404EL 8 Mbps Inverse Multiplexer

Descriptions

404EL is a 4 E1 inverse multiplexer enabling the transport of high speed data broadband services over the 1 to 4 E1 links. Using G.704 and G.8040 standard to convert Ethernet to multiple E1 by GFP format mapping, 404EL supports minimum 1.984Mbps and Maximum 7.936Mbps. If any E1 drop or errors count is too big will not influence the bandwidth automatic adjustment

10/100/1000 Base-TX or fiber LAN interface make 404EL is an ideal solution for high speed broadband application. The inverse aggregation bandwidth is scalable as Nx1.984 Mbps [N=1～4] with maximum payload bandwidth at 7.936Mbps.

404EL can be managed locally by connecting a VT-100 emulated PC to the CID port or remotely through Telnet/SNMP access all on front panel of the unit. Administration, Maintenance, and Provisioning (OAM&P) are provisioned with the use of 16Kbps embedded operation channel (EOC) that runs through the inverse link. Configured with individual IP address for local and remote unit, 404EL is accessible to the Internet users who are managing the units from a far end place.

To ensure operation continuity and accommodate field requirement, 404EL offers choices of AC or DC or AC+DC power.
.

Features

◆ Connect one high speed broadband over 1～4 E1 links

◆ Desktop

◆ Automatically scale up and down E1 links according to link availability.

◆ Support data rates 1.984XN [1～4] Mbps.

◆ Use 16Kbps EOC channel for remote configuration and OAM&P.

◆ Support fiber LAN interface

◆ Comply with ITU-T G.703

◆ Support VLAN ID Q in Q

◆ Support dying gasp for remote power failure detection

◆ Allow a maximum delay of 64 ms among E1 links.

Support management via VT-100, Telnet & SNMP

Specification

Inverse multiplexing

Maximal delay:	64 ms[512 frame buffer]
Data rate:	Nx1.984Mbps, N=1-4, 16Kbps EOC channel is embedded in SA4-SA6 spare bits.

E1 Interface

Standard:	ITU-T G.703, G.704,
No. of E1 output:	1–4,scaled down automatically per E1 alarms
Line rate:	2048 Kbps +/- 50 PPM
Line Code:	HDB3
Framing:	PCM31, PCM31C, PCM30, PCM30C
Pulse shape:	Meet ITU-T G.703
Impedance:	Balanced 120Ω+/-5% resistive or unbalanced 75Ω+/-5% resistive, software programmable
Connection Type:	RJ-45 or BNC (optional)

LAN Interface

Standard:	IEEE 802.3 / IEEE 802.3u
Interface:	IEEE 802.3/802.3u 10/100/1000M Base-T
Data Rate:	N x1.984Mbps[N=1～4]
Bridging Capability:	Complied with IEEE 802.1d transparent bridge

Supports VLAN ID, Q in Q and up to 2048 MAC addresses learning

Connection Type: RJ45, 4 ports

Ethernet packet size: Maximum packet size up to 9K jumbo frame

SFP interface

Type   One 100Base-FX 802.3u interface or 10/100/1000Base-FX 802.3u

               interface, SFP or SC type

Alarm and Performance

CID interface: VT-100/RS-232C/Telnet/SNMP/Web server

EOC channel: 16Kbps

SNMP: meet IETF RFC1157,1212 and 2495@10/100Based Tx with RJ-45

                   connector

Meet G.821 and G.826 for E1 interface

Fiber interface; LOS,

Maintenance

Loopback: LL, RL and NL(local payload loopback)

Power

AC [Default], DC is optional

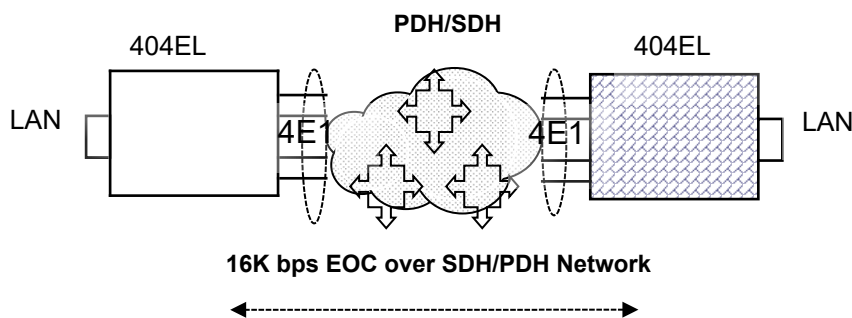AC: 90 - 260 V @ 50-60 Hz, 0.2A

DC: -36~ -72 V

Mechanic

Desktop (WxHxD)   250mmx40mmx168mm

Application

Point to Point

Two units of 404EL connected in a pair for transporting user LAN traffic over the PDH network. The 16K EOC
channel for management traffic of 404EL is also shown.

16K bps EOC over SDH/PDH Network

Transporting Broadband Services over TDM Network

404EL enables the transport of Broadband Services over the legacy TDM network.

In the typical application diagram illustrating below, Broadband ADSL traffic from 2 user Sites are connected to
Local Offices 1 & 2 respectively, where IP DSLAM and 404EL are deployed for transporting over the PDH
network.

In the Central Office of Service Providers, user traffic relayed by two 404EL peers is sent to a Layer 3 switch where Internet connection is made.