

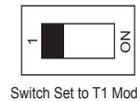
SPECIFICATIONS

Operating Modes	T1/FT1 of E1/FE1 Frame Relay, T1/FT1 or E1/FE1 PPP, T1/FT1 or E1/FE1 HDLC, T1/FT1 or E1/FE1 Multilink Frame Relay, T1/FT1 or E1/FE1 Multilink PPP
8xT1 Interfaces	Supported Standards: AT&T TR 62411, AT&T TR 54016, ANSI T1.403, Bellcore TR.194 Line Rate: 1.544 Mbps \pm 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 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 \pm 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 Connector: RJ-48C
Clock Source	Network, internal
Diagnostics	Network Loopbacks: Line, payload, remote Test Pattern Generation and Detection: QRSS, 2 ¹⁵ -1, 511, all ones, all zeros
Compliance	FCC Part 15 Class A, EN 55022 Class A, EN 61000-3-2, EN 61000-3-3 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: 14.29 cm (5.63 in) W x 21.91 cm (8.63 in) D Operating Temperature: 0°C to 50°C (32°F to 122°F) Relative Humidity: Up to 95 percent, noncondensing at 30°C (86°C) Non-Operating Temperature: -20°C to 70°C (-4°F to 158°F) Non-Operating Relative Humidity: Up to 95 percent, noncondensing at 30°C (86°F) Altitude: Up to 3.05 km (10,000 ft)

INSTALLATION INSTRUCTIONS

Warning For ProCurve Secure Router modules with outside plant connections, ensure that all cables are removed from the module before installing or removing it from the router chassis.

1. Remove power from the unit.
2. The 8xT1/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.
3. Slide the 8xT1/E1 wide module into the wide option slot until the module is firmly positioned against the chassis.
4. Secure the screws at both edges of the module.
5. Connect the cables to the associated device(s).
6. Complete the installation of the base unit.
7. Restore power to the unit.



Switch Set to T1 Mode



Switch Set to E1 Mode

Note For safety information for the routers and all modules, please refer to the safety and ESD precautions in the **ProCurve Secure Router Installation Guide** included in your router shipment.

T1/E1 NETWORK (RJ-48C) CONNECTION PINOUT

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

8XT1/E1 WIDE MODULE COMMON COMMANDS

clock source [line* | internal]

Configures the source timing used for the interface.

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

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 T1/E1 interface to respond to loopbacks initiated by a remote unit (or service provider). Use the **no** form of this command to disable this feature.

shutdown

Disables the interface (both physical and virtual) so that no data will pass 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 the results (including error count) from active test patterns.

snmp trap link-status

Controls the SNMP variable, *ifLinkUpDownTrapEnable* (RFC2863) to enable 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. 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. Display the error count using the **show test-pattern** command.
insert Inserts an error into currently active test pattern. Display the injected error result using the **show test-pattern** command.
ones Generates a pattern of continuous ones.
p215 Generates a pseudorandom test pattern sequence based on a 15-bit shift register.
p511 Generates a repeating pattern of ones and zeros.
qrss Generates a random pattern of ones and zeros.
zeros Generates a pattern of continuous zeros.

tdm-group <group#> timeslot <DS0 range> speed [64]

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

- <group#> Number label (1 to 255) to identify this TDM group.
 <DS0 range> Specifies the timeslots used in the TDM group. Enter as a single number (representing one of 24 T1 or 31 E1 channel timeslots) or as a contiguous group of channels. (For example, 1-10 specifies the first ten channels of the T1 or E1 circuit.)

- 64 (Optional) Specifies a DS0 rate of 64 kbps.

8XT1/E1 WIDE MODULE T1 COMMANDS

coding [ami | b8zs*]

Configures the line coding for the T1 physical interface. This setting must match the line coding supplied on the circuit by the service provider (or external equipment).

- ami** Specifies alternate mark inversion.
b8zs* Specifies bipolar eight zero substitution.

fdl [ansi* | att | none]

Specifies the format of the facility data link (FDL) channel on the T1 circuit.

- ansi*** Configures the FDL for ANSI T1.403.
att Configures the FDL for ATT TR 54016.
none No FDL standard specified.

framing [d4 | esf*]

Configures the framing format of the T1 interface.

- d4** Specifies D4 superframe (SF) T1 framing.
esf* Specifies Extended SF T1 framing.

lbo [long <0* | -7.5 | -15 | -22.5> | short <0 to 655>]

Sets the line build out (in dB or feet) for the T1 Interface. Use the **lbo long** command for T1 interfaces with a cable length greater than 655 feet. Use the **lbo short** command for T1 interfaces with a cable length less than 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 loopback (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 loopback (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 at the far end. 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

Selects the alarm signaling type to be sent when a loss of frame is detected on the T1 receive signal. Use the **no** form of this command to disable all transmitted alarms.

- rai*** Sends 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.

8XT1/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.
hdb3* Configures the line coding for high-density bipolar 3.

framing [crc4]

Configures the framing format of the E1 interface. This setting must match the framing format provided by the service provider (or external equipment).

- crc4** Enables CRC4 framing.

loop-alarm-detect

Enables detection of a loop alarms on the E1 interface. Use the **no** form of this command to disable loop alarm detection. This setting is enabled by default.

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 response to a loss of frame. Also prevents a received RAI from causing a change in interface operational status.

- 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.

Note

*This command list is an illustration of available commands. For complete command descriptions and default values, refer to the **SROS Command Line Interface Reference Guide** provided on your ProCurve SROS Documentation CD.*