16E1-4Eth-C aggregation Converter

16E1-4ETH-C is multi-E1 convergence-type bridge equipment, it provides 16 E1 and 4 FE interfaces, possesses Channel convergence function, according to the different bandwidth can divide into 1~16 Channel. Each Channel is composed of one or multi-E1 lines, the Channel as the link unit carries the Ethernet data transparently, and it has the function which is similar to EPON, any Channel under the user need can set up isolation or communication. Make use of the Channel as the link unit what is composed of E1 lines can realize point to point or point to multi-point flexible networking, and meet the users' variety of bandwidth and centralized network management needs.

16E1-4ETH-C not only provides complete alarm instructions of the line side and the Ethernet side, but also provides the error rate statistics, timeout warning, Ethernet traffic statistics management or other exhaustive management information. Network management approach respectively provide based on WEB, PC interface which based on TCP / IP, and library files which based on SNMP to build the SNMP network management that can be unified operation and management.

PRODUCT CHARACTER:

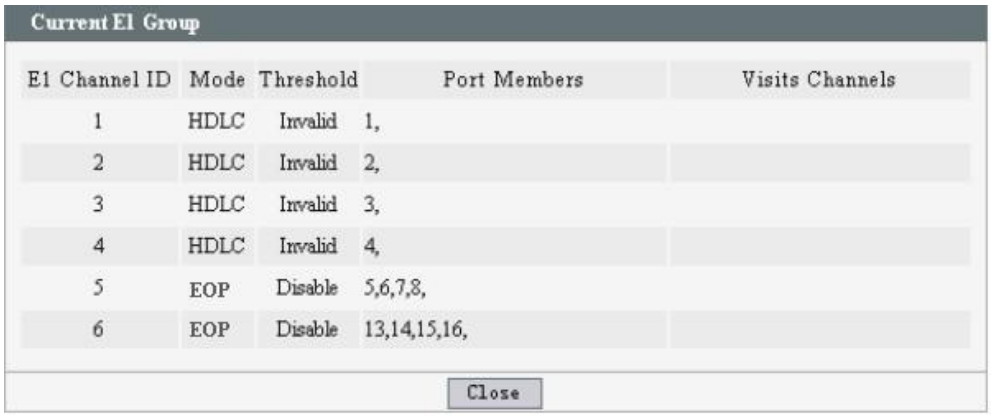
- Provide 16 E1 interfaces, and 4 FE Interfaces.
- Support 1 ~ 16 Channel division configuration, each Channel is composed of 1~16 E1 that have been specified by users, the Channel as link unit point to point carrying Ethernet data transparently and independently.
- Support one point to multi-point applications (Channel number is greater than 1), and point to point networking applications (Channel number is equal to 1), up to one point to 16-point networking application.
- Under the point to multi-point mode, support the different manufactures' single E1 Bridge and multi-E1 Bridge as the remote device mixed networking application.
- When Channel is composed of one E1, it compatible with single-E1 bridge equipment that is realized by SW1701F, RJ-017, SE0162, SE0163, RC7222, X-BRIDGE2.0 and other standard EOP protocol.
- When Channel is composed of two or more than two E1 lines, it compatible with multi-E1 Bridge equipment that is realized by SW16xxF, SW17xxF series, and will also compatible with all Bridge device that from different manufacturers but supports the EOP

protocol.

- Support communication between any Channel, and can set isolation or communication according to the user's need.
- Each Channel supports 802.1Q Tag VLAN and QinQ function.
- The Ethernet data from Channel completes frame re-sequencing technology at the E1 line side, effectively guarantees the frame sequence and improves the transmission efficiency.
- The maximum transmission delay is 64ms between any two E1 lines in channel, it can guarantee steady operation under kinds of complex networks.
- Each E1 line only costs 64Kbps overhead.
- The Channel automatically detects available E1 lines in it, and automatically allocates bandwidth.
- The Channel supports each E1 line to set CRC error threshold in it, when one line's error rate exceeds the threshold, the system can automatically shut down the E1 line for isolation.
- The Channel achieves a one-way off-isolation in it, only cuts off the E1 line that over the BER threshold, and the other direction of transmission is not affected, Ethernet data can be asymmetrically transmitted in both direction, in order to ensure the maximum data transmission efficiency when the E1 line goes wrong.
- When one direction of E1 line received a LOSS or AIS alarm in Channel, the sending direction of the E1 line will not be affected, then realizes the asymmetric transmission on the E1 line.
- When receiving direction of all the E1 lines are cut off in Channel at the same time, local alarm and network management information can still be transmitted to remote via sending direction, achieves a one-way transmission on E1 line. This feature is particularly suitable for protocol converter cooperates with optical communication equipment. It can judge the faults of the lines when the optical communication equipment appears a one-way fiber cases.
- Support loop-back and loop-back protection of each E1 line.
- Support Ethernet packets statistics function.
- Support local system to control each remote E1 loop-back.
- Support the transfer function of full fault alarm.
- Support BERT testing function of E1 line.
- Support remote alarm indication.
- Support particular Ethernet packet statistics function.
- Support WEB network management features, support network interface of the PC which based on TCP / IP, open SNMP library files, support the customer to complete network management that based on SNMP

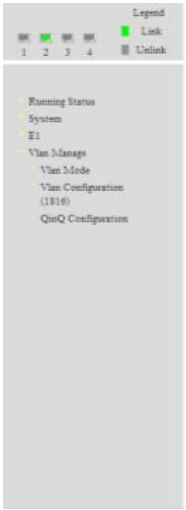
NMS Introduction:

1, 16E1 convergence converter can set different protocols on each E1 channel through NMS, can let each remote device work under HDLC working mode of E1-ETH, also can be standard GFP (EOP) protocol of 1/4/8E1-ETH.



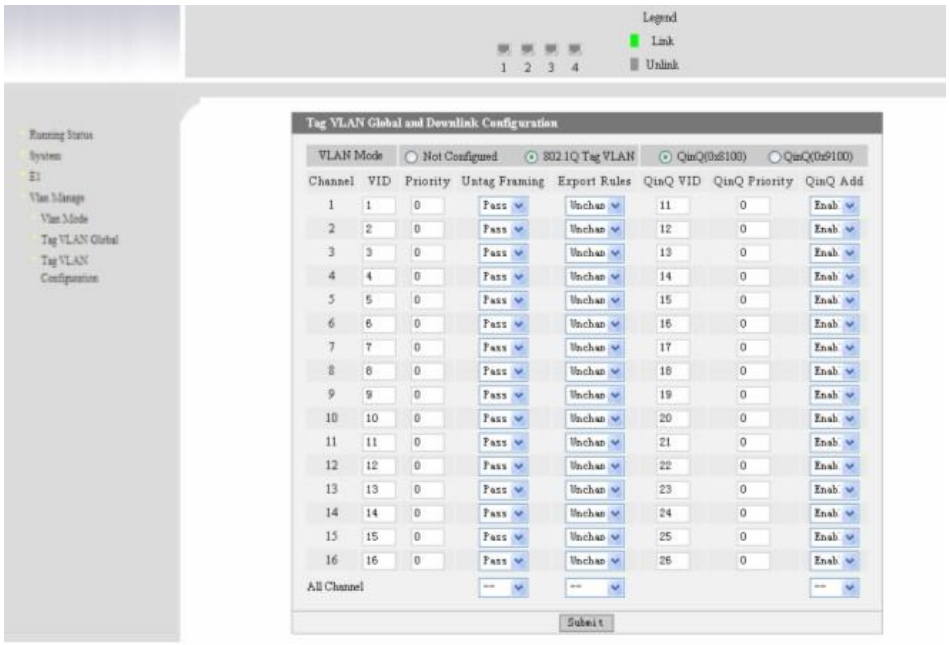
View all E1 group

2, 16E1 convergence converter can set VLAN, Q-in-Q, and special tagging through NMS.

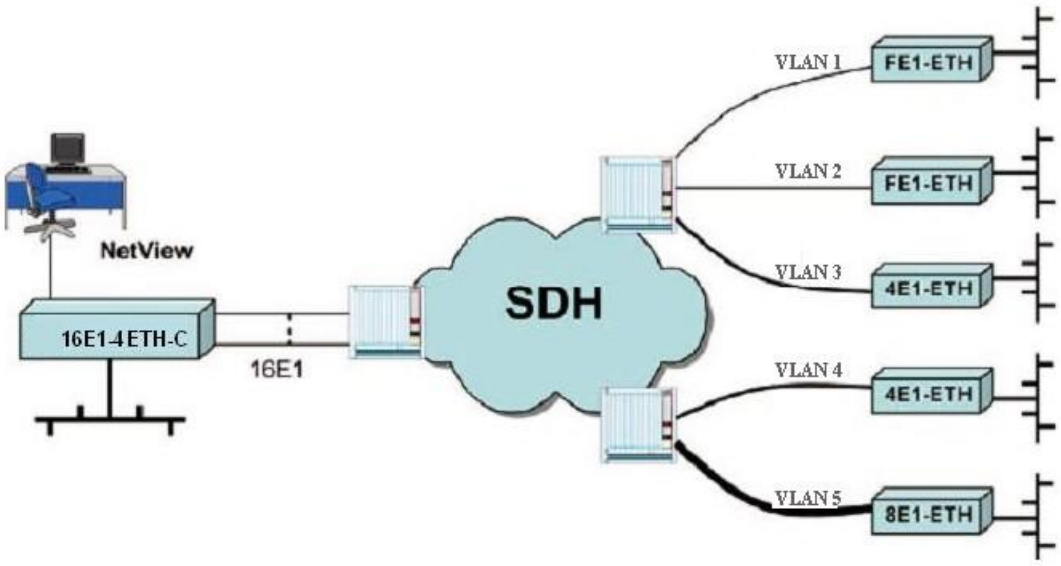


VLAN Management

(1) Set Tag VLAN & Q-in-Q (base on E1 channel): Set the VLAN & Q-in-Q in each channel. It base on CID, can separate the ETH packet from each channel through setting the 802.1 Q VLAN or Q-in-Q.



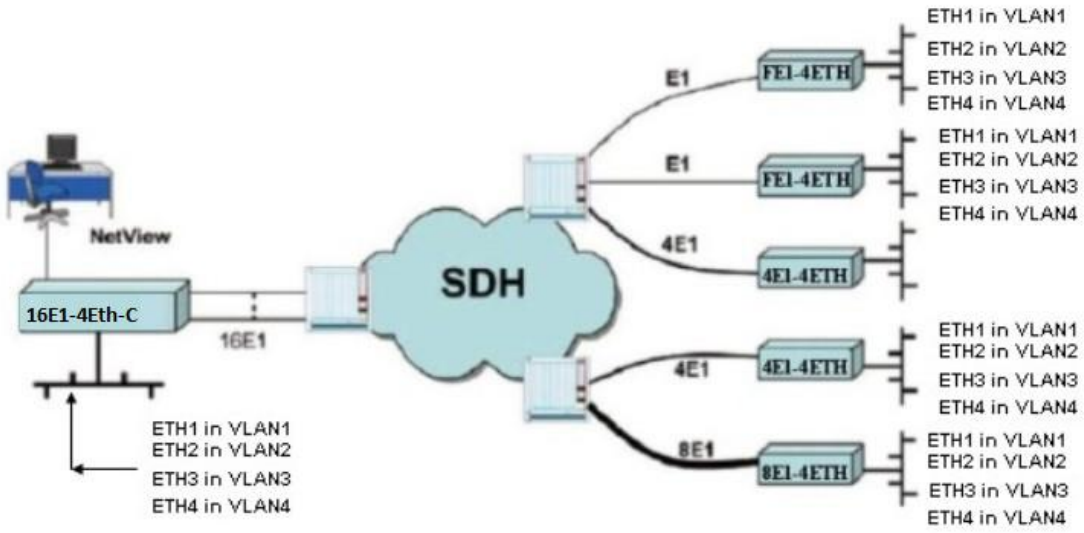
On this page specific settings for 802.1Q Tag VLAN rules of each E1 channel , separately set to default VID, priority, Untag Framing (adopted or discarded), the export rules (not to modify, add Tag or cut Tag), Q-in-Q ETYPE (0x8100 or 0x9100), Q-in-Q VID, Q-in-Q priority, Q-in-Q add (Prohibition or enabled).



Application of Tag VLAN & Q-in-Q

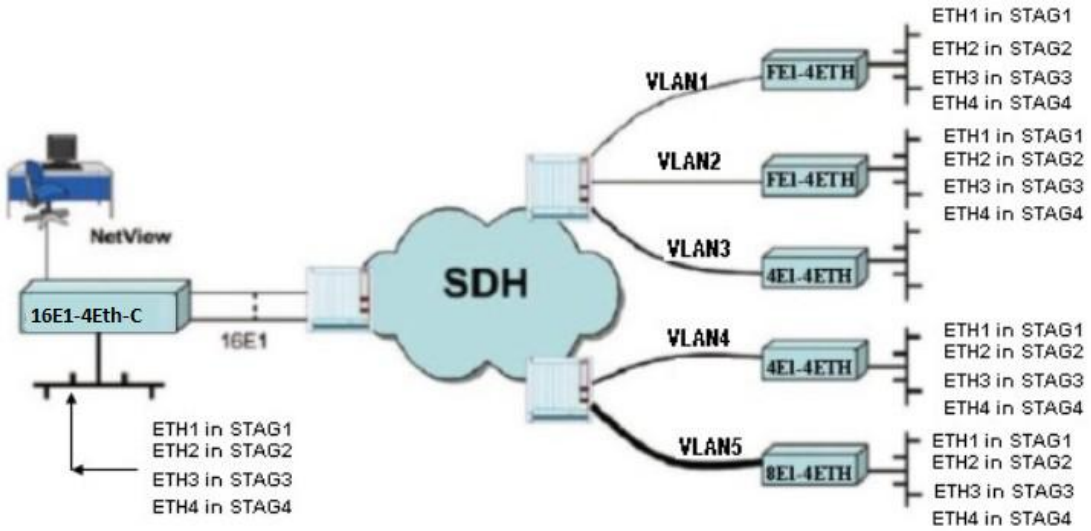
(2) Tag VLAN (Switch, base on 4ETH port): It can work with FE1-4ETH, 4E1-4ETH, 8E1-4ETH. It can

separate the ETH packet of 4ETH port from remote to local. It means the ETH1 in E1/4E1/8E1-4ETH only can communicate to the ETH1 in 16E1-CU. the same with ETH2, ETH3, ETH4. It also base on 802.1Q Tag VLAN. Set all ETH1 in converter be in VLAN1, all ETH2 in VLAN2, all ETH3 in VLAN3, all ETH4 in VLAN4



Application of Tag VLAN (switch)

(3) Special Tagging: Special Tagging is a private protocol. It will add a Tagging on the ETH packet which had set the 802.1Q VLAN Tag. It can use add the Tag ID in the network. It can separate the 4ETH port in the converter base on Tag, but never effect the VLAN ID in the switch or the never effect the VLAN ID in the Tag VLAN & Q-in-Q function



Application of Special Tagging

TECHNICAL SPECIFICATION:

16xE1 interface:

Interface standard: according to G.703

Interface Rate: 2.048Mbps+-50ppm

Jitter tolerance: according to G.742 and G.823.

Transmission capability: 16*E1

Clock mode: inter-clock, line-clock

Connector: BNC（75Ω）、RJ48（120Ω）

E1 Impedance: 75Ω(unbalance), 120Ω(balance).

4x10/100 Base-T interface:

Data Rate: 10/100Mbps (auto-negotiation supported)

Standard: Compatible with IEEE802.3

Connector: RJ-45, 4 Ethernet ports

Full/Half duplex with pause frames (flow control)

Working environment:

power supply: AC220/110V 50-60hz, or DC –48V (38-72VDC) both in the same chassis

power consumption: ≤5W

working temperature: -5 ℃ ~ 45 ℃

storage temperature: -40 ℃ ~ +70 ℃

humidity: ≤95 %

Typical Application: