Version 1.2

SDH MULTIPLEXER

HX9150
SDH STM-1 TM/ADM

Features

- 1U height, ETSI shelf (full front access) or ANSI shelf (front and rear access)
- SDH STM-1TM/ADM
- Aggregate port
  - 2 SFP optical housing
  - MSP 1+1 protection
  - SNCP protection
- Tributary port (manufacturing option)
  - Two 8-port E1 ports with DB37 connector or 16-port E1 ports with RJ48C and four 10/100 (FE) Ethernet ports
  - 8-port E1 with RJ48C connector and 8-port E1 with DB37 connector, with four 10/100 (FE) Ethernet ports
  - 8-port E1 ports with RJ48C /DB37and two 10/100 (FE) Ethernet ports
  - 4-port E1 ports with RJ48C/DB37and two 10/100 (FE) Ethernet ports
- Hot swappable power Modules, dual power modules for redundancy
  - DC power -48 Vdc (-36 to -72Vdc)
  - AC power (100 to 240 Vac)
- Networking protection
- MSP (1+1) protection for TM (Terminal Multiplexer)
  - SNCP protection for ADM (Add/Drop Mux)
- VC-12 cross-connect
- 4-Ethernet Port for total 63xVC12, with independent port configuration
- Supports Internal/Line clock
- Supports VCAT, GFP, and LCAS
- Supports E-Line
- Performance monitoring
- Alarm suppression, masking, and reporting
- Management:
  - Console port
  - SNMP port
  - Centralized management with EMS over DCC channel
  - CXRView GUI EMS
  - Telnet support
- RoHS compliant

Product Description

The CXR HX9150 SDH STM1 TM/ADM is a standard equipment device for SDH/MSTP networks with VC-12 directly reaching the network terminal. Through an STM-1 uplink, the HX9150 provides VC-12 standard E1s and Ethernet supporting VCAT, GFP, and LCAS protocol.

The HX9150 is a comprehensive fiber transmission platform for traditional telecom business and broadband information business applications. As well, it is suited to adapt to general data in Metropolitan Area Networks and audio and information business data in Private Networks.

On the aggregate side, the HX9150 has two STM-1 ports supporting MSP (1+1) TM and SNCP for ADM protection.

On the tributary side, the HX9150 has four Ethernets and up to 16-port E1. As terminal equipment, the HX9150 can be built in a range of complex topologies such as star, linear and ring. These can support a non-blocking cross-connect between different business interfaces.

All interfaces are fully compliant with the relevant ANSI standards and ITU recommendations. The HX9150 provides fault management, performance monitoring, configuration management, and network security management. Through the console port, LAN port and DCC channel, the OAM&P can be achieved both locally and remotely via SNMP or menu-driven interfaces. HX9150 supports the CXR-View GUI EMS (Element Management System).

CXR ANDERSON JACOBSON

ORDERING INFORMATION

To specify options, choose from the list below:

Model	Description	Notes
HX9150-1U-2FE-4E1	SDH STM1 ADM multiplexer 2 STM1 with SFP slots (w/o SFP), 1U 19", with 4 E1/120ohms RJ45, 2 x10/100BaseT E-Line. Slots for 2 power supplies. Industrial Operating range -40/65°C	Order Power supply separately Order SFP modules separately from SFP Optical Module Brochure.
HX9150-1U-2FE-4E1DB	SDH STM1 ADM multiplexor 2 STM1 with SFP slots (w/o SFP), 1U 19", with 4 E1/75ohms with DB37 male connector, 2 x10/100BaseT E-Line. Slots for 2 power supplies. Industrial Operating range -40/65°C. Conversion cable DB37 not included.	
HX9150-1U-4FE-16E1	SDH STM1 ADM multiplexer 2 STM1 with SFP slots (w/o SFP), 1U 19", with 16 E1/120ohms RJ45, 4 x10/100BaseT E-Line. Slots for 2 power supplies. Industrial Operating range -40/65°C	
HX9150-1U-4FE-16E1DB	SDH STM1 ADM multiplexor 2 STM1 with SFP slots (w/o SFP), 1U 19", with 16 E1/75 ohms with DB37 male connector, 4 x10/100BaseT E-Line. Slots for 2 power supplies. Industrial Operating range -40/65°C. Conversion cable DB37 not included.	
HX9150-SA	AC power supply for HX9150-1U, 100/240Vac, maxi 2 ANSI	
HX9150-48	DC power supply for HX9150-1U, - 48v (-36Vdc to -72Vdc), maxi 2 ANSI	
CA603049	Cable console for HX9150 RJ45-8 / DB9F, 2m	

Accessories

User's Manual	
CXR-HX9150-UM	Paper copy of User Manual. **Note:** Standard package includes CD version
SFP Optical Modules	
Please contact us for other SFP Optical Module Brochure.	
Conversion Connector	
CA-DB37-8E-175-16BNC	One DB37 female to eight (8TX/8RX) 1.0/2.3 RF male (75ohms impedance) conversion adaptor
Blank Panel	
HX9150-PAN-DC	Blank panel for single DC power slot
HX9150-PAN-AC	Blank panel for single AC power slot

PRODUCT SPECIFICATIONS

Aggregate Lines

E1 Interface

Number of E1	DB37 connector: 2 * 8 E1/per port RJ48C connector: 16 E1	DB37 connector: 1 * 8 E1/ per port RJ48C connector: 8E1	DB37 connector: 1 * 4 E1/ per port RJ48C connector: 4E1
Line Rate	2.048 M bps ± 50 ppm	Output Mask	ETS 300 689 Sec.4.2.1.2 ITU G.703
Line Code	HDB3	Jitter	ITU G.823
Input Code	ITU G.703	Framing	unframed
Output Code	ITU G.703	Impedance	75 ohm coax/120 ohm twisted pair
Connector	1. DB37 (75ohm) male with conversion connector 2. DB37 (120ohm) male 3. RJ48C		

Fast Ethernet (FE) Interface

Number of Port	2 or 4		
Line Rate	10/100M bps	Mapping	n x VC12
Process Protocol	VCAT, GFP(G.7041), and LCAS (G.7042)	Connector	RJ45
Ethernet Frame MTU	1792 bytes		

System Clock

Clock Source	Internal Clock Two Line Clock

Management

LEDs	Multi-color LEDs
Console Port	Electrical: RS232 Connector: RJ45 (female, DCE) Protocol: Menu driven VT-100
Telnet	
SNMP	SNMPv1 (RFC1213)
Outband Interface	Using DCC channel, user selectable 3, 9 or 12 channels

Diagnostics System

Loopback Test	Direction: to optical lines, to tributary lines

Unit E1

Loopback Test	Direction: to optical lines, to tributary lines	
BERT Test	E1 interface	Direction: to optical lines, to tributary lines

Unit Ethernet

Lane Loopback Test	Direction: to optical lines
Wan Loopback Test	Direction: to optical lines, to tributary lines
Wan-to-Wan Loopback Test	Direction: to tributary lines

Performance Monitor

Performance Reports	Performance Parameters: Error Block (EB), Background Block Error (BBE), Error Second (ES), Burst Error Second (BES), Severe Error Second (SES), Unavailable Second (UAS)			
Alarm History	System Alarm	Power Loss, TS Sync Loss, SNCP Switch, MSP Switch, Login/Logout, FOM Equip/Unequip		
	SDH Line Alarm	SDH	Line	PI-LOS, RS-LOF, RS-TIM, RS-BIP UAS, MS-SD, MS-SF, MS-AIS, MS-RDI, MS-BIP UAS, MS-REI UAS,
			Ho-Path	AU-LOP, AU-AIS, HP-TIM, HP-UNEQ, HP-PLM, HP-RDI-S, HP-RDI-C, HP-RDI-P, HP-BIP UAS, HP-REI UAS, LOM
			Lo-Path	TU-LOP, TU-AIS , LP-UNEQ
Alarm Queue	Contains up to 300 alarm records of latest alarm types, alarm severity, date and time.			

Power

AC Power	100 to 240 Vac, 50/60Hz
DC Power	-48 Vdc (-36 to -72Vdc)
Power Consumption	Maximum 25 Watts

Physical

Dimensions	480 x 44 x 220 mm. (W x H x D)
Temperature	*Industrial Series - Temperature range -40°C to +65°C*
Humidity	0-95%RH (non-condensing)
Mounting	*Desk-top, 19-inch rack mountable, and wall mountable*

Standards Compliance

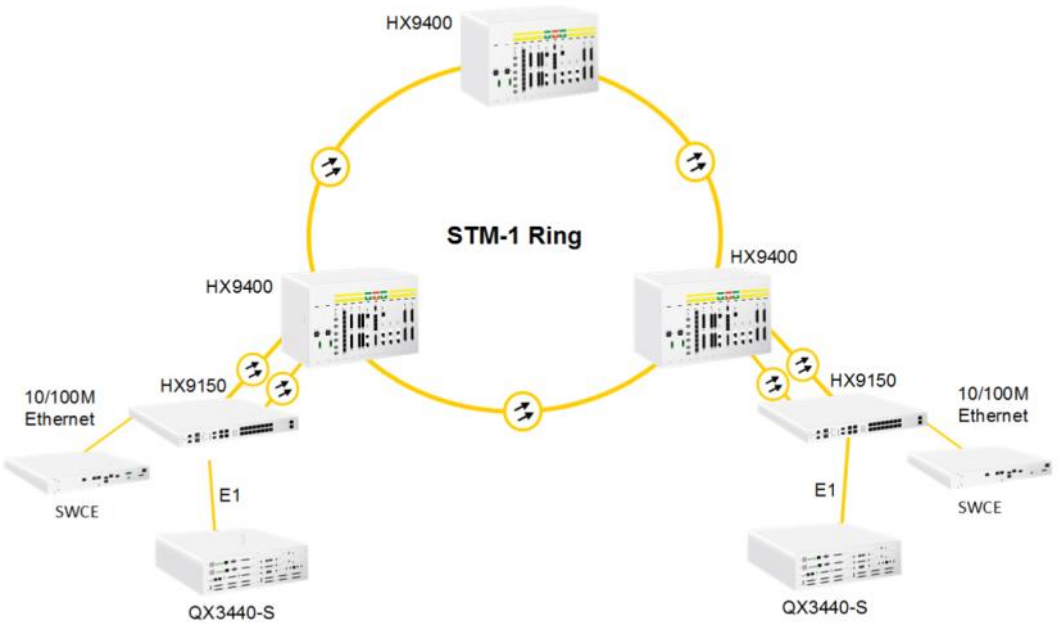
ITU	G.664, G.707, G.7041, G.7042, G.775, G.783, G.806, G.823, G.747, X.86
ANSI	T1.105, T1.107
IEEE	802.1q (VLAN), 802.1w (RSTP), 802.1s (MSTP) 802.3x (flow control)
IETF	RFC2236 (IGMP Snooping), RFC1213 (SNMPv1)

Certification

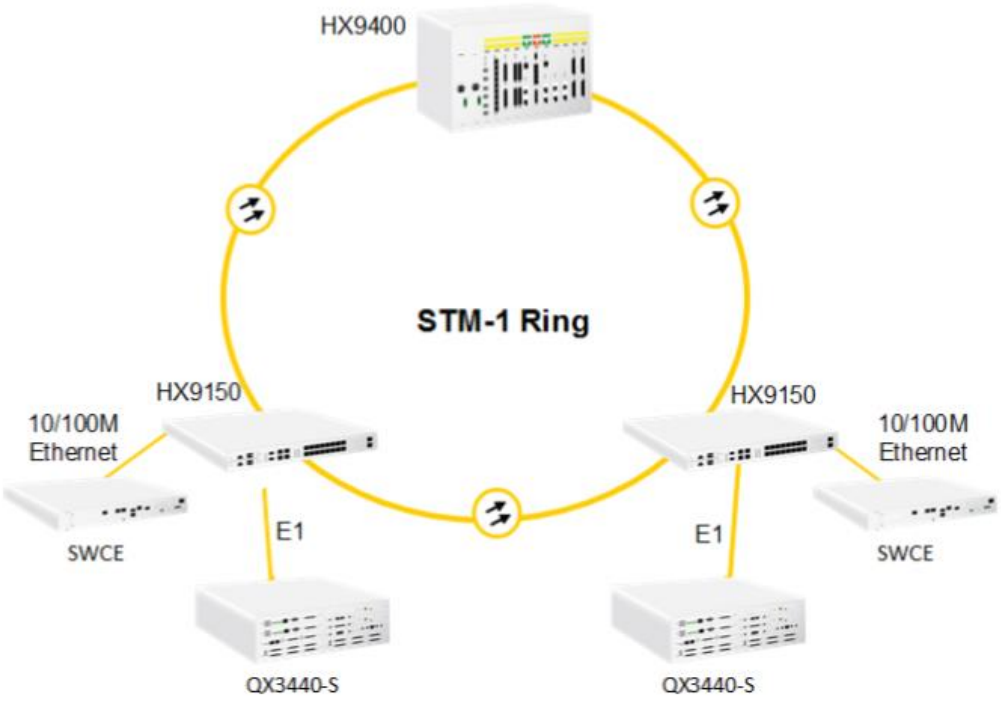
EMI/EMC	EN55022 Class A, EN55024, EN61000-3-2, EN61000-3-3
Safety	EN60950-1
MTBF	225.000 hours

Application Illustrations

TM (MSP Protection)



ADM



CXR Anderson Jacobson
Rue de l'Ornette
28410 Abondant - France

T +33 (0) 237 62 87 90
F +33 (0) 237 62 88 01
email: contact@cxr.com