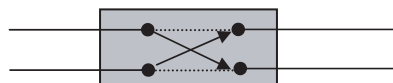
### Firmware Design

- ◆ Switch Driver Development
- ◆ Optical Monitoring and Alarm Development
- ◆ Imbedded Operating Systems

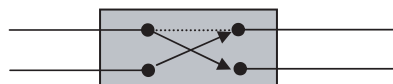
### Qualifications

- ◆ Design Verification Tests
- ◆ Qualification Tests

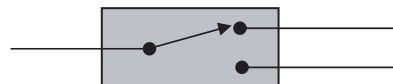
## Switch Options



Full 2x2 Switch



2x2Add/Drop Switch



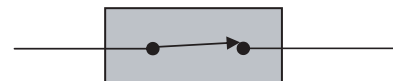
1x2 Switch



Dual 1x2 Switch



Ultra- Mini 1x2 Switch



1x1 On/Off Switch

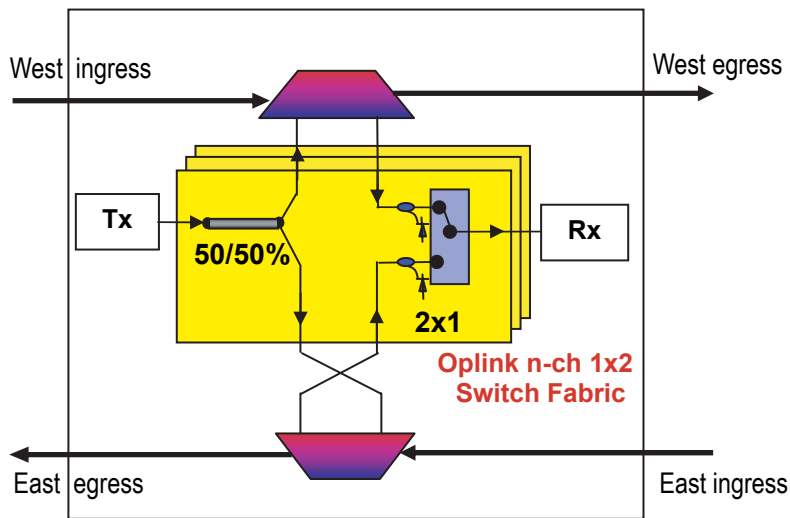
Oplink opto-mechanical switches are available as Full 2x2, 2x2 Add/Drop, 1x2, 1x1 On/Off, Single window (C+L)/Dual Window (1310 + C +L), latching/non-latching options. Switch can be operated in single or dual relay coil mode. The rich options provide customer complete selections and combinations for switching solution.



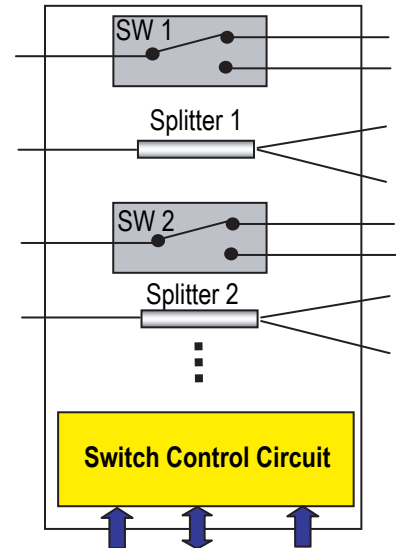
# CUSTOM OPTICAL SWITCH FABRIC

## Switch Fabric Example Block Diagram

### • Switch Fabric for Optical Channel Dedicated Protection

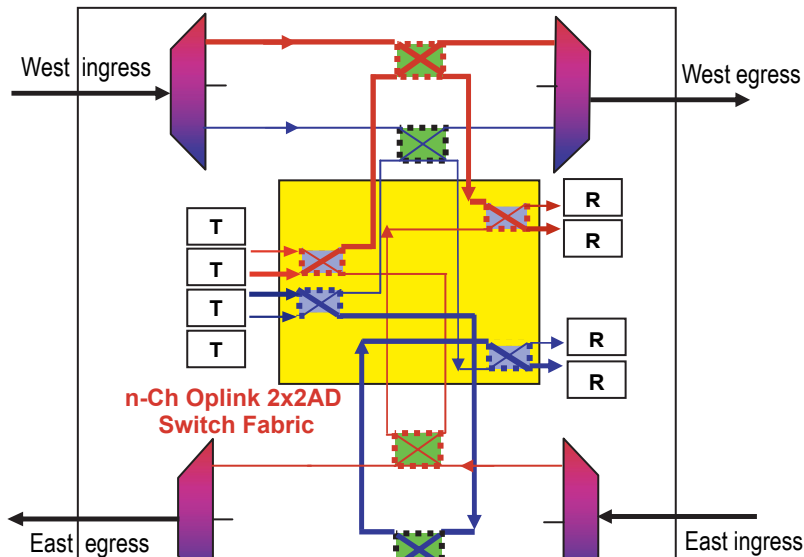


Node Structure

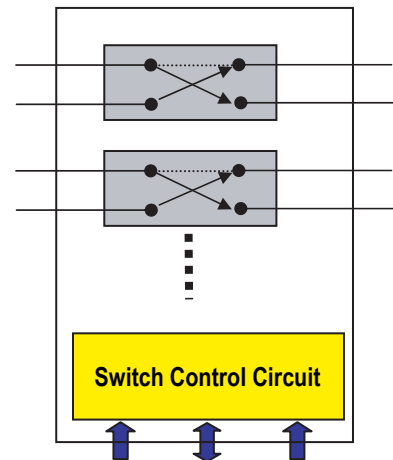


n-Ch O-UPSR Protection Switch Fabric

### • Switch Fabric for Optical Channel Shared Protection



Node Structure



n-Ch O-BLSR Protection Switch Fabric

## Ordering Information

Oplink can provide a remarkable range of customized optical solutions. For detail, please contact Oplink's OEM design team or account manager for your requirements and ordering information (510) 933-7200.

