encore e!networks™

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The BANDIT III E&M Signaling Chassis

The BANDIT III™ E&M signaling chassis (Figure 2-1) is a full-featured tabletop model in the BANDIT™ family, providing both IPsec/SLE VPNs and legacy-protocol support.[1] In addition to E&M signaling for PCM voice channels, the BANDIT III E&M signaling chassis offers all features of the standard BANDIT III, including enhanced performance, a full choice of connections for the expansion port, and support of up to 30 simultaneous VPN tunnels.

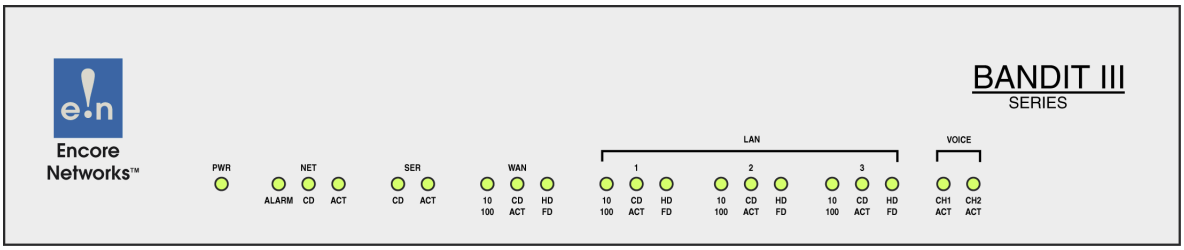

Figure 2-1. BANDIT III™ Chassis, E&M Signaling Model, Front Panel

The BANDIT III E&M signaling chassis contains LED indicators for the following items:

- Power
- Alarm state
- Carrier detect (CD) and activity (ACT) on a card in the expansion port
- Carrier detect (CD) and activity (ACT) on the DB25 serial port
- 10base-T/100base-T (10/100), CD/ACT, and half-duplex/full-duplex (HD/FD) on the WAN port
- 10/100, CD/ACT, and HD/FD on three LAN ports
- Channel 1 (CH1)/ACT on the E&M card's analog voice port
- Channel 2 (CH2)/ACT on the E&M card's analog voice port

The BANDIT III E&M signaling chassis can hold one or two wireless cards for CDMA, EVDO CDMA, GPRS GSM, or EDGE GSM wireless networks. One card is internal; the other can be installed in the expansion slot. Each wireless card for the BANDIT III includes an antenna. (A plastic chassis can use an internal antenna or an external antenna but not both; a metal chassis uses only an external antenna.) However, when used as a terminal in a PCM voice network, the

1. In the BANDIT documents, "E&M" is understood to represent "earth and magneto" (in other terms, ground and battery). "E&M" can also be understood as "ear and mouth" and as other phrases.

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BANDIT III E&M signaling chassis uses a CSU/DSU card in its expansion slot. In this case, the BANDIT III can use only an internal wireless card.

The BANDIT III E&M signaling chassis (Figure 2-2) is available for 12, 24, 48, or 130 volts DC input power, or for 110/220 volts AC input power. When you order a BANDIT III chassis, you specify the type of input power it will use.

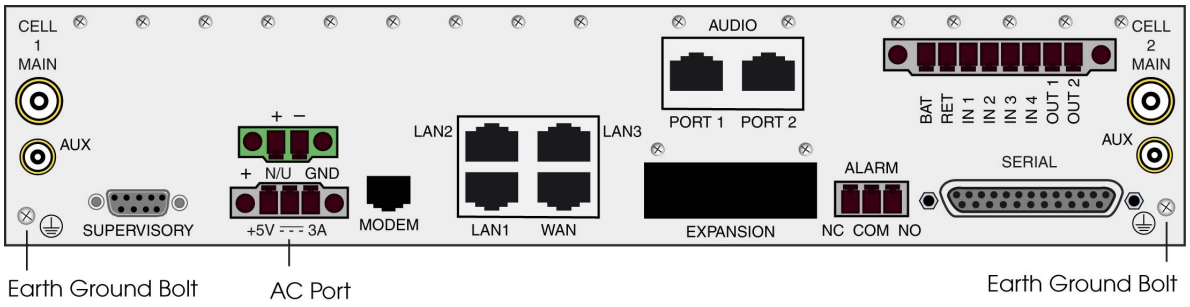

Figure 2-2. BANDIT III™ Chassis, E&M Signaling Model, Rear Panel

The following items are on the back of the BANDIT III E&M signaling chassis (Figure 2-2):

- Two ports labeled "Cellular," for antennas for wireless cards, to support connection to wireless networks
- Two ports labeled "Auxiliary," for second antennas (diversity antennas) for wireless cards
- Two earth ground connection screws
- A DB9 supervisory port for management
- A connector for AC input power, or a connector for DC input power, or both (for a power failover option)

  Note: A DC-powered BANDIT III chassis can also have a port for AC input power; you can choose whether to connect an AC power supply to the AC port. If you connect both the DC port and the AC port to input power sources, the chassis will use the power source that you connect first as the primary power source. The other power connection will be on standby.

  If the primary power source fails, the standby power source immediately provides power to the chassis and becomes the new primary power source. It remains the primary power source even when the original primary power source is restored. That restored power source becomes the new standby power source.

  Consult your network administrator to determine whether your BANDIT III DC-powered chassis will use only a DC input power configuration or will use a failover DC and AC input power configuration.
- A V.90/V.92 modem port
- Four RJ45 10/100-Base-T Ethernet ports:
  - One WAN port, typically used as the network uplink to the host
  - Three LAN ports, typically connected to local IP devices

  Note: The three Ethernet LAN ports on the BANDIT III constitute a LAN switch; you can use them to create a small network.

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- An expansion slot for a card that provides an additional port. The expansion slot can hold one of several expansion cards for specific interfaces:
  - Ethernet port, for a DMZ LAN
  - DB25 serial port, configurable as RS-232, RS-449, V.35, or X.21
  - 56k CSU/DSU port
  - T1/E1 CSU/DSU port
  - Dual-port T1/E1 CSU/DSU port, with drop-and-insert capability
  - A second wireless card; this can be the same type (CDMA, EVDO CDMA, GPRS GSM, or EDGE GSM) as the internal wireless card or a different type from the internal wireless card.

  Note: For more information about ports for the expansion slot, see *Ports in the BANDIT Products*.
- An alarm port
- A DB25 serial port
- 8 relay ports, for relay signaling
- 2 audio ports, for voice connection

Note: The audio ports and the relay ports are on the E&M card. For information about those ports, see *Specifications for the Four-Wire E&M Card*.

Warning: Always follow safety procedures when working with electrical equipment. See *Basic Safety Guidelines*.

The BANDIT III E&M signaling chassis uses an internal E&M card for pulse-code-modulated (PCM) voice. The chassis uses a CSU/DSU card, a T1/E1 CSU/DSU card, or a dual-port T1/E1 CSU/DSU card (in the BANDIT III's expansion slot) to carry encapsulated voice packets across a network.

The E&M card has two audio ports for analog connection to one or two telephones or private branch exchanges (PBXs). The BANDIT digitizes the voice and encapsulates the voice packets over another protocol.

The encapsulated packets travel through the network until they reach a BANDIT III on the other side of the network. That BANDIT III opens and delivers the voice packets to a PBX. The PBX sends the voice packets on the routes to their destinations.

The BANDIT III supports E&M signaling Type I through Type V. You must set the DIP switches on the BANDIT III's E&M card to support the E&M signaling that each audio port on the E&M card will use. See *Changing the DIP Switch Settings on the Four-Wire E&M Card*.