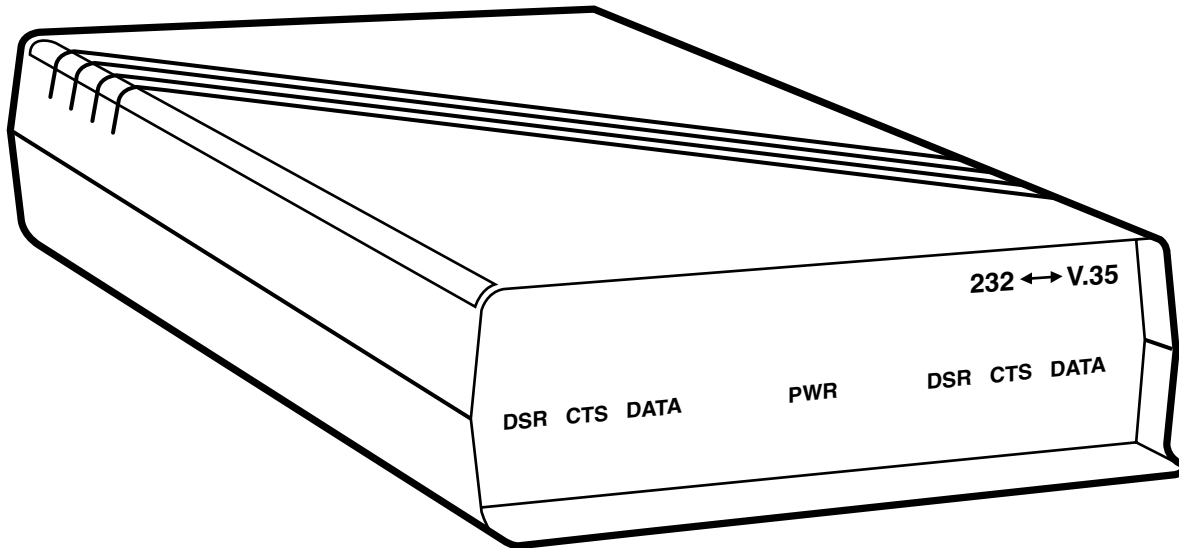




RS-232 ↔ V.35 Interface Converter



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**FEDERAL COMMUNICATIONS COMMISSION
RADIO FREQUENCY INTERFERENCE STATEMENT**

This equipment generates, uses, and can radiate radio frequency energy and if not installed and used properly, that is, in strict accordance with the manufacturer's instructions, may cause interference to radio communication. It has been tested and found to comply with the limits for a Class A computing device in accordance with the specifications in Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when the equipment is operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference, in which case the user at his own expense will be required to take whatever measures may be required to correct the interference.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

"This digital apparatus does not exceed the Class A limits for Radio noise emission from digital apparatus set out in the Radio Interference Regulation of the Canadian Department of Communications."

"Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la classe A prescrites dans le Règlement sur le brouillage radioélectrique édicté par le ministère des Communications du Canada."

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1.0 Specifications

Speed —	Up to 64 Kbps
UL —	E87344
CSA —	LR58206
MTBF —	125,905 hours
Interface —	RS-232, V.35; both interfaces DTE/DCE selectable
Connectors —	RS-232: DB25 male; V.35: (1) 34-pin female "M" block
Environmental —	Maximum storage temperature: 70° C Maximum operating temperature: 50° C
Power —	115 VAC, 60 Hz, 13 watts (230-VAC model available on request)
Size —	Standalone: 2.3"H x 8"W x 11.9"D (5.8 x 20.3 x 30.2 cm) Rackmount: Card: 1.2"H x 7.5"W x 10.5"D (3 x 19.1 x 26.7 cm)
Weight —	2 lb. (0.9 kg)

2.0 Introduction

The RS-232↔V.35 Interface Converter comes in standalone units for 115-VAC and 230-VAC operation. A card version is also available for rackmounted units. The Card is used for both 115-VAC and 230-VAC operation.

The RS-232↔V.35 Interface Converter provides bidirectional conversion of all the commonly used V.35 and RS-232 signals. The unit is designed for use with one port configured as Data Terminal Equipment (DTE) and the other port as Data Communications Equipment (DCE). You should not operate the unit with both ports configured as DCE or both ports configured as DTE.

The unit has two jumper-selectable configurations. One connects RS-232 modem equipment to V.35 terminal equipment (DTE to DCE). The other connects V.35 modem equipment to RS-232 terminal equipment (DCE to DTE). Both configurations allow bidirectional data transfer. Figure 2-1 shows a typical application of the RS-232↔V.35 Interface Converter.

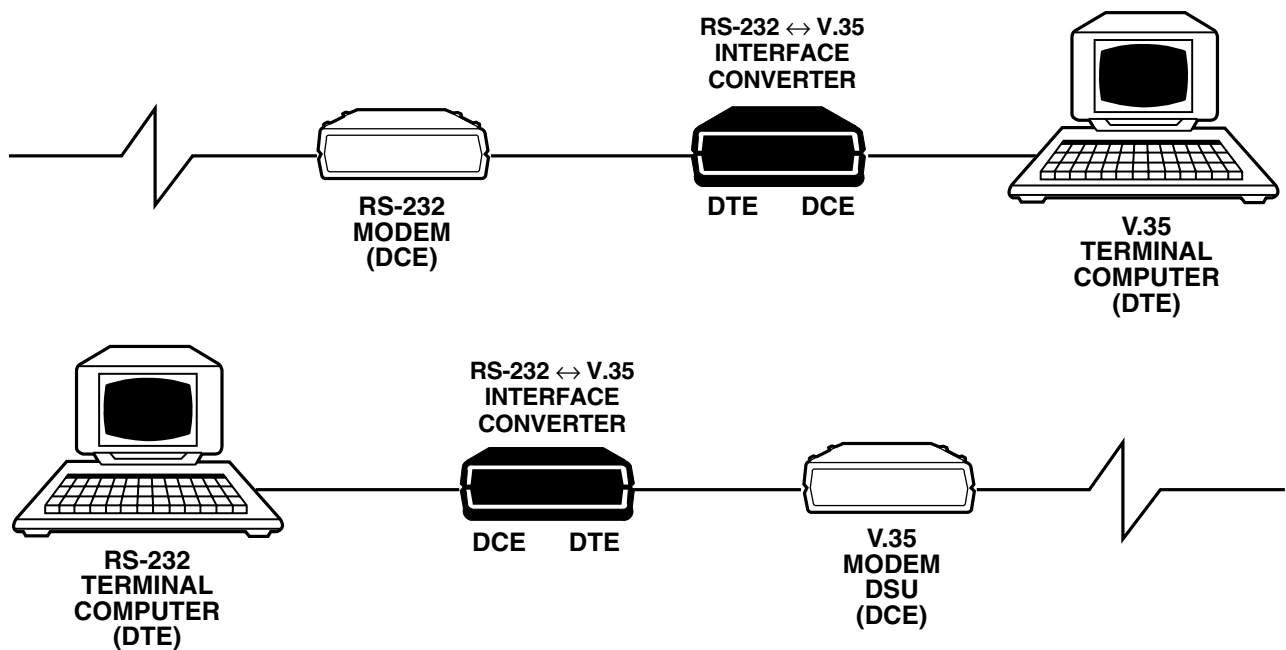


Figure 2-1. Typical Application of the RS-232↔V.35 Interface Converter.

3.0 Installation

To install the unit, follow the steps below and refer to Figure 3-1.

1. Attach the cable from the RS-232 device to the 25-pin male connector (J1) on the rear panel of the RS-232↔V.35 Interface Converter.
2. Attach the cable from the V.35 device to the 34-pin female connector (J2) on the rear panel of the RS-232↔V.35 Interface Converter.

3. Plug the 4-pin power cord into the receptacle on the rear panel of the case. Do not plug the power module into an AC outlet until after the DIP shunts and Strap W7 are set as explained in Sections 3.1 and 3-2.

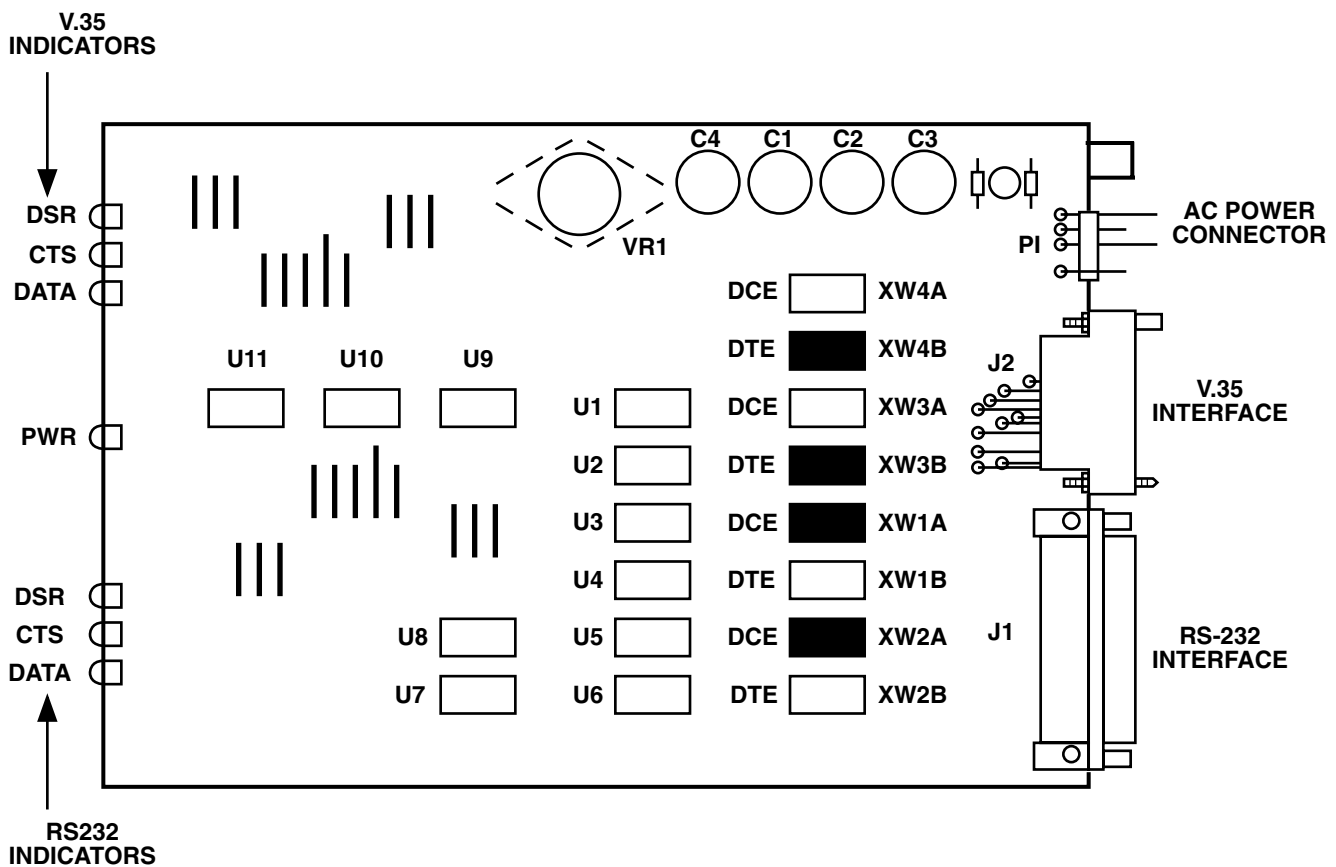


Figure 3-1. Strap Selections for RS232 DCE ↔ V.35 DTE.

3.1 DIP Shunt Settings

The RS-232↔V.35 Interface Converter has two jumper-selectable configurations determined by DIP shunt settings located inside the unit on the printed circuit board. Figure 3-1 shows how to configure the RS-232 side of the converter for DCE and the V.35 side as DTE. This configuration should be used when connecting RS-232 DTE equipment to V.35 DCE equipment, such as a computer to a CSU/DSU.

Figure 3-2 shows the converter configured for RS-232 DTE and the V.35 side as DCE. This configuration should be used when connecting RS-232 DCE equipment to V.35 DTE equipment.

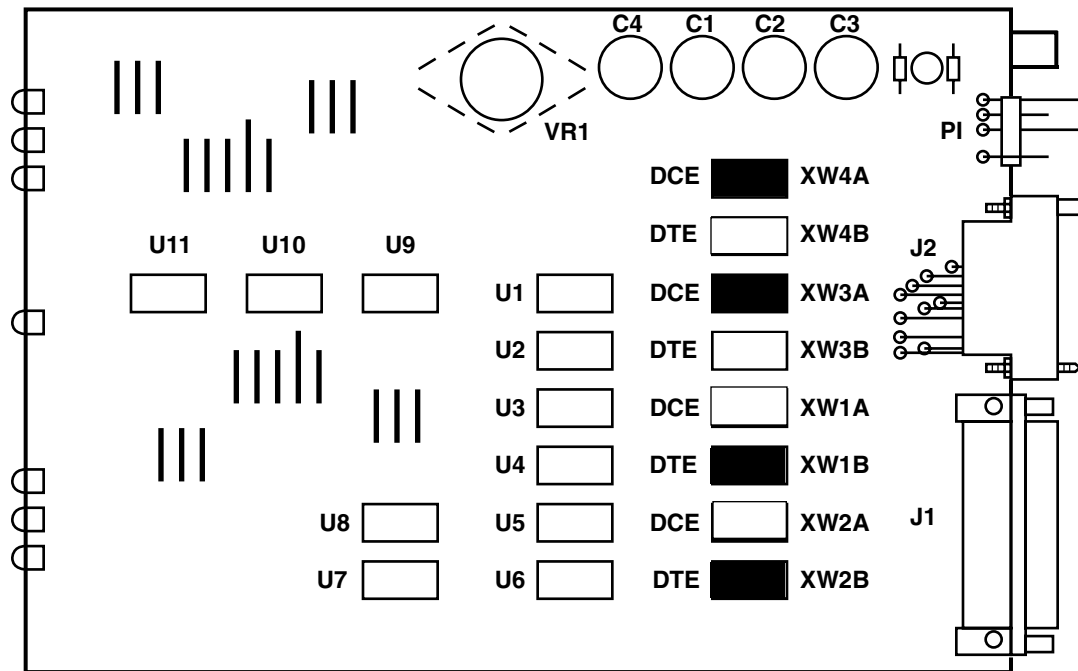


Figure 3-2. Strap Selections for V.35 DCE ↔ RS232 DTE .

Table 3-1. Setting the DIP Shunts.

RS-232 INTERFACE		V.35 INTERFACE	
DCE/DTE	Put Shunt In:	DCE/DTE	Put Shunt In:
DCE	XW1A and XW2A	DCE	XW3A and XW4A
DTE	XW1B and XW2B	DTE	XW3B and XW4B

3.2 Terminal Ready Option Strap W7

NOTE

All printed circuit boards identified with a date code of 8926 and later have the revised connector with Pin H supported. In earlier models, Strap W7 controls Pin 20 only.

Strap W7 controls the Terminal Ready (Pin H) and DTR (Pin 20) function. When the RS-232 port is configured as DCE, and the V.35 port is configured as DTE, a jumper over B and C forces Terminal Ready (Pin H) out of the V.35 port (default). The jumper between A and B passes DTR (Pin 20) to Terminal Ready (Pin H).

With the RS-232 port configured as DTE and the V.35 port configured as DCE mode, a jumper from B to C forces DTR (Pin 20) out of the RS-232 port (default). A jumper between A and B passes terminal ready (Pin H) to DTR (Pin 20).

NOTE

Due to the fact that the LEDs indicate only incoming signals, the true status of DTR out will not be reflected by the LED when strap W7 is placed in the B-C position. Refer to the diagrams in Section 4.2.

3.3 LEDs

The RS-232↔V.35 Interface Converter is equipped with seven LED indicators located on the front panel. The PWR LED illuminates when power is applied to the unit.

The three left-most LEDs indicate the state of the **INCOMING** V.35 signals. If the V.35 interface is configured as **DTE**, the LEDs have the following meanings:

- **DSR** — Reflects the state of DSR (Pin E)
- **CTS** — Indicates the CTS (Pin D)
- **Data** — Indicates Rx data (Pins R and T)

If the V.35 interface is configured for **DCE**, the LEDs have the following meanings:

- **DSR** — Not connected, off.
- **CTS** — Indicates the status of RTS (Pin C)
- **Data** — Indicates Tx data (Pins P and S)

The three right-most LED indicators show the state of the **INCOMING** RS-232 signals. If the RS-232 interface is configured as **DTE**, the LEDs have the following meanings:

- **DSR** — Indicates the state of DSR (Pin 6)
- **CTS** — Indicates the state of CTS (Pin 5)
- **Data** — Indicates Rx data (Pin 3)

If the RS-232 interface is configured as **DCE**, the LEDs have the following meanings:

- **DSR**— Indicates the state of DTR (Pin 20)
- **CTS** — Indicates the state of RTS (Pin 4)
- **Data** — Indicates Tx data (Pin 2)

4.0 Ground Strap and Pin Connections

4.1 Ground Strap

Signal grounds (Pin 7 on the RS-232 interface and Pin B on the V.35 interface) are connected to each other but not connected to chassis ground (Pin A). However, for applications requiring the grounds at a common reference point, the grounds can be connected by installing a jumper strap across W1 located at the rear of the printed circuit board between J1 and P1.

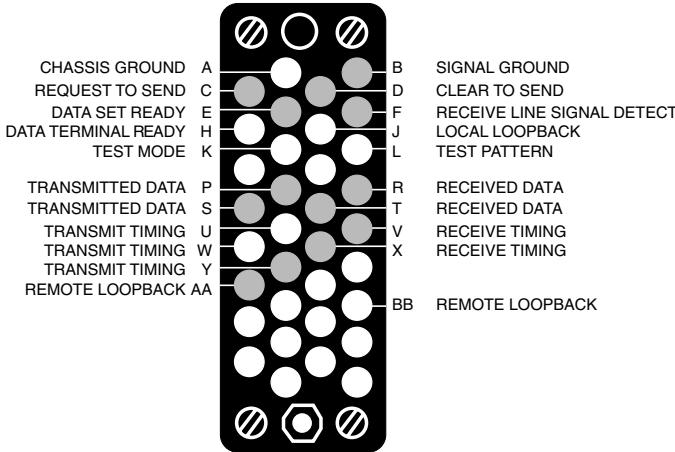


Figure 4-1. V.35 Interface (male).

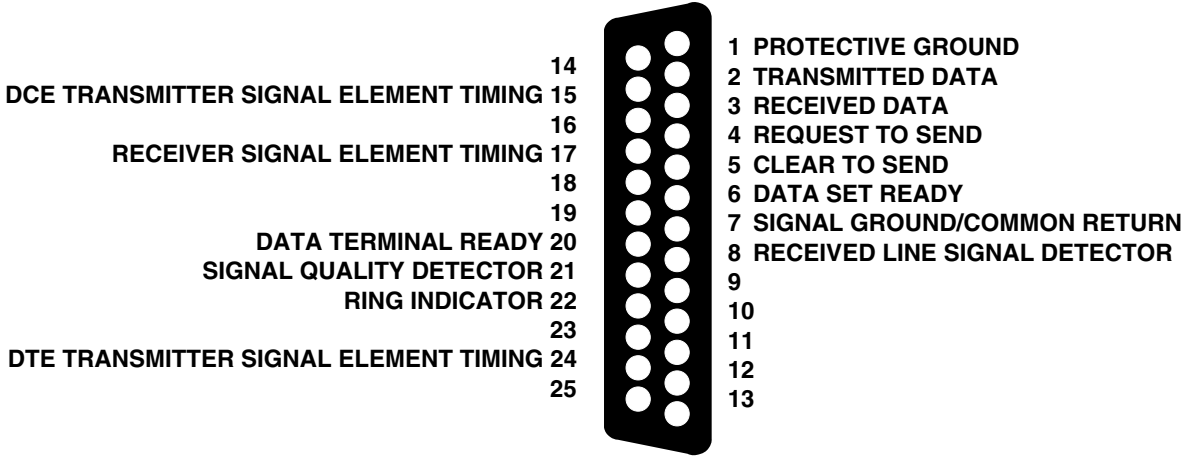


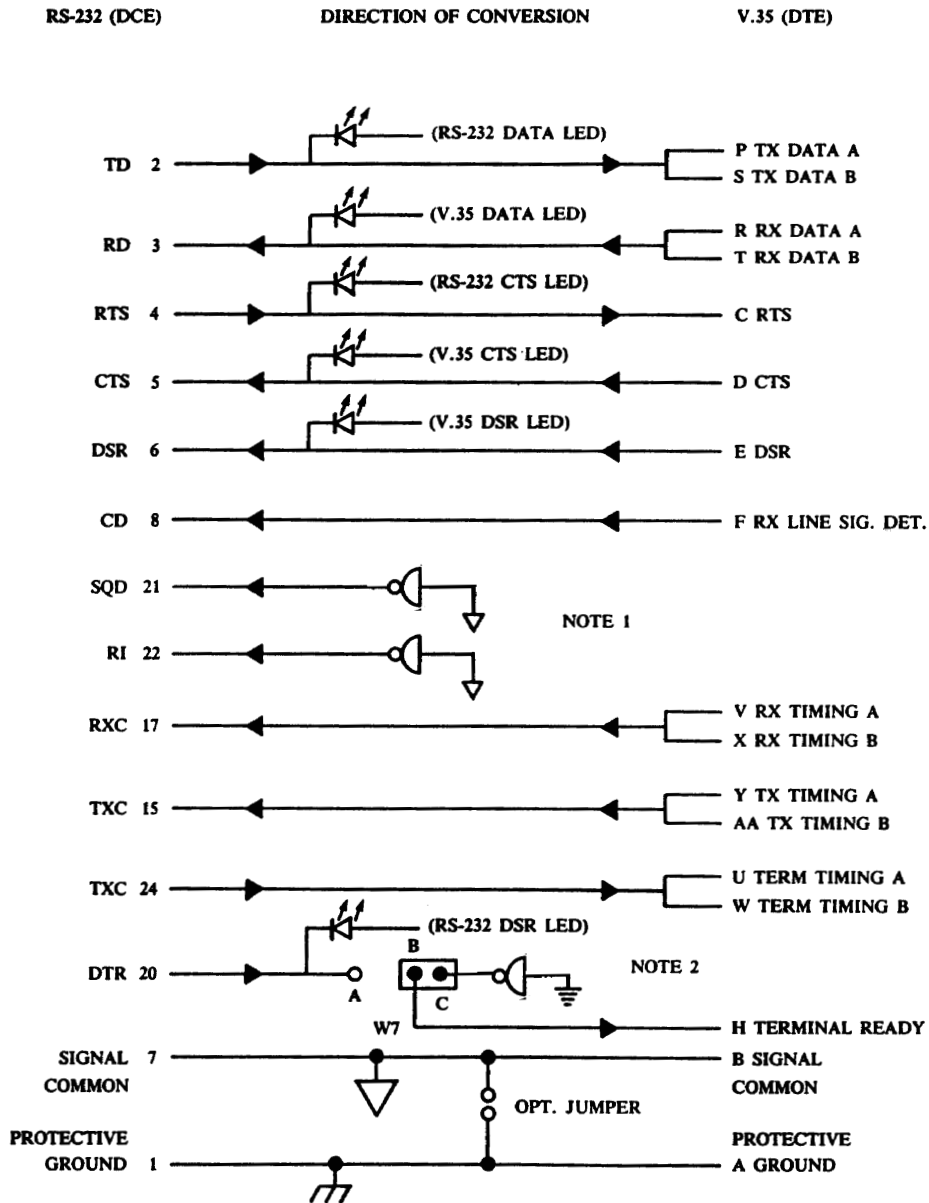
Figure 4-2. RS-232 Interface (male).

RS-232 ↔ V.35 INTERFACE CONVERTER

4.2 Pin Connections

The pin connections for RS-232 DCE to V.35 DTE are shown below.

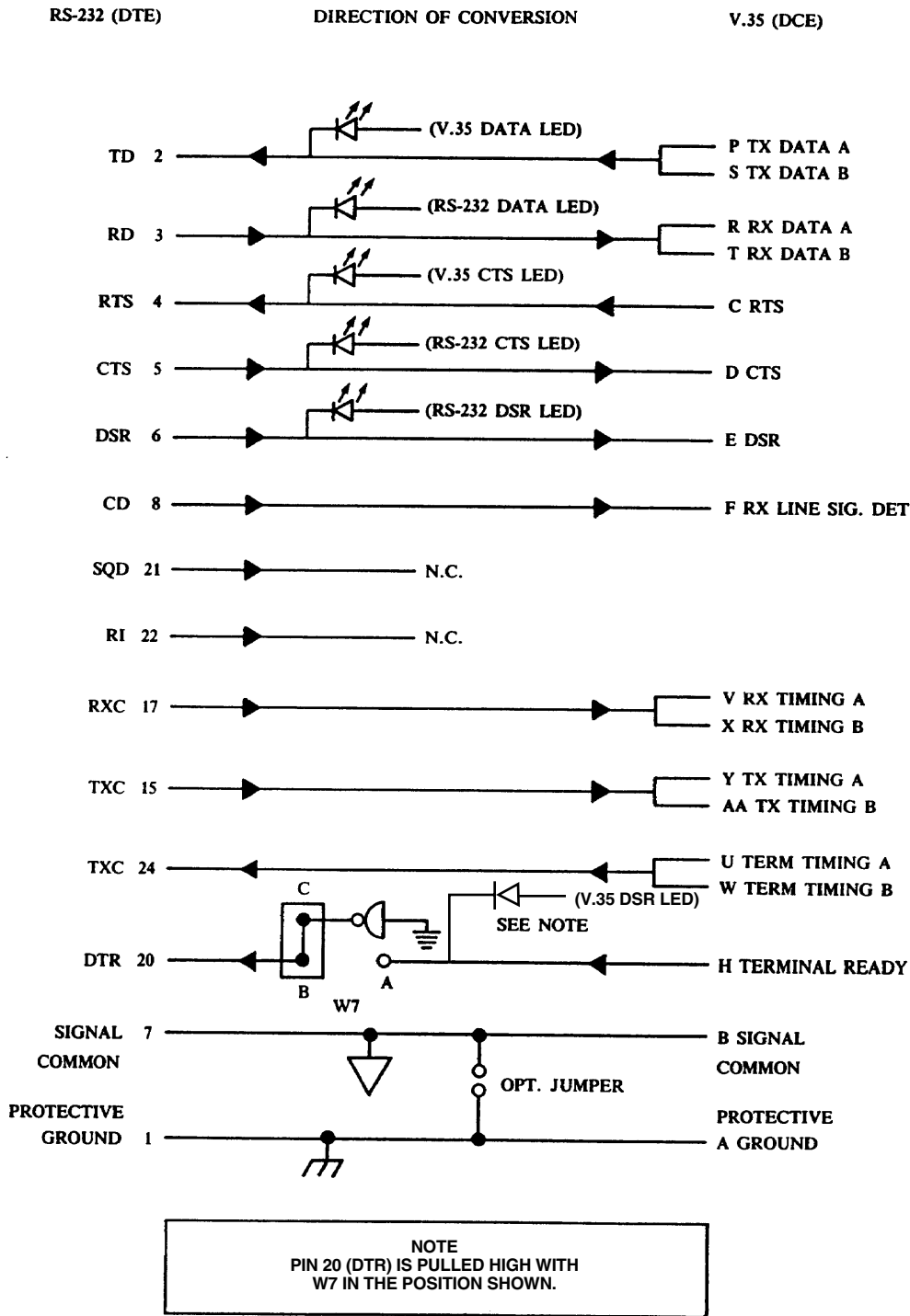
RS-232/V.35 INTERCONNECT DIAGRAM
WITH RS-232 SET FOR DCE AND V.35 SET FOR DTE



NOTES

1 - PINS 21 AND 22 (SQD AND RI) ARE PULLED HIGH.
2 - PIN 20 WILL ILLUMINATE THE DSR LED.

The pin connections for RS-232 DTE to V.35 DCE are shown below.





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