



# TSU 100 & 100e

## Modular T1/FT1 DSU with Embedded SNMP

### Product Features

- T1/FT1 DSU/CSU
- Embedded SNMP management
- Integrated V.35 synchronous port with built-in dial backup capability (TSU 100e only)
- Single option module slot supports up to four additional DTE ports
- Customer interface modules available for analog voice, digital voice, DDS, Frame Relay, high-speed data and ISDN
- Front panel, back-lit LCD for configuration and monitoring
- Extensive network testing and troubleshooting
- T-Watch PRO™ and Telnet support for local and remote units
- Standard five-year warranty

The TSU 100™ and 100e™ are modular, full-featured T1/FT1 Multiplexers designed to support a wide range of end-user applications. Equipped with a synchronous V.35 DTE interface, the TSU 100(e) supports applications combining high-speed data with additional end user applications. As interface requirements increase, the flexibility of the TSU 100(e) benefits the user with modularity through its expansion slot. The TSU 100(e) provides complete monitoring and control of the T1 network with embedded simple network management protocol (SNMP) provided through a SLIP interface. The TSU 100e also has a built-in 10BaseT Ethernet interface. To support critical data applications, the built-in V.35 interface on the TSU 100e can be converted to provide dial backup functionality during T1 failure conditions. This feature is supported by the interface and is available using an optional V.35 “Y” cable.

Support for future growth, through the unit's single expansion slot, is a key feature of the TSU 100(e). The ability to combine many types of plug-in and plug-on modules provides extensive combinations of voice and data interfaces. Several data modules are available for single and dual-port access to Frame Relay, DDS or Basic Rate ISDN services provided over T1 facilities. Voice modules

are also easily integrated allowing access to analog voice circuits or additional PBX connections. As a fully functional T1 Multiplexer, the TSU 100(e) supports all mixed-mode networking applications providing termination for circuits containing voice, data and video channels.

Configuration and management of the TSU 100(e) is available through a variety of methods. The TSU 100(e) supports SNMP with Gets, Sets and Traps functionality through a built-in agent. ADTRAN MIBs support management for the TSU 100(e) and all installed expansion modules. For access to SNMP features, the TSU 100e has both a 10BaseT Ethernet and a SLIP (EIA-232) connection, while the TSU 100 has a SLIP interface only. In addition to SNMP, the unit utilizes the management capabilities found in optional software products from ADTRAN®. For Windows-based management, the TSU 100(e) is compatible with the popular T-Watch PRO™ software package. For more complex network management systems, ADTRAN's ADVISION™ operates on an SNMP enterprise management system such as HP OpenView™ and provides full GUI configuration and control via SNMP.



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## Product Specifications

### Network Interface

- **Line Rate:** 1.544 Mbps +/- 75 bps
- **Physical Interface:** RJ-48C, 8-pin modular
- **Framing:** D4(SF)/ESF, AT&T 54016 or ANSI T1.403
- **Line Code:** AMI/B8ZS
- **Input Signal:** 0 to -36dB
- **DS0 Assignment:** User selectable
- **T1 Transmit Timing:** Network, secondary NI, normal (CSU), internal or base DTE

### V.35 DTE Interface

- **Data Rate:** Nx56 or Nx64 kbps (N=1 to 24)
- **Electrical and Mechanical:** CCITT V.35, Winchester type, 34-pin
- **Clock Options:** Normal/inverted and internal/external

### Dial BackUp (TSU 100e only)

- Accessible on Base V.35 DTE port
- Requires optional V.35 "Y" cable
- **DBU Dialing:** DTR dialing
- **DBU Test:** Loopback to DCE, test dialup network, force dial backup

### Testing and Troubleshooting

#### Local

- Payload, line, and DTE loopback

#### Remote

- Payload, line, and DTE loopback
- **Fractional T1 Loopback:**  
Per ANSI T1.403-1995, annex B
- CSU Loopback (from Telco)

### Test Pattern Generator and Detector

- QRSS and 511 (selectable DS0s)
- All 0s and All 1s (Transmit Only)

### Performance Monitoring

- **Error Counts:** ES, SES, UAS, % AS, % EFSEC, Alarms and Error Rates
- **Reports:** NI information stored for last 24 hours (15-minute increments)
- **PRMS:** ANSI performance report messages

### Network Interface Test Jacks

- **Bantam Jacks:** TX, RX and RXMON

### Management Options and Interfaces

#### Control In/Control Out Ports

- **Interface:** EIA-232, PC serial port, modem or SLIP connection to router
- **Physical Connector:** RJ-45, modular 8-pin

#### SNMP/Telnet

- SLIP connection to router
- MIB II, RFC1213, and 1407 compliant
- ADTRAN Enterprise MIB for extended monitoring, 100e control/configuration and expansion module support

### 10BaseT Interface (100e only)

- **Interface:** IEEE 802.3 compliant, 10 Mbps
- **Physical Connector:** RJ-45, modular 8-pin
- **Service:** SNMP, Telnet, ICMP, ARP, PING, T-Watch PRO™

### Physical

- **Dimensions:** 3.125" H, 12.5" D, 8.5" W
- **Weight:** 4 lbs
- **Power:** 115 vAC, 60 Hz, 9 W

### Agency Approvals

- UL 1950, CUL, FCC Part 15 (Class A), and FCC Part 68

### Environment

#### Operating Temperature

- 0° to 45°C, (32° to 122°F)

#### Storage Temperature

- -20° to 70°C, (-4° to 158°F)

### Product Includes

- One 6 ft modular 8-pin to 8-pin cable
- Modular-to-female DB-25 adapter
- Modular-to-female DB-15 adapter
- Two 15 ft modular T1 cables
- User manual

## Ordering Information

Equipment	Part #
TSU 100e™	1202052L1
TSU 100™	1202052L2
V.35 "Y" Cable	1200196L1



TSU 100 Back



TSU 100e Back

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