

D-Series Dial-Up Modem

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Data Comm for Business, Inc.
807 Pioneer Street
Champaign, IL 61820
217-352-3207

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1. DESCRIPTION

1.0 Description

The DCB Dial-Up modem is available in 14.4, 33.6, or 56 Kbps (V.90) versions. The case, connectors, power supply and lights are the same for all three versions. The modem can be powered by an external AC wall mount power supply, or by an optional internal 24, or 48 volt DC supply. A rack front is available for the metal case, so it can be easily rack mounted with one, two or three modems per 1U rack height.

Applications for the D-Series modems include those industrial strength applications where a rack mounting is required, a metal enclosure is required, or where the power source available is DC, rather than an AC wall outlet.

The slower models are quite useful for remote control applications. Since the D series is available in a 14.4 Kbps model, it is faster connecting than more complex modems which have to step down to the slower speed only after failing negotiation at faster speeds. They are also more reliable on marginal phone lines than commonly used "retail store" modems.

1.1 Features

- Metal enclosure
- Stand alone or rack mounting
- Two-wire dial-up modem
- 14.4 Kbps, 33.6 Kbps or 56 K (V.90) modem
- DB-25 serial asynchronous interface
- LED's for Power, TxD, RxD, DTR, DCD
- Ideal for remote data collection applications, SCADA, back-up links, and remote controls.
- 120 VAC wall mount supply included
- Available with options for external 24 or 48 VDC power



D33.6 Front and Rear Views

2. SPECIFICATIONS

2.1 Specifications

2.1.1 General

Three model options, (14.4, 33.6 or 56 Kbps)

14.4 model – D14.4

33.6 model – D33.6

56K model – D56

For special power options, add the suffix -24 or -48 for 24 or 48 volt DC power

2.1.2 Front Panel Indicators

Power, TxD, RxD, DTR, DCD

2.1.3 Controls

Standard AT command set

2.1.4 Physical/Electrical

Power requirements: 12 VDC, 500 ma

Supports 9 to 18 VDC external power on 2.5mm x 5.5 mm power connector

Options available for 24 or 48 VDC external power

Rack mount bezel available for 1, 2 or 3 units per 1U rack height

Size: 5.75" x 1.45" x .55"

Weight: one pound

3. INSTALLATION

3.1 Unpacking

The following is included with each D Series Modem:

- Modem and external 120 VAC power supply
- Cable for connection to phone line
- Manual
- Information regarding warranty, maintenance contracts and repair

3.2 Setup For Use With SR Series Multiplexers

To configure your SR Multiplexers to work with external DCB dial-up modems first connect the modems to the multiplexers using the Modem to Composite cable supplied. Next attach a terminal or PC to the SR Network Management Port using the green cable and the appropriate adapter (supplied). Set the terminal for 9600 8,N,1. When you see "AT YOUR COMMAND >>", follow the instructions below. User responses are shown in **BOLD**.

HOST MULTIPLEXER

AT YOUR COMMAND >> **CN<Enter>**

CONFIGURE NETWORK

SYNC MODEM
LEASED LINE
ERROR CORRECTION ON

SYNC or ASYNC modem? [S/A] >> **A<Enter>**
ASYNC rate? [9600 / 19200 / 38400 / 57600 / 115200] >> **57<Enter>**
Leased or Dialup Line? [L/D] >> **D<Enter>**
Enable Error Correction? [Y/N] >> **Y<Enter>**
Disconnect timeout? [1 to 99 min; 0=Disable] >> **0<Enter>**
One-Touch Dialing? [ATDS0 / DTR Dial / OFF] >> **OFF<Enter>**
Send SR call progress messages? [Y/N] >> **N<Enter>**

ASYNC MODEM: 57600
DIALUP LINE
ERROR CORRECTION ON

Configure Modem? [Y/N] >> **Y<Enter>**
*** CONFIGURE MODEM - Type ESC ESC to stop
at<Enter>
OK
at&f &q6 s0=1 &w<Enter>
OK

Type **<Esc><Esc>** to return to AT YOUR COMMAND.

*** End CA/CC Capture

AT YOUR COMMAND >>

REMOTE MULTIPLEXER

AT YOUR COMMAND >> CN<Enter>

CONFIGURE NETWORK

SYNC MODEM
 LEASED LINE
 ERROR CORRECTION ON

```

SYNC or ASYNC modem? [S/A] >> A<Enter>
ASYNC rate? [9600 / 19200 / 38400 / 57600 / 115200] >> 57<Enter>
Leased or Dialup Line? [L/D] >> D<Enter>
Enable Error Correction? [Y/N] >> Y<Enter>
Disconnect timeout? [1 to 99 min; 0=Disable] >> 0<Enter>
One-Touch Dialing? [ATDS0 / DTR Dial / OFF] >> AT<Enter>
Send SR call progress messages? [Y/N] >> Y<Enter>

```

ASYNC MODEM: 57600
 DIALUP LINE
 ERROR CORRECTION ON

```
Configure Modem? [Y/N] >> Y<Enter>
*** CONFIGURE MODEM - Type ESC ESC to stop
```

at<Enter>

OK

```
at&f &q6<Enter>
```

OK

at&z0=nnn-nnnn<Enter> *Note: Replace nnn-nnnn with the phone number of the HOST Multiplexer.*

OK

at&w<Enter>

OK

<Esc><Esc>

*** End CA/CC Capture

AT YOUR COMMAND >>

ONE-TOUCH DIALING

To make a connection to the host press <space> or <Enter> from any terminal connected to the remote multiplexer. When you see “SR: Connected...” you should be able to log in from all remote terminals. If you set the remote multiplexer Disconnect timeout to a number from 1 to 99 (minutes), the connection will hang up if there is no activity to or from any terminal for that period of time. To reestablish the connection, type <space> or <Enter> from any terminal.

3.3 Setup For Use With DCB Access Switch

To configure your Access Switch to work with the external DCB dial-up modem first attach the modem to input port 1 (1 IN DTE) using the Modem to Composite cable provided. Next attach a terminal or PC to input port 2 (2 IN-DTE) using the green cable and the appropriate adapter. Set the terminal for 9600 8,N,1. When you see the Access >> prompt, follow the instructions below. User responses are shown in **BOLD**.

```
To Disconnect enter:  ^D^D^D
Access >> SETUP<Enter>
ATTENTION:  There is no Setup Password
Enter PW to set password

****  Access Switch - V7.15  ****
      AS-8

>> Enter H<CR> for Help

SETUP >> CM<Enter>

CONFIGURE MODEM
-----

Port 1 as modem port - currently set to:  NO
(Enter YES or NO) ?  Y<Enter>

Current Modem Commands: &C1&D2S0=1&W

New Commands (enter "CLEAR" for default) ? <Enter>

Current dialout port timeout 15 seconds.
New timeout? <Enter>

SETUP >> BYE<Enter>

To Disconnect enter:  ^D^D^D
Access >>
```

4. FRONT PANEL INDICATORS

4.1 Indicators

<u>Indicator</u>	<u>Condition</u>	<u>Meaning</u>
Power	ON	Power is supplied to the modem
TxD	Flickering	Modem is sending data to the far end
RxD	Flickering	Modem is receiving data from the far end
DTR	ON	DTR is asserted by the attached DTE device
DCD	ON	Modem carrier is asserted

5. INTERFACE SIGNALS

5.1 DTE Port Interface

<u>Pin</u>	<u>Signal</u>	<u>In/Out</u>
1	Frame Ground	
2	Transmit Data	IN
3	Receive Data	OUT
4	Request to Send	IN
5	Clear to Send	OUT
6	Data Set Ready	OUT
7	Signal Ground	
8	Data Carrier Detect	OUT
20	Data Terminal Ready	IN

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 the 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 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, especially the loopback tests. Record your results.

8. WARRANTY

DCB modems are warranted to be free of defects in materials and workmanship for two 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. Champaign, 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) 352-3207 between 8 AM and 5 PM central time. Equipment must be shipped prepaid to DCB and will be returned at DCB's expense.

Data Comm for Business, Inc.
807 Pioneer Street
Champaign, IL 61820

Tel (217) 352-3207
Fax (217) 352-0350
Email support@dcbnet.com