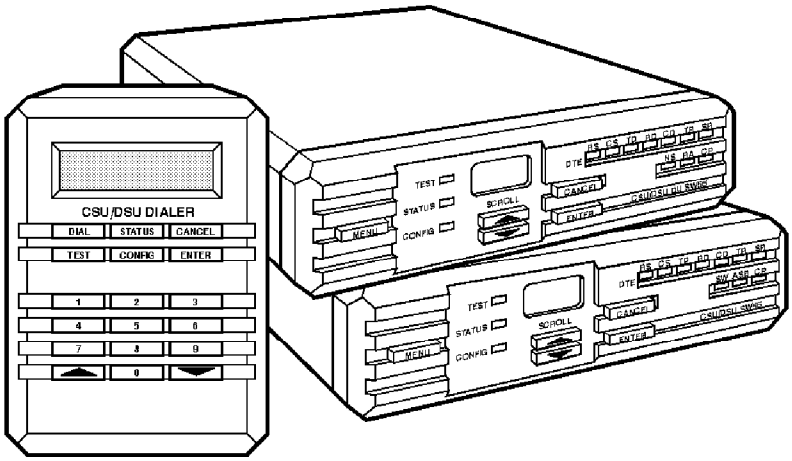
BLACK BOX®

The Source for Connectivity℠

Switched 56 CSU/DSUs CSU/DSU DIALER



Dual ports help you get the most from your hardware and 2- or 4-wire Switched-56.

Configure and dial quickly, conveniently, with CSU/DSU Dialer.

Key Features

- *V.35 and RS-232C ports maximize your connectivity options.*
- *Access menu two ways—from the convenient front panel or the optional hand-held CSU/DSU Dialer.*
- *DTE-to-Loop service rate matching allows slower DTE devices to communicate over higher-speed Switched-56 line.*
- *CSU/DSU dialer gives you convenient, fingertip menu control.*

Overview

The cost of Digital Data Service (DDS) lines has been steadily decreasing and is now comparable to the cost of leased analog lines. But DDS has two distinct advantages over analog service: Data moves at higher speeds, allowing transmission of larger volumes and data error rates are greatly reduced.

ACCUNET® Switched 56 is a dialup DDS offered by AT&T that allows you to pay for data transfer only when the unit is active. Regional Bell Operating Companies provide the local loop service to Switched-56 customers. SPRINT® 56 is a Switched-56 service supplied by US SPRINT®.

If you are making the decision to replace analog with Switched-56 digital, or if you want to expand the capabilities you now have with Switched-56, consider our SW56 CSU/DSUs. They're designed specifically for use with 2- or 4-wire Switched-56. Typically, a CSU/DSU SW56 or CSU/DSU DU SW56 replaces the modem in a network and supports either sync or async data formats at speeds of 2.4, 4.8, 9.6, 19.2, and 56 Kbps in point-to-point or multipoint configurations *(see the diagram on page 2)*.

Our CSU/DSU DU SW56, based on Northern Telecomm's DATAPATH™ technology, is a standalone unit that provides an interface between your DTE and a 2-wire Switched-56 network. The CSU/DSU SW56 is a standalone unit that provides an interface between your DTE 4-wire Switched-56, Basic Data Services, or DDS. The rear panel of both units features an RS-232C and a V.35 DTE interface to increase your connectivity options, now and in the future. You configure the units and dial manually from the front panel or with the CSU/DSU Dialer. Automatic dialing uses a separate dialing port that automatically adapts to an RS-232C or an RS-366 dialing interface.

Making the move from analog to Switched-56 digital doesn't mean replacing all your DTE devices with "fast" equipment designed for digital. Both the CSU/DSU DU SW56 and the CSU/DSU SW56 use the T-Link rate-adaptive protocol so your slower DTEs can communicate over the network at 56 or 64 Kbps.

Convenient entering, storing, and automatic or manual dialing of telephone numbers is the plus of our CSU/DSU Dialer, which can be used with either the CSU/DSU SW56 or CSU/DSU DU SW56. Connect the Dialer to the rear panel via a telco-style connector.

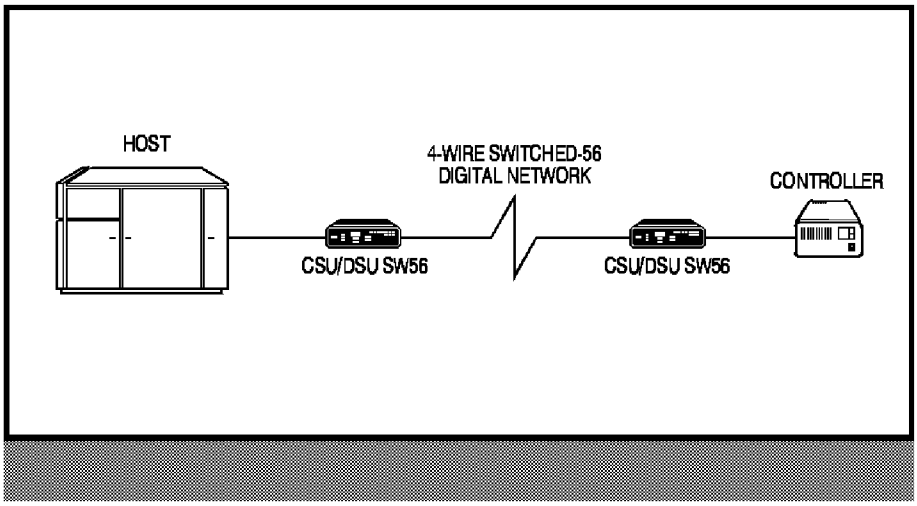
Typical Applications

Move more data faster.

Maximize performance of slower DTEs on high-speed Switched-56.

Use CSU/DSU Dialer to dial telephone numbers with a single keystroke.

Switched-56: Move data faster and pay only for what you use.



Technically Speaking

- Digital Data Service (DDS) is a wide-bandwidth private leased line that transmits data in digital, rather than analog, format. DDS lines are 4-wire circuits (Transmit pair, Receive pair) linked by special repeaters and separated from conventional analog lines. They can provide a higher data-transmission rate and maintain a higher level of data integrity than analog transmission service.
- A nationwide service of AT&T, DDS allows interconnection and transport of data for the regional Bell operating companies. The telephone companies provide a DDS-compatible service within their region and provide the local loop service to DDS customers.
- An ISU (Integrated Service Unit) replaces the modem in a network. It combines the CSU (Channel Service Unit) and the DSU (Data Service Unit), and is commonly called a CSU/DSU.
- The CSU/DSU SW56 and CSU/DSU DU SW56 provide the standard DDS rates of 2.4, 4.8, 9.6, and 19.2 Kbps sync or async, and 56 Kbps sync. The CSU/DSU DU SW56 also provides DDS rates of 1.2 Kbps sync or async, 64 Kbps sync only, and 300 bps async only.
- On the CSU/DSU SW56 and CSU/DSU DU SW56, DTE rate adaption to 2.4, 4.8, 9.6, 19.2, and 56 Kbps is supported at 56-Kbps loop speed.
- The T-Link Rate Adaption protocol adapts user data rates into network-transport bit streams of 56 or 64 Kbps. Both units can communicate and rate-adapt with any T-Link-compatible device. The CSU/DSU DU SW56 also provides an interface with non-T-Link-compatible devices at 56 Kbps, so you can place a call to a 4-wire Switched-56 network.
- The additional DB25 connector marked DIALPORT on the rear panel accommodates either an RS-232C asynchronous interface or an RS-366 parallel interface, to initiate dialing over a switched digital network. The DIALPORT automatically adapts to the appropriate interface, based on signals present at the connector.
- The front panels have a four-character dot-matrix LED display, ten Status LED indicators, three Menu Select LED indicators, and five control keys.
- For configuration and testing, you use the front-panel controls or the CSU/DSU Dialer. Local, Remote, and Network Test modes are supported. The units can generate and monitor standard test patterns during selected tests and report the number of errors on the front-panel display. The units will also respond to standard DSU and CSU loopback commands from the telephone company central office, or DDS/V.54 commands from a remote CSU/DSU SW56 or CSU/DSU DU SW56.
- The MENU select key is used to select between three menus: TEST, STATUS, and CONFIG. The SCROLL keys are used to move within the selected menu. The ENTER Key is used to select an option, and the CANCEL key is used to exit an option without a change.

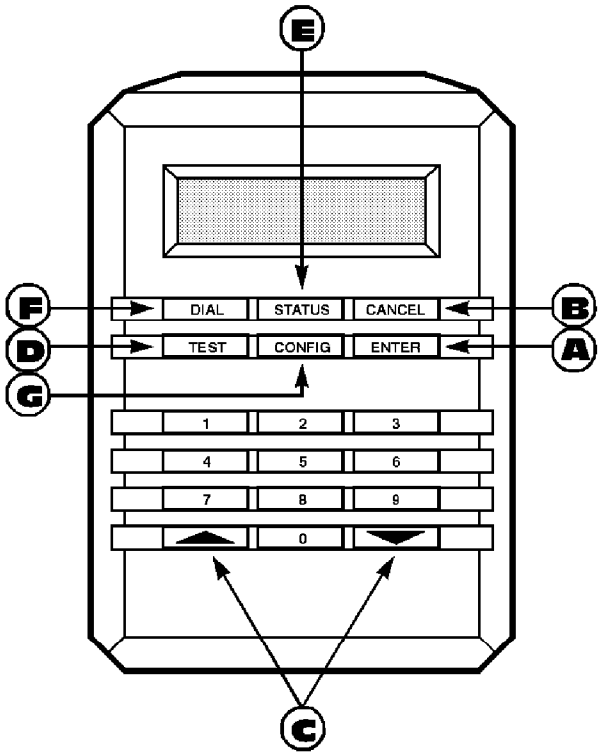
Technically Speaking cont.

- The rear panel contains two DTE connectors that provide primary channel V.35 or RS-232C. A 6-pin RJ-11 telco connector is provided for connection to the network. A separate RJ-11 connector for the optional CSU/DSU Dialer, a power cord *(see below)*, and a fuse are also located on the rear panel.
- Each unit includes an 8-foot power cord. The power cord is terminated by a 3-prong plug that connects to a grounded power receptacle. NOTE: Use only a grounded, 115 VAC 60 Hz receptacle to provide power.
- The user-primary DTE should be connected to either the RS-232C DTE connector or the CCITT V.35 DTE connector. The maximum cable lengths are 50 feet for RS-232C cabling, and 100 feet for the V.35 cabling. Pin assignments for these connectors are described in the User's Manual that accompanies each unit. CAUTION: To prevent possible radio-frequency interference emissions, you must use a shielded V.35 cable.
- Ten LEDs show the status of the primary and secondary DTE interface leads. See the table at the right for the complete listing.

The CSU/DSU DTE Indicators (LEDs)

	Indicator	Definition
CSU/DSU SW56	RS	Primary Request to Send
	CS	Primary Clear to Send
	TD	Primary Transmit Data
	RD	Primary Receive Data
	CD	Receive Signal Present
	TR	Data Terminal Ready from DTE
	SR	Data Set Ready from Unit
	SW	Switched-56 Active
	ASB	Automatic Switched Backup Active
	CP	Control Port Active
CSU/DSU DU SW56	RS	Request to Send
	CS	Clear to Send
	TD	Transmit Data
	RD	Receive Data
	CD	Carrier Detect *(Receive Signal Present)*
	TR	Data Terminal Ready from DTE
	SR	Data Set Ready
	NS	No Signal Present
	RA	Ring Announcer
	CP	Control Port Active

Operation of the CSU/DSU Dialer



A) ENTER is used to select an item from a menu. Pressing ENTER either allows entry into the next menu or selects a parameter value for a menu item. The message "OK" appears momentarily to indicate acceptance.

B) CANCEL is used to terminate specific operations. Pressing CANCEL makes the display revert to the entry point of the current menu branch. CANCEL may also be used to edit telephone numbers.

C) The scroll keys (up and down arrows) are used to move around within a menu or to select a new parameter value for a particular menu item. Scroll-key movements are indicated on each menu-flow diagram (included with the Dialer).

D) TEST provides access to the TEST menu.

E) STATUS provides access to the STATUS menu, which tells you the current configuration and operational information. STATUS screens vary according to the particular mode of operation.

F) DIAL allows you to place switched data calls.

G) CONFIG is used to access the configuration menu for the unit. ENTER and scroll keys are used for moving about the menu tree.

Specifications

CSU/DSU SW56

DTE Rates—2.4, 4.8, 9.6, 19.2 Kbps sync or async; 56 Kbps sync only

Interface—V.35 or RS-232 sync or async

Indicators—(10) Status LEDs: RS, CS, TD, RD, CD, TR, SR, SW, ASB, CP; (3) Menu LEDs: TEST, STATUS, CONFIG

Power—115 VAC, 60 Hz, 8 watts

Size—2"H x 7.5"W x 9"D (5.1 x 19.1 x 23 cm)

Weight—6.8 lb. (3.1 Kg)

CSU/DSU DU SW56

Network Interface — 2-Wire Switched 56

Line Interface — 2-Wire, full-duplex, TCM line code

DTE Interface — V.35 and RS-232 Synchronous at 64, 56, 19.2, 9.6, 4.8, 2.4, and 1.2 Kbps; Asynchronous at 19.2, 9.6, 4.8, 2.4, 1.2 Kbps and 300 bps

Indicators—(10) Status LEDs: RS, CS, TD, RD, CD, TR, SR, NS, RA, CP; (3) Menu LEDs: TEST, STATUS, CONFIG

Power—115 VAC, 60 Hz, 8 watts

Size—2"H x 7.5"W x 9"D (5.1 x 19.1 x 22.9 cm)

Weight—6.8 lb. (3.1 Kg)

The Complete Package

What you get when you order the CSU/DSU SW56, the CSU/DSU DU SW56, or the CSU/DSU Dialer.

- CSU/DSU SW56 (MT133A), or
- CSU/DSU DU SW56 (MT130A), or
- CSU/DSU Dialer
- User's Manual

Additional equipment you may need

- CSU/DSU MS/DBU (MT134A)
- T1 CSU-B (MT131A)
- V.35 Interface Cable (EYN450)
- RS-232 Cable (ECN25A)

For these and other components...

Call our expert Technical Support Staff for all your data-communications needs. They'll help you find the best equipment for your application.

Ordering Information

This information will help you place your order quickly.

PRODUCT NAME	ORDER CODE
CSU/DSU SW56	MT133A
CSU/DSU DU SW56	MT130A
CSU/DSU Dialer	MT135A