Ethernet transport over PDH over STM1

Version 1.2 – Nov 2012

XM-SW2STM1-2CB

CONCENTRATOR OF 63 E1 EOPDH OVER A SDH STM1

Features

- Inverse multiplexer of 63 E1 G703/G704 over SDH STM1
- Ethernet over PDH switch

SDH support :

- 2 STM1 interfaces
- Mode MSP 1+1 protection
- Mode ADM 2 STM1 Payload with ADM of 63 VC12 (E1)
- SFP interfaces for STM1 155Mbps copper or fiber

EoPDH Functions :

- Point-to-Point inverse multiplexer of 63E1
- Point-to-Multipoint or EoPDH switch of 63E1 for:
  - Single E1 link to CV200TTX
  - 4E1, 8E1 or 16E1 links to XM-F4E1, XM-F8E1, XM-SW16E1 inverse multiplexer

Ethernet encapsulation in E1

- HDLC for E1/FE1
- PPP-BCP RFC3585 for 1E1
- GFP-F for 4 to 16 E1 comply with IUT-I G.7041, G.7042, G.7043

Ethernet side:

- 2 Combo Gigabit Ethernet 10/100/1000Baset & SFP
- Switch layer 2 with 10Gb fabric
- Tagging per port 802.1p or 802.1q
- Double Tagging. Q-in-Q
- Transparent to 1552 bytes Ethernet frames
- STP & RSTP

Management:

- By Web browser, CLI command or in SNMP over consol or Ethernet port
- Of distant device out-band over VLAN or In-band HDLC

Models

- 1 U 19''
- 2 redundant AC and/or DC 48v power

POINT-TO-POINT OR MULTIPOINT EOPDH OVER SDH

The XM-SW2STM1-2CB is an Ethernet inverse multiplexer provides connectivity from GE copper or fiber LAN to LAN over up to 63 E1 in parallel.

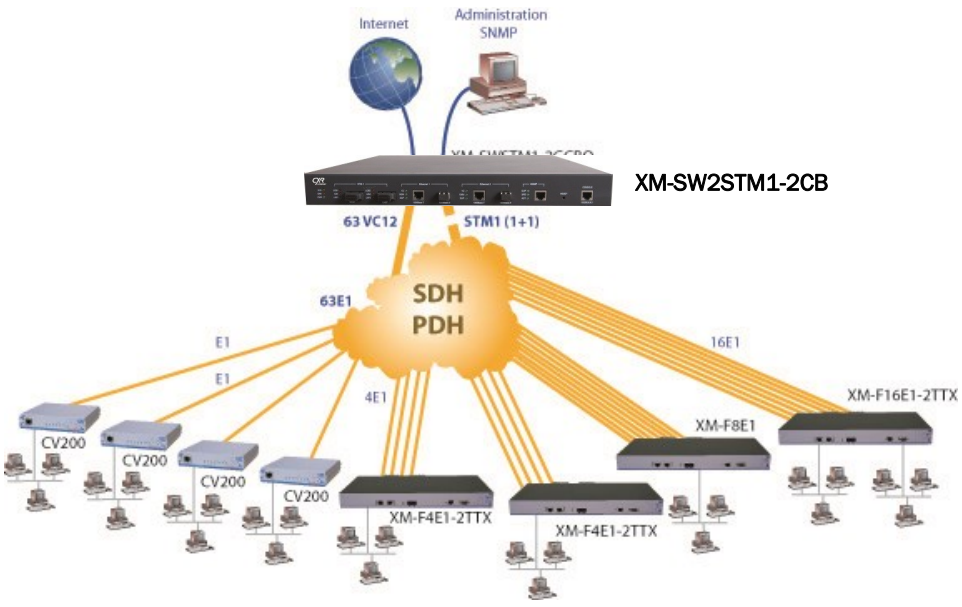
The XM-SW2STM1-2CB is mainly used as a switch with 2 uplink Combo GE with SFP and up to 63E1 EoPDH mapped in a STM1.

This configuration is particularly used to deploy IP-DSLAM, WiMAX BTS, Ethernet distribution networks, with Q-in-Q services in Telco's or large organizations with TDM/E1 infrastructure. This xE1 links are delivered to the XM-SW2STM1-2CB over one or two STM1 in ring or with MSP 1+1 protection.

The ***XM-SW2STM1-2CB*** is a Gigabit Ethernet switch layer 2 with 2 uplink Combo GE with SFP and up to 63E1 EoPDH mapped in 63 VC12 of one or two STM1. This device is concentrating Ethernet over PDH links over single E1 G703/G704 and links of 4/8/16 E1 in G704. The encapsulation of single E1 is done in HDLC or PPP-BCP or in GFP/VCAT w or w/o LCAS protocol compliant with ITU-T G.7041, G.7042, G.7043 and G.8040 standards. The system is concentrating together single E1 from simple converter like CV200-2TTX and multiple E1s links from inverse multiplexer like ***XM-F4E1-2TTX, XM-SW16E1-2TGTX***.

This xE1 links are encapsulated in SDH VC12 and delivered over an SDH network to the XM-SW2STM1-2CB over one STM1 or two in MSP 1+1.

The system is supporting VLAN tagging simple or double or Q-in-Q services for creating a Ethernet network of transport.



Ethernet transport over PDH over STM1

CXR an complete offer of Ethernet transport over TDM with interoperability :

MD40FT *EoGSHDSL*
CV200-TTX *EoPDH E1*
XM… *EoPDH x E1*
CVE3T3-TTX *EoPDH E3*
XM-STM1 *EoPDH STM1*
HX9400S *EoSDH*

PRODUCT SPECIFICATION

Ethernet over TDM over SDH concentrator or inverse multiplexer

Line Interfaces SDH:

Capacity	2 STM1 interfaces with SFP (SFP modules in option)
Working mode	Ring or bus ADM, TM or TM with MSP 1+1 protection 63 VC12 ADM capabilities
Line Rate	155Mbps, STM1 SDH G.707
Clock	Internal or from the line with master and slave
Jitter	ITU G.823

Diagnostics Test:

Loopbacks	Line Loopback, Payload Loopback, and Local Loopback
Remote Loopbacks	Line Loopback, and Payload Loopback

Ethernet over PDH:

Inverse multiplexer	HDLC or PPP-BCP Protocol G704 of 63E1 maximum
Concentrator E1	HDLC Protocol over single E1 G703 or G704 PPP-BCP RFC3518 Protocol over single E1 G703 or G704
Concentrator n E1	GFP/VCAT w or w/o LCAS according to ITU-T G.7041, G.7042, G.7043 and G.8040 standards *
Delays between E1	16 ms maximum

Ethernet:

Interfaces	2 Combo port Gigabit Ethernet 10/100/1000Baset, IEEE802.3ab standard 1000SX/LX/ZX, IEEE802.3z 850nm/1310nm/1550nm/CWDM
Connector	2 RJ45 and 2 SFP with LC
Switch	Layer 2 Switch layer 2 with 10Gb fabric
VLAN	802.1p and q, tagging/untagging simple and double, Q-in-Q
Maximum frame	1552 bytes including jumbo frame
Protection	Spanning Tree Protocol, RSTP*
IGMP	Support IGMP* snooping V1 and V2.

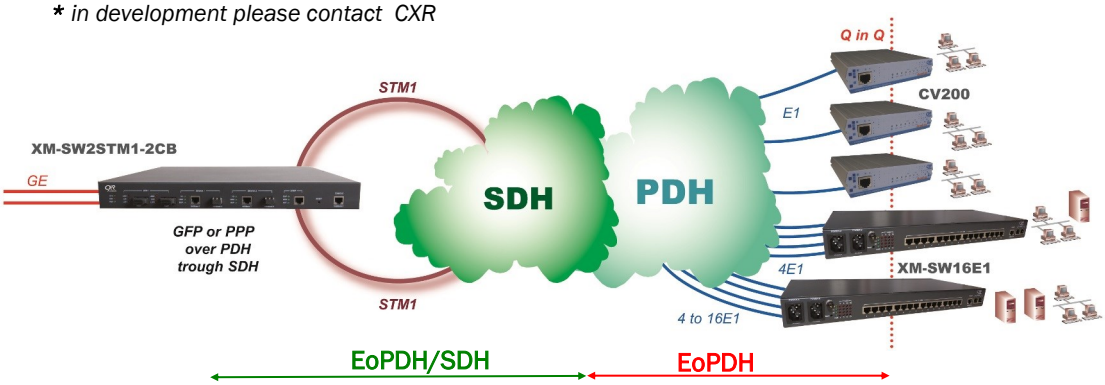
Management :

Connector	DB9 and Ethernet SNMP
Protocol	CLI and embedded SNMP V1, V2

Physical:

Dimensions	1U, 19" Chassis 432 x 44 x 365 mm (WxHxD)
Power	Dual AC 100-240Vac 50/60 Hz and dual DC 48Vdc
Temperature	-10 to -50°C
Humidity	0-90% RH (NON-CONDENSING)
Mounting	Desk-top stackable, wall mount

** in development please contact CXR*

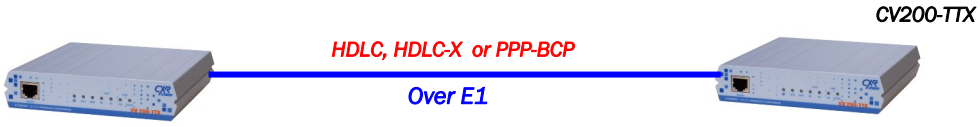


ORDERING INFORMATION

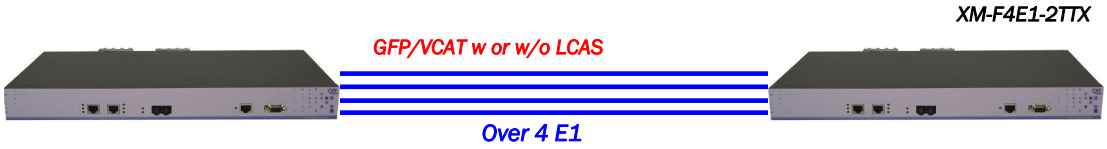
XM-SW2STM1-2CB-2ACDC	Inverse multiplexer or EoPDH concentrator of 63 E1 over 63 VC12 with TM(1+1) or ADM w 2 STM1, HDLC (BCP-PPP/GFP future*), 2 Combo ports 10/100/1000BaseT & SFP , 19" 1U, power supply 2 AC and 2 DC48v

THE EOPDH SOLUTIONS OVER E1, E3 AND STM-X

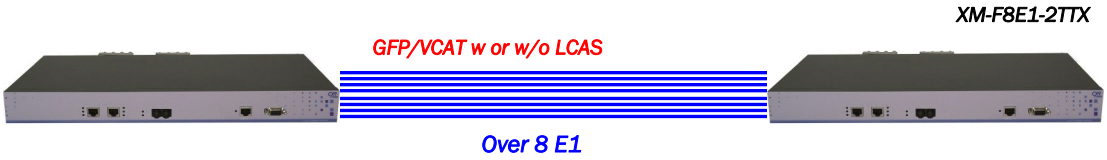
CV200-TTX
Ethernet over 1 E1
VLAN tagging, Q-in-Q



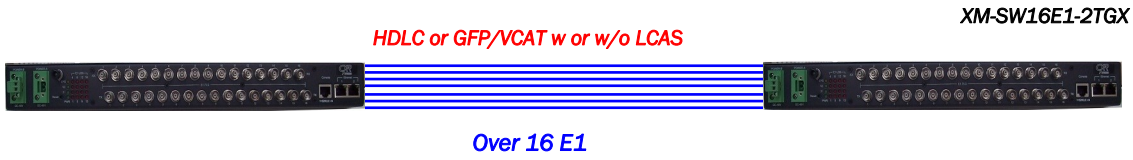
XM-F4E1-2TTX
Point to point
Ethernet over 4 E1
VLAN tagging,



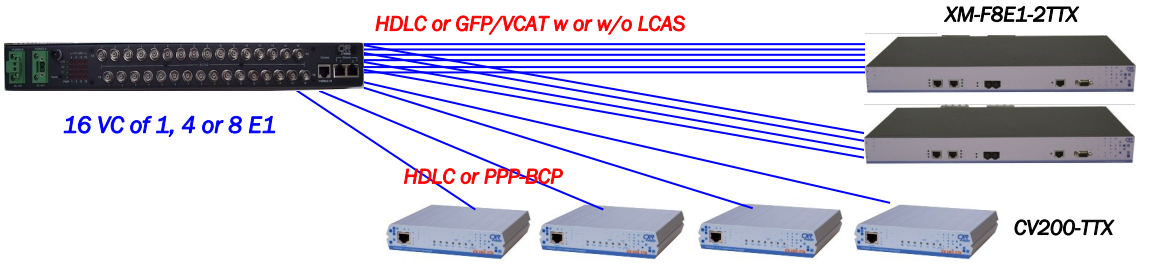
XM-F8E1-2TTX
Point to point
Ethernet over 8 E1
VLAN tagging,



XM-SW16E1-2TGX
Point to point Ethernet
over 16 E1
VLAN tagging, Q-in-Q,



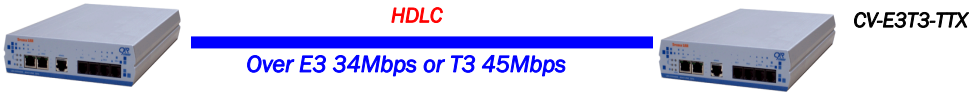
XM-SW16E1-2TGX
Ethernet switch
of 16 E1 EoPDH
VLAN tagging, Q-in-Q,



XM-SW2STM1-2CB
Point to point Ethernet
over 63 E1
Include in STM1

XM-SW2STM1-2CB
Ethernet switch of 63 E1 EoPDH from CV200- over one or two fractioned STM1 TM or ADM

CV-E3T3-TTX
Ethernet over 1 E3



THE EOSDH/SONET SOLUTIONS STM-1/4/16

CXR provide different solutions of Ethernet transport over New Generation SDH with the ***HX9100*** an STM1 ADM/TM, the ***HX9400S*** a compact STM1/4 ADM/TM , the ***HX9400R and HX9416R*** modular SDH/SONET STM1, STM4 and STM16 ADM/TM/HUB systems.

These devices are supporting the modes: E-Line as Point to Point and E-LAN as multipoint over n VC12, n VC3 and n VC4 up to 4 VC4. Transport inside SDH circuit is using GFP/VCAT mode or PPP-BCP/VCAT mode according to RFC2615 for switching networks and both with or without LCAS protocol.

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Smart solutions for smart networks

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