

**SPECIFICATIONS**

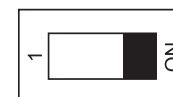
- Operating Modes** Frame Relay, Multilink Frame Relay, PPP, Multilink PPP, HDLC
- 8xT1 Interfaces** Supported Standards: AT&T TR 62411, AT&T TR 54016, Bellcore TR 194, ANSI T1.403  
Line Rate: 1.544 Mbps ±75 bps  
Line Codes: AMI or B8ZS  
Framing: D4 (SF) or ESF  
Input Signal: 0 to -36 dB (DS1); Support for Nx64 on all T1 interfaces (1 through 8)  
Line Build-Out: 0, -7.5, -15, -22.5 dB (long), 0 to 655 ft (short)  
Connector: RJ-48C
- 8xE1 Interfaces** Supported Standards: ITU-T G.703, ITU-T G.704 (CRC-4), ITU-T G.823, ITU-T G.797  
Line Rate: 2.048 Mbps ±50 PPM  
Line Codes: AMI or HDB3  
Framing: FAS/NFAS with optional CRC-4  
Input Signal: 0 to -30 dB (DS1) on all E1 interfaces (1 through 8)  
FE1 Line Rate: Channelized timeslot (in multiples of 64 kbps)  
Connector: RJ-48C
- Clock Source** Network, internal
- Diagnostics** Network Loopbacks: Line, payload, remote (T1 only)  
Test Pattern Generation and Detection: QRSS, 2<sup>15</sup> - 1, 2<sup>20</sup> - 1, 511, all ones, all zeros
- Compliance** FCC Part 15 Class A, EN 55022 Class A, EN 55024, EN 61000-3-2, EN 61000-3-3  
AS/ACIF S016, ETSI TBR 12/TBR 13, ACTA/FCC Part 68, IC CS-03  
UL/CUL 60950, EN 60950, IEC 60950, AS/NZS 60950
- Physical** Dimensions: 5.63-inch W x 8.63-inch D  
Operating Temperature: 0°C to 50°C  
Storage Temperature: -20°C to 70°C  
Relative Humidity: Up to 95 percent, noncondensing

**INSTALLATION INSTRUCTIONS**

1. Remove power from the unit.
2. Remove the cover plate from the wide option slot.
3. The NetVanta T1/E1 Wide Module is shipped with the T1/E1 mode switch (located on the circuit board) set to T1 (switch set to 1). If you require E1 functionality, using your thumbnail, slide the switch to the **ON** position as shown in the bottom figure to the right.
4. Slide the wide module into the wide option slot until the module is firmly seated against the chassis.
5. Secure the screws at both edges of the module.
6. Connect the cables to the associated device(s).
7. Complete the installation of the base unit.
8. Restore power to the unit.



Switch Set to T1 Mode



Switch Set to E1 Mode

**T1/E1 NETWORK (RJ-48C) CONNECTION PINOUTS**

Pin	Name	Description
1	R1	Receive data from the network - Ring 1
2	T1	Receive data from the network - Tip 1
3	—	Unused
4	R	Transmit data toward the network - Ring
5	T	Transmit data toward the network - Tip
6-8	—	Unused



**Important:** For additional details on product features, specifications, installation, and safety, refer to the appropriate Hardware Installation Guide on the **ADTRAN OS System Documentation CD** shipped with the base unit and available online at [www.adtran.com](http://www.adtran.com).

## OCTAL T1/E1 WIDE MODULE COMMON COMMANDS

### clock source [internal | line\*]

Configures the source timing used for the interface. Use the **no** form of this command to return to the default value.

- internal** Provides clocking using the internal oscillator.  
**line\*** Recovers clock from the T1/E1 circuit.

### loopback network [line | payload]

Initiates a loopback on the interface toward the network. Use the **no** form of this command to deactivate the loopback.

- line** Initiates a metallic loopback of the physical T1/E1 network interface.  
**payload** Initiates a loopback of the T1/E1 framer (CSU portion) of the T1/E1 network interface.

### remote-loopback

Configures the interface to respond to loopbacks initiated by a remote unit (or the service provider). Use the **no** form of this command to disable this feature. This setting is enabled by default.

### shutdown

Disables the interface (both physical and virtual) so that no data will be passed through. Use the **no** form of this command to turn on the interface and allow it to pass data. By default, all interfaces are disabled.

### show test-pattern

Displays results from test patterns inserted using the **test-pattern** command.

### snmp trap link-status

Controls the Simple Network Management Protocol (SNMP) variable *ifLinkUpDownTrapEnable* (RFC2863) to enable (or disable) the interface to send SNMP traps when there is an interface status change. Use the **no** form of this command to disable this trap.

### test pattern [clear | insert | ones | p215 | p511 | qrss | zeros]

Activates the built-in pattern generator and begins sending the specified test pattern. This pattern generation can be used to verify a data path when used in conjunction with an active loopback. Use the **no** form of this command to cease pattern generation.

- clear** Clears the test pattern error count.  
**insert** Inserts an error into currently active test pattern.  
**ones** Generates a test pattern of continuous ones.  
**p215** Generates a pseudorandom test pattern sequence based on a 15-bit shift register.  
**p511** Generates a test pattern of repeating ones and zeros.  
**qrss** Generates a test pattern of random ones and zeros.  
**zeros** Generates a test pattern of continuous zeros.

### tdm-group <group number> timeslot <DS0 range> speed 64

Creates a group of contiguous DS0s on this interface to be used during the cross-connect process.

- <group number> Identifies the created TDM group (valid range: 1 to 255).  
**timeslot <DS0 range>** Specifies the DS0s to be used in the TDM group. Can be entered as a single number representing one of the 24 T1 or 31 E1 channel timeslots or as a contiguous group of DS0s. (For example, **1-10** specifies the first 10 channels of the T1/E1.)  
**speed 64** Specifies the individual DS0 rate on the T1/E1 interface to be 64 kbps. The default speed is 64 kbps.

## OCTAL T1/E1 WIDE MODULE T1 COMMANDS

### coding [ami | b8zs\*]

Configures the line coding for the T1 physical interface. The settings must match the line coding supplied on the circuit by the service provider.

- ami** Configures the line coding for alternate mark inversion (AMI).  
**b8zs\*** Configures the line coding for bipolar eight zero substitution (B8ZS).

### fdl [ansi\* | att | none]

Configures the framing format for the T1 interface. This parameter should match the framing format supplied by your network provider. Use the **no** form of this command to return to the default value.

- ansi\*** Configure the FDL for ANSI T1.403 standard.  
**att** Configure the FDL for AT&T TR 54016 standard.  
**none** Disables FDL on this circuit.

### framing [d4 | esf\*]

Configures the framing format for the T1 interface. This parameter should match the framing format supplied by your network provider. Use the **no** form of this command to return to the default value.

- d4** Specifies D4 superframe (SF) format.  
**esf\*** Specifies extended superframe (ESF) format.

### lbo [long <-22.5, -15, -7.5, 0\*> | short <0-655>]

Configures the line build out (LBO) for the T1 interface. Use the **no** form of this command to return to the default value.

- long <-22.5, -15, -7.5, 0\*>** Configures the LBO (in dB) for T1 interfaces with a cable length greater than 655 feet. Choices are -22.5, -15, -7.5, and 0 dB.  
**short <0-655>** Configures the LBO (in feet) for T1 interfaces with a cable length less than 655 feet. Range is 0 to 655 feet.

### loopback remote line [fdl | inband]

Sends loopback code to the remote unit to initiate a line loopback. Use the **no** form of this command to send a loopdown code to the remote unit to deactivate the loopback.

**fdl** Uses the facility data link (FDL) to initiate a full 1.544 Mbps physical (metallic) loopback of the signal received by the remote unit from the network.

**inband** Uses the inband channel to initiate a full 1.544 Mbps physical (metallic) loopback of the signal received by the remote unit from the network.

### loopback remote payload

Sends loopback code to the remote unit to initiate a payload loopback. A payload loopback is a 1.536 Mbps loopback of the payload data received from the network maintaining bit-sequence integrity for the information bits by synchronizing (regenerating) the timing. Use the **no** form of this command to send a loopdown code to the remote unit to deactivate the loopback.

### remote-alarm [rai]

Specifies sending a remote alarm indication (RAI) in response to a loss of frame. Also prevents a received RAI from causing a change in interface operational status.

## OCTAL T1/E1 WIDE MODULE E1 COMMANDS

### coding [ami | hdb3\*]

Configures the line coding for the E1 physical interface. The settings must match the line coding supplied on the circuit by the service provider.

- ami** Configures the line coding for alternate mark inversion (AMI).  
**hdb3\*** Configures the line coding for high-density bipolar 3 (HDB3).

### framing [crc4]

Configures the framing format for the E1 interface. This parameter should match the framing format set on the external device. Use the **no** form of this command to return to the default value.

**crc4** Enables CRC-4 bits to be transmitted in the outgoing data stream. Received signal is checked for CRC-4 errors.

### remote-alarm [rai\* | ais]

Selects the alarm signaling type to be sent when a loss of frame is detected on the E1 receive signal. Use the **no** form of this command to disable all transmitted alarms.

- rai\*** Sends a remote alarm indication (RAI) in bit position 3 (Sa3).  
**ais** Sends an alarm indication signal (AIS) as an unframed all-ones signal  
**ts16**

Enables timeslot 16 multiframe to be checked on the receive signal. Use the **no** form of this command to disable timeslot 16.

\* Indicates the default value.



*This command list is an illustration of available commands. For complete command descriptions and default values, refer to the **ADTRAN Operating System Command Reference Guide** provided on your ADTRAN OS Documentation CD.*