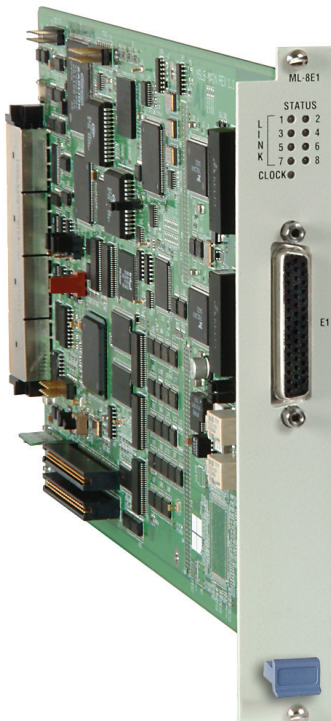


Megaplex-2100/2104

# ML-8E1, ML-8T1

8-Port Main Link E1 and T1 Modules



- Up to 8 E1 or T1 interfaces with built-in LTU (E1) or CSU (T1)
- Software-configurable for E1/T1 operation
- Multiple clock source selection
- E1 interface per ITU-T Rec. G.703, G.704 and G.732
- ANSI-compatible T1 interface

The ML-8E1 and ML-8T1 modules enable direct connection of Megaplex to up to 8 E1 or T1 lines. Up to 12 modules can be installed in a single chassis, providing Megaplex with up to 96 E1/T1 ports.

The E1 interface is compatible with all carrier-provided E1 services, meeting the requirements of ITU-T Rec. G.703, G.704 and G.732. It supports both 2 (G732N) and 16 (G732N) frames per multiframe. CRC-4 and E bit are also supported, complying with G.704 recommendations. Zero suppression over the lines is HDB3.

The E1 interface is equipped with an integral user-enabled LTU, ensuring ranges of up to 2 km (1.2 miles).

The T1 interface is compatible with ANSI requirements. Both D4 and ESF framing formats are supported. Zero suppression is selectable for Transparent, B7ZS, or B8ZS.

The T1 interface is equipped with an integral user-enabled CSU, ensuring ranges of up to 1.6 km (1 mile).

Diagnostic capabilities feature local and remote loopbacks on each port, and local and remote loopbacks per timeslot.

High-density module  
for efficient point-to-  
multipoint applications



data communications

The Access Company

# ML-8E1, ML-8T1

## 8-Port Main Link E1 and T1 Modules

### Specifications

#### Number of Ports per Module

8

#### E1 INTERFACE

##### Compliance

ITU-T G.703, G.704, G.732 (Including CRC-4 and E bit)

##### Framing

2 frames (G732N), or 16 frames (G732N) per multiframe

##### Data Rate (per link)

2.048 Mbps

##### Line Code

HDB3

##### Jitter Performance

As per ITU-T G.823

##### Impedance

Balanced 4-wire: 120 $\Omega$

Unbalanced coax: 75 $\Omega$

##### Signal Level

Receive:

Without LTU: 0 to -10 dBm

With LTU: 0 to -33 dBm

Transmit:

Balanced:  $\pm 3V$  ( $\pm 10\%$ )

Unbalanced:  $\pm 2.37V$  ( $\pm 10\%$ )

#### T1 INTERFACE

##### Compliance

ANSI T1.107 and T1.403 (inband loopback activation only)

##### Framing

D4, ESF

##### Data Rate (per link)

1.544 Mbps

##### Line Code

Bipolar AMI

##### Zero Suppression

Transparent, B7ZS, B8ZS

##### Jitter Performance

As per AT&T TR-62411

##### Impedance

Balanced 4-wire: 100 $\Omega$

##### Signal Level

Receive:

Without CSU: 0 to -10 dBm

With CSU: 0 to -34 dBm

Transmit:

Without CSU:  $\pm 3V$  ( $\pm 10\%$ ),  
user adjustable,

measured at 0 to 655 ft

With CSU: 0, -7.5, -15, -22 dBm

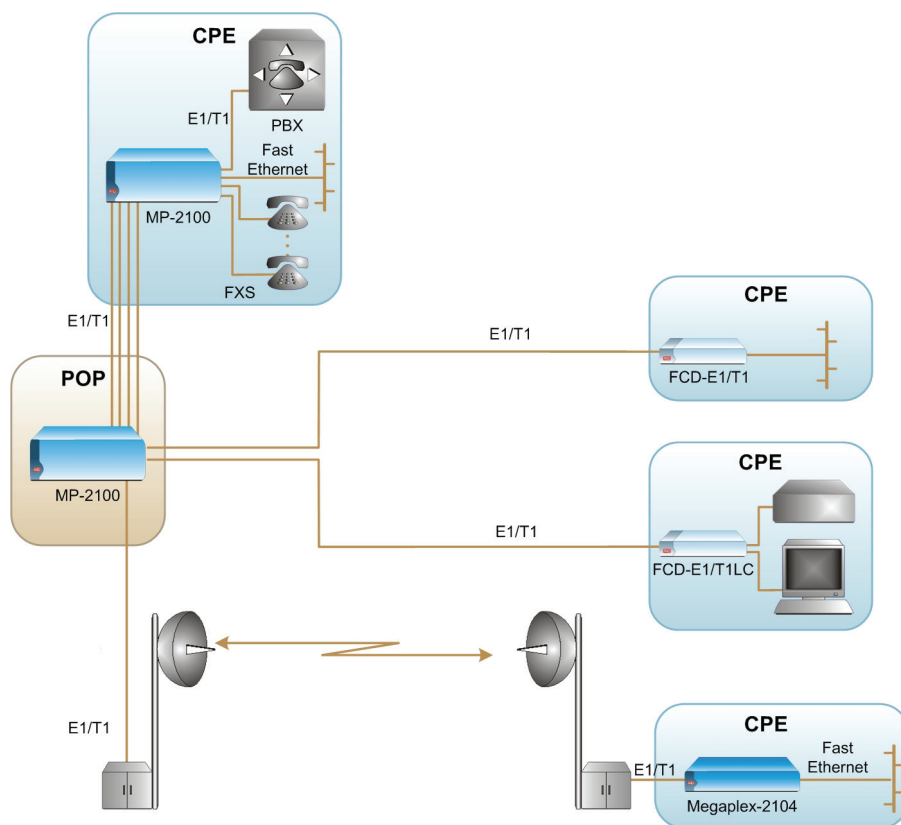


Figure 1. Ethernet, Data and Voice Access over TDM Uplinks

**DIAGNOSTICS****Loopbacks**

User-activated local and remote loopback  
on each port

Local and remote loopbacks per timeslot

**T1 modules only:**

Network line loopback

Network payload loopback

CSU network loopback

**INDICATORS****Clock (per module)**

Lights steadily in green when station clock  
is selected and indicates a good signal

Off when station clock port is not selected  
or there is loss of signal

**Status (per link)**

Lights steadily in green when the port is  
connected and carries traffic

Lights in red during local loss of  
synchronization or red alarm

Off when not connected

**GENERAL****Line Connector**

Single DB-44, female (see *Ordering* for  
splitter cables available from RAD)

**Power Consumption**

7.9W

**Environment**

Operating temperature: 0°C to 45°C  
(32°F to 113°F)

Storage temperature: -20°C to +70°C  
(-4°F to +160°F)

Humidity: up to 95%, non-condensing

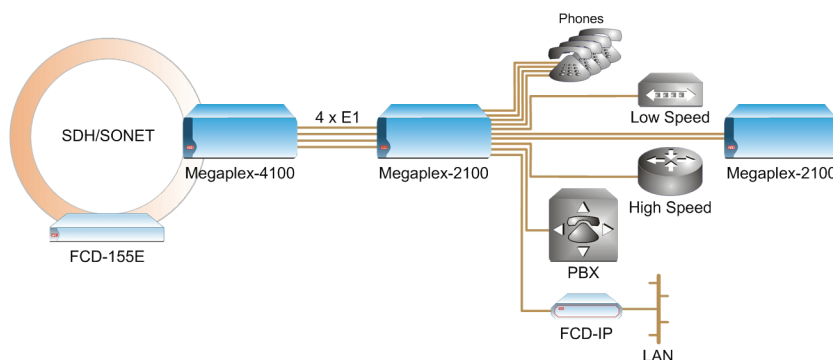


Figure 2. 8 TDM Links on a Single Module

## ML-8E1, ML-8T1

## 8-Port Main Link E1 and T1 Modules

## Ordering

**MP-2100M-ML-8E1**

8-port E1 module with balanced interface  
for MP-2100 and MP-2104

**MP-2100M-ML-8T1**

8-port T1 module for MP-2100 and  
MP-2104

## OPTIONAL ACCESSORIES

**CBL-G703-8/RJ45/ST**

Splitter cable with station clock for  
splitting the 44-pin module connector to  
8 E1 or 8 T1 balanced RJ-45 connectors

**CBL-G703-8/RJ45/ST/X**

Splitter cross-cable with station clock for  
splitting the 44-pin module connector to  
8 E1 or 8 T1 balanced RJ-45 connectors

**CBL-G703-8/OPEN/2M**

Open-ended cable with DB-44 connector  
on the Megaplex side for balanced  
applications

All the cables are 2m (6.6 ft) long.

Megaplex Main Link Modules

ML-E1/T1



MLF-E1/T1



ML-8E1/8T1



MSL-8



ML-IP



ML-20N



## Feature

Interface Type	E1/T1	E1/T1	E1/T1	SHDSL	ETH (TDMoIP)	n x 64 kbps
Number of Channels	1/2	1/2	8	8	2	1/2
Redundancy	Link	Link	None	None	Bundle	Link
Ring	E1/T1	E1/T1	None	None	RFER	None

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