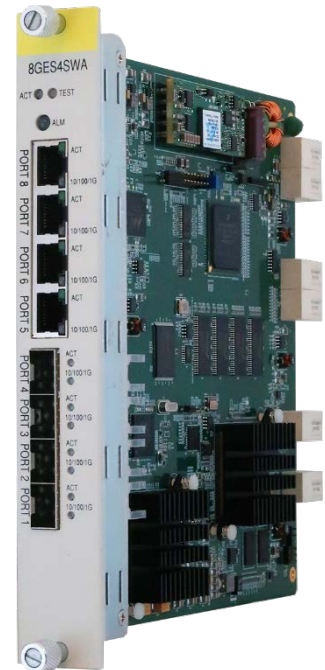


# 8-PORT GbE OVER SDH/SONET INTERFACE CARD WITH SWITCH (8GESW) FOR HX9400R/HX9500R

## Features

- High-speed (HS) interface card for HX9400R\*/HX9500R
- Hot-pluggable and software configurable
- Eight GbE LAN ports
  - Four SFP optical ports with ALS
  - Four electrical ports
  - LED indicators for port and card status
- Jumbo Frame up to 9600 bytes
- Ethernet over SDH/SONET (EoS) technology
  - Virtual Concatenation (VCAT) and VCG
  - Framing/Encapsulation
    - GFP (G.7041),
    - LAPS
    - BCP Layer 2 (RFC2615)
  - LCAS (G.7042) or non-LCAS
- Ethernet Virtual Circuit (EVC) service types
  - 4 EPL
  - 8 EVPL via Q-in-Q
  - E-LAN via max.1024 VLANs and 48 VCGs
- Layer 2 switch
  - MAC Learning
  - MSTP, RSTP
  - Link Aggregation (Trunking)
  - IGMP Snooping
  - QoS
    - CoS or DSCP for priority mapping
    - Per-port 2-rate-3-color or 1-rate-3-color
    - 8 queues per port
    - Strict Priority or WRR for queue scheduling
- 622Mb/s or 2.5Gb/s\* backplane



\* Future Option

## Description

8GESW is a high-speed card for HX9500R series, and is specifically designed to transport Ethernet services over SDH/SONET networks (EoS). Customer LAN bridging types supported by 8GESW include EPL (E-line mode), EVPL (Virtual E-line mode), and EPLAN (E-LAN mode). Bridged traffic is encapsulated in SDH/SONET frames via framing protocols (GFP-F, LAPS, or BCP) and Virtual Concatenation (VCAT).

8GESW supports eight Gigabit Ethernet ports and a range of standard L2 switch functions, including VLAN, Q-in-Q, MAC learning, MSTP/RSTP, CoS and QoS, and etc.

An 8GESW's total bandwidth for SDH/SONET transportation is either STM-4/OC-12 or STM-16/OC-48\*. Dual 8GESW cards can be mounted simultaneously to achieve card-level protection. Working card failure will trigger protection switch to the backup card without any traffic interruption. SDH/SONET paths can also be protected by SNCP/UPSR ring protection scheme.

\* Future Option

## Ordering Information

To specify options, choose from the list below.

**Note:** RoHS compliant units are specified by the letter **G** at the end of the ordering code.

Model	Description	Notes
HX9400R-8GES4SW HX9500R-8GES4SW	Eight GbE over SDH/SONET plug-in module with L2 switch using 622Mb/s backplane channel	Compatible with all HX9500R controllers and all HS slots
HX9400R-8GES16SW* HX9500R-8GES16SW*	Eight GbE over SDH/SONET plug-in module with L2 switch using 2.5Gb/s backplane channel	Compatible with HX9500R's slot 3&4 of CHAA/CHPA Chassis with CC16/CCPA Controller

### Accessories

User's Manual	
HX9400R-8GESW-UM	User's Manual (paper copy). <b>Note:</b> A CD version of the manual is already included as standard package.

\* Future Option

## Product Specifications

[SFP module characteristics, please refer to SFP Optical Module brochure for details.](#)

**NOTE:** Non-CXR SFP modules are not guaranteed to work with our equipment.

It is strongly recommended to buy CXR-logo SFP modules.

### 8GES4SWA CC4 622M

#### LAN Gigabit Ethernet (GbE) Interface

Electrical Ports	4 RJ45 ports (Port 5 to 8) BaseT 10/100/1000 Mbps per port Auto MDI/MDIX
Optical Ports	4 ports of SFP housing (Port 1 to 4) 10/100/1000 Mbps per port, auto laser shutdown (ALS)
Speed	10/100/1000 Mbps, auto-negotiation
Direction	duplex(half/full), auto-negotiation

#### WAN Transmission

Throughput	STM-4/OC-12 (622M) 2 x STM-1/OC-3 or 1 x STM-4/OC-12, software configurable
EVC services	E-line mode: Port-based E-line (Ethernet Private Line, EPL) Virtual E-line mode: VLAN-based E-line (Ethernet Virtual Private Line, EVPL) E-LAN mode: Port-based E-LAN (Ethernet Private LAN, EPLAN)
EVC grouping Protection	4 EPL pipes, 8 EVPL pipes, 1024 VLANs and 48 VCGs for EPLAN External switch connected to two 8GESW cards at the same time for card-level 1+1 protection

#### Ethernet Function

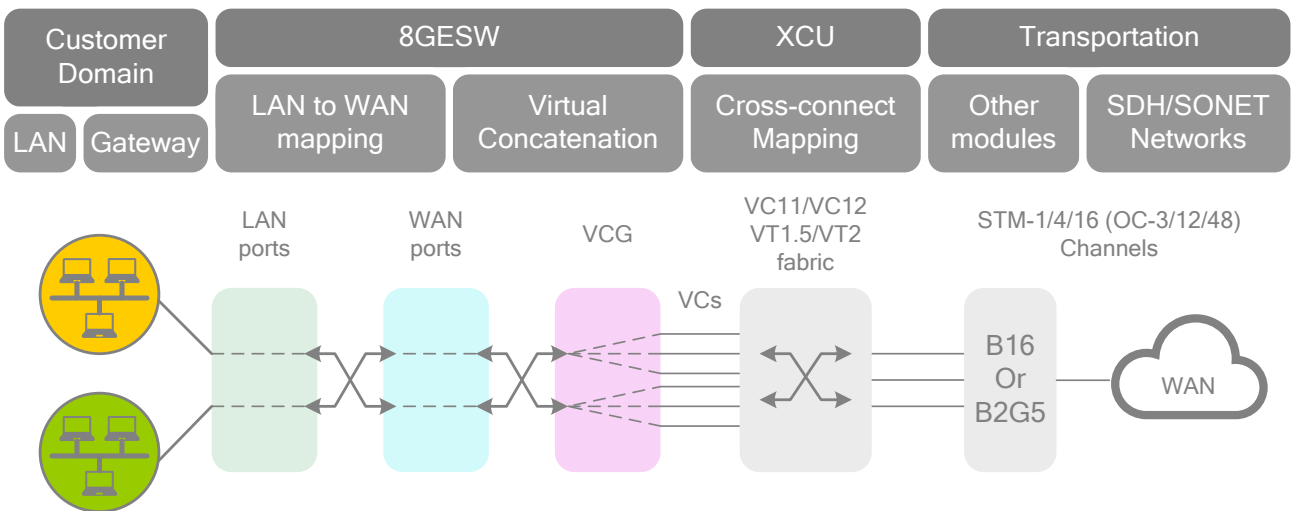
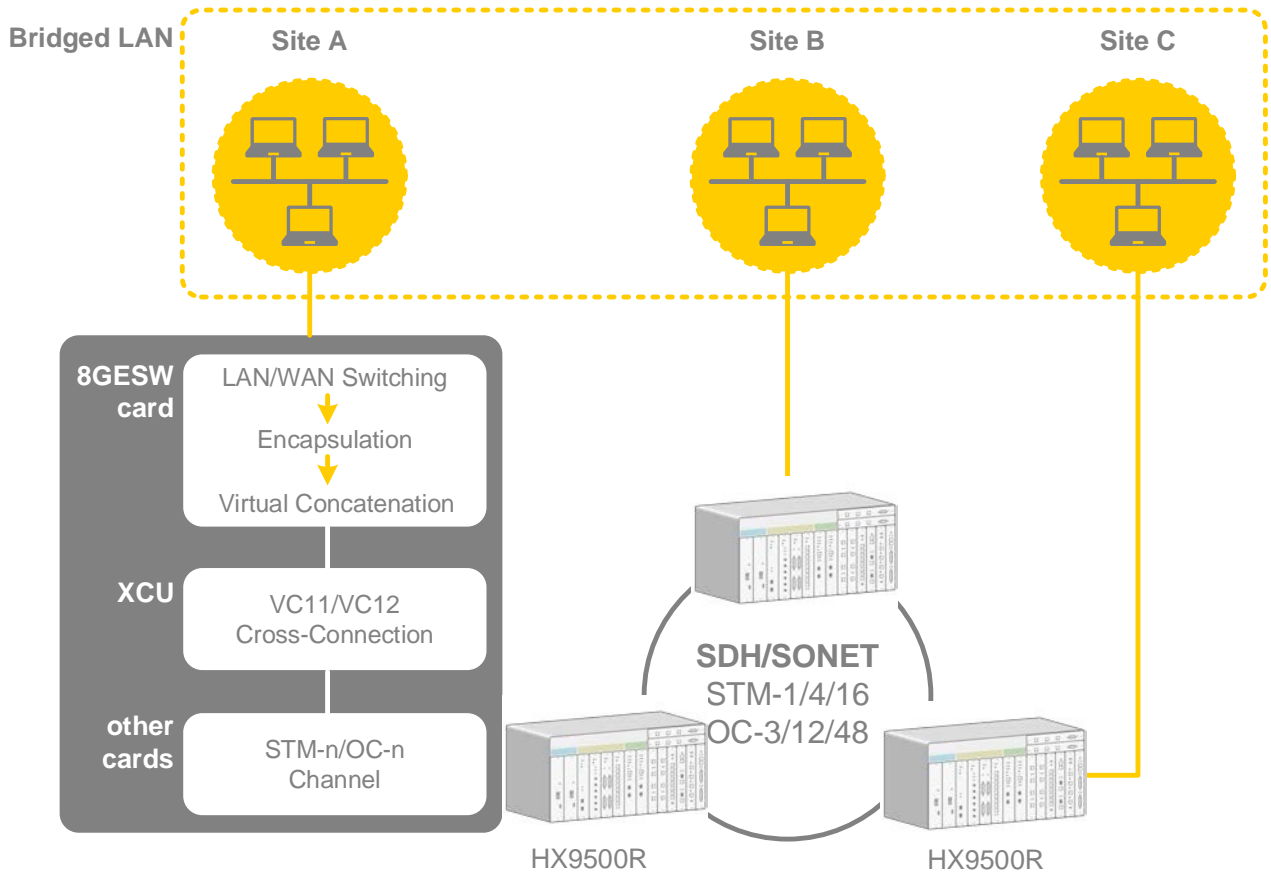
Line Rate	10/100/1000 Mbps
SDH/SONET Mapping	n x AU4/AU3/TU3/TU11/TU12 (STS3C/STS1/VT1.5/VT2)
Multiplexing	G.707
Layer 2 Protocols	RSTP (802.1W), VLAN (802.1Q, 802.1P), Flow Control (802.3X) MSTP (802.1S), IGMP Snooping, QoS
EoS Protocols	Virtual Concatenation (VCAT) Encapsulation: GFP(G.7041), LAPS or BCP LCAS (G.7042) and non-LCAS
Bridge	802.1d MAC learning (maximum MAC table 16K entry)
VLAN	IEEE 802.1q bridging Supports tag stacking, up to 2 VLAN tags VLAN packet transparent
QoS	Eight priority queues per LAN/WAN port Packet classification based on 802.1p user priority (CoS) or DSCP Traffic Engineering supports TRTC and SRTC meter rules, and packet color remark Queue scheduling algorithm either Strictly Priority or Weighted Round-Robin (WRR)

#### Standards Compliance

IEEE	802.1q, 802.1p, 802.3, 802.3u, 802.3ab, 802.3z, 802.1s, 802.1w, 802.1x G.7041, G.7042
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# Application Illustration



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The information contained in this document is not contractual. CXR is evolving its products. Specifications may change without notice.



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