



## iSAP1000 STM1/E1 Access Multiplexer

iSAP1000 is 1U 19" rack type STM-1/E1 terminal multiplexer which delivers traditional PDH services over SDH networks. iSAP1000 provides connectivity for up to 16E1. The product complies with SDH standards and interfaces with existing SDH backbones through a single or 1+1 protection STM-1 interface. iSAP1000 supports a variety of management access over console, and SNMP. iSAP1000 provides two Gigabit Combo ports (2-port 10/100/1000Base-T and 2-port 1000Base-X SFP slot) with 16x E1 or 2x STM-1 fiber interfaces. The two GE combo ports support Link aggregation, port based VLAN and 802.1Q VLAN function.

### Features

- Provides 2-port STM-1 fiber with 1+1 protection.
- Supports Internal clock and recovery clock modes
- Supports Single E1 fractional and unframed E1 service; Multiple E1, fractional E1
- Supports PCM31, FAS+CRC4, CRC self-test
- Supports HDLC/GFP bridge operation, 16x VCG with total 16 remote device, 16E1 Per VCG, MAX data rate 32Mbps Per VCG
- Supports 16E1 balanced RJ45 or unbalanced BNC connectors
- Maximum 220ms delay variance between E1 links
- Supports 2x GbE Combo ports
- Supports IEEE 802.1Q VLAN and QinQ, Link aggregation
- Fiber port support ALS(Auto Laser Shutdown) function
- Built-in BERT for performing local and remote loopback
- Supports Console, GUI and SNMP management
- Supports local and remote FTP/TFTP f/w upgrade
- Complies with ITU-T G.8040 standard

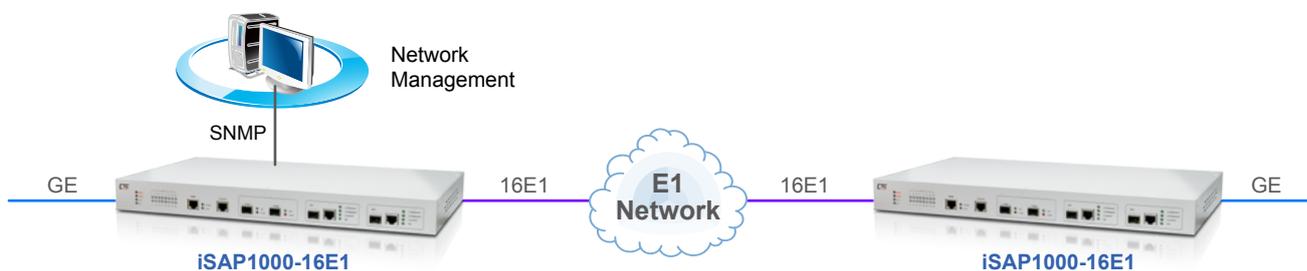
### Specifications

<b>Ethernet Interface</b>	Supports 2x GE combo ports Auto Negotiation, AUTO-MIDX, 10M/100M/1000M, Full/Half Duplex Connector : RJ45
<b>Optical Interface</b>	Supports 802.3x flow control 1000FX, SFP Connector : LC
<b>E1 Interface</b>	Supports 802.3x flow control Up to 16x E1(ITU-T G.703) Line Impedance : 75ΩBNC or 120ΩRJ45 Bit rate : 2048kbps±50ppm Line code : HDB3
<b>STM-1 Interface</b>	Supports 2x STM-1 optical fiber port with SFP slot Supports 1+1 optical fiber protection

<b>Management port</b>	One console port with RJ45 connector One SNMP Ethernet port with RJ45 connector
<b>LED Indicators</b>	SYS, PWR, PWR1, PWR2, GE(LNK/ACT, SD), E1(LOS, SYNC)
<b>Standards</b>	IEEE802.3 Ethernet, IEEE802.3u, IEEE802.3Z, IEEE802.3X, IEEE802.1Q, IEEE802.1ad, SNMPv1/v2c/v3, ITU-T G.703, ITU-T G.704, ITU-T G.823
<b>Dimensions</b>	310 x 440 x 44mm (D x W x H)
<b>Power</b>	AC: 90-265V, DC: -48V, Supports AC+AC, DC+DC, AC+DC
<b>Power Consumption</b>	<24W
<b>Temperature</b>	Operating: -5 ~ 50°C Humidity : ≤90% non-condensing

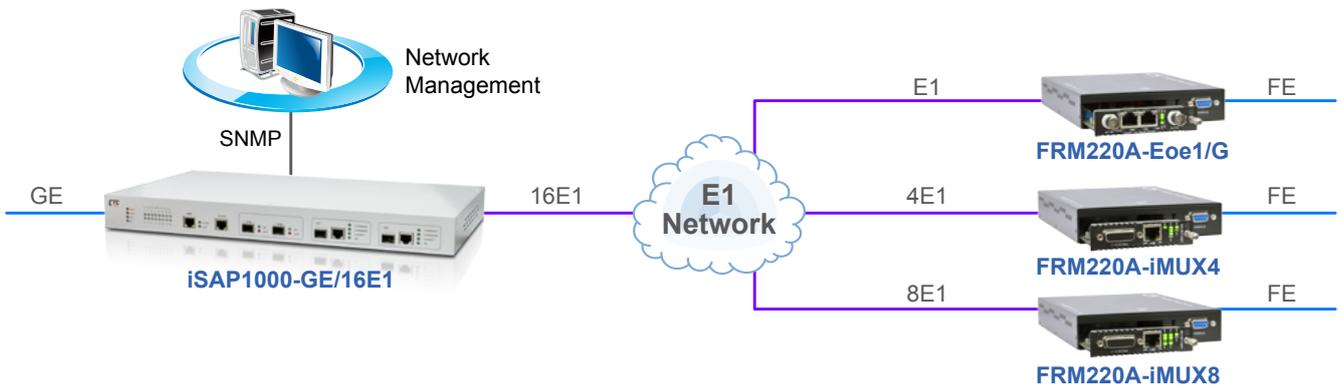
### Application

#### P to P, GE over 16E1 application

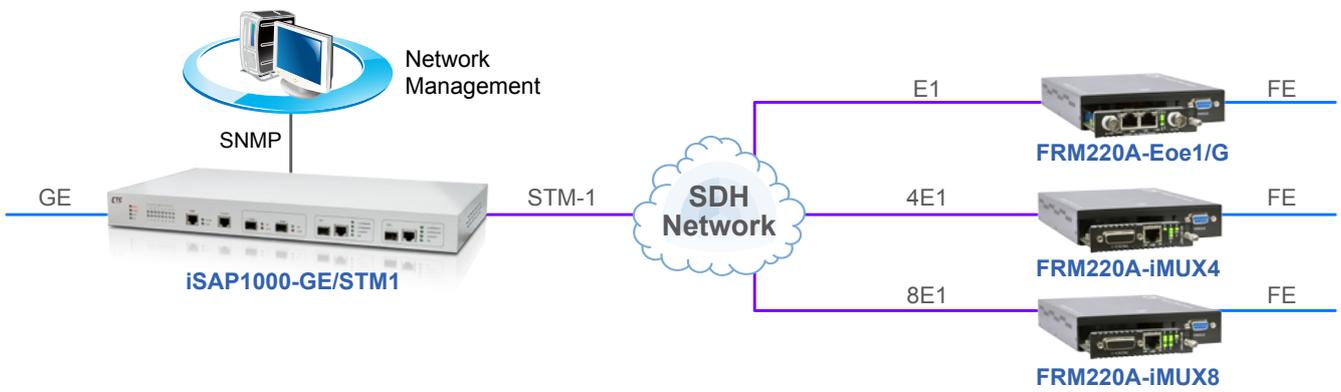


## Application

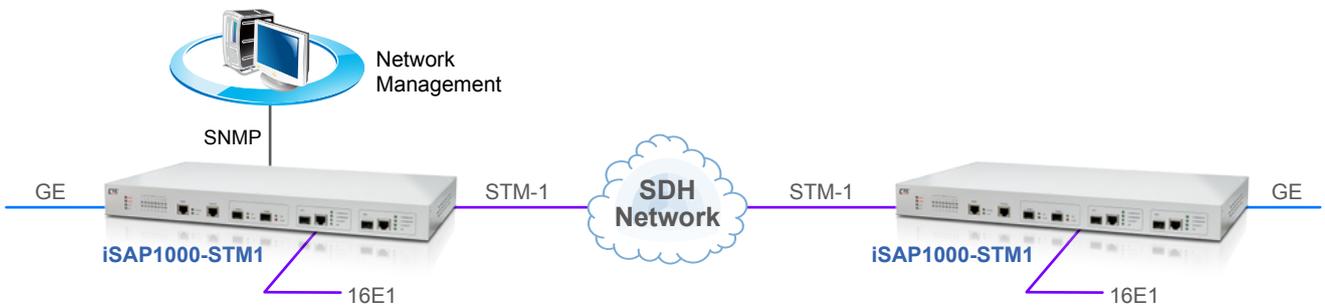
### Point to Multi-points 16E1 aggregation



### Point to Multi-points 16E1 aggregation over STM-1



### GE + 16E1 over STM-1 Application



## Ordering Information

Model Name	Description
iSAP1000-16E1B-AD	2x GbE Combo over 16E1 BNC, P to P, 1U 19" Rack, AC+DC power
iSAP1000-16E1R-AD	2x GbE Combo over 16E1 RJ45, P to P, 1U 19" Rack, AC+DC power
iSAP1000-GE/16E1B-AD	2x GbE Combo over 16E1 BNC, P to M, 1U 19" Rack, AC+DC power
iSAP1000-GE/16E1R-AD	2x GbE Combo over 16E1 RJ45, P to M, 1U 19" Rack, AC+DC power
iSAP1000-GE/STM1-AD	2x GbE Combo over STM1, P to M, 1U 19" Rack, AC+DC power
iSAP1000-STM1B-AD	2x GbE Combo + 16E1 BNC over STM1, P to P, 1U 19" Rack, AC+DC power
iSAP1000-STM1R-AD	2x GbE Combo + 16E1 RJ45 over STM1, P to P, 1U 19" Rack, AC+DC power

Example: iSAP 1000 –  –   
 Connector Power Type

**NEW**



## iSAP2000

### 2U, Data, Ethernet, Voice E1 Managed Multiplexer

The iSAP2000 is a 2U 19" 6 slots rack type E1 Time Division Multiplexer for fractional E1 network across, which is designed for non-stop operation. There are 6 slots available for hot-swappable I/O cards and two slots are provided for power supplies. Uplink supports E1 copper connection, maximum up to 96x E1 cross connect for Voice and Data. The iSAP2000 optionally accommodates up to two separate power supplies, which may derive power from AC (110/220) or DC (-36~72V) power sources. When two power supplies are installed, the modules provide complete power redundancy and are hot swappable even during the E1 cards' transmission. The iSAP2000 provides E1 copper uplink, the maximum E1 supports up to 96 E1 channels with cross connection for Voice and Data, the interface included RS232, RS485, G703/64K, V35, FXS, FXO, ET100 & E&M.

### Interface Cards

- E1 card: 5100-8E1, 5100-16E1
- Power modules: 2000-AC240, 2000-DC48
- I/O cards: 5100-RS232, 5100-RS232/C, 5100-N\*64K/V35, 5100-G703/64K, 5100-ET100, 5100-E&M, 5100-FXS, 5100-FXO, 5100-RS485

### Features

- Supports MAX. 96x E1 with full cross-connect, Supports DSO cross-connect
- Supports 16 channel Main E1 LTU card
- Supports E1 time slot broadcast function
- Modular design for Voice IO card, the voice IO card has two sub-module, each sub-module supports 4-port FXO/FXS
- All modules and cards support hot-swapping
- DCE card types included N\*64K, RS232(Sync/Async), G703-64K, ET100, E&M, FXO, FXS...etc.
- Supports Console, Telnet, SNMP and GUI management
- Available types of power built-in : AC+AC, AC+DC, DC+DC
- Modular design, 2U 19", 6-slot for I/O cards

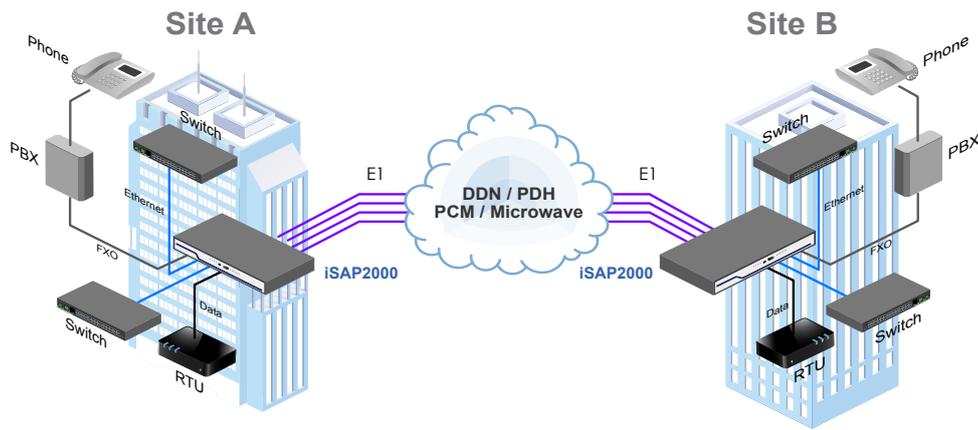
### Specifications

<b>5100-MS-DM-96</b>	
NMS	10/100Base-TX
Console	RS232
<b>5100-8E1, 5100-16E1</b>	
Interface	Supports 8E1, 16E1 two types interface
E1 Cross connect	96x E1 transparent cross connect, supports E1, time slot
CAS cross connect	Supports 16 time slot CAS follow voice time cross connect
Line Impedance	120 / 75 ohms
Frame format	CAS(PCM30)/CCS(PCM31)
Connector	RJ45
<b>5100-RS232</b>	
Data rate	≤38.4kbps Async or 64/128kbps Sync
Ports	6-port
Interface	RS232
<b>5100-RS232/C</b>	
Data rate	9600bps, 19.2Kbps Sync/Async
Ports	6-port
Interface	RS232
<b>5100-N*64K/V35</b>	
Data rate	Nx64kbps(N=1~30 or 31)
Ports	4-port
Connector	V.35 Interface
<b>5100-G703/64K</b>	
Data rate	64Kbps, Co-directional, Contra-directional and Centra-directional
Ports	4-port
Connector	RJ45
<b>5100-ET100</b>	
Standards	IEEE 802.3, 802.3u
MDI/MDIX	Auto
Data rate	10/100Mbps
Ports	4-port
Connector	RJ45

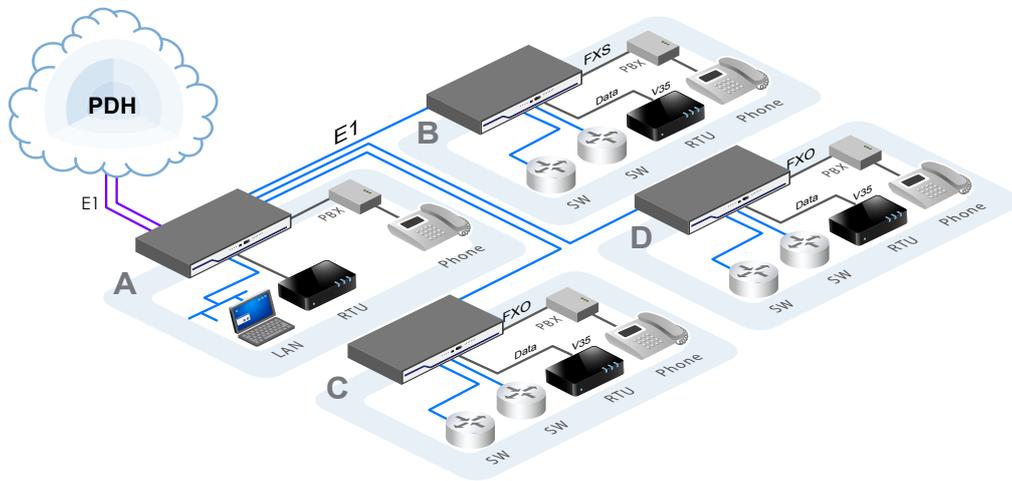
<b>5100-E&amp;M</b>	
Loop current	5~30 mA, maximum 70mA
Ports	8-port
Connector	RJ45
<b>5100-FXS</b>	
ITU-T Standard	G.712, G.713, G.714
Line resistance	600Ω
Off-hook current	25mA
Line distance	2km
Ports	8-port
On-hook current	10mA+/-3mA
Effective Ring	Frequency: 25Hz Voltage: 75V, peak to peak 110V MAX line resistance: 1500Ω
Connector	RJ45
<b>5100-FXO</b>	
ITU-T Standard	G.712, G.713, G.714
Line resistance	600Ω
Line distance	2km
Ports	8-port
Caller ID	Supports DTMF, FSK Standard
Connector	RJ45
<b>Electrical &amp; Mechanical</b>	
Dimensions(WxDxH)	440mmx300mmx88mm
Environmental	Operating: 0~60°C Storage: -25~70°C Humidity: 10~90%, non-condensing
Power	AC 220V: 165~265V, 50~60Hz AC 110V, AC 220V: 90~265V, 50~60Hz -48V: -36~-72VDC
Power Consumption	< 40W

## Application

### Connection with PBX (Private Branch Exchange)



### The extension and expansion of DDN (Distributed Data)



## Ordering Information

Model Name	Type	Description
iSAP2000-CH	Chassis	2U 19" 16-slot Chassis
iSAP2000/AC	Power	AC Power plug-in module (90 to 250 VAC)
iSAP2000/DC	Power	DC Power plug-in module ( $\pm 36$ to $\pm 76$ VDC)
iSAP5100-8E1R	Main E1 card	8 channels Main-E1 LTU card: Fractional E1 RJ45
iSAP5100-16E1R	Main E1 card	16 channels Main-E1 LTU card: Fractional E1 RJ45
iSAP5100-FXO	Voice Card	8 channels FXO interface card
iSAP5100-FXS	Voice Card	8 channels FXS interface card
iSAP5100-E&M	Voice Card	8 channels 2/4 wires E&M voice interface card
iSAP5100-RS232	RS-232 card	6 channels RS-232 interface card 38.4kbps, Low speed: 64kbps or 128kbps sync DEC
iSAP5100-RS232C	RS-232 card	6 channels RS-232 (V.24) interface card, Low speed: 128kbps, 19.2kbps Async with Multi-Clock function
iSAP5100-ET100	FE Card	4 channels Ethernet (10/100Base-TX) interface card (v4.0)
iSAP5100-G.703/64K	G703/64K Card	4 channels G703 64K interface card (v4.0)
iSAP5100-V35	V.35Card	4 channels Nx64K V.35 card with DB68 to 4 x M34 cable

Chassis  
**iSAP2000** -   
 Example: iSAP2000 - CH

Card Type  
**iSAP2000** -   
 Example: iSAP2000 - 8E1R



## iSAP5100

### 4.5U, Data, Ethernet, Voice STM1/E1 Managed Multiplexer

The iSAP5100 is a 4.5U 19" 18 slots rack type STM1 / E1 Time Division Multiplexer for fractional E1 network access, which is designed for non-stop operation. There are 18 slots available for hot-swappable iSAP5100 I/O cards. Two slots are provided for CPU Controller cards and two slots are provided for power supplies. Uplink supports STM1 fiber and E1 copper, two types of connection, maximum up to 144x E1 cross connect for Voice and Data. The iSAP5100 accommodates up to two separate power supplies, which may derive power from AC (110/220) or DC (-36~72V) power sources. When two power supplies are installed, the modules provide complete power redundancy and are hot swappable even during the E1 cards' transmission. The iSAP5100 provides STM1 fiber and E1 copper uplink with a the maximum E1 support of up to 96 E1 channels with cross connection for Voice and Data or interface including RS232, V.35, G703/64K, FXS, FXO, ET100 and E&M.

### Interface Cards

- Control card: 5100-MS-DM-96, 5100-MS-DM-155
- E1 card: 5100-8E1, 5100-16E1
- Power modules: 5100-AC240, 5100-DC240
- I/O cards: 5100-RS232, 5100-RS232/C, 5100-G703/64K, 5100-V35, 5100-ET100, 5100-E&M, 5100-FXS, 5100-FXO

### Features

- Supports MAX. 96x E1 with full cross-connect, Supports DSO cross-connect
- Supports 16 channel Main E1 LTU card
- Supports E1 time slot broadcast function
- Modular design for Voice I/O card, the voice I/O card has two sub-module, each sub-module supports 4-port FXO/FXS
- All modules and cards support hot-swapping
- DCE card types included N\*64K, RS232(Sync/Async), G703-64K, ET100, E&M, FXO, FXS...etc.
- Supports Console, Telnet, SNMP and GUI management
- Available types of power built-in : AC+AC, AC+DC, DC+DC
- Modular design, 4.5U 19", 6-slot for I/O cards

### Specifications

5100-MS-DM-96	
<b>Interface</b>	10/100Base-TX Ethernet RJ45 port
<b>Console</b>	RS232
<b>E1 Cross Connect</b>	144x E1 Transparent cross connect, Supports E1 time slot mapping / broadcast function
<b>CAS Cross Connect</b>	Supports 16 time slot CAS follow voice time cross connect
5100-MS-DM-155	
<b>Interface</b>	Supports 1-port STM-1 155M SFP Slot on CPU card, CPU redundancy (1+1)
<b>NMS</b>	10/100Base-TX
<b>Console</b>	RS232
<b>E1 Cross Connect</b>	155M fiber to 63E1 and 144x E1 cross connect, supports E1 /time slot mapping/broadcast function
<b>CAS Cross Connect</b>	Supports time slot 16 CAS follow voice time cross connect
<b>STM-1/E1 Drop / Insert</b>	Supports STM-1 63E1*32TS to E1/I/O slot 128E1*32TS connection
5100-8E1 / 5100-16E1	
<b>Interface</b>	Supports 8E1/16E1 interface
<b>Line Impedance</b>	120 / 75 ohms
<b>Frame format</b>	CAS (PCM30)/CCS (PCM31)
<b>Connector</b>	RJ45
5100-RS232	
<b>Data rate</b>	≤38.4kbps Async or 64/128kbps Sync
<b>Ports</b>	6-port
<b>Interface</b>	RS232
5100-V35	
<b>Interface types</b>	V.35
<b>Connector</b>	HD68F (female) with cable adapter
<b>Line code</b>	NRZ
<b>Data rate</b>	Nx64kbps

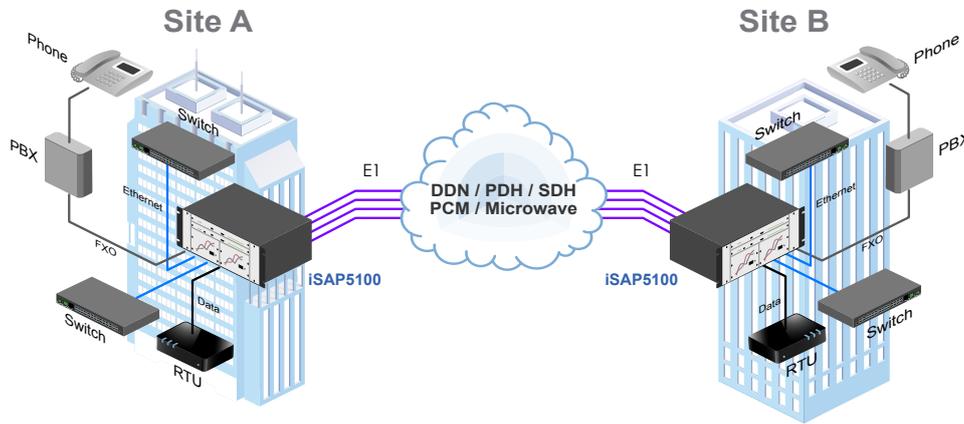
5100-RS232/C	
<b>Data rate</b>	9600bps, 19.2Kbps Sync/Async
<b>Ports</b>	6-port
<b>Interface</b>	RS232
5100-G.703/64K	
<b>Data rate</b>	64Kbps, Co-directional/Contra-directional and Centra-directional
<b>Ports</b>	4-port
<b>Connector</b>	RJ45
5100-ET100	
<b>Standards</b>	IEEE 802.3, 802.3u
<b>MDI/MDIX</b>	Auto
<b>Data rate</b>	10/100Mbps
<b>Encapsulation</b>	HDLC
<b>Ports</b>	4-port
<b>Connector</b>	RJ45
5100-E&M	
<b>Loop current</b>	25 mA, maximum 70mA
<b>Ports</b>	8-port
<b>Connector</b>	RJ45
5100-FXS	
<b>ITU-T Standard</b>	G.712/G.713/G.714
<b>Line resistance</b>	600Ω
<b>Off-hook current</b>	25mA
<b>Line distance</b>	2km
<b>Ports</b>	8-port
<b>On-hook current</b>	10mA+/-3mA
<b>Effective Ring</b>	Frequency: 25Hz Voltage: 75V, peak to peak 110V MAX line resistance: 1500Ω
<b>Connector</b>	RJ45

<b>5100-FXO</b>	
ITU-T Standard	G.712, G.713, G.714
Line resistance	600Ω
Line distance	2km
Ports	8-port
Caller ID	Supports DTMF, FSK Standard
Connector	RJ45

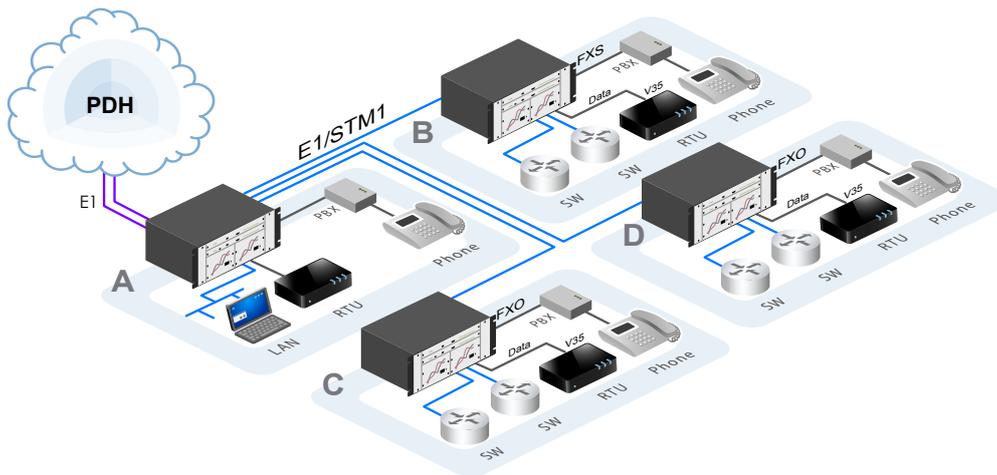
<b>Electrical &amp; Mechanical</b>	
Dimensions	350 × 440 × 187 mm (D x W x H)
Environmental	Operating: 0~60°C Storage: -25~70°C Humidity: 10~90%, non-condensing
Power	AC 220V : 165~265V, 50~60Hz AC 110V, AC 220V : 90~265V, 50~60Hz
Power Consumption	< 90W

## Application

### Connection with PBX (Private Branch Exchange)



### The extension and expansion of DDN (Distributed Data)



## Ordering Information

Model Name	Type	Description
iSAP5100-CH	Chassis	4.5U 19" 18-slot Chassis
iSAP5100/AC	Power	AC Power plug-in module (165 to 265 VAC)
iSAP5100/DC	Power	DC Power plug-in module (±36 to ±76 VDC)
iSAP5100-8E1R	Main E1 card	8 channels Main-E1 LRU card: Fractional E1 RJ45
iSAP5100-16E1R	Main E1 card	16 channels Main-E1 LRU card: Fractional E1 RJ45
iSAP5100-MS-DM-96	CPU-card	CPU card for 96x E1
iSAP5100-MS-DM-155	CPU-card	CPU card for STM-1
iSAP5100-FXO	Voice Card	8 channels FXO interface card
iSAP5100-FXS	Voice Card	8 channels FXS interface card
iSAP5100-E&M	Voice Card	8 channels 2/4 wires E&M voice interface card
iSAP5100-RS232	RS-232 card	6 channels RS-232 interface card 38.4kbps, Low speed: 64kbps or 128kbps sync DEC
iSAP5100-RS232C	RS-232 card	6 channels RS-232 (V.24) interface card, Low speed: 128kbps, 19.2kbps Async with Multi-Clock function
iSAP5100-ET100	FE Card	4 channels Ethernet (10/100Base-TX) interface card (v4.0)
iSAP5100-G.703/64K	G703/64K Card	4 channels G703 64K interface card (v4.0)
iSAP5100-V35	V35Card	4 channels Nx64K V.35 card with DB68 to 4 x M34 cable

Chassis  
**iSAP5100** -     
 Example: iSAP5100 - CH

Card Type  
**iSAP5100** -      
 Example: iSAP5100 - 8E1R



# ERM-MUX-Plus

## 4U, E1 Multi-Service Multiplexer

9

TDM Series

The ERM-Mux-plus is a 4U 19(23)" 14-slot rack type E1 Time Division Multiplexer for Fractional E1 network access which is designed for non-stop operation. There are 10 slots available for hot-swappable ERM-Mux-plus-I/O cards. Two slots are provided for Mux-E1 cards, which may be configured for redundant 1+1 operation of the E1 lines, safe guarding against expensive network down time. Two slots are also available for CPU cards, with the second CPU card acting as a hot standby in case of primary card failure. Each Mux-E1 card may be linked to another ERM-Mux-plus Rack to provide a point-to-point variety of datacom, Ethernet & voice over E1 network services. The ERM-Mux-plus optionally accommodates up to two separate power supplies, which may derive power from AC (110/220) or DC (-48V) power sources. When two power supplies are installed, the modules provide complete power redundancy and are hot swappable even during the E1 cards' transmission. The ERM-Mux-plus provides all interface connections on the front panel. BNC and RJ-45 are used for E1 Line interface connections, RJ-45 connections are used for all voice (FXO, FXS, E&M), for 10/100 Ethernet Bridge and G.703-64K co-directional / contra-directional / center. Optional cable adapters are used to convert the DB-62F DCE ports of the I/O cards to 6xRS-232, HP68F DCE port of I/O card to 4x V.35, RS-232, RS-530, RS-449, RS-422 and X.21 or 5x X.50 channels.

## Features

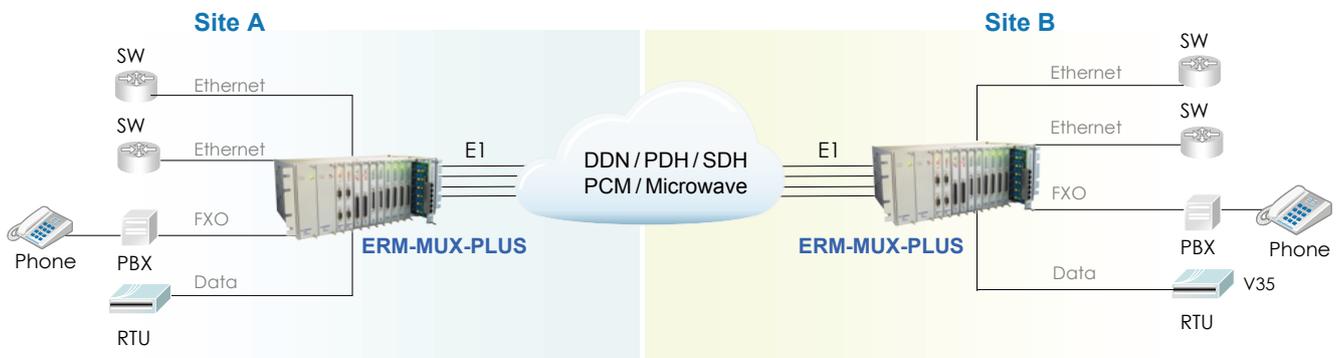
- CPU redundancy (1+1)
- E1 redundancy (1+1) and E1 card redundancy
- Power redundancy (1+1) [2AC, 2DC, AC+DC]
- DCE hot swappable card types
- Drop & Insert function
- Console, NMP,SNMP, management
- 4ch V.35 (nx64K)
- 4ch G.703 64K co-directional /contra-directional / center mode
- 2ch Ethernet bridge
- 6ch RS232
- 6ch FXS voice
- 6ch FXO voice
- 6ch E&M voice

## Specifications

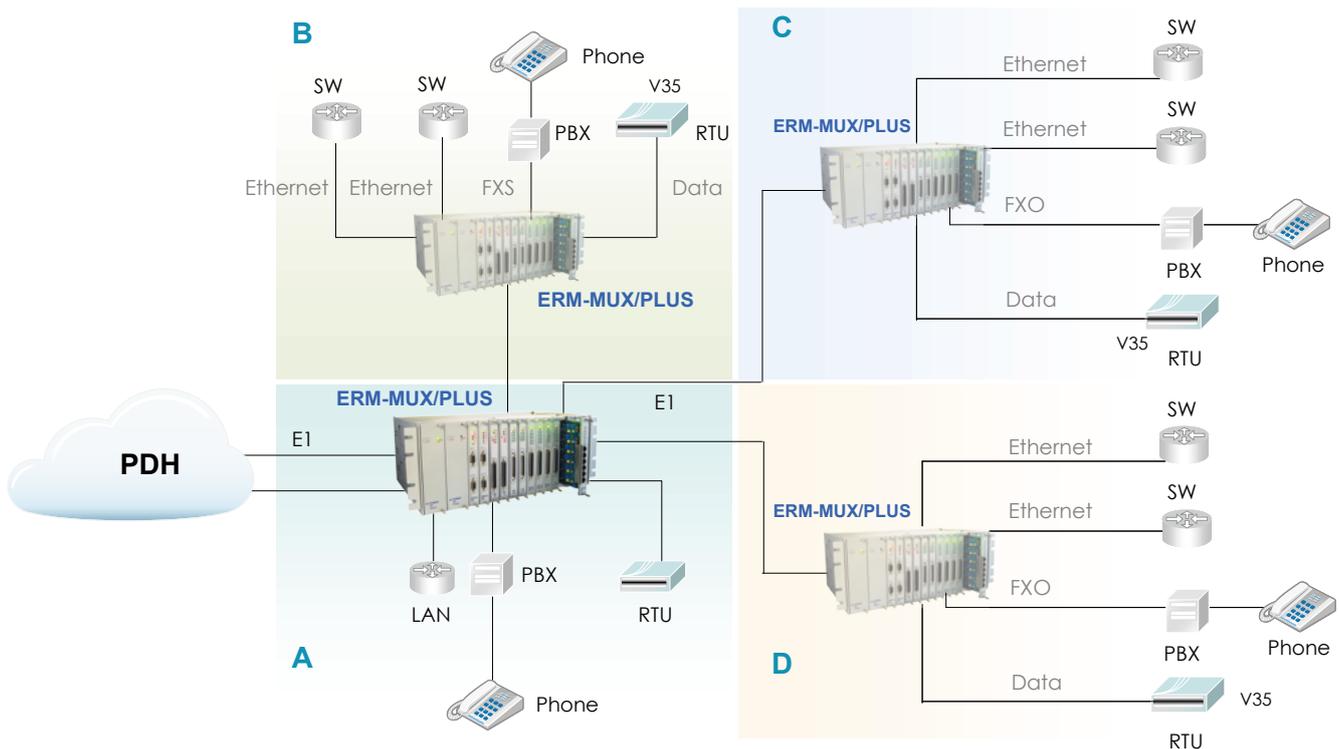
<b>Connectors</b>	Console port (RJ45, RS232C)	<b>Environmental</b>	Operating 0°C ~ 60°C
<b>Physical</b>	WAN port RJ45 Jack (2-wire, 4-wire)	<b>Specifications</b>	Storage 0°C ~ 70°C Relative humidity 0% ~ 90% non-condensing Predicted MTBF : 65,000 hrs (25°C)
<b>Specifications</b>	Dimensions: 350 x 438 x 176mm (W x D x H)	<b>Certification</b>	CE
<b>Power</b>	Weight: 8kg (chassis+dual power+8 I/O cards)		
<b>Characteristics</b>	0.45kg per card		

## Application

### Connection with PBX (Private Branch Exchange)



The extension and expansion of DDN (Distributed Data)



## Ordering Information

Model Name	Type	Description
ERM-MUX-PLUS/AA-CH	Chassis	4U 19" 14 slot Chassis for AC+AC power
ERM-MUX-PLUS/DD-CH	Chassis	4U 19" 14 slot Chassis for DC+DC power
ERM-MUX-PLUS/AD-CH	Chassis	4U 19" 14 slot Chassis for AC+DC power
ERM-MUX/AC	Power	AC Power plug-in module ( 90 to 250 VAC )
ERM-MUX/ACV	Power	AC Power plug-in module ( 90 to 250 VAC ) with Voice support
ERM-MUX/DC	Power	DC Power plug-in module ( ±36 to ±76 VDC )
ERM-MUX/DCV	Power	DC Power plug-in module ( ±36 to ±72 VDC ) with Voice support
ERM-MUX-PLUS/GUI	Management	GUI for ERM; support Windows 95, 98, 2000, XP
ERM-MUX-PLUS-2E1R	Card	2-Ch Main-E1 LTU card(V1.2); w/DB37M to 2xRJ45 cable
ERM-MUX-PLUS-2E1B	Card	2-Ch Main-E1 LTU card(V1.2); w/DB37M to 2xBNC cable
ERM-MUX-PLUS-8E1R	Card	8-Ch Main-E1 LTU card(V1.2); w/DB37M to 8xRJ45 cable
ERM-MUX-PLUS-8E1B	Card	8-Ch Main-E1 LTU card(V1.2); w/DB37M to 8xBNC cable
ERM-MUX-PLUS-CPU	Card	CPU card (V4.3) for NMP management
ERM-MUX-PLUS-SNMP	Card	SNMP card (V2.2) for NMP management
ERM-MUX-PLUS-FXO	Card	6-Ch FXO interface card(V2.1)
ERM-MUX-PLUS-FXS	Card	6-Ch FXS interface card(V4.1)
ERM-MUX-PLUS-E&M	Card	6-Ch 2/4 wires E&M voice interface card (V4.1) (Tx/Rx range -20dB ~ +8dB)
ERM-MUX-PLUS-E&M+	Card	6-Ch 2/4 wires E&M voice interface card (V4.1) (Tx range -12dB ~ +16dB, Rx range -20dB ~ +8dB)
ERM-MUX-PLUS-RS-232	Card	6-Ch RS-232 interface card, 64k/128kbps(Sync), 19.2k/38.4kbps(Async)
ERM-MUX-PLUS-ASYNC	Card	6-Ch RS-232 interface card, 9.6k/19.2kbps(Sync), 19.2k/38.4kbps(Async) with multi rate clock function.
ERM-MUX-PLUS-G64K	Card	4-Ch G.703 64k interface card (V4.0)
ERM-MUX-PLUS-HS-SERIAL	Card	4-Ch V.35/X.21/RS-449/RS-530 interface card
ERM-MUX-PLUS-RS485	Card	6-Ch RS-485 / RS-422 Interface card
ERM-MUX-PLUS-ET100	Card	2-Ch Ethernet(10/100Base-TX) interface card (V4.0)

Card Type  
**ERM - MUX- PLUS** -   
 Example: ERM - MUX- PLUS - 2E1R



# ETU02-MUX

E1 Mux 4 Data Port sub E1 w/ SNMP

The ETU02-MUX is a 1U 19(23)" 4 slot rack mountable multiplexing solution for Fractional E1 network services. Up to four DTE devices may be linked to this model at data rates of 64Kbps to 2048Kbps. There is also provision for one optional E1 sub-link which will perform drop & insert with user-defined timeslot connections from a PABX or other E1 equipment to E1 network services. The Fractional E1 2 or 4 port multiplexer supports local control and diagnostics via an LCD display and LED status indicators located on the front panel or via a serial console port. These features enable users to easily configure the unit, execute the in-service diagnostics and monitor the network status. The ETU02-MUX provides for optional SNMP Network Management System, which allow the user to remotely control and manage the system via SNMP protocol. This model fully meets all of the E1 specifications including ITU-T G.703, G.704, G.706, G.732, and G.823.

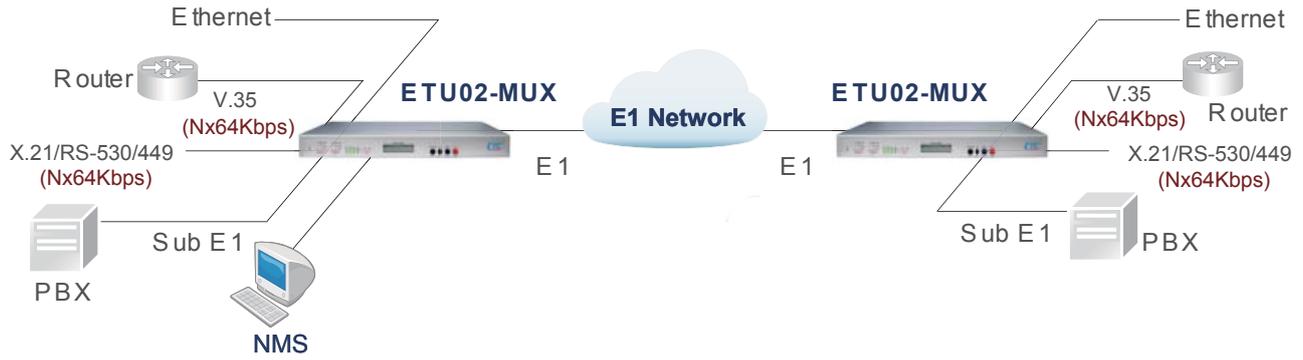
## Features

- Provides 4 slots, removable interfaces: V35, X21, RS530, RS449, RS232, G.703 Co-directional, NRZ, Ethernet Bridge and Router.
- Optional drop and insert E1 port (Sub E1)
- Built-in BERT with V.54 diagnostic capabilities for performing local and remote loopback
- Setup and Control via front Panel with LCD display or RS-232 terminal
- Multiple clock source selection (Internal or External: E1 recovery, DTE or DCE)
- Optional SNMP management

## Specifications

<b>E1 and Sub-E1</b>	Framing: Unframed / Framed CCS(PCM31) Framed: CAS(PCM30) Bit rate: 2.048Mbps±0 ppm Line code: AMI / HDB3 Line impedance: 75 ohm (BNC) / 120 ohm (DB-15, RJ-45)	<b>Key Pad</b>	4 operation keys
<b>Transmitter level</b>	Relative receive level: 0 to -43dB Pulse: Nominal 2.37V ±10% for 75ohm Amplitude: Nominal 3.00V ±10% for 120ohm Zero amplitude: ±0.1V Transmit frequency: Internal timing±100 ppm Tracking: Recovery timing±100 ppm External timing: ±100 ppm Jitter performance: According to ITU-T G.823 Return loss: 12dB for 51 ~ 102KHz 18dB for 102 ~ 2048KHz, 14dB for 2048 ~ 3072KHz Interface connector: 15-pin D-type F, BNC	<b>LCD</b>	16 x 2 character backlit LCD
<b>User Data Channel</b>	Data rate: Nx56Kbps or Nx64Kbps Control signals: CTS constantly on DSR constantly on, except during test loops DCD constantly on or follows RTS, except during signal loss Loopback: Line, Payload, local, DTE loopback BERT Test Patterns: 511, 2047, 2e15-1, 2e20-1, QRSS, 2e23-1, All 1, All 0, Alt, 0011, 3 in 24, 1 in 16, 1 in 8, 1 in 4 test pattern.	<b>Indications</b>	Signal loss, Sync loss, Alarm (AIS, MRAI, RAI), TD, RD, Error, Test
<b>Clock modes</b>	Clock mode 0 (DCE1) Receive and transmit clock (recovered) to the sync DTE Clock mode 0 (DCE2) Receive and transmit clock (internal oscillator) to the sync DTE Clock mode 0 (DCE3) Receive and transmit clock from the sync DCE (from ETC and ERC pin) Clock mode 0 (DCE4) Receive and transmit clock from the sync DCE (all from ETC pin)	<b>Standard</b>	ITU-T G.703/G.704/G.706, G.732 & G823
		<b>Power Input</b>	AC: 90 ~250V, DC24: -18 ~-36VDC, DC48: -36 ~-72VDC
		<b>Power / Consumption</b>	10W
		<b>Dimensions / Weight</b>	235 x 438 x 45mm (D x W x H) / 2.9kg
		<b>Temperature</b>	0~50°C (Operating), -10~70°C (Storage)
		<b>Humidity</b>	10~90% non-condensing
		<b>Certification</b>	CE, FCC, RoHS
		<b>MTBF</b>	57,000 hrs

## Application



## Ordering Information

Model Name	Type	Description
ETU02-Mux4-AC	Power	E1 Mux with 4 data ports, AC power
ETU02-Mux4-DC	Power	E1 Mux with 4 data ports, DC power
ETU02-Mux4-AD	Power	E1 Mux with 4 data ports, AC+DC power
ETU02-Mux2-AC	Power	E1 Mux with 2 data ports, AC power
ETU02-Mux2-DC	Power	E1 Mux with 2 data ports, DC power
ETU02-Mux2-AD	Power	E1 Mux with 2 data ports, AC+DC power

Power Type  
**ETU02 - MUX - □□**  
 Example: ETU02 - MUX - AC



# ETU01A

## Single Port Modular E1 CSU/DSU with LCD and SNMP

The ETU01A single port stand-alone CSU/DSU provides our best digital access solution for E1 and Fractional E1 network services termination. A DTE device may be linked to an ETU01A at data rates of 56Kbps to 2048Kbps. The ETU01A features user replaceable dataport modules for a number of interface standards; including Ethernet bridge, router, V.35, X.21, RS-530, RS-449, G.703 64Kbps Co-directional and RS-232. The ETU01A supports local control and diagnostics via LCD display, keypad and LED status indicators located on the front panel as well as via a menu driven RS-232 console port in conjunction with a standard terminal.

These features enable users to easily configure the unit, execute the in-service diagnostics and monitor the network status. The ETU01A provides optional SNMP (Simple Network Management Protocol), which allows the user to remotely control, diagnose and monitor the system using industry standard SNMP protocol, our proprietary MIB and any network management software.

### Features

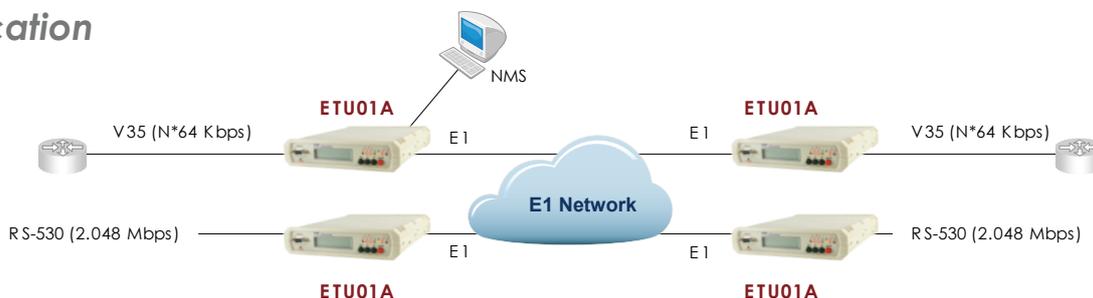
- Supports Fractional E1 and Unframed E1 service with EOC control
- Removable interfaces, support V.35, X.21, RS-530, RS-449, RS-232, G.703 Co-directional, NRZ, Ethernet Bridge and Router
- I/O connectors on rear panel
- Multiple clock source selection (Internal or External: E1 recovery, DTE or DCE)
- Supports Console, Telnet and SNMP management
- Menu keys and LCD display
- SNMP V1, V2C, V3 supported
- Supported by Smart View EMS
- Built-in BERT with V.54 diagnostic capabilities for performing local and remote loopback

### Specifications

<b>G.703 E1</b>	Framing	Framed CCS (PCM31) CAS (PCM30) / Unframed CRC4 on/off
	Line Code	AMI/ HDB3
	LCD display	16*2 character LCD with backlight
	Bit rate	N*56K or N*64Kbps, where N=1~31 in CCS or 1~30 in CAS
	Relative receive level	0 to -43dB
	<b>Transmit level:</b>	
	Pulse	Nominal 2.37V ±10% for 75ohm
	Amplitude	Nominal 3.00V ±10% for 120ohm Zero amplitude ±0.1V
	Jitter performance	According to ITU-T G.823
	Connectors	BNC(unbalanced), RJ-48(balanced)
	<b>Clock modes:</b>	
	Clock mode 0	Receive & transmit clock (DCE1) (recovered) to the sync DTE
	Clock mode 1	Receive & transmit clock (DCE2) (internal oscillator) to the sync DTE

<b>G.703 E1</b>	Clock mode 2	Receive clock to the sync and transmit (DTE1) clock from the sync device
	Clock mode 3	Receive and transmit clock from the (DTE2) sync DCE (from ETC and ERC pin)
	Clock mode 4	Receive and transmit clock from the (DTE3) sync DCE (all from ETC pin)
<b>Diagnostics</b>	local loopback, Digital remote loopback, Test pattern	
<b>Indicators</b>	LEDs (Power, TD, RD, Signal loss, Sync loss, Error and test)	
<b>Standards</b>	ITU-T G.703/G.704/G.706 & G.732	
<b>Power Input</b>	AC: 90-250VAC, DC: 18-72 VCD	
<b>Power Consumption</b>	10W	
<b>Dimensions</b>	250 x 195 x 45 mm (D x W x H)	
<b>Weight</b>	1.5kg	
<b>Temperature</b>	0 ~ 50°C (Operating), -1 ~ 70°C (Storage)	
<b>Humidity</b>	10 ~ 90% non-condensing	
<b>Certification</b>	CE, FCC, RoHS compliant	
<b>MTBF</b>	65,000 hrs	

### Application



### Ordering Information

Model Name	Type	Description
ETU01A/AC	Power	1U, 19/2", Data port to framed E1 with 100 ~240VAC
ETU01A/DC	Power	1U, 19/2", Data port to framed E1 with -48VDC

Power Type

ETU01A/

Example: ETU01A/AC

Interface Module	Description
ETU/TTU-V35	V.35 interface module
ETU/TTU-X21	X.21 interface module
ETU/TTU-530	RS-530 interface module
ETU/TTU-449	RS-449 interface module
ETU/TTU-232	RS-232 ASYN/SYNC interface module
ETU/TTU-G64	G.703 64Kbps co-directional interface module
ETU/TTU-NRZ	NRZ interface module (4 * BNC)
ETU/TTU-ET100	10/100 Base-Tx Ethernet E1 Bridge interface module
ETU/TTU-ET100R	10/100 Base-Tx Ethernet Routing interface module

**Note:** Please refer to page 9-11



## ETU011

### Single Modular Port E1 CSU/DSU

The ETU011 stand-alone DSU/CSU is a digital access unit for Unframed E1, Fractional E1, or Fractional cascaded E1 service. The ETU011 data channel supports user-selectable transmission rates via randomly selected E1 timeslots, which provides integral multiples of 64kbps, up to a maximum 2.048Mbps (unframed), for a line attenuation of up to 43 dB on twisted pair or coax cable. This provides an approximate operating range up to 2km (using 22AWG). The ETU011 packs the data channels into the E1 link in user-selected time slots. The unused time slots can insert IDLE code (in frame mode). The ETU011 front panel sports status LEDs for monitoring both the CSU and DSU conditions and push button switches for initiating local and remote loopback with integral BERT.

### Features

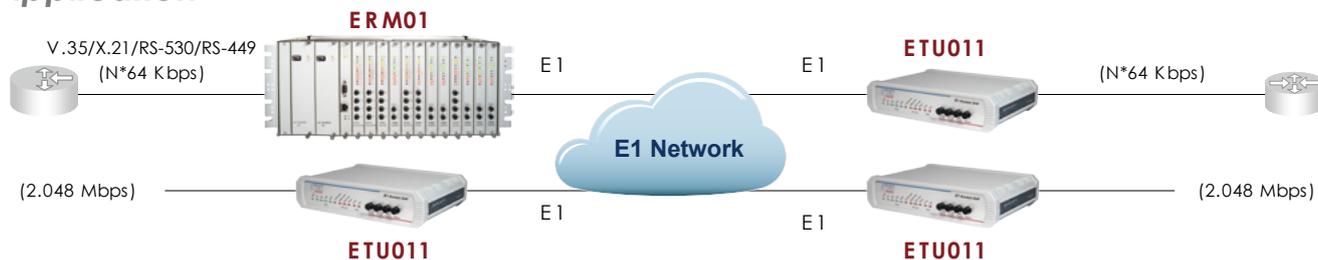
- Supports Fractional E1 and Unframed E1 service
- Removable interfaces, support V.35, X21, RS-530, RS-449, RS-232, G.703 Co-directional, NRZ, Ethernet Bridge and Router
- I/O connectors on rear panel
- Multiple clock source selection
- (Internal or External: E1 recovery, DTE or DCE)
- Built-in BERT with V.54 diagnostic capabilities for performing local and remote loopback

### Specifications

<b>G.703 E1</b>	Framing	Framed CCS (PCM31) CAS (PCM30)/ Unframed CRC4 on/off
	Line Code	AMI/ HDB3
	Bit rate	N*56K or N*64Kbps, where N=1~31 in CCS or N equal 1~30 in CAS
	Relative receive level	-43dB
	<b>Transmit level:</b>	
	Pulse	Nominal 2.37V ±10% for 75 ohm
	Amplitude	Nominal 3.00V ±10% for 120 ohm Zero amplitude ±0.1V
	Jitter performance	According to ITU-T G.823
	Connectors	BNC(unbalanced), RJ-48(balanced)
	<b>Clock modes:</b>	
	Clock mode 0	Receive & transmit clock (DCE1) (recovered) to the sync. DTE
	Clock mode 1	Receive & transmit clock (DCE2) (internal oscillator) to the sync. DTE

<b>G.703 E1</b>	Clock mode 2	Receive clock to the sync. and transmit (DTE1) clock from the sync device
	Clock mode 3	Receive and transmit clock from the (DTE2) sync. DCE (from ETC and ERC pin)
	Clock mode 4	Receive and transmit clock from the (DTE3) sync. DCE (all from ETC pin)
<b>Indicators</b>	LEDs (Power, TD, RD, RTS, DCD, Signal loss, Sync loss, Alarm)	
<b>Standards</b>	ITU-T G.703/G.704/G.706 & G.732	
<b>Power Input</b>	AC: 90-250VAC, DC: -18 ~ -75VDC	
<b>Power Consumption</b>	10W	
<b>Dimensions</b>	250 x 195 x 45 mm (D x W x H)	
<b>Weight</b>	0.51kg	
<b>Temperature</b>	0°C ~ 50°C (Operating), -10°C ~ 70°C (Storage)	
<b>Humidity</b>	10 ~ 90% non-condensing	
<b>Certification</b>	CE, FCC, RoHS compliant	
<b>MTBF</b>	57,000 hrs	

### Application



### Ordering Information

Model Name	Type	Description
ETU011-AC	Power	1U, 19/2", Data port to framed E1 w/ built-in AC 90 ~ 250 VAC
ETU011-DC	Power	1U, 19/2", Data port to framed E1 w/ built-in DC -18 ~ -72 VDC
Interface Module		Description
ETU/TTU-V35		V.35 interface module
ETU/TTU-X21		X.21 interface module
ETU/TTU-530		RS-530 interface module
ETU/TTU-449		RS-449 interface module
ETU/TTU-232		RS-232 ASYN/SYNC interface module
ETU/TTU-G64		G.703 64Kbps co-directional interface module
ETU/TTU-NRZ		NRZ interface module (4 * BNC)
ETU/TTU-ET100		10/100 Base-TX Ethernet E1 Bridge interface module
ETU/TTU-ET100R		10/100 Base-TX Ethernet Routing interface module

Power Type  
**ETU011** –    
 Example: ETU011 – AC

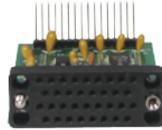
## Interface Module for ETU01A and ETU011

### ETU/TTU-V35

#### V.35 Interface

##### Features :

- Compliant with ITU-T V.35 standards
- Winchester type 34-pin MB34 M-Block female connector
- Synchronous data rate at Nx64 (where N=1 to 32)
- Data Communications Equipment interface electrically compatible to ITU-T V.11 (RS-422)



### ETU/TTU-232

#### RS-232 Interface

##### Features :

- Compliant with EIA RS-232-C (Unbalanced)
- Compatible to ITU-T V.24 25-pin D Sub female connector
- Synchronous data rate at 64 or 128Kb/s Asynchronous (transparent) at up to 19.2K or 38.4K Data Communications Equipment interface



### ETU/TTU-X21

#### X.21 Interface

##### Features :

- Compliant with ITU-T X.21 standard (Balanced)
- 15-pin D Sub female connector
- Synchronous data rate at Nx64 (where N=1 to 32)
- Data Communications Equipment interface electrically compatible to V.11



### ETU/TTU-530

#### RS-530 Interface

##### Features :

- Compliant with Category 1 EIA-530 (Balanced) 25-pin D Sub female connector
- Synchronous data rate at Nx64 (where N=1 to 32)
- Data Communications Equipment interface electrically compatible to RS-422



### ETU/TTU-NRZ

#### Non-Return to Zero Interface

##### Features :

- 4 BNC connectors: TxD, TxC, RxD and RxC (Data&Clock)
- NRZ line coding Logic "1" 0V +/- 0.3V Logic "0" -1.5V +/- 0.3V
- Synchronous data rate Nx64 (where N=1 to 32)



### ETU/TTU-449

#### RS-449(V.36) Interface

##### Features :

- Compliant with EIA/TIA-530-A (Balanced)
- 37-pin D Sub female connector
- Synchronous data rate at Nx64 (where N=1 to 32)
- Data Communications Equipment interface electrically compatible to RS-422



### ETU/TTU-G64

#### G.703 64K Co-directional Interface

##### Features :

- Pulse shape compliant with ITU-T G.703
- Clock frequency: 64KHz
- Pulse Amplitude: 1.0V
- Zero Amplitude: 0V
- Impedance: 120 Ohms
- 15-Pin D Sub connector
- Range: up to 800m with 24AWG

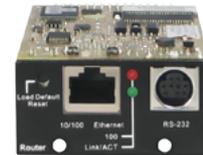


### ETU/TTU-ET100R

#### 10/100 Base-TX Ethernet Router

##### Features :

- Ethernet port IP Address/subnet mask
- Dynamic Routing RIP I & II, Send or Receive on Ethernet or WAN
- PPP, HDLC and Cisco® HDLC WAN protocol encapsulation



### ETU/TTU-ET100

#### 10/100 Base-TX Ethernet Bridge

##### Features :

- High performance bridge for 10Base-T or 100Base-TX Ethernet extension
- Transparent half / Full duplex support on WAN / LAN interface
- Provides Ethernet over E1 economically



## Ordering Information

Model Name	Description
ETU/TTU-V35	V.35 interface module
ETU/TTU-X21	X.21 interface module
ETU/TTU-530	RS-530 interface module
ETU/TTU-449	RS-449 interface module
ETU/TTU-232	RS-232 ASYN/SYNC interface module
ETU/TTU-G64	G.703 64Kbps co-directional interface module
ETU/TTU-NRZ	NRZ interface module ( 4 * BNC )
ETU/TTU-ET100	10/100Base-TX Ethernet E1 Bridge interface module
ETU/TTU-ET100R	10/100Base-TX Ethernet Routing interface module

Interface  
**ETU/TTU** -   
 Example: ETU/TTU - V35



## ETU01-Plus

### Single V.35 Port E1 CSU/DSU

The ETU01-Plus stand-alone CSU/DSU is a digital access unit for Unframed E1 or Fractional E1 service. The ETU01-Plus data channel supports user-selectable transmission rates via randomly selected E1 timeslots, which provides integral multiples of 64kbps, up to a maximum 2.048Mbps (unframed), for a line attenuation of up to 43 dB on twisted pair or coax cable. This provides an approximate operating range up to 2km (using 22AWG). The ETU01-Plus packs the data channels into the E1 link in user-selected time slots. The ETU01-Plus front panel sports status LEDs for monitoring the CSU and DSU conditions and pushbutton switches for initiating local and remote loopback with integral BERT. The ETU01-Plus features a fixed on-board V.35 interface.

### Features

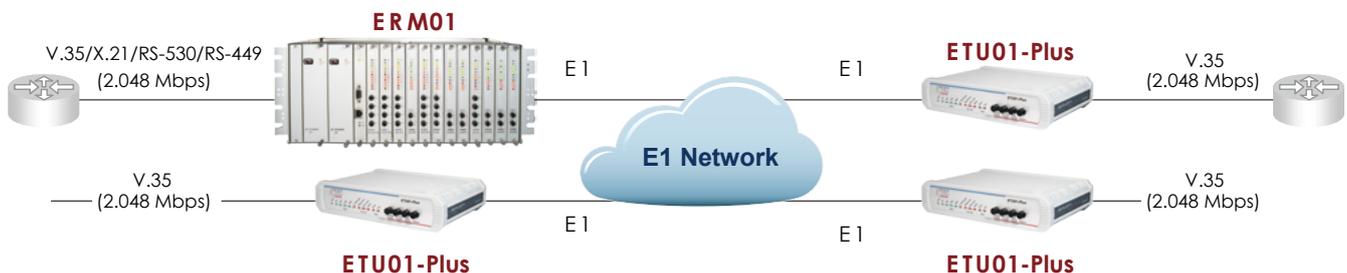
- Supports Fractional E1 and Unframed E1 service with EOC control
- Model with fixed V.35 interface for price critical applications
- Multiple clock source selection (Internal or External: E1 recovery, DTE or DCE)
- Built-in BERT with V.54 diagnostic capabilities for performing local and remote loopback
- Fixed V.35 port with MB34F connector
- I/O connectors all located on rear panel

### Specifications

<b>G.703 E1</b>	Framing	Framed CCS (PCM31) CAS (PCM30)/ Unframed CRC4 on/off
	Line Code	AMI/ HDB3
	Data rate	N*56K or N*64Kbps, where N=1~31 in CCS or N equal 1~30 in CAS
	Relative receive level	-43dB
	<b>Transmit level:</b>	
	Pulse Amplitude	Nominal 2.37V ±10% for 75 ohm Nominal 3.00V ±10% for 120 ohm Zero amplitude ±0.1V
	Jitter performance	According to ITU-T G.823
	Connectors	BNC(unbalanced), RJ-48(balanced)
	<b>Clock modes:</b>	
	Clock mode 0	Receive & transmit clock (DCE1) (recovered) to the sync DTE
	Clock mode 1	Receive & transmit clock (DCE2) (internal oscillator) to the sync DTE

<b>G.703 E1</b>	Clock mode 2	Receive clock to the sync. and transmit (DTE1) clock from the sync device
	Clock mode 3	Receive and transmit clock from the (DTE2) sync DCE (from ETC and ERC pin)
	Clock mode 4	Receive and transmit clock from the (DTE3) sync DCE (all from ETC pin)
<b>Indications</b>	LEDs (Power, TD, RD, RTS, DCD, Signal loss, Sync loss, Alarm)	
<b>Standards</b>	ITU-T G.703/G.704/G.706 & G.732	
<b>Power Input</b>	AC: 90-250VAC , DC: -18 ~ -75 VDC	
<b>Power Consumption</b>	10W	
<b>Dimensions</b>	195 x 160 x 45 mm (D x W x H)	
<b>Weight</b>	0.51kg	
<b>Temperature</b>	0°C ~ 50°C (Operating), -10°C ~ 70°C (Storage)	
<b>Humidity</b>	10 ~ 90% non-condensing	
<b>Certification</b>	CE, FCC, RoHS compliant	
<b>MTBF</b>	55,000 hrs	

### Application



### Ordering Information

Model Name	Type	Description
ETU01/Plus-AC	Power	1U, 19/2", Fixed V.35 port to framed E1 w/ built-in AC 90 ~ 250 VAC
ETU01/Plus-DC	Power	1U, 19/2", Fixed V.35 port to framed E1 w/ built-in DC -18 ~ -75 VDC

Power Type  
**ETU01/Plus** –    
 Example: ETU01/Plus – AC



# Eoe1A

## Ethernet over E1 with SNMP Management

The Eoe1A is a Channel Service Unit for unframed ITU-T G.703 E1 that features a built-in Ethernet bridge. The CSU has a built-in Network Terminating Unit (NTU) and may connect to either 75 Ohm unbalanced, BNC connectors or to 120 Ohm balanced, unframed E1 via twisted pairs and a shielded RJ-45 connector. The Eoe1A Ethernet Bridge uses HDLC encapsulation to transport Ethernet packets across the WAN and supports 10/100 auto-negotiation or manual settings for 10M, 100M, Full or Half Duplex Ethernet. The Ethernet port also supports a standard auto-MDIX feature that will completely eliminate Ethernet cross-over cables or the guessing that is sometimes involved in choosing a cable when connecting to a HUB or a PC. The Eoe1A is very easy to configure by a menu driven serial console interface. SNMP and proprietary MIB add the ability to manage the Eoe1A centrally through third party network management software or via CTC Union's EMS management system.

### Features

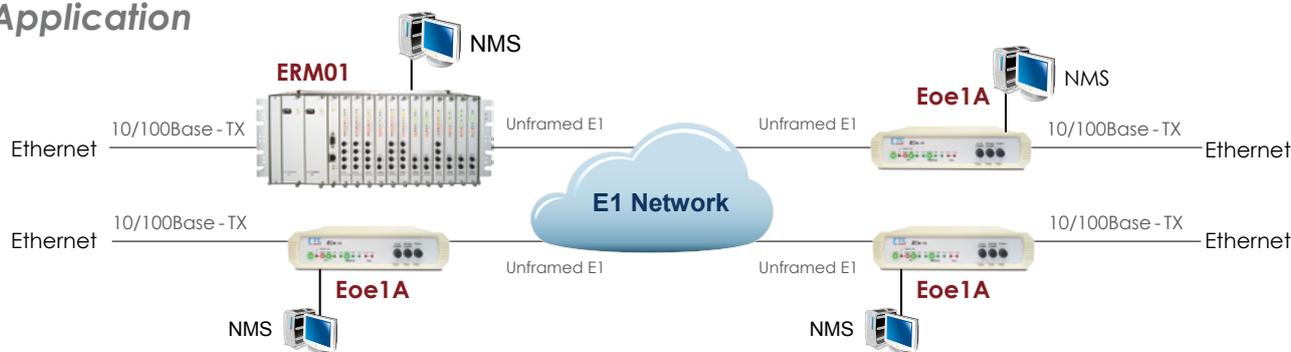
- Supports 10/100Base-TX Ethernet over Unframed E1
- Automatic address learning, aging and deletion after 5 minutes
- Auto padding of undersized packets to meet the minimum Ethernet packet size requirement
- Buffering modes can be selected according to the setting of WAN and LAN line speeds
- Forwarding and filtering rate at WAN speed with throughput latency of 1 frame
- Auto MDI / MDIX
- Real-time filtering with 256 MAC address table
- Supports Console, SNMP and Web management
- Adjustable pay load rates of: 10K, 32K, 64K, 128K, 256K, 512K, 1024K & 2048K

### Specifications

G.703 E1 Specifications	
<b>Framing</b>	Unframed
<b>Line code</b>	AMI/ HDB3
<b>Bit rate</b>	2.048Mbps (clear channel)
<b>Relative receive level</b>	0 to -43dB
<b>Transmit level</b>	Pulse Nominal 2.37V ±10% for 75ohm Amplitude Nominal 3.00V ±10% for 120ohm Zero amplitude ±0.1V
<b>Jitter performance</b>	According to ITU-T G.823
<b>Connector</b>	BNC(unbalanced), RJ-48(balanced)
<b>Clock modes</b>	Clock mode 0: Receive & transmit clock (DCE1)(recovered) to the sync DTE Clock mode 1: Receive & transmit clock (DCE2)(internal oscillator) to the sync DTE
Diagnostics	
<b>Test Switches</b>	Digital local loopback, Analog local loopback, Digital local and remote loopback, 2047 Test pattern
Ethernet Specifications	
<b>Connector</b>	RJ-45
<b>Data Rate</b>	10/100Mbps; Half Duplex / 20/ 200Mbps; Full duplex

<b>Filtering &amp; Forwarding</b>	90,000 packets/sec
<b>Delay</b>	1 frame
<b>Frame Buffer</b>	340 frames
<b>MAC Table</b>	256 MAC address
<b>Protocols</b>	Synchronous HDLC
<b>Indications</b>	LEDs (Power, Signal Loss, Alarm, Link, TD, RD, 100, Full, Error, Error, Test)
<b>Standards</b>	ITU-T G.703, G.706 and G.732, IEEE 802.3/802.3u
<b>Management</b>	Console, Web, SNMP
<b>Power Input</b>	AC: 90-250VAC ; DC: 18-72 VCD
<b>Power Consumption</b>	20W
<b>Dimensions</b>	250 x 195 x 45mm (D x W x H)
<b>Weight</b>	1.5kg
<b>Temperature</b>	0°C ~ 50°C (Operating), -10°C ~ 70°C (Storage)
<b>Humidity</b>	10 ~ 90% non-condensing
<b>Certification</b>	CE, FCC, RoHS compliant
<b>MTBF</b>	57,000 hrs

### Application



### Ordering Information

Model Name	Description
Eoe1A/AC	1U half 19" Ethernet over unframed E1 SNMP with AC power (100 ~ 240V)
Eoe1A/DC	1U half 19" Ethernet over unframed E1 SNMP with DC power (18 ~ 75 V)
Eoe1A/AD	1U half 19" Ethernet over unframed E1 SNMP with AC (100~240V) and DC (18 ~ 75 V)

Power Type  
**Eoe1A** -    
 Example: Eoe1A - AD



## ET100A (V2)

### Ethernet to WAN (Synchronous) Bridge

The ET100A Network Bridge is a high performance remote, self-learning, Ethernet bridge. Its compact size and low cost makes it ideal for cost-sensitive bridging applications, or as a LAN extender or segmenter over bit stream type infrastructures. The built-in n x 64 (56)Kbps timing clock generator makes it easy to connect to other n x 64 (56)Kbps related data equipment. Several options of data interfaces, including V.35, RS-530, RS-449, RS-232, and X.21 make this unit's connection between 10Base-T or 100Base-TX LAN and various data port interfaces convenient.

### Features

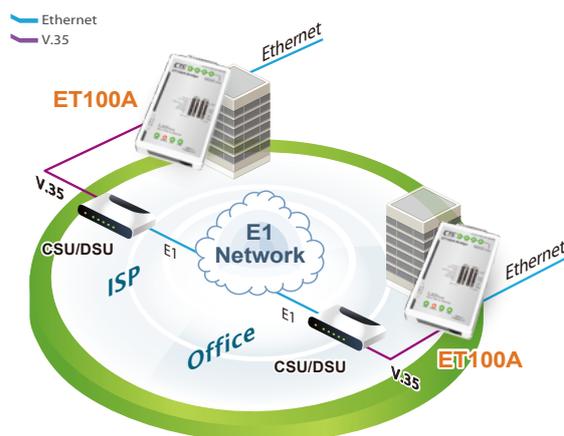
- Protocol : Synchronous HDLC (ISO 13239), PPP, CISCO® HDLC
- 10Base-T or 100Base-TX Ethernet bridge
- Auto MDI/MDIX
- Supports IEEE 802.3x flow control
- Selectable data port : V.35, RS-530, RS-449, RS-232, X.21
- Transparent half / Full duplex support on WAN, LAN interface
- Nx64, Nx56 timing clock generator for Sync WAN link
- LEDs indication for LAN, WAN status

### Specifications

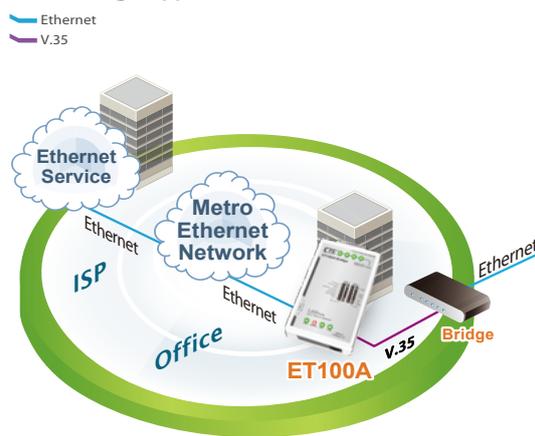
<b>WAN</b>	Interface:	Selectable RS-232(Sync), V.35, RS-530, RS-449, RS-232, X.21with Adapter Cable	<b>LAN</b>	Compliant with IEEE 802.3, 802.3u, 802.3x		
	Protocol:	Synchronous PPP, HDLC (ISO 13239), CISCO® HDLC		Connector: RJ-45		
	Connector:	DB25M		Speeds: 10/100Base-TX, Full/Half duplex		
	Type:	DTE		Frames: Support 64 ~ 2044 byte packet lengths		
	Configuration:	All Configuration by Dip switch (Protocol, interface, Clock mode, data rate)		<b>Bridge Specifications</b>	MAC Address learning, aging and deletion after 5 minutes	
	Data rate:	Nx56Kbps, Nx64Kbps RS-232 up to 128Kbps V.35, X21, RS-530, RS-449 up to 10Mbps		256 addresses MAC table, 1763 packet buffer	<b>Power</b>	12VDC
	Clock source:	Tx/Rx internal or external		<b>Power Consumption</b>	< 5 W	
Handshake (DCD)	Follow CTS/RTS or Always On	<b>Dimensions</b>	135 x 79 x 25mm (D x W x H)			
<b>Indications</b>	LEDs	(PWR, WAN Rx/Tx, LAN Tx/Rx/Link/Err/Speed)	<b>Weight</b>	180g		
			<b>Temperature</b>	0°C ~ 50°C (Operating), -10°C ~ 70°C (Storage)		
			<b>Humidity</b>	10 ~ 90% non-condensing		
			<b>Certification</b>	CE, FCC, RoHS compliant		

### Application

#### ■ Ethernet over TDM, Point to Point



#### ■ HDLC Bridge Application



### Ordering Information

Model Name	Description
ET100A/V35M	Ethernet to V35 WAN Bridge with V.35 cable: DB25F to MB34M, 1 meter
ET100A/X21M	Ethernet to X21 WAN Bridge with X21 cable: DB25F to DB15M, 1 meter
ET100A/RS530M	Ethernet to RS530 WAN Bridge with RS530 cable: DB25F to DB25M, 1 meter
ET100A/RS449M	Ethernet to RS449 WAN Bridge with RS449 cable: DB25F to DB37M, 1 meter
ET100A/RS232M	Ethernet to RS232 WAN Bridge with RS232 cable: DB25F to DB25M, 1 meter