



CWDM Managed Transponder Platform

SML-2100

The SML2100 is a 2U high 19" Rack, 20-slot modular CWDM transponder rack. It provides an economic solution in high density 3R Transponder installations in enterprises or central offices. All critical components, Power, fans, management module and interface cards are hot swappable, allowing online field replacement. The hot-swappable power modules can be chosen from AC100-240V, DC18-36. or DC 36-72V. The chassis also has a pair of alarm relays and is able to stack up to 10 chassis as one management unit. A number of cards are available that support different protocols including 10G and 2.7G 3R Transponders.

Features

- 20-slot transponder chassis
- Single or optional redundant power supplies
- Hot swappable fan, power, cards and SNMP modules
- Chassis cascade up to 10 with one IP management
- Chassis backplane consists of passive components
- 19" Requires only 2RU of rack space
- 19" rack-mountable

Connectors

Console RS-232

LAN 10/100 Base TX RJ45

Physical Specifications

Dimensions: 303mm x 438mm x 88mm (W x D x H)

Weight: 5.2kg w/o P/S

Power Characteristics

AC input : 100 ~ 240VAC

DC Input : 24VDC, 48 VDC, 72VDC

Environmental Specifications

Operating -10°C ~ 60°C

Storage -20°C ~ 70°C

Relative humidity 5% ~ 90% non-condensing

Predicted MTBF : 65,000 hrs

Certification

FCC class A, VCCI class A, CE, RoHS

20-slot Transponder Platform

Technologies Supported:

- 10G 3R Transponder
- 2.7G 3R Transponder
- 2.7G 3R Transponder with Protection



Chassis backplane consists of passive components



Chassis cascade up to 10 with one IP management

Hot swappable Thermal fans



Two Alarm relays

Single or optional redundant power supplies

Power Redundancy

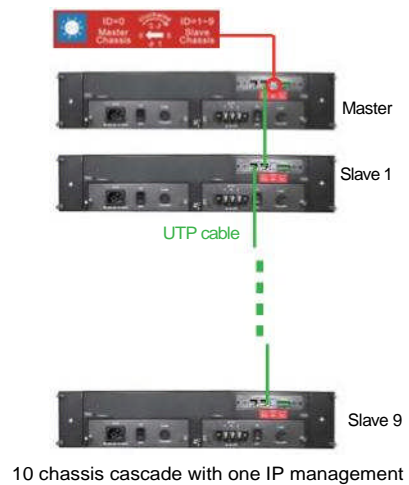
All the SML2100 chassis power supplies are hot swappable and modular, installing two into a chassis provides redundancy should a single power supply fail. A fully loaded chassis can run continuously with only one power module fitted into the chassis.

Intelligent Cooling Fan

To further increase system reliability, the SML2100 chassis is fitted with two hot swappable fan modules. Both fan modules can be easily removed from the rear of the chassis, without interruption to the operation of the line cards. A fully loaded chassis can run continuously with only one fan module fitted into the chassis.

Chassis cascade

The SML2100 features cascadeable management which allows managing a stack (up to 10 chassis) from a single IP address. Chassis are interconnected with standard UTP cables that carry control signals. Each chassis has its own ID, starting with the master chassis ID0 and cascading up to ID9.



Network Management

The SML2100 chassis provides an NMC (Network Management Controller) card which must be installed into the first slot of chassis. The NMC card allows a network administrator with the ability to configure and monitor the status of the blades. Management can be achieved locally over RS232, or over the network by Telnet, Web or SNMP.

Protocol Supported

The SML2100 chassis has been designed as a CWDM Managed platform. This allows network administrators to deploy the chassis in a wide range of DWDM, CWDM network. Technologies supported by the chassis included 10G 3R Transponder and 2.7G 3R Transponder.

Ordering Information

SML-2100- Chassis type

- CH : 2U 20-Slot Chassis
- AC : 100 ~ 240V
- DC24 : 18 ~ 36V
- DC48 : 36 ~ 72V

Example: SML-2100-CH



Network Management Controller SML-21-SNMP

The SML-21-SNMP is a Network Management Controller card that can be placed in a compatible SML-2100 series chassis to provide network management functions. The management interface supports a local RS-232 serial console or remote TCP/IP management by Telnet, HTTP or SNMP protocols. The card is designed to be hot swapped so that it may be field replaced without affecting any online service of any other rack cards. The card also supports online firmware upgrade from TFTP server, using any user interface. Support for any standard NMS is provided by the included proprietary MIB file.

Features

- Supports local / remote monitor and configuration. Supports local / remote online TFTP f/w upgrade
- Fiber transceiver status & info display
- Supports multiple accesses for SNMP management
- Supports Web GUI management, Telnet, Serial console Supports console RS-232 port and 10/100Base-T Ethernet port
- Supports SNMP standard MIB II and proprietary MIB Supports NTP time synchronization
- Supports 100 entries system log

Serial Console Management

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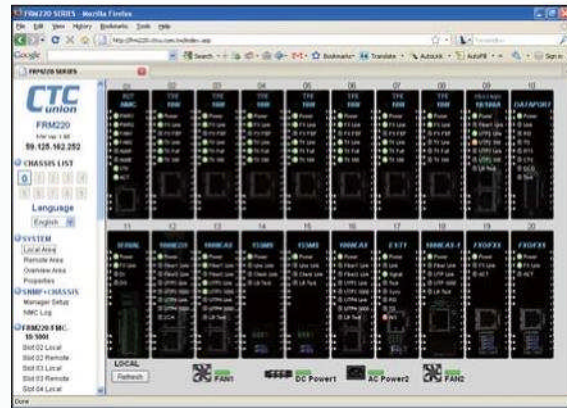
*****
*** CTC UNION TECHNOLOGIES CO., L. ***
*** SML-21-SNMP VER. 1.795 ***

This Chassis ID:[00] Cascaded:[Yes] Monitored Chassis ID:[00]
Chassis List:[Master]
#0:[X] #1:[ ] #2:[ ] #3:[ ] #4:[ ] #5:[ ] #6:[ ] #7:[ ] #8:[ ] #9:[ ]
<1>:SLOT #01 > SML-21-10S-SS <8>:SLOT #11 > SML-21-10S-SS
<2>:SLOT #02 > SML-21-10S-XX <9>:SLOT #12 > SML-21-10S-SS
<3>:SLOT #03 > SML-21-2.7G-2S <D>:SLOT #13 > SML-21-10S-SS
<4>:SLOT #04 > SML-21-2.7G-2S <E>:SLOT #14 > SML-21-10S-SS
<5>:SLOT #05 > SML-21-2.7G-2S <F>:SLOT #15 > SML-21-10S-SS
<6>:SLOT #06 > SML-21-2.7G-2S <G>:SLOT #16 > SML-21-10S-SS
<7>:SLOT #07 > SML-21-2.7G-2S <H>:SLOT #17 > SML-21-10S-SS
<8>:SLOT #08 > SML-21-2.7G-3S <I>:SLOT #18 > SML-21-10S-SS
<9>:SLOT #09 > SML-21-2.7G-3S <J>:SLOT #19 > SML-21-10S-SS
<A>:SLOT #10 > SML-21-2.7G-3S <K>:SLOT #20 > SML-21-10S-SS
<->:Monitor Previous Chassis <<->:Monitor Next Chassis
<I>:SNMP System Configuration Setup
<M>:SNMP Manager Configuration Setup
<P>:Password Setup
<R>:Reboot <Z>:Logout
Please select an item
    
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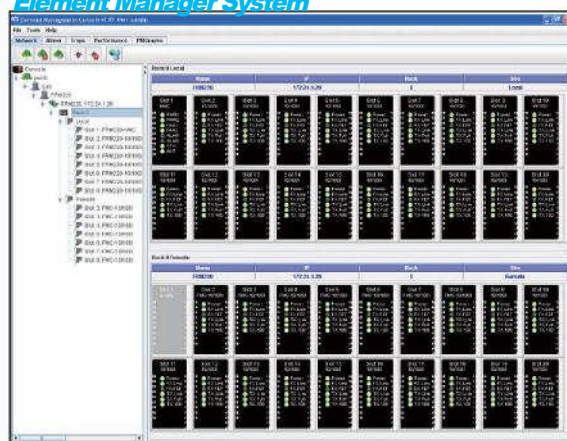
CTC Union also provides and maintains their own EMS (Element Management System) which is a Java based client/server manager for monitoring and maintaining a large number of network elements over a long period of time.

Electrical Interface	<ul style="list-style-type: none"> • Console RS232 port • LAN 10/100Base-TX
Management Interface	<ul style="list-style-type: none"> • Provide all system Network management functions: software updates, and management system interaction through Ethernet port. • Out-band management: supports Web, Telnet and SNMP , EMS management • Configuration Management • Performance Management • Fault Management • Status Monitoring. • PWR, Fan, Alarm Act, STK, LAN LNK/SPD
Indications	<ul style="list-style-type: none"> • 155 x 88 x 23mm (DxWxH)
Dimensions Weight	<ul style="list-style-type: none"> • 120g
TemperatureHumidity	<ul style="list-style-type: none"> • 0 ~ 50oC (Operating) , -10 ~ 60oC (Storage)
CertificationMTBF	<ul style="list-style-type: none"> • 10 ~90% non-condensing • CE, FCC, LVD, RoHS • 65,000 hrs (25oC)

Web GUI Manager



Element Manager System



10G 3R Transponder SML-21-10G



The SML-21-10G is a series of managed 10G fiber to fiber 3R repeater and transponders. Based on a number of 10 Gigabit Fiber standards, these transponders support XFP to XFP (XX), SFP+ to XFP (SX), or SFP+ to SFP+ (SS) fiber connections. The transponders are protocol transparent, providing 3R (Re-amplification, Re-shaping and Re-clocking) regeneration between these different optical module types. One of the major applications for this converter is in connecting proprietary transceiver equipment to CWDM or DWDM when these 'colored' optical modules are not available for the proprietary equipment. With full duplex wire speed forwarding capability between the 2 fiber media, the SML-21-10G brings you the best and simplest solution for your 10G conversion between fiber and fiber.

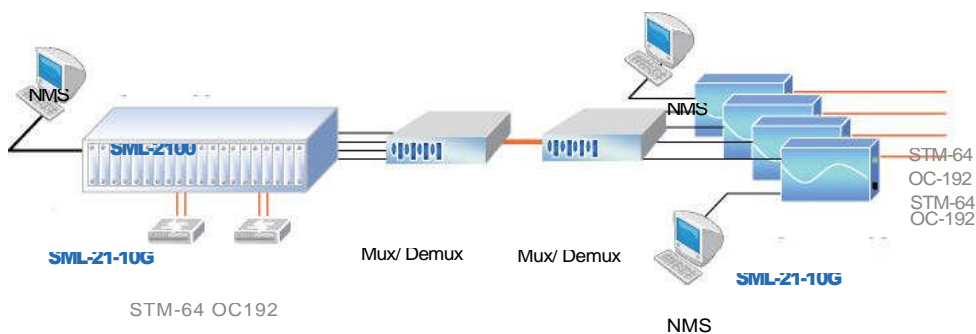
Features

- Multiple protocol supported 10G Ethernet, 10G FC, STM-64, OC-192
- Network management via Web, Telnet, SNMP in central SML-2100 chassis
- Protocol transparent 3R fiber media transponder / repeater (Re-amplification, Re-shaping and Re-clocking)
- Promotes flexibility and eases management with pluggable SFP+ or XFP transceiver
- Features two 10G ports offering multiservice 10G transponder and regenerator function
- Provides superior optics capabilities resulting in extended transport distances for regional application.
- Extend 10G Ethernet transmission over fiber
- Useful as a 'Transponder' in CWDM or DWDM systems for 10G Ethernet/Fiber Channel/STM-64
- Supports Client / Line loop back tests

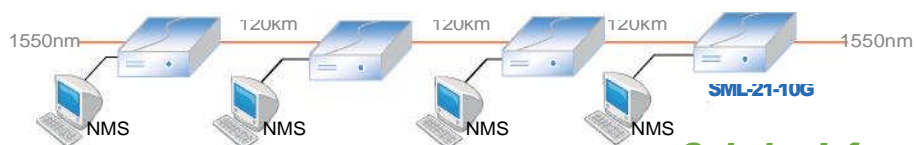
Optical Interface

Connector	SML-21-10G-SS LC, 1x Line SFP to 1x Client SFP+ SML-21-10G-XX LC, 1x Line XFP to 1x Client XFP SML-21-10GSX LC, 1x Line SFP+ to 1x Client XFP
Traffic Format	OC-192/STM-64 10 Gigabit Ethernet LAN 10G FC (10.51875G) OTN G.709; OTU2 (10.709225G)
Regeneration	Re-amplification Re-shaping Re-timing
Loopback	Line / Client
Cable type	SM 9/125um
Wavelength	CWDM 1470 ~ 1610nm DWDM 1529.55 ~ 1565.50nm
Indications	LED (Power, Line Link, Client Link, Test, Loop back, Port Active, Alarm)
Power Consumption	<18W
Dimensions	155 x 88 x 23mm (D x W x H)
Weight	150g
Temperature	0 ~ 50°C (Operating), -10 ~ 70°C (Storage)
Humidity	10 ~90% non-condensing
Certification	CE, FCC, LVD, RoHS
MTBF	75,000 hrs (25°C)

Managed 10G 3R Transponder



10G 3R Repeater



Ordering Information

SML-21-
10G Model type

Example: SML-21-10G



2.7G 3R Transponder SML-21-2.7G-2S

The SML-21-2.7G-2S is a 2.7G 3R optical regeneration device, which consists of Re-amplification, Re-shaping and Re-timing. The transponder card converts a data signal to the correct wavelength for transmission on a specific channel by supporting SFP optics on both line side and client side interfaces. When the SML-21-2.7G-2S card is placed in the SML rack with SNMP management, the management can view the converter card's status, type, version, fiber link status and alarms. The card can be configured to enable or disable the port, reset the port and set the desired data rate.

Features

- Multiple protocol supported at bit rates 28Mbps to 2.7Gbps (Fast Ethernet, Gigabit Ethernet, OC-3, OC-6, OC-12, OC-24, OC-48, STM-1, STM-4, STM-16, FC-1, FC-2)
- Network management via Web, Telnet, SNMP in central SML chassis
- Local configuration via DB9 craft port In Stand-alone
- Digital Diagnostic monitoring of SFP module
- Perform optical repeater function (Re-amplification, Re-shaping, and Re-clocking)
- Facility loopback on both Client / Line sides
- Link Fault Pass through (LFP)
- Auto Laser Shutdown (ALS)
- Dip Switch setting data rate
- Detect fiber transmitter error Alarm

Optical Interface

Connector	SFP LC
Data rate	28M to 2.7Gbps
Duplex mode	Full duplex
Fiber	MM 50/125μm, 62.5/125μm. SM 9/125μm
Distance	MM 2km, SM 15/30/50/80/120km, WDM 20/40/60/80km
Wavelength	MM 1310nm, SM 1310,1550nm WDM 1310Tx/1550Rx (type A) 1550Tx/1310Rx (type B) CWDM 1470 ~ 1610nm

Standard

Indications

IEEE 802.3, IEEE 802.3u
LED (PWR, Line Link, Client Link, Test, Loop back, Port Active, Alarm)

Power Input

Card : 12VDC
Standalone : AC, DC options

Power Consumption

< 10W

Dimension

155 x 88 x 23mm (D x W x H)

Weight

120g

Temperature

0 ~ 50°C (Operating), -10 ~ 70°C (Storage)

Humidity

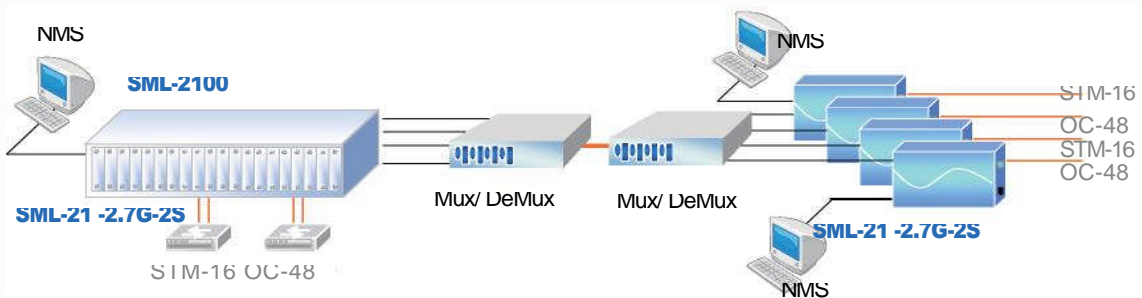
10 ~ 90% non-condensing

Certification

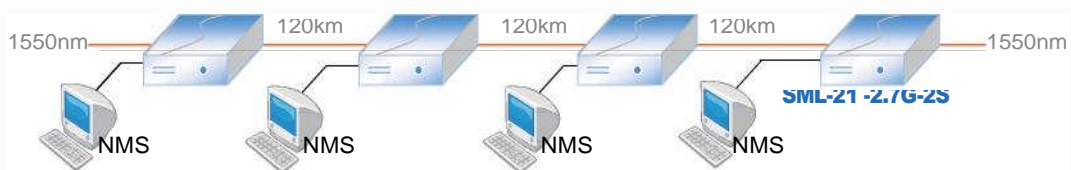
CE, FCC, LVD, RoHS

MTBF

65,000 hrs (25°C)



Managed 2.7G 3R Transponder



2.7G 3R Repeater

SML-21-2.7G-2S can be inserted CH02M, CH02N and CH20 chassis.

Ordering Information

SML-21- Optional card

2.7G-2S

Example: SML-21-2.7G-2S

3R 2.7G Transponder SML-21-2.7G-3S



The SML-21-2.7G-3S is an 3R 2.7G optical regeneration device, which consists of Re-amplification, Re-shaping and Re-timing. The transponder card converts a data signal to the correct wavelength for transmission on a specific channel by supporting SFP optics on both line side and client side interfaces. 1+1 Automatic optical line Protection Switching are supported for the aggregate fiber ports. When the SML-21-2.7G-3S card is placed in the SML rack with SNMP management, the management can view the converter card's status, type, version, fiber link status and alarms. The card can be configured to enable or disable the port, reset the port and set the desired data rate.

Features

- Multiple protocol supported at bit rates 28Mbps to 2.7Gbps (Fast Ethernet, Gigabit Ethernet, OC-3, OC-6, OC-12, OC-24, OC-48, STM-1, STM-4 STM-16, FC-1, FC-2)
- Network management via Web, Telnet, SNMP in central SML chassis
- Local configuration via DB9 craft port In Stand-alone
- Digital Diagnostic monitoring of SFP module
- Perform optical repeater function (Re-amplification, Re-shaping, and Re-clocking)
- Facility loopback on both Client / Line sides
- 1+1 Optic fiber protection
- Link Fault Pass through (LFP)
- Auto Laser Shutdown (ALS)
- Dip Switch setting data rate
- Detect fiber transmitter error Alarm

Optical Interface

Connector	SFP LC
Data rate	28M to 2.7Gbps
Regeneration	Re-amplification Re-shaping Re-clocking
Loop back	Line/Client
Fiber	MM 62.2/125µm, 50/125µm. SM 9/125µm
Wavelength	MM 850, 1310nm SM 1310, 1550nm WDM 1310T/1550R, 1550T/1310R CWDM 1470 ~ 1610nm

Indications

LED (PWR, Line Link, Client Link, Test, Loop back, Port Active, Alarm)

Power Consumption

< 10W

Dimensions

155 x 88 x 23mm (D x W x H)

Weight

120g

Temperature

0 ~ 50°C (Operating), -10 ~ 70°C (Storage)

Humidity

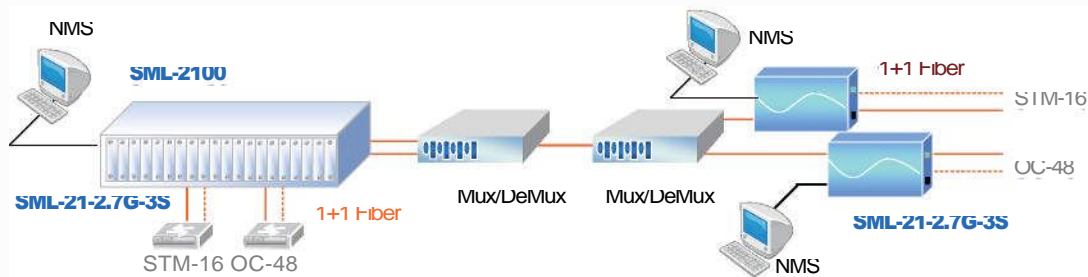
10~90% non-condensing

Certification

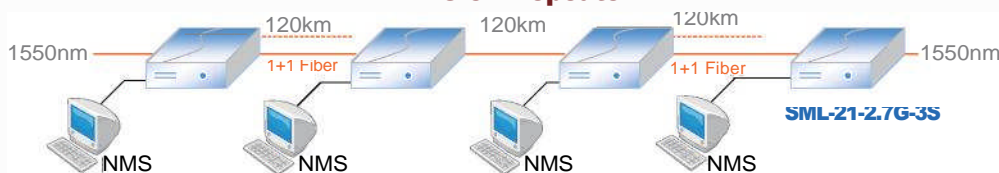
CE, FCC, LVD, RoHS

MTBF

65,000 hrs (25°C)



Managed 2.7G 3R Transponder with Fiber Redundant 2.7G 3R Repeater



Ordering Information

SML-21- Optional card

2.7G-3S

Example: SML-21-2.7G-3S