TSU 120 & 120e

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 120e only)

- Integrated DSX-1 interface port for PBX connectivity

- 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

- Industry-leading five-year North American warranty

The TSU 120™ and 120e™ are modular, full-featured T1/FT1 multiplexers designed to support a wide range of end-user applications. Equipped with both a synchronous V.35 DTE interface and a DSX-1 PBX port, the TSU 120/120e supports applications combining digital voice and high-speed data. As interface requirements increase, the flexibility of the TSU 120/120e benefits the user with modularity through its expansion slot. The TSU 120/120e provides complete monitoring and control of the T1 network with embedded simple network management protocol (SNMP) provided through a SLIP interface. The TSU 120e also has a built-in 10BaseT Ethernet interface. To support critical data applications, the built-in V.35 interface on the TSU 120e 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 120/120e. 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 120/120e supports all mixed-mode networking applications providing termination for circuits containing voice, data and video channels.

Configuration and management of the TSU 120/120e is available through a variety of methods. The TSU 120/120e supports SNMP with Gets, Sets and Traps functionality through a built-in agent. ADTRAN™ MIBs support management for the TSU 120/120e and all installed expansion modules. For access to SNMP features, the TSU 120e has both a 10BaseT Ethernet and a SLIP (EIA-232) connection, while the TSU 120 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 120/120e 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.

ADTRAN®

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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, Base DSX-1 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 & Internal/External

Dial BackUp (TSU 120e 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

DSX-1 Interface
- **Line Interface:** DSX-1 per ANSI T1.102
- **Physical Interface:** RJ-48C, modular 8-pin
- **DSX-1 Framing:** D4(SF)/ESF
- **DSX-1 Line Code:** AMI/B8ZS
- **DSX-1 Line Length:** 0 to 655 ft in 133 ft steps

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 Carrier Network)

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 & DSX-1 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, 120e control/configuration and expansion module support

10BaseT Interface (120e 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, and user manual

Ordering Information

Equipment	Part #
TSU 120e	1202129L1
TSU 120	1202129L2
V.35 "Y" Cable	1200196L1

TSU 120 Back Panel

TSU 120e Back Panel