

ERM-MUX-Plus

4U, E1 Multi-Service Multiplexer



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.

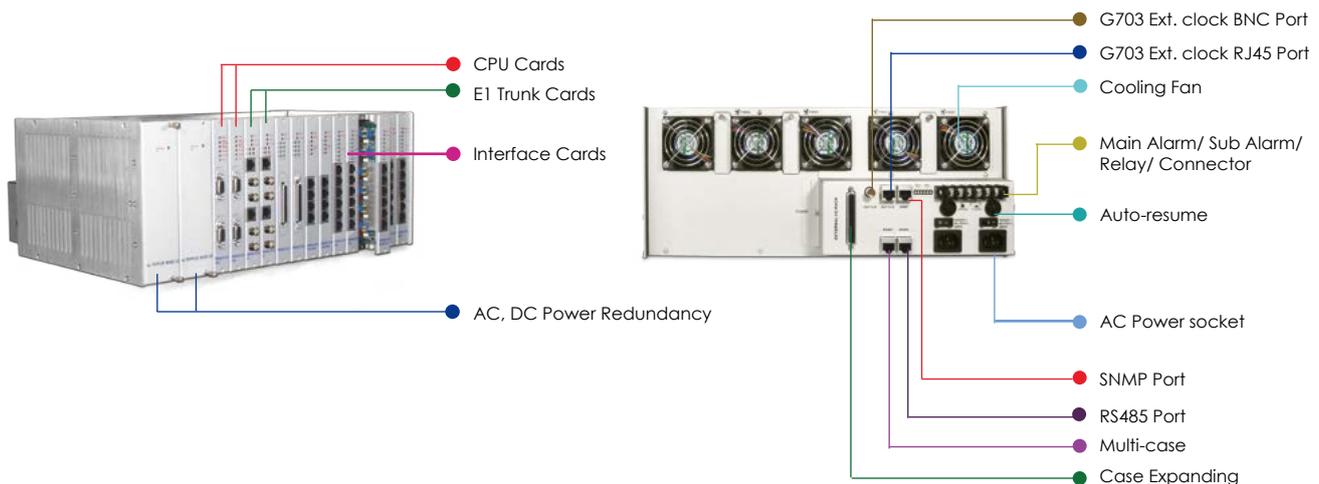
Features

- 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

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

ERM-Mux/plus overview



• 1+1 Redundant

The ERM-MUX/PLUS supports complete redundant functions for the electrical input service, the power module cards, CPU card and E1 card. The E1 backup provides 1+1 modes. All of these cards are capable of automatic switchover in case of failure. The system has complete warning and diagnostic functions for stable and reliable operation.

• Network Management

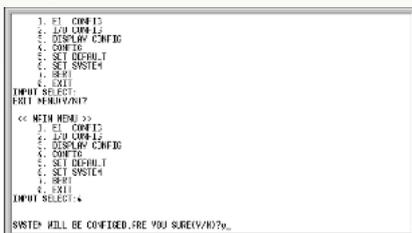
The ERM-MUX/PLUS supports SNMP and/or NMP GUI network management with local PC or via a dedicated timeslot from the E1 line. The NMP GUI can manage more ERM-MUX/PLUS equipment via the E1 network in-line or in nested structures. A console terminal mode is supported as well. When SNMP management mode is available and selected, remote Telnet is also available for management. ERM-MUX/Plus with SNMP option is also manageable under CTC Union's Smart View EMS.

Specifications & design are subject to change without prior notice. Please visit CTC Union website for more details.

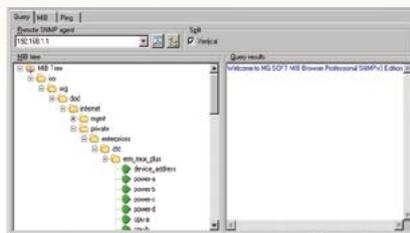
ERM-Mux / Plus Management

The intelligent NMS provides the support that the network manager needs. It consists of three parts :

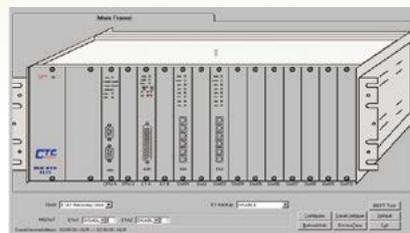
1. Terminal mode: Configuration by local RS-232 serial port; Maintenance & alarm.



2. MIB file SNMP: Configuration by RJ-45 10/100 Ethernet port; Complies with MIB-II standard.



3. GUI : Configuration by RJ-45 10/100 Ethernet port; Real time monitoring in Window® graphic mode.



• Cascade

RS-485 interface is used for cascading expansion rack, and are provided by RJ-45 x 2 connectors. DB62 connector for connecting backplane data to expansion rack.

• Power Redundancy

Power supply options for 110V AC, 220V AC or -48V DC, ensure maximum flexibility for central office installations. This equipment complies fully with all ITU-T standards for E1 transmissions. The modules are hot-swappable, capable of automatic switch over in case of module failure, stable, and reliable.

• Performance and BERT test

System supports performance monitoring and BERT test through NMP or Terminal console according RFC 1406 recommendation. CRC-4 and BPV monitoring: CURR ES / UAS , LONG ES / UAS. Loopback test and BERT test: display Rx error amounts, Error counts and Bit-error-rate. Test patterns: 2e9-1, 2e11-1 and 2e15-1. Error Insertions and rates: Single, 10e-1, 10e-2, 10e-3, 10e-4, 10e-5, 10e-6, 10e-7.

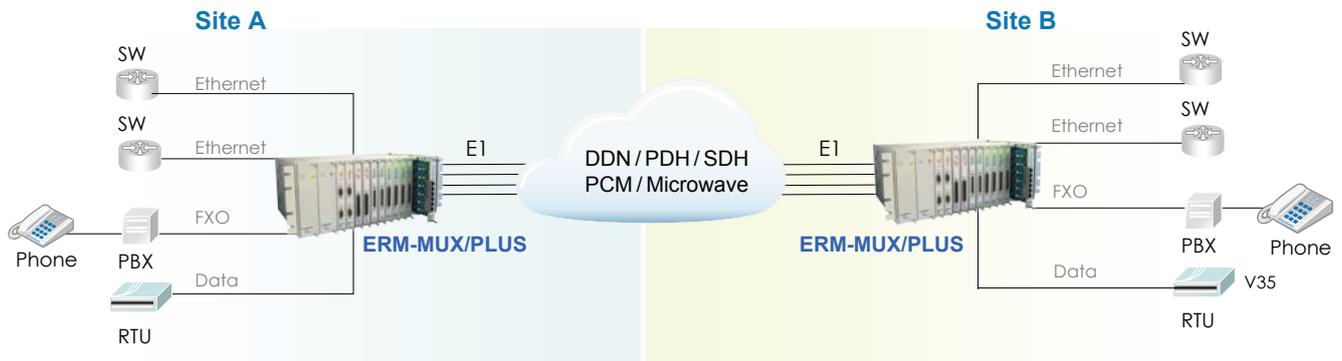
Ordering Information

| 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) |

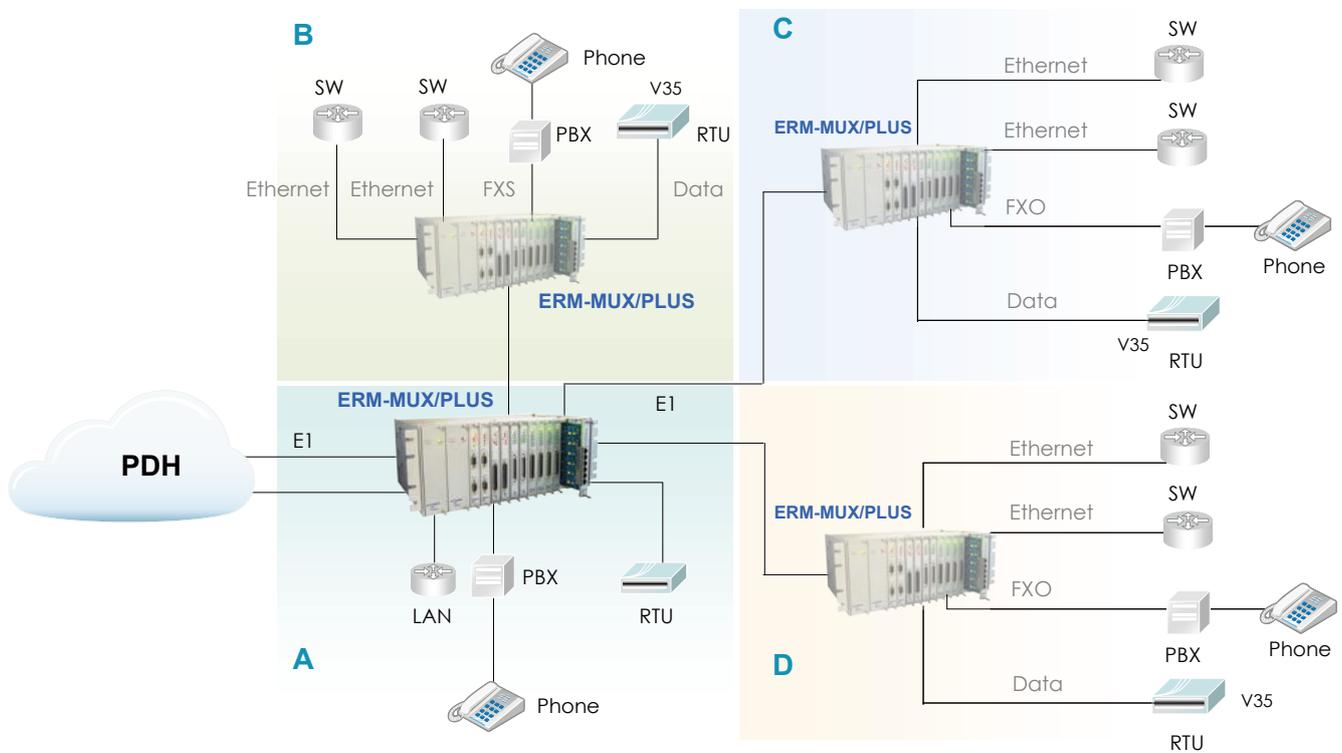
Card Type
ERM – MUX– PLUS –
 Example: ERM – MUX–PLUS – 2E1R

Application

Connection with PBX (Private Branch Exchange)



The extension and expansion of DDN (Distributed Data)



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