

1. Description

The Data Test Set (DTS) provides a means for a technician at a remote site to implement a full external loopback at the terminal port of a DSU or modem and to obtain visual indication of the circuit operation. The DTS has two physical DB-25 male connectors which support EIA-530, RS-232 (sync and async), and a variant of the V.35 interface standards. The DTS may be attached directly to the female DB-25 connector on a DSU or modem, or attached at the end of a cable. Only one connector on the DTS may be used at one time. The DTS is not intended to be used with DTE's such as terminals or PCs.

Four light-emitting diode (LED) indicators provide a means for the technician to view the status of data, clock, and certain control signals from the DSU or modem. Indicators for clock and data provide status on the activity of the corresponding signal, while those four control signals provide status on the signal level.

All power to the DTS is supplied via the DSU or modem from the interface signal drivers.

2. Operation

2.1. Loopback Connections

The DTD performs a loopback between the following 4 DCE circuits on both connectors:

DCE Output Circuit	DCE Input Circuit
Receive Data (RxD)	Transmit Data (TxD)
DCE Transmit Clock (TxC)	External (DTE) Transmit Clock (TxCE)
Data Set Ready (DSR)	Data Terminal Ready (DTR)
Data Carrier Detect (DCD)	Request to Send (RTS)

Connector J1, supports RS-232 and V.35 DCE interfaces, while connector J2 supports EIA-530 standard DCE interfaces. Since V.35 has no standard for translation to a DB-25 connector, the following mapping is used which matches that used in certain TxPORT modems or DSUs:

Interface Signal	V.35 Connector pin	DB-25 translation pin
RxD-A	R	3
RxD-B	T	16
TxD-A	P	2
TxD-B	S	14
RxC-A	V	17
RxC-B	X	18
TxC-A	Y	15
TxC-B	AA	11
TxCE-A	U	24
TxCE-B	W	25
RTS	C	4
CTS	D	5
DTR	H	20
DSR	E	6
DCD	F	8

2.2. Indicators

The four indicators on the DTS monitor the operation of the corresponding circuits from the DCE. In general, for synchronous DCE all indicators ON are indicative of a normally operating loopback circuit. For asynchronous modems, the status of the CLOCK indicator should be ignored.

The following describes the interpretation of each indicator:

DATA - When this indicator is ON, data is making frequent transitions between voltage levels corresponding to a logical 1 and a logical 0, indicating that data in some form is being received through the DCE. If this indicator is OFF, then the data circuit is constantly at one voltage level, or is turned off.

CLOCK - When this indicator is ON, the clock signal is making frequent transitions between voltage levels required for clocking data. If this indicator is OFF, then the clock circuit is constantly at one voltage level, is turned off, or the DTS is attached to an asynchronous modem.

DSR - When this indicator is ON, the Data Set Ready signal is at a voltage level indicating the DCE is, at minimum, powered on. If this indicator is OFF, then the DCE may not be powered, or may have encountered some failure.

DCD/LSD - When this indicator is ON, the Data Carrier Detect or Line Signal Quality Detect signal is at a voltage level indicating the DCE is ready to send and receive data to the remote DCE. If this indicator is OFF, then the modem may not be connected on the line side, or there may be a failure on the communication link.