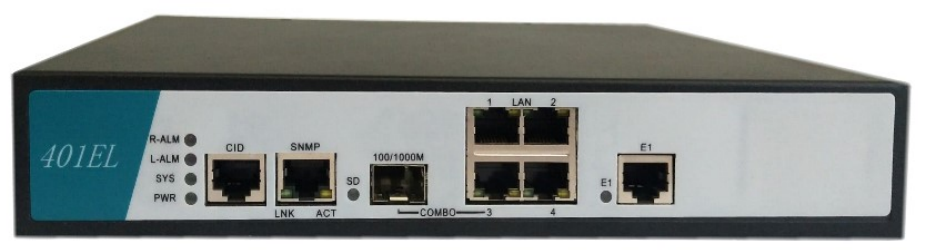
401EL 2 Mbps Inverse Multiplexer



Destriptions

401EL is an E1 inverse multiplexer enabling the transport of high speed data broadband services over the E1 links. Converting G.704 and G.8040 standard to Ethernet with multiple E1 by GFP format mapping, 401EL can support 1.984Mbps.

10/100Base-TX or Fiber LAN user interfaces make 401EL is an ideal solution for high speed broadband application. The inverse aggregation bandwidth is scalable as Nx64kbps [the maximum N=31] with maximum payload bandwidth at 1.984Mbps.

401EL 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, 401EL is accessible to the Internet users who are managing the units from a far end place.

To ensure operation continuity and accommodate field requirement, 401EL offers choices of AC or DC or AC+DC power.

Features

- Connect one high speed broadband over E1 links
- Available in Desktop
- Automatically scale up and down E1 links according to link availability.
- Support data rates N x 64kbps [the maximum N=31] Mbps.
- Use 16Kbps EOC channel for remote configuration and OAM&P.

- Support fiber LAN interfaces
- 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:	N x64kbps, [the maximum N=31], 16Kbps EOC channel is embedded in SA4-SA6 spare bits.

E1 Interface

Standard:	ITU-T G.703, G.704,
No. of E1 output:	1, scaled down automatically per E1 alarms
Line rate:	2048 Kbps +/- 50 PPM
Clock Mode	Internal, Recovery
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 x64K bps[N=1~31]
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 1000Base-FX 802.3u interface, SFP 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 or DC or AC+DC

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

DC: -36~ -72 V

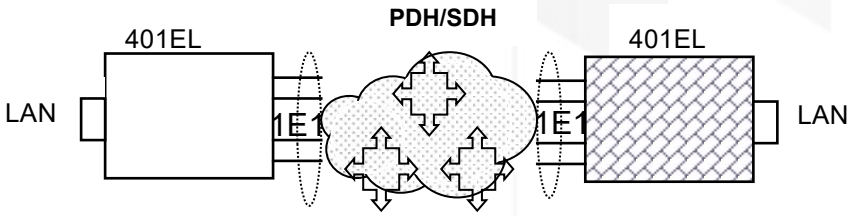
Mechanic

Desktop (WxHxD) 234mmx155mmx43mm

Application

Point to Point

Two units of 401EL connected in a pair for transporting user LAN traffic over the PDH network. The 16K EOC channel for management traffic of 401EL is also shown.

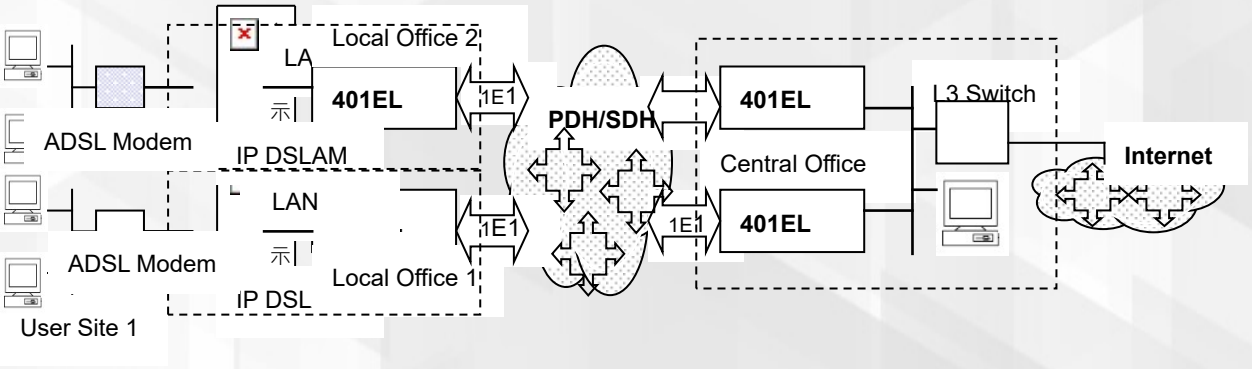


Transporting Broadband Services over TDM Network

401EL 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 401EL are deployed for transporting over the PDH network.

In the Central Office of Service Providers, user traffic relayed by two 401EL peers is sent to a Layer 3 switch where Internet connection is made.

User Site 2


Local Office 2
LA
401EL
1E1
PDH/SDH
401EL
L3 Switch
ADSL Modem
IP DSLAM
Central Office
Internet
LAN
1E1
1E1
401EL
ADSL Modem
Local Office 1
IP DSL
User Site 1