

ANALOG VOICE MODULES

FXS, FXO AND E&M INTERFACES FOR THE TSU MULTIPLEXER SERIES

PRODUCT FEATURES

- Modules available for the TSU Multiplexer Family
- 2 and 4 port configurations for analog voice applications FXS, FXO and E&M interfaces
- Support for specialized applications such as PLAR, Tandem and TO
- Modular RJ interfaces for easy and trouble-free setup and connectivity
- Front panel or VT-100 terminal setup and monitoring through TSU Multiplexer
- PC based configuration support via T-Watch PRO™ software
- Remote TSU Mux and module configuration via 8k in-band or FDL
- Local and remote testing capability
- Five-year warranty

To support analog voice applications in the TSU Multiplexer, ADTRAN has several modules available that provide FXS, FXO and E&M interfaces. For flexibility, the analog voice modules come in a variety of formats, including four port single card, dual port Expansion (Plug-In) and dual port Plug-On. These modules provide a quick and simple upgrade path for TSU multiplexers requiring support for PBX's, KSU's, analog telephones, dial-up modem pools, fax machines and leased line modems.

FXS+ MODULES

To support station side connectivity for analog interfaces, the FXS+ modules offer several connectivity options. For typical installations terminating a T1 and delivering analog lines into a PBX or directly to telephone sets, the 2nd Gen FXS module can be utilized. This module comes in three models, the dual plug-in, dual plug-on and the single-card quad module. (1200302L1, 1200304L1 and the 1200300L1)

For applications involving message waiting or the requirement for more robust ringing voltage, the FXS+ (MW) modules are available. These modules, in dual plug-in and dual plug-on format, provide interoperability with the FXO modules for support of message waiting applications. (1200080L1#HS and 1200082L1#HS)

FXO MODULES

For office-side connectivity applications, the FXO modules are available. The dual plug-in and dual plug-on modules support a variety of applications including OPX loop start and ground start lines, Dial Pulse Terminate (DPT), Direct Inward Dial (DID) trunk termination and message waiting support. (1200103L2 and 1200104L2).

E&M MODULES

Applications involving 2- or 4-wire E&M tie lines are supported in the TSU multiplexer with the E&M modules. In addition to supporting Type I, II and V E&M signalling, the E&M modules support legacy leased line modems in Transmit Only (TO) mode. Each dual port plug-in and dual port plug-on module supports the 2713Hz loop back tone. (1200105L3 and 1200106L3)

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Product Specifications

DUAL 2FXS+ (MW) PLUG-IN AND PLUG-ON

Physical Interface

- Dual Modular RJ-45

Operating Modes

- FXS (Loop and Ground Start)
- PLAR
- Tandem (E&M to FXS Conversion)
- Single Party and UVG (Loop and Ground Start)

Signalling Modes

- Loop Start and Ground Start

Tandem Supervision

- Immediate or Wink Start

Ringling

- On Board Ring Generator
- 70Vrms
- 0.5 REN per port

TLP Levels

- -8dB to 0dB - Rx TLP (in 1 dB steps)
- +3dB to -5dB - Tx TLP (in 1 dB steps)

Loop Range

- 0 to 1200 Ω

Other Features

- CLASS Services Supported
- Message Waiting Support (when used with 1200103L2 and 104L2 FXO modules at host end)
- Line Side Answer Supervision
- Loop Reverse Battery
- Far End Disconnect
- Dialtone and Ringback Tone Generators

Part Numbers

Dual FXS (MW) Plug-In1200080L1#HS
Dual FXS Plug-On (MW).....1200082L1#HS
(Only operates with 1200080L1#HS)

2nd GEN DUAL 2FXS QUAD, PLUG-IN, PLUG-ON

Physical Interface

- Quad or Dual Modular RJ-45

Operating Modes

- FXS (Loop and Ground Start)
- PLAR
- Tandem (E&M to FXS Conversion)
- Single Party and UVG (Loop and Ground Start)

Signalling Modes

- Loop Start and Ground Start

Tandem Supervision

- Immediate or Wink Start

Ringling

- On Board Ring Generator
- >40Vrms balanced
- 2.0 REN per port

TLP Levels

- -8dB to 0dB - Rx TLP (in 1 dB steps)
- +3dB to \bar{n} 5dB - Tx TLP (in 1 dB steps)

Loop Range

- 0 to 600 Ω

DUAL FXO PLUG-IN AND PLUG-ON

Physical Interface

- Dual Modular RJ-45

Operating Modes

- FXO (Loop and Ground Start)
- DPT

2-Wire Impedance

- 600 Ω + 2.5 μ F

TLP Levels

- 0dB to -8dB - Rx TLP (in 1 dB steps)
- 0dB to +8dB - Tx TLP (in 1 dB steps)

Ring Detection

- >20 VAC @ 15-65 Hz
- 0.3 REN per port

Other Features

- CLASS Services Supported
- Message Waiting Support — 110Vdc (when used with 1200080L1#HS and 082L1#HS FXS modules at remote end)
- Line Side Answer Supervision
- Distinctive Alerting
- Far End Disconnect

Part Numbers

Dual FXO Plug-In.....1200103L2
Dual FXO Plug-On1200104L2

DUAL E&M PLUG-IN AND PLUG-ON

Physical Interface

- Dual Modular RJ-45

Operating Modes

- 2-or 4-Wire E&M (Modes I, II, V)
- 2-and 4-wire Transmit Only

Impedance

- 600 Ω

TLP Levels

- -17dB to +7dB - Rx TLP (in 1 dB steps)
- +13dB, +6dB to -17dB Tx TLP (in 1 dB steps)

Signalling Modes

- E&M : E-lead originate device, detects M-lead
- Transmit Only

Other Features

- 2713 Hz Loopback capable

Part Numbers

Dual E&M Plug-In.....1200105L3
Dual E&M Plug-On1200106L3

COMMON SPECIFICATIONS

ENVIRONMENT

- Operating: 0° to 50°C (32 to 122°F)
- Storage: -20° to 70°C (-4° to 158°F)
- Relative Humidity: Up to 95%, non-condensing

PHYSICAL

- Modules Dimensions: 7.0" W x 10.0" D x 1.25" H
- Modules: Standard TSU Plug-in, plug-on or single card format
- Weight: 1.5 lbs