RC959-4FE16E1 Ethernet over 16 E1 Inverse Multiplexer

RC959-4FE16E1 is an inverse multiplexer that transmits Fast Ethernet service over bonded E1 circuits. The device is typically deployed in pair, and can deliver 2~32Mbps Ethernet service according to customers' requirements. Designed following the standard GFP EoPDH encapsulation, the device supports LCAS, with which the service channel established by the pair of device will not be down even if unstable or broken-down E1 links exists in the TDM network.

RC959-4FE16E1 provides 16 VCG, which allows carriers and service providers to access multiple users and provision service channel bandwidth conveniently.

The device has three working mode: VLAN unaware mode, VLAN aware mode and Q-in-Q mode. When working in VLAN unaware mode, the device will forward any packets received. When working in VLAN aware mode or Q-in-Q mode, the device will forward received packets according the pre-set forwarding rules based on VLAN tags.

RC959-4FE16E1 supports various diagnostic tools such as local and remote E1 loopback, E1 BER testing, loopback detection, and etc. The pair of RC959-4FE16E1 can also be fully monitored and managed on the GUI of Raisecom NView NNM system. All this tools provide ways of quick fault isolation, which will help save time and cost of carriers and service providers.

RC959-4FE16E1-BL

Feature

E1 port	framed mode, PCM31 with FAS+CRC4, auto CRC configurable
FE port	3 FE ports with RJ-45 connector, 1 SFP slot for FX
VCAT	ITU-T G.7043, byte interleaving in Ethernet to VCG encapsulation
LCAS	ITU-T G.7042, E1 circuit order auto sensing, latency between E1 members ±256ms
GFP-F	ITU-T G.7041 & G.8040, FCS configurable
Working mode	VLAN unaware mode: user traffic is transparently forwarded by MAC address VLAN aware mode: user traffic is forwarded by CVLAN tags Q-in-Q mode: user traffic is forwarded by SVLAN tags regardless of CVLAN tags
MTU	up to 9000 Bytes
Fault propagation	Fault pass through from E1/VCG to Fast Ethernet port
Diagnostics	E1 internal/external loopback test Inbuilt BER tester E1 loopback detection VCG loopback detection
Statistics monitoring	E1 port statistic VCG statistic Fast Ethernet port statistic
ALS	Support on FX port
Power supply redundancy	Two power supply connectors for AC or DC power supply
Firmware upgrade	Local and remote online upgrade through FTP
CLI management	Full CLI management via local CONSOLE or Telnet
GUI management	Full GUI management on NView NNM system that covers both local and remote devices
In-band remote management	When two RC959-4FE16E1 are deployed point-to-point, the remote one can be discovered and managed on both CLI and the GUI of Raisecom NView NNM system

Specification

Fast Ethernet port	3*10/100Base-T Connector: RJ-45 Auto-MDI/MDIX IEEE802.3x flow control 1*100Base-FX SFP slot Connector: LC
E1 port	16*E1 ports balanced or unbalanced Bit rate: 2048Kbps±50ppm Line coding: HDB3
CONSOLE port	RJ-45
System indicator	SYS, Flashing indicates CPU works normally
Power supply indicaor	PWR, ON indicates the device is powered on; PWR1, ON indicates first power supply works normally; PWR2, ON indicates second power supply works normally.
FE port indicator	LNK/ACT and 100M indicator for each FE port
FX port indicator	LNK/ACT and SD indicators
Indicators for E1 ports	LOS
Dimension	430(W)*266(D)*444.5(H)mm
Weight	3.3kg
Power supply	AC: 100~240V DC: -48V

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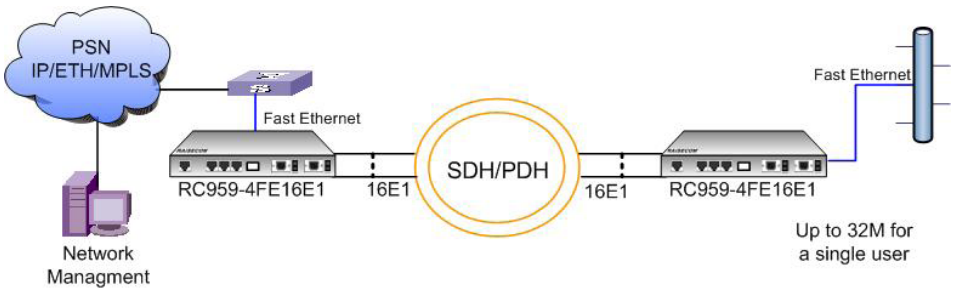
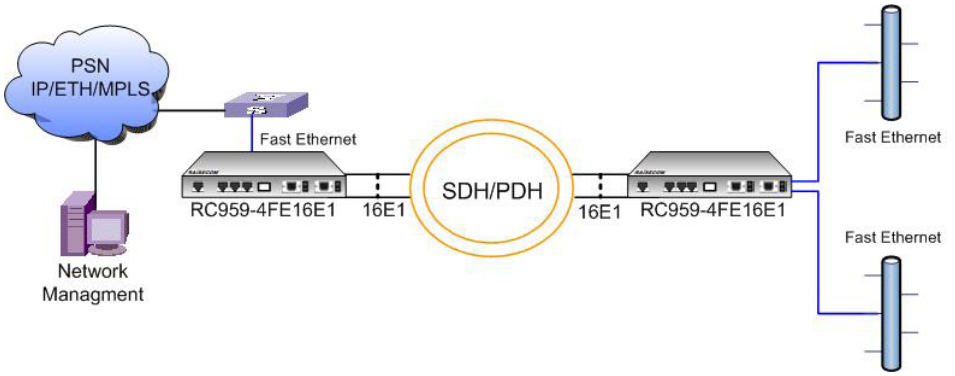
Typical Application 1

Transmitting one Fast Ethernet over 16 bonded E1 circuits, providing a single subscriber 32Mbps bandwidth



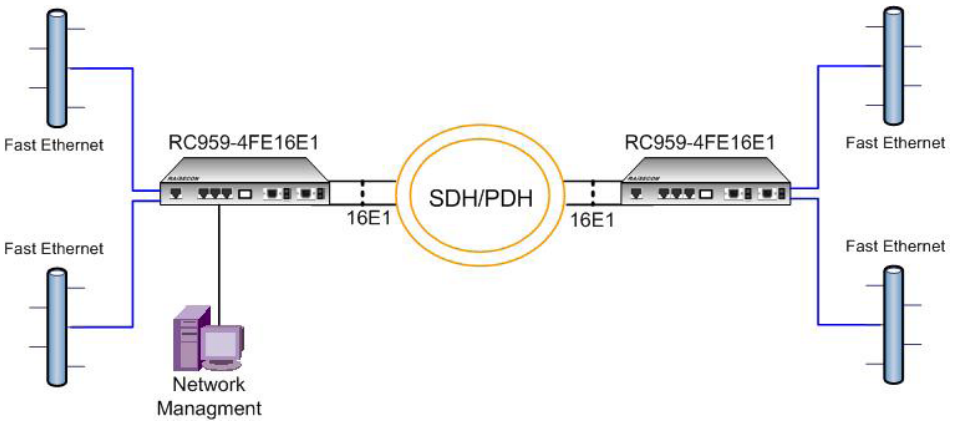
Typical Application 2

Central office aggregates Fast Ethernet service of the two remotes, the two remotes share the 32Mbps bandwidths



Typical Application 3

Multiple departments communicates with their counterparts by sharing the 32Mbps bandwidth.



Power consumption	≤ 25W (at max load)
Working ambience	Temp: -5~50 centigrade RH: ≤90% non-condensing
Storage ambience	Temp: -25~85 centigrade RH: 20~90% non-condensing
Safety compliance	CE certification

Compliance

Standards & protocols	IEEE802.3 Ethernet IEEE802.3x full duplex on 10BaseT, 100BaseTX, 100BaseFx ports IEEE802.3u 100BaseTX SNMPv1/v2c/v3 ITU-T G.703 ITU-T G.704 ITU-T G.823

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Ordering Information

RC959-4FE16E1-BL-AC	16 E1 inverse multiplexer , 3 FE ports and 1 SFP-based FX port on Client side, 16 120ohm balanced E1 ports in the form of RJ-45 on Line side, double AC power supply for power supply redundancy
RC959-4FE16E1-BL-DC	16 E1 inverse multiplexer , 3 FE ports and 1 SFP-based FX port on Client side, 16 120ohm balanced E1 ports in the form of RJ-45 on Line side, double DC power supply for power supply redundancy
RC959-4FE16E1-AC	16 E1 inverse multiplexer , 3 FE ports and 1 SFP-based FX port on Client side, 16 75ohm unbalanced E1 ports in the form of BNC on Line side, double AC power supply for power supply redundancy
RC959-4FE16E1-DC	16 E1 inverse multiplexer , 3 FE ports and 1 SFP-based FX port on Client side, 16 75ohm unbalanced E1 ports in the form of BNC on Line side, double DC power supply for power supply redundancy

SFP Specification

Part Number	Optical Connector	Wavelength (nm)	RX sensitivity (dBm)	Tx Power (dBm)	Typical distance (km)
USFP-03/M	LC	1310	<-29	-20 ~ -14	2
USFP-03/S1	LC	1310	<-34	-15 ~ - 8	15
USFP-03/S2	LC	1310	<-34	- 5 ~ 0	40
USFP-03/S3	LC	1550	<-34	- 5 ~ 0	80
USFP-03/SS13	LC	1310	<-28	-15 ~ -8	15
USFP-03/SS15	LC	1550	<-28	-15 ~ -8	15
USFP-03/SS23	LC	1310	<-32	- 5 ~ 0	40
USFP-03/SS25	LC	1550	<-32	- 5 ~ 0	40

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