



## SPECIFICATIONS

**Operating Modes** E1/FE1 Frame Relay, E1/FE1 PPP

**E1/FE1 Interface** Line Rate: 2.048 Mbps  $\pm$ 50 PPM  
Line Code: AMI or HDB3  
Framing: FAS with optional CRC-4  
FE1 Line Rate: Timeslot, channelized (in multiples of 56/64 kbps)  
Receiver Sensitivity: -30 dB  
Connector: RJ-48C

**G.703 Interface** Line Interface: Per ITU-T G.703  
Receiver Sensitivity: -30 dB  
Line Rate: 2.048 Mbps,  $\pm$ 50 PPM  
Capacity: 1 to 31 timeslots  
If timeslot 16 signaling is used on the drop port, a maximum of 15 timeslots can be mapped to router (1 to 15 or 17 to 31).  
Line Code: AMI or HDB3  
Framing: FAS with Optional CRC-4  
Connector: RJ-48C

**Clock Source** Network, Internal, and Through

**Diagnostics** Test Pattern Generation and Detection: QRSS, 511  
Network loopbacks  
Alarm generation and detection  
Network performance data (15 minutes and 24 hours)

**Standards** FCC Part 15 Class A, EN 55022 Class A, EN 55024, EN 61000-3-2, EN 61000-3-3  
ACIF S016, ETSI TBR 12/TBR 13  
EN60950, AS/NZS 60950, IEC 60950  
ITU G.703, ITU-T G.704 (CRC-4), ITU-T G.823, ITU-T G.797

**Physical** Dimensions: 2.75 inch W x 4.25 inch D  
Operating Temperature: 0°C to 50°C  
Storage Temperature: -40°C to 85°C  
Relative Humidity: Up to 95 percent, noncondensing

## INSTALLATION INSTRUCTIONS

1. Remove power from the unit.
2. Slide the Network Interface Module (NIM) into the option slot until the NIM is firmly seated against the front of the chassis.
3. Secure the pins at both edges of the NIM.
4. Connect the cables to the associated device(s).
5. Complete the installation of the base unit.
6. Restore power to the unit.

## WAN-E1 NETWORK (RJ-48C) CONNECTION PINOUT

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

## G.703 (RJ-48C) CONNECTION PINOUT

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



*NetVanta modules should be installed only in NetVanta Series products.*

## DBU CONNECTION PINOUT

Pin	Name	Description
1-2	—	Unused
3	R1	Network-Ring1
4	R	Network-Ring
5	T	Network-Tip
6	T1	Network-Tip1
7-8	—	Unused



*An optional Dial Backup Interface Module (DIM) is required for dial backup applications.*

## E1/FE1 + G.703 NIM COMMANDS

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

Configures the source timing used for the interface.

<b>line*</b>	Recovers clock from the E1 circuit.
<b>internal</b>	Provides clocking using the internal oscillator.
<b>through</b>	Recovers clock from the circuit connected to the G.703 interface.

### coding [ami | hdb3\*]

Configures the line coding for the E1 or G.703 physical interface. This setting must match the line coding supplied on the circuit by the service provider.

<b>ami</b>	Specifies Alternate Mark Inversion.
<b>hdb3*</b>	Specifies High-Density Bipolar 3.

### framing [crc4]

Configures the framing format of the E1 interface.

<b>crc4</b>	Enables CRC-4 framing.
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### loop-alarm-detect

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

### loopback network [line | payload]

Initiates a loopback on the interface toward the network. Deactivate using the **no loopback network** command.

<b>line</b>	Initiates a metallic loopback of the physical E1 network interface.
<b>payload</b>	Initiates a loopback of the E1 framer (CSU portion) of the E1 network interface.

### loopback remote v54

Initiates an E1 remote loopback test (with a V54 loopback pattern). Deactivate using the **no loopback remote v54** command.

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

Selects the alarm signaling type to be sent when a loss of frame is detected on the E1 receive signal.

<b>rai*</b>	Specifies Remote Alarm Indication.
<b>ais</b>	Specifies Alarm Indication Signal.

### remote-loopback

Enables acceptance of remote loopback requests on this E1 interface. Deny acceptance using the **no remote-loopback** command. This setting is enabled by default.

### sa4tx-bit [0 | 1\*]

Assigns a value to the Tx spare bit in position 4.

### show test-pattern

Shows current test pattern error count.

### shutdown

Turns off the interface. The **no** version of this command turns the interface on and allows it to pass data.

### snmp trap link-status

Enables the unit interface to send SNMP traps when there is an interface status change and controls the SNMP variable, *ifLinkUpDownTrapEnable*.

### tdm-group <group#> timeslots <DS0 range> speed [56 | 64\*]

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

<group#>	Identifies this TDM group using a number label.
<DS0 range>	Identifies DS0s in this group in the form: <starting DS0 - ending DS0>. Valid range is 1 through 31.
<b>56   64*</b>	Optional. Specifies a channel rate of 56 kbps or 64 kbps.

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

Initiates sending the specified test pattern.

<b>clear</b>	Clears the test pattern error count.
<b>insert</b>	Inserts an error into currently active test pattern.
<b>ones</b>	Generates a pattern of continuous ones.
<b>p511</b>	Generates a repeating pattern of ones and zeros.
<b>qrss</b>	Generates a random test pattern.
<b>zeros</b>	Generates a pattern of continuous zeros.
<b>ts16</b>	

Enables timeslot 16 multiframe to be checked on the receive signal.

\* Indicates default values.