



SKU: 0110-0238

Category: Cards/Units

E&M Special Services (E&M) Plug-in Card

The Tellabs 1000 MSAP E-lead and M-lead signaling (E&M) plug-in card is a special services channel unit. The E&M card supports one subscriber line circuit for E&M types I, II, III, IV and V and two subscriber line circuits configured for operation in E&M types I or V. The special services plug-in card also supports DX signaling (switched or fixed bias) and can provide subscriber line circuits for Tandem modes I and II (switch and station side) and Pulse Link Repeater (PLR) types I and II.

Features

- End-to-end compatibility with existing cards in the field
- Two circuits per card, each able to support different provisioning
- Software-provisionable E&M and PLR modes (2-wire or 4-wire)
- Provides one or two E&M circuits per card, depending on modes: E&M Type I, II, III, IV, V and PLR I and II
- Software-provisionable Tandem and DX modes (4-wire only)
- Provisionable transmit and receive gain
- Provisionable bias (switched or fixed: DX mode only)
- Post-equalization
- 600 ohms and 1200 ohms fixed impedances
- Normal and reverse DX signaling

Highlights

Flexible

The E&M plug-in card can provide either 2- or 4-wire service. It can only provide 4-wire service when provisioned in the Tandem or DX modes. The E&M plug-in card has a fixed impedance of 600 ohms. Voice frequency gain is provisionable in 0.1 dB increments.

Many uses

This special services card has expanded functionality with additional support for equalization and signaling, and is fully GR-57 compatible. The primary application for the E&M card is interoffice trunking from a PBX to a switch.

Software provisionable

Software provisionable E&M and PLR modes (2-wire or 4-wire) and software provisionable Tandem and DX modes (4-wire only). Provisionable transmit and receive gain and provisionable bias (switched or fixed: DX mode only).

Specifications

Physical

- Height: 5.125 in (13.018 cm)
- Width: 0.563 in (1.429 cm)
- Depth: 10.5 in (26.67 cm)
- Weight: 0.5 lb (0.23 kg)

Interfaces

- Two circuits per card

Power Consumption

- Average power consumption: 3.0 W
- Maximum power consumption: 8.8 W

Signaling

- Signaling Types: n E&M Types I, II, III, IV and V - Tandem Modes I and II, Station side - Tandem Modes I and II, Switch side - PLR Types I and II - DX (fixed or switched bias)
- Signaling delay: 50 ms maximum
- Wink distortion for any off wink > 50 ms \hat{A} 315 ms
- On-hook interval distortion for intervals > 50 ms \hat{A} 325 ms
- Maximum loop length (E&M, PLR, Tandem modes):300 ohms
- Maximum loop length (DX mode): 3030 ohms (including 1430 ohms for DX unit)
- DX bridge circuit balancing: Fixed value of 1210 ohms for far-end DX bridge, plus 1120 Ohms adjustable in 16 steps for cable resistance
- Pulse distortion:

Audio

- Transmit gain adjustment (toward DLC): 2-wire Terminal mode -5.5 dB to +4.5 dB, 4-wire Terminal mode -7.0 dB to +17.5 dB, 4-wire Cable mode -6.0 dB to +9.0 dB
- Receive gain adjustment (from DLC): 2-wire Terminal mode -10.0 dB to 0.0 dB, 4-wire Terminal mode -16.0 dB to +8.5 dB, 4-wire Cable mode -9.0 dB to +6.0 dB
- Line impedance: 2-wire Terminal mode 600 ohms + 2.16 uF, 4-wire Terminal mode 600 ohms, 4-wire Cable mode 150 ohms, or 600 ohms (unloaded cable) or 1200 ohms (loaded cable)
- Return loss (600 ohms + 2.16 uF): ERL > 28 dB and SRL > 20 dB
- Longitudinal balance 4-wire DX mode: 200 Hz to 2 kHz, > 58 dB, 3 kHz, > 53 dB
- Idle channel noise
- Supported cable configurations: 2-wire and 4-wire Terminal interface, Up to 3000 feet of intraoffice cable, but \hat{a} 1.5 dB 1 kHz loss - 4-wire Cable interface, Maximum cable length is limited to 10 dB 1 kHz loss or 1600 ohms DC cable resistance
- Supported cable facilities: Nonloaded cable 19, 22, 24 and 26 gauges are supported up to 18,000-ft, including bridge taps. Maximum bridge tap length is limited to 6000 ft. All combinations are allowed. All loops longer than 18,000 ft must use H-88 loading - Loaded cable Only H-88 loading is supported. 19, 22, 24 and 26 gauges are supported, including any gauge combinations.

Environmentals

- Operating temperature: -40 F to +149 F (-40 C to +65 C)
- Relative humidity: 5%-95% noncondensing

Compliance

- GR-57-CORE
- GR-1089-CORE (for lightning and power cross)

LED Indicators

- Green, BUSY - The E&M plug-in card is busy or is being tested; do not remove from service
- Red, FAIL - The unit has failed
- Blinking Red, FAIL - Illegal signaling

Software Support

- Minimum base software FP15 and higher

Installations

- Supported in Tellabs 1000 CBA