DA-56

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1. DESCRIPTION

The DCB DA-56 is a 56 / 64Kbps DSU with an asynchronous interface. The async interface can run at speeds from 9600 up to 115,200 bps (speeds below 9600 bps can be provided for special applications). It operates in either point to point or multidrop mode. A companion model, the SR-01DSU, is available for supporting async devices over Frame Relay networks.

The DA-56 is easy to install and operate. Controls on the unit include the loopback push button switch, a switch to allow setup of the unit through the data port, a switch to select line driver mode or phone company clock, a switch to select RTS forced on or terminal controlled, and a switch for an anti-streaming timer. The anti-streaming timer is useful for multidrop applications where the remote terminals can keep RTS asserted and kill a multidrop line if the anti-streaming timer is not used. The minimum number of controls and comprehensive indicators of the DA-56 make installation and troubleshooting easy. Diagnostic aids built into the DA-56 include LED indicators and loopback capabilities.

A unique feature of the DA-56 is the ability to mimic a generic modem handshake. This special feature allows PCs using Microsoft Windows 95/98 (and similar Internet dialers) to use their built in dial-up-networking function. To use this feature, select the generic high speed modem in the dial up networking setup, select a fixed or dynamic TCP/IP address, and go on-line. The PC software “thinks” it dialed up through a dial up modem, since the DA-56 mimics the responses of a dial up modem.

Features

- 56 / 64Kbps DSU
- RS-232 interface up to 115.2 Kbps
- "AT" command spoofing for Microsoft Windows 95 dialer and other dialers
- Use over DDS
- Ideal for async Internet over DDS
- Reliable, high speed private line service alternative to dial up modems

2. SPECIFICATIONS

2.1 General

DTE Port Rates
Asynchronous rates of 9,600, 19,200, 38,400, 57,600 and 115,200 bps

Application
Point-to-point or multidrop

Indicators
Power, Activity, Line Error, Modem Ready, Port 1 Setup, Loopback, TXD, RXD, RTS, CTS, DCD, TEST

Controls
Front panel push button for loopback.
Rear panel accessible DIP switches for internal /DDS line timing, a switch for RTS forced on or terminal controlled.
Setup via asynchronous RS-232 port, activated by a front panel push-button, or use rear panel management port.

Ports
DTE Port
RS-232, V.24, RJ-45 connector per EIA/TIA 561
Telco Port
RJ48S, 8 position connector
Management Port
RS-232, V.24, RJ-45 connector per EIA/TIA 561

2.2 Environmental

Operation: 0 to 65° C, 10 to 85% relative humidity
Storage: -40 to 85° C, 10 to 85% relative humidity

2.3 Physical / Electrical

Power requirements: 120 VAC, wall mount power supply 60 Hz, 18 Watts
10 1/4" x 9 3/4" x 2 1/4"
One pound

2.4 Management Port Commands

Help
Show Configuration
Configure Ports
Configure Options
Set Identifier
Activity Counter
Zero Counter
Type
Repeat Last Command
Disconnect NMP
Reset DA

3. INSTALLATION

3.1 Unpacking

The following is included with each unit:

- Unit and external power supply
- Cable for connection to phone line
- Cable for connecting a terminal or PC to the Network Management Port for configuration
- Manual
- Information regarding warranty, maintenance contracts and repair

3.2 Location

Place the unit in a clear area where you can reach the front panel for setup and the rear panel to connect the cables. The unit has an external power supply that requires a 120 VAC outlet. The power cord length is about 6 feet.

3.3 Setup

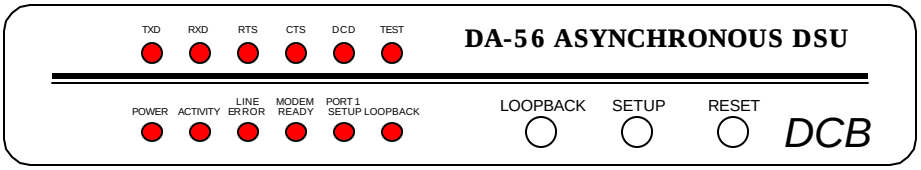
If the default DTE port rate of 57.6 Kbps isn't wanted, use the CP command to set the port rate to 9.6, 19.2, 38.4, 57.6, or 115.2 Kbps.

3.4 Connections

Using the cable provided, connect the DSU Telco port to the phone line. Connect the DTE device to the DTE port. See Section 6 for port interface and cabling information.

4. CONTROLS AND INDICATORS

4.1 Front Panel Controls



4.1.1 Loopback Switch

Loops the DTE port.

4.1.2 Setup Switch

Enables the unit to be configured using the PC connected to port 1. The Port 1 Setup indicator will light. This makes port 1 operate as a temporary set-up management port. In this state, port 1 should be accessed using a terminal emulator program such as Hyperterm. Press the switch again to return to normal operation.

4.1.3 Reset Switch

Performs a hardware reset. Configuration settings are retained through the reset.

4.2 Rear Panel Controls

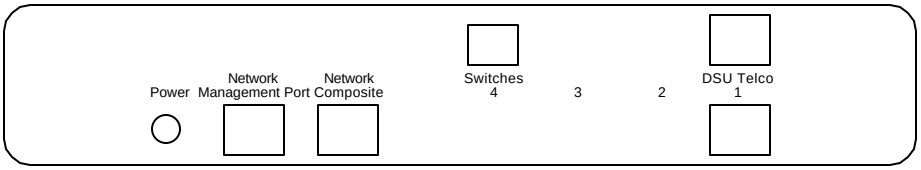
4.2.1 Dip Switches

The DSU switches are located at the rear of the unit. Switch functions are shown in the following table:

Switch	Down	Up
1	56K	64K
2	Slave Clock	Master Clock
3	Must Be Down	
4	RTS Normal	RTS Forced ON
5	Normal	Local Loop ON
6	Not Used	

NOTE

RTS mode (sw 4) is active in 56Kbps mode only. In 64Kbps mode, RTS is forced on.



For normal operation with a telephone company line, set the DSU for SLAVE clock timing (switch position 2 DOWN). For in-house line driver applications (56K only), set the host DSU for MASTER timing (switch position 2 UP). The remote unit should remain set for Slave clock.

4.3 Indicators

Indicator	Condition	Meaning
Power	ON	Unit has power.
Activity	ON	Device connected to DTE port. (RTS Hi)
Line Error	ON	Framing Error
Modem Ready	ON	Network DCD is high.
Port 1 Setup	ON	Network Management Port functions have been mapped to Port 1 for unit configuration. To return to normal operation, press the front panel Port 1 Setup switch.
	OFF	Normal operation. Configuration must be done from the Network Management Port.
Loopback		DTE port in loopback.
TxD	Flashing	Data is being sent over the link.
RxD	Flashing	Data is being received from the link.
RTS	ON	Forced on or high from DTE device.
	OFF	No RTS from DTE device.
CTS	Follows RTS	CTS signal to the DTE device
DCD	ON	Normal condition.
	OFF	No carrier signal received from the far end.
TEST	Flashing	Telephone line in loopback.
	ON	DSU switch 5 is UP (DSU loop on)

5. NETWORK MANAGEMENT PORT

5.1 Introduction

The Network Management port (NMP) provides access to vital statistics and troubleshooting tools. By connecting a terminal or modem to the NMP a vast array of information is at your finger tips. This information can also be accessed via a terminal device (or PC using terminal emulation software) on port 1 when the port 1 setup switch is depressed.

5.2 Connections and Setup

Connection to the NMP is made either through a port on the rear of the unit or by using Port 1 Setup.

5.2.1 Port 1 Setup

The easiest way to access the NMP functions is by using a terminal or PC connected to port 1 of the unit. A switch located on the front panel performs this function. See paragraph 4.1.2 for information. Once the switch is set, no further setup is required.

5.2.2 Dedicated Terminal

The NMP functions are also available through a port on the rear of the unit labeled Network Management Port. To connect a dedicated terminal to this port, use the cable described in paragraph 6.3.2. Set the terminal for 9600 bps, 8 data bits, no parity and one stop bit.

5.2.3 Dedicated Modem

For remote access to NMP functions, a dial-up modem may be connected to the Network Management Port. You must fix the DTE interface speed of the modem at 9600 bps, 8 data bits, no parity and one stop bit. Refer to your modem manual for appropriate setup procedures. Use the appropriate cable from paragraph 6.3.2 for connection.

5.3 Using the Network Management port

To activate the NMP, press the ENTER key. When you see **AT YOUR COMMAND >>**, the NMP is active and ready for your commands. Type H <Enter> to display the command set.

5.4 Commands

5.4.1 Help

Displays all available commands.

COMMAND		PARAGRAPH
Show Configuration	SC	5.4.2
Change Port Configuration	CP	5.4.3
Change Options	CO	5.4.4
Set ID	ID	5.4.5
Activity Counters/Zero	AC/Z	5.4.6
Type	TY	5.4.7
Repeat Last Command	*	5.4.8
Disconnect NMP	BYE	5.4.9
Reset DA	RESET	5.4.10

5.4.2 Show (Port) Configuration

Displays the current DTE port rate.

5.4.3 Change Port Configuration

The Change Port Config (CP) command is used to set the DTE port rate. Rates from 9600 to 115,200 bps can be set. The default rate is 57,600 bps.

5.4.4 Change Options

The Change Options (CO) command is used to configure the DTE port to do AT port dialing and set the port for 8 bit plus parity.

5.4.5 Set ID

The Set ID (ID) command allows you to set or change the local unit identifier. IDs can be a maximum of 15 characters in length. Pressing <Enter> with no entry will leave the ID unchanged. The ID is used only when accessing the unit from the NMP. Its use is optional.

5.4.6 Activity Counters / Zero

The Activity Counters (AC) command shows transmit and receive data statistics for the DTE port. The data are presented in terms of blocks of information sent and received by the network and each data port. Error counts are also shown.

The Z command is used to zero the counters so that current activity can be monitored.

5.4.7 Type

The Type (TY) command displays information about the PPP-SR including firmware version, number of ports, unit ID, frame relay parameters, and IP address.

5.4.8 Repeat Last Command

To repeat the last command, simply press the * key. This is handy for repeating screens of constantly changing data.

5.4.9 Disconnect NMP

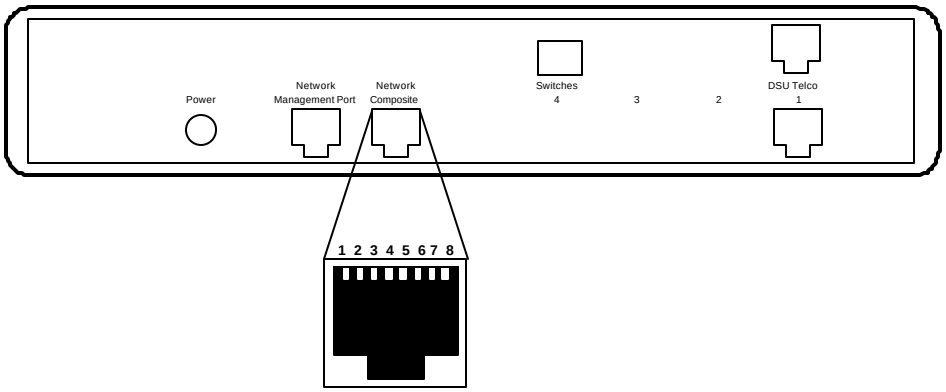
The BYE command toggles the RTS output from the Network Management port. This is used to disconnect equipment such as dial-up modems or the DCB Access Switch.

5.4.10 Reset DA

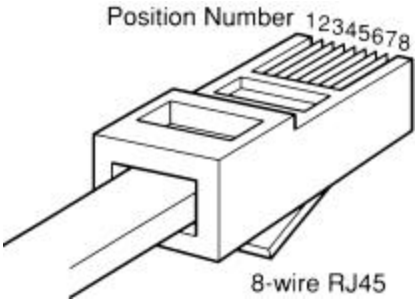
To reset the unit type RESET.

6. INTERFACE SIGNALS AND CABLING

6.1 Connector Location and Pin Reference



Rear Panel and RJ-45 Jack



RJ-45 Plug Positions

6.2 Port Interface

6.2.1 TELCO Jack (RJ-48S)

Pin	Signal
1	Transmit Data
2	Transmit Data
7	Receive Data
8	Receive Data

6.2.2 ASYNC Port (RJ-45)

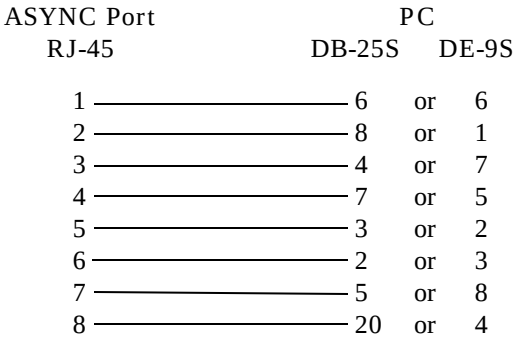
Pin	Signal	In/Out
1	Data Set Ready	OUT
2	Data Carrier Detect	OUT
3	Busy	IN
4	Signal Ground	
5	Receive Data	OUT
6	Transmit Data	IN
7	Clear to Send	OUT
8	Request to Send	IN

6.2.3 Network Management Port (RJ-45)

Pin	Signal	In/Out
1	Not Used	
2	Not Used	
3	Data Carrier Detect	IN
4	Signal Ground	
5	Transmit Data	OUT
6	Receive Data	IN
7	Request to Send	OUT
8	Clear to Send	IN

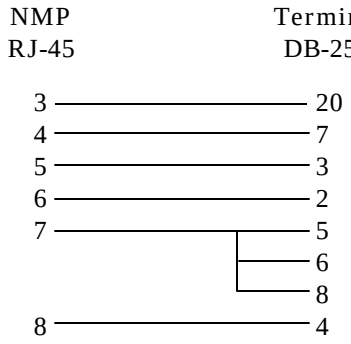
6.3 Cables

6.3.1 ASYNC port to a PC

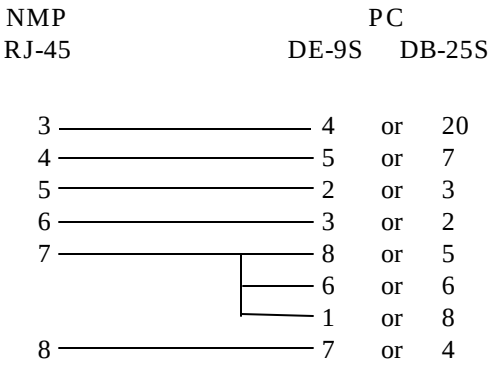


6.3.2 Network Management Port

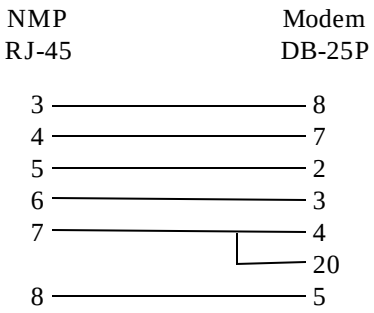
To a TERMINAL



To a PC using terminal emulation



To a dial-up MODEM for remote access



7. TROUBLESHOOTING

7.1 General Approach

When troubleshooting problems, a rational plan can save you many hours of frustration. The following is a brief outline of standard troubleshooting procedures.

1. Gather the facts to determine the exact nature of the problem.
2. Draw a picture of the system showing all equipment at both the host and remote ends and the phone lines or in-house wiring. Use this as a reference to note your observations, test steps and test results. A picture keeps you focused and often saves duplicate effort.
3. Record the front panel indications and all configuration information before changing anything. This is an important part of fact gathering
4. If you change anything, change only one thing at a time.
5. Use the built-in test functions, record your results.

8. WARRANTY

The DA-56 is warranted to be free of defects in materials and workmanship for five years. Data Comm for Business, Inc. will repair or replace any equipment proven to be defective within the warranty period. All warranty work is F.O.B. Dewey, IL. This warranty is exclusive of abuse, misuse, accidental damage, acts of God or consequential damages, etc. DCB liability shall not exceed the original purchase price.

All equipment returned for warranty repair must be accompanied by a Returned Material Authorization (RMA) number. To receive an RMA number, call (217) 897-6600 between the hours of 8 AM and 5 PM central time. Equipment must be shipped prepaid to DCB and will be returned at DCB's expense.

Ship returned items to:

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