



# TSU ACE

## Low Cost T1/FT1 DSU/CSU

### Product Features

- Single V.35 DTE interface
- Nx56 or Nx64 operation for data rates to 1.536 Mbps
- Auto and Manual D4(SF) or ESF framing support
- B8ZS or AMI line coding
- Easy to use front panel keypad for unit configuration
- Remote configuration from host TSU via FDL or 8k in-band
- Local and remote loop-back capability
- Extensive built in test capabilities
- IEC standard power connection
- Industry-leading five-year North American warranty

The ADTRAN® TSU ACE™ is a low cost, full-featured T1/FT1 Data Service/ Channel Service Unit (DSU/CSU). The TSU ACE provides an interface between T1 or Fractional T1 service and the end user's Data Terminal Equipment (DTE) for applications such as LAN-to-LAN bridging, Frame Relay circuit termination and video-conferencing. The TSU ACE provides access to traditional dedicated point-to-point T1 services as well as network termination for Frame Relay.

Housed in a compact, durable plastic housing the TSU ACE supports synchronous data rates from 56 kbps to 1.536 Mbps at Nx56 or Nx64 kbps. A single V.35 physical interface provides a connection to the end user's DTE equipment.

For configuration and testing, the TSU ACE provides the capability for remote control from a host TSU through the T1 FDL channel. If the FDL channel is unavailable, the host TSU can use 8 kbps of the data traffic to provide configuration and control of the remote TSU ACE. The in-band control channel is used on an as-needed basis and is automatically controlled by the host TSU.

The TSU ACE responds to standard local and remote loopback commands from the telephone company central office. In addition, the user has several built-in test capabilities including V.54 remote loopback and 511 BERT test patterns. Complete configuration and performance data is available from the front panel keypad and two-line by 16 character LCD display.

The ADTRAN TSU ACE desktop unit also provides integrated keyholes in the bottom housing for wall mount applications or can be rackmounted using ADTRAN's custom designed 19" shelves.

ADTRAN provides several T1 DSU/CSUs for a variety of customer applications. Additional products in the TSU family include the TSU LT™, TSU ESP™, TSU 100™, TSU 120™, TDU 120™ and the TSU 600™. These T1/FT1 DSU/CSUs offer flexibility, modularity and end user configuration. The modular approach allows the ADTRAN TSU family to serve in point to point T1 applications with a mixture of voice, data and video.





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# TSU ACE

## Low Cost T1/FT1 DSU/CSU

## Product Specifications

### Network Interface

#### Line Rate

- T1/FT1 (1.544 Mbps)

### Physical Interface

- RJ48C: 8-Pin Modular

### Framing

- SF/ESF
- Auto Detection

### ESF Format

- AT&T 54016
- ANSI T1.403

### Line Code

- AMI/B8ZS

### Input Signal

- 0 to -36dB

### DSO Assignment

- Contiguous
- Alternating

### T1 Transmit Timing

- Network Loop Timed
- Internal
- DTE

### DTE Interface

- Bit Rate: 56 Kbps to 1.536 Mbps,  
Nx56 or Nx64 Kbps (N=1 to 24)

### Electrical

- CCITT V.35

### Mechanical

- V.35 (Winchester Type 34 pin)

### DTE Transmit Clock

- Automatic

### Performance Monitor & Data

- BPVs/CRCs, ES, SES, UAS, % AS,  
% EFSEC, Alarms, Errors

### Reports

- NI information stored for last 24 hours in  
15 minute increments

### PRMS

- ANSI Performance Report Messages  
(User selectable)

### Tests

- Local: Payload/Line Loopback, DTE Loopback
- Remote: Payload/Line Loopback, V.54 (DTE) Loopback
- Network: CSU and DSU loopbacks

### Built-In Test Patterns

- 511 (active DS0s) with error insert available
- 1:8 (all DS0s)
- All 1's (all DS0s)
- All 0's (all DS0s)

### Remote Configuration

#### Required Software

- ADTRAN T-Watch Pro™

#### Required Hardware (one of the following)

- TSU LT (1203060L1)
- TSU (1200060L2)
- TSU RM (1202077L1)
- TSU ESP (1200169L1)

### Agency Approvals

- FCC part 15, Class A, FCC Part 68,  
Industry Canada CS03, UL, CUL

### Environment

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

### Physical

- Dimensions: 1.5" H, 6.25" D, 9" W
- Weight: 2 lbs
- Power: 115 VAC, 60Hz, 5W

## Ordering Information

Equipment	Part #
TSU ACE	1202295L1
19" Rackmount Shelves	Part #
HRM-1MA Shelf - single unit	1200411L1
VRM-7MA Shelf - up to 7 units	1200417L1



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