

CWDM Family

Managed 5U/2U Chassis



SML-5000, 2000

The SigmaLinks5000/2000 is a flexible, cost-effective optical transport system, designed to multiplex, de-multiplex and switch high-speed data for storage, video and voice applications. The SML-5000/2000 is housed in a standard 5U/2U, 19" or 23" rack mountable transport platform for ITU G.694.2 compliant CWDM applications, which features 17/6 universal hot-swappable module slots. Currently supported module line cards include SNMP, Transponders, Mux/ Demux, OADM, Optical protection and optical channel monitors. The SML-5000/2000 supports optional redundant power and SNMP management. Another unique feature of the SML-5000/2000 is a line card design which may be transformed into stand-alone units. The use of a common PCB card which may either be placed in the rack or used as a stand-alone unit reduces manufacturing costs as well as the inventory of spares required by distributors, installers, and end users. The NMS (Network Management System) option includes an SNMP card (agent) and standard MIB file for importation and compilation into network management platforms such as HP OpenView or CA Unicenter. This allows remote configuration and system monitoring via industry standard network management software.

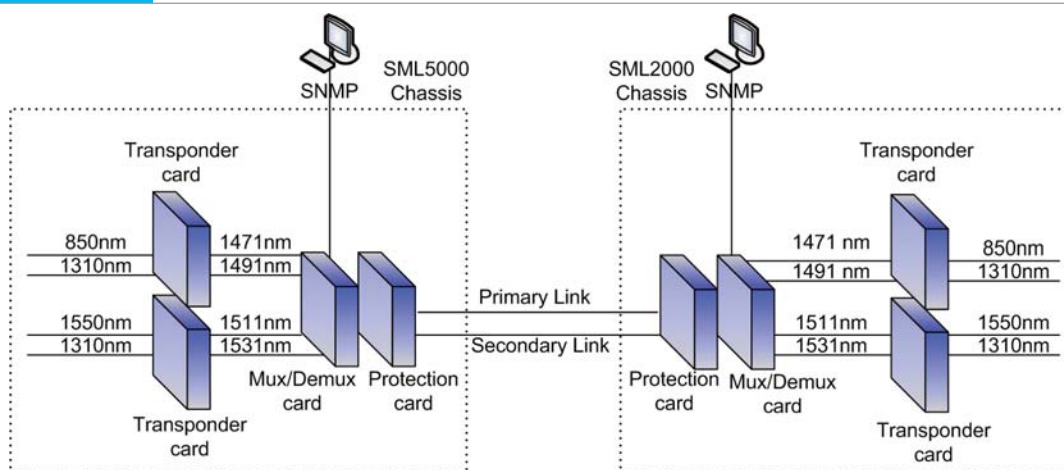
Features

- 5U/2U , 19 (23") chassis, accommodates up to 17/6 card modules
- All modules are hot-swappable
- Redundant AC/DC Power and cooling fans
- Alarm Relay contacts
- Chassis Cascade up to 6 Chassis (SML-5000 model only)
- LCD status indication with keypad control (SML-5000 model only)
- TFTP firmware upgrade
- Supports Console, Telnet, SNMP and Web management
- Up to 8 CWDM wavelengths in compliance with ITU G.694.2

Specifications

Ports	Console: D-type 9-pin female SNMP, LAN : RJ45 Alarm: D-type 9-pin male
LEDs	PWR1/2, FAN1/2, Link (chassis link), Fan
Power	AC : 100 ~240V DC 24: 18 ~ 56V, DC48 : 36 ~ 72V
Power Consumption	SML2000 <25W, SML5000 <75W 155 x 88 x 23mm
Dimensions (D x W x H)mm	SML2000: 250 x 440 x 89mm SML5000: 250 x 440 x 220mm
Weight	SML2000 4.8kg, SML5000 9.5kg
Temperature	0~50°C (Operating) ,0~70°C (Storage)
Humidity	10~90% non-condensing
Certification	CE, FCC, RoHS
MTBF	57,000 hours

Application



Ordering Information

For SigmaLinks5000 Series

- **SML-50-9051-R** 19" 5U, 17-slot chassis
- **SML-50-9210-L** SNMP for SigmaLinks5000
- **SML-50-9110-R** AC power supply (90~264VAC)
- **SML-50-9120-R** DC power supply (-18 ~ -56VDC)
- **SML-50-9121-R** DC power supply (-36 ~ -72VDC)

SigmaLinks2000 Series

- **SML-20-9021-R** 19" 2U, 6-slot chassis
- **SML-20-9210-L** SNMP for SigmaLinks2000
- **SML-20-9110-R** AC power supply (90~264VAC)
- **SML-20-9120-R** DC power supply (-18 ~ -56VDC)
- **SML-20-9121-R** DC power supply (-36 ~ -72VDC)

CWDM Family

Line Cards for SigmaLinks

Transponder

The transponder card converts a data signal to the correct wavelength for transmission on a specific CWDM channel. By supporting SFP optics on both line side and client side interfaces, the transponder provides a truly flexible and easy to deploy solution for all applications. The transponder supports 2R regeneration, which consists of re-amplification and reshaping.



Mux/DeMux

Optical Mux/Demux (Multiplexer/Demultiplexer) cards are available in 4-channel or 8-channel models and are used to combine signals from 1-channel or 2-channel transponder cards on to a single pair of fiber. A 1311nm CWDM channel is accessible separately. The MUX/DEMUX cards provide the primary wave division and combination functions. Line side wave lengths require translation to client side equipment via the transponder card.



Features

- 2R regeneration (Re-amplification and reshaping)
- Line rate support from 100Mbps up to 2.5Gbps
- Client Side Wavelengths: 850/ 1310/ 1550nm
- Line Side CWDM Wavelengths: 1471/ 1491/ 1511/ 1531 / 1551/ 1571/ 1591/ 1611nm
- Optical Connector: SFP-LC (On both Line & Client Side)

Features

- Four different CWDM Mux/ Demux are available:
 - 4 Ch (1531/1551/1571/1591nm)
 - 4+1 Ch (1531/1551/1571/1591/ + 1311nm)
 - 8 Ch (1471/1491/1511/1531/1551/1571/1591/1611nm)
 - 8+1 Ch (1471/1491/1511/1531/1551/1571/1591/1611 + 1311nm)
- Full native mode performance
- Optical connectors: LC connectors, SMF 9/ 125mm
- Optical input/ output monitoring port
- Passive model requires no power
- Protocol transparent, no limitation
- Utilizes industry standard ITU CWDM wavelengths

Specifications

Ports	Connector : SFP LC
Optical Interface :	Data rate : 100Mbps, 1.25Gbps, 2.5Gbps
	Cable type : MM 62.2/125μm, 50/125μm.
	Distance : SM 9/125μm
	Wavelength : 850, 1310, 1470 ~ 1610nm
LEDs	Power, Link(Line), Link(Client), TX/Act, Loopback
Power	DC12V In
Power Consumption	1channel <5W, 2 channel <10W
Dimensions (D x W x H)mm	220 x 162 x 25mm
Weight	900g
Temperature	0~50°C (Operating) ,0~70°C (Storage)
Humidity	10~90% non-condensing
Certification	CE, FCC, RoHS
MTBF	57,000 hours

Specifications

Connector	LC
Standard	ITU-T G.694.2
Wavelength	SML-50-8181 1310, 1470, 1490, 1510, 1530, 1550, 1570, 1590, 1610nm
	SML-50-8141 1310, 1550, 1570, 1590, 1610nm
Insertion Loss	SML-50-8181 < 3.5dB for CWDM wavelength
	SML-50-8141 < 5.0dB for CWDM wavelength
Return Loss	> 45dB
Dimensions (D x W x H)mm	220 x 162 x 25mm
Weight	900g
Temperature	0~50°C (Operating) ,20~70°C (Storage)
Humidity	10~90% non-condensing
Certification	CE, FCC, RoHS
MTBF	57,000 hours

Ordering Information

- **SML-50-8011-L** 1.25G,1Ch transponder card
- **SML-50-8012-L** 1.25G,2Ch transponder card
- **SML-50-8021-L** 2.5G,1Ch transponder card
- **SML-50-8022-L** 2.5G, 2Ch transponder card
- **SML-50-8032-L** 2.5G, 2Ch transponder card

Ordering Information

- **SML-50-8041-L** 4+1 channels Mux/DeMux card (1551/1571/1591/1611 + 1311nm)
- **SML-50-8043-L** 8+1 channels Mux/DeMux card (1471/1491/1511/1531/1551/1571/1591/1611 + 1311nm)

CWDM Family

Line Cards for SigmaLinks

Optical Protection

An optical protection unit is able to provide fiber path redundancy on a channel by channel basis. These units are particularly well suited for protection in fiber data transmission. The solution includes monitoring capabilities for both working and protection paths. The monitoring is available through the SNMP Management unit. In case of a fiber cut in the protecting path, traffic will be switched over to the protecting path in less than 50 ms.



OADM

An Optical Add/Drop Multiplexer takes a single wavelength from a trunk, pulls the signal out, and allows a new signal at the same wavelength to be inserted into the trunk at roughly the same spot. All the other wavelengths pass through the Add/Drop Multiplexer with only a small loss of power (usually < 0.5dB including connectors and adapters). An Optical Add/Drop Multiplexer (OADM) is available allowing a single wavelength to be dropped or added at specific sites in linear Add/Drop topology.



Features

- 1+1 full optical protection
- Low channel cross talk < -55dB ; Low insertion loss < 6.5dB
- Latch feature, if power is lost the switch remains in its current state
- Protection transition □ 50 ms
- Works with any combination of 1 ~16 wavelengths
- Traffic is switched in one of three modes :
Auto, Semi-Auto, Manual
- Optical Interface Type : LC connectors
- Working and protected lines are physically separated fiber

Specifications

Connector	LC
LEDs	Power System, Working Path, Protection Path, Work mode
Power	DC 12V In
Restoration Time	50ms
Range	Input PWR :+3 ~ -15dBm(TX), -2~-29dBm(RX). Detection: -5 ~ -29dBm
Loss	Insertion Loss < 6.5dB, Return Loss > 45dB
Power Consumption	<10W
Dimensions (D x W x H)mm	220 x 162 x 25mm
Weight	900g
Temperature	0~50°C (Operating) ,20~70°C (Storage)
Humidity	10~90% non-condensing
Certification	CE, FCC, RoHS
MTBF	57,000 hours

Ordering Information

- **SML-50-8210-L** Optical Protection Card

Features

- Single Add/Drop Channel
- Operating channel : 1311,1471,1491,1511,1531,1551,1571, 1591,1611nm
- Passive optical module, no power required
- Protocol transparent, no limitation
- Utilizes Industry standard ITU CWDM wavelengths
- Optical connectors : LC

Specifications

Connector	LC
LEDs	Power System, Working Path, Protection Path, Work mode
Power	DC 12V In
Restoration Time	50ms
Range	Input PWR :+3 ~ -15dBm(TX), -2~-29dBm(RX). Detection: -5 ~ -29dBm
Loss	Insertion Loss < 6.5dB, Return Loss > 45dB
Power Consumption	<10W
Dimensions (D x W x H)mm	220 x 162 x 25mm
Weight	900g
Temperature	0~50°C (Operating) ,20~70°C (Storage)
Humidity	10~90% non-condensing
Certification	CE, FCC, RoHS
MTBF	57,000 hours

Ordering Information

- **SML-50-8041-L** 1 channel, OADM Drop/Insert card, (00/1311, 01/1471, 02/1491, 03/1511, 04/1531, 05/1551, 06/1571, 07/1591, 08/1611nm)

XDSL Series

PDH Series

IP Networking

Tester Series

Interface Converter Series

Management