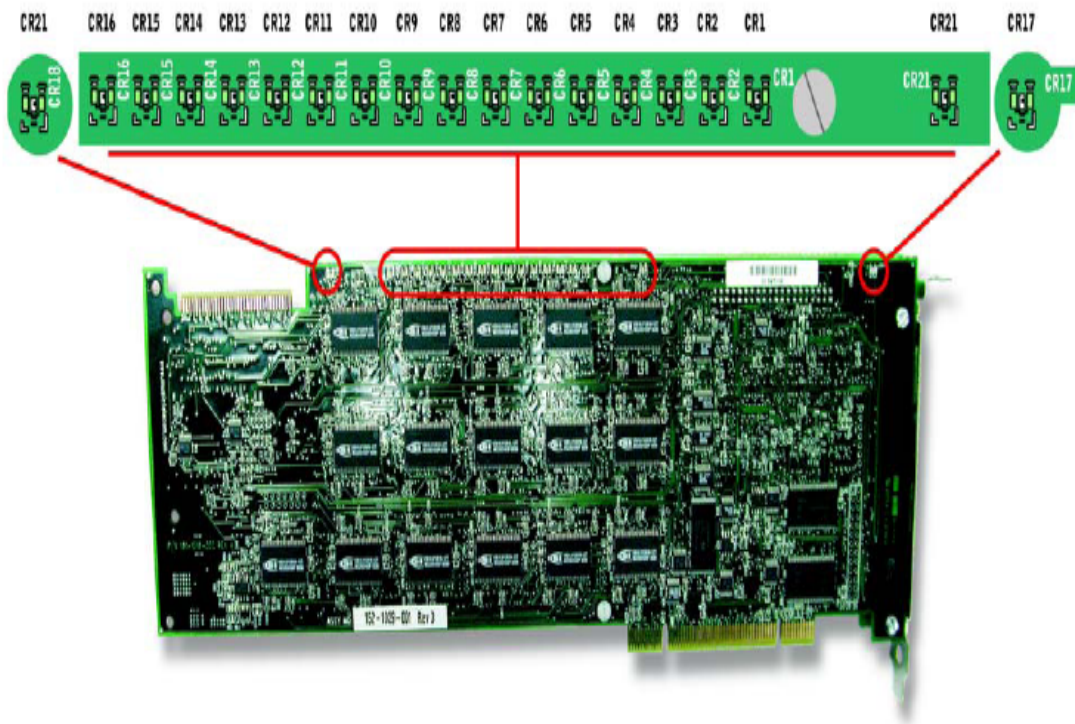


BOARD STATUS LEDs

Nineteen board status LEDs are the SmartWORKS DT. The location of each LED is shown in Figure 10-5.

Figure 10-5: SmartWORKS DT LEDs



CR1 - CR16

These LEDs indicated that the DSPs have started. Each DSP turns its LED "ON" to indicate a successful initialization.

CR17

Three stage power and board initialization monitoring LED with the following occurrences:

- "ON," indicating 3.3V power is supplied and the board is ready for the driver to be loaded.
- "OFF," indicating the driver has successfully loaded and the board has initialized.
- "BLINKING," indicating the board initialization process has failed or board panic has occurred. **Note:** Invoking the MTBlinkBoard() API function causes the LED to blink. The total number of times it blinks equals the board number + 1. Use this function to match board location in a chassis with its board number.

CR18

This LED indicates that the TDM clock has been terminated. "ON" indicates TDM clocks are being terminated. **Note:** to terminate clocks jumper J8 must be closed.

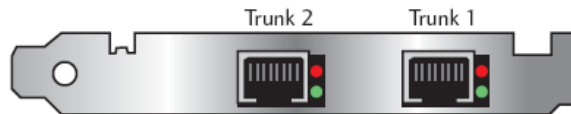
CR21

This LED indicates the state of the CPU. This LED is turned ON when the local CPU is started by the driver.

TRUNK STATUS LEDs

Two Trunk Status LEDs per trunk are included to help troubleshoot installation problems. As shown below, they are located next to the cable connections.

Figure 10-6: Trunk Status LED Locations



The following table shows possible states of LEDs and describes the state of trunk interface.

TABLE 10-7: SMARTWORKS DT TRUNK STATUS LED MEANINGS





Lights	Red	Green	Status
	OFF	OFF	Framer Reset

TABLE 10-7: SMARTWORKS DT TRUNK STATUS LED MEANINGS

Lights	Red	Green	Status
	OFF	ON	Normal Operation
	ON	ON	Signal Present & Alarm(s) Present
	ON	OFF	No Signal, Framing Started

Making Connections

The following sections cover connecting the DT to T1 and E1 trunks, as well as, voice recording applications.

CONNECTING THE DT TO T1 AND E1 TRUNKS

SYSTEM CONFIGURATION

The SmartWORKS DT is a dual Digital Terminate board, which means the board terminates the trunk. The trunk typically connects to the Central Office (CO). However, for service observance applications the trunk is connected to the Customer Premises Equipment (CPE) i.e. PBX.

NOTE: When installing on an external network without homo approval, a CSU/DSU is required between the CO and the DT card.

LINE INTERFACE CHARACTERISTICS

The SmartWORKS DT has two trunk interfaces. The list below details the characteristics of each trunk interface.

- Connectors: two RJ-45 (located on its front bracket)
- Interface type: balanced
- Characteristic Impedance for Input and Output in T1 or E1 mode: 110 Ω

The characteristic impedance is 110 Ω , which meets T1 and E1 requirements. In T1 mode, the interface supports line AMI and B8ZS coding as well as SF and ESF framing. In E1 mode, the interface supports line AMI and HDB3 coding as well as basic G704 and CRC4 framing.

Instead of balanced lines, some European networking and telephony trunks use unbalanced lines (Coaxial cable). In this case, to convert from Coax to twisted pair (RJ-45) a Dual BALUN converter is required.

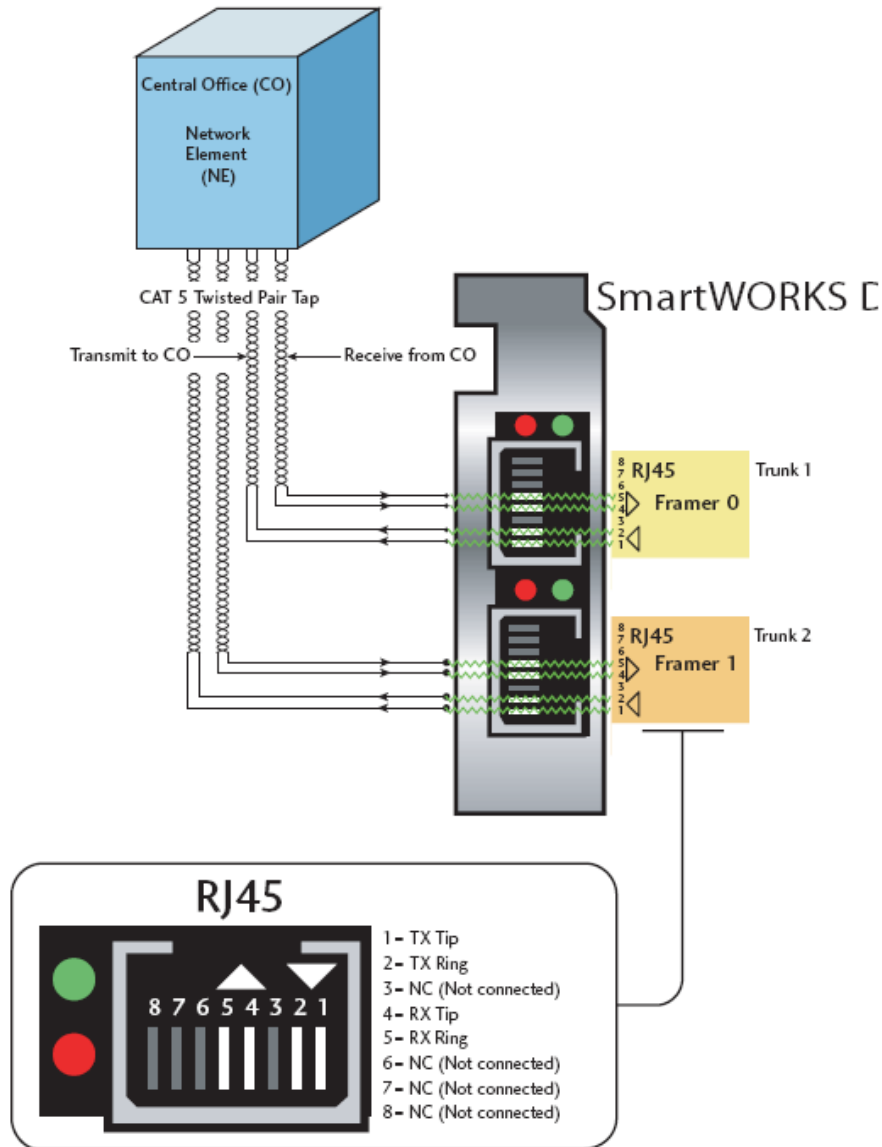
For more information, see [Figure 10-8 on page 128](#).

T1 AND E1 TRUNKS

When the DT board was originally introduced, a crossover cable was required. This is illustrated in the wiring diagram on the following page. Later versions of the DT board (DT6409TE and DT3209TE) do not require a crossover cable, as the Transmission and Receive lines have been re-positioned. A diagram of the newer RJ45 connector is provided following the wiring diagram shown below.

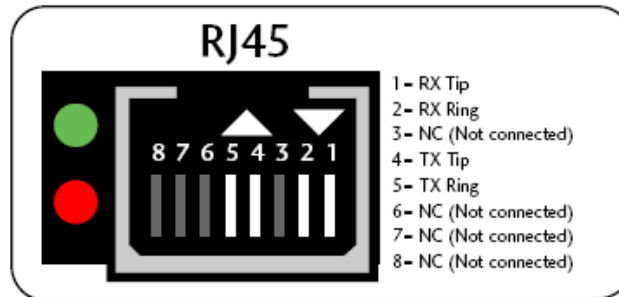
Figure 10-8: DT T1/E1 Wiring Diagram

SmartWORKS DT Wiring Diagram for T1/E1 Trunk



The following diagram shows the RJ45 connector that is implemented on newer versions of the DT card (DT6409TE, and the DT3209TE). A crossover cable is not required when installing these boards.

Figure 10-9: RJ45 Connector - DT6409TE and DT3209TE



SIGNALING BITS EXTRACTION AND INSERTION

To allow custom interfacing with foreign protocols, the SmartWORKS DT provides signaling bits extraction and insertion. When this feature is enabled, the user application reads the current state of ABCD signaling bits' and ABCD signaling bits are extracted and presented for use upon a state change.

Signaling bits extraction is disabled by default. Hence, user applications must enable ABCD signaling when it is to be used. To enable ABCD signaling extraction, invoke `MTEnableFramerABCDSignalingEvent()` event.