



Modem Installation Guide

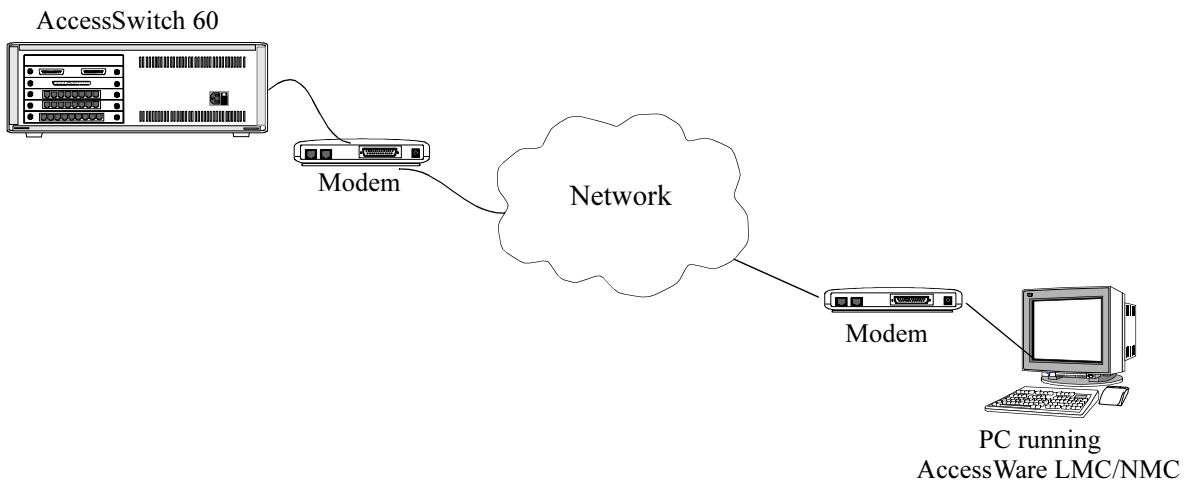
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1.1 Introduction

A modem can be used to connect an AccessSwitch to the network or connect a personal computer (PC) to the network. When you connect the modem to an AccessSwitch, the hub is able to communicate with a remote PC (running AccessWare LMC/NMC Network Management software). When the modem is connected to a PC, you are able to configure and manage an AccessSwitch via AccessWare LMC/NMC Network management software.

See Figure 1-1.

Figure 1-1 Sample Network Diagram for modem installation



Steps required for installing and configuring the modem are as follows:

- Verify package contents
- Connect the modem to an AccessSwitch
- Connect the modem to a personal computer

1.2 Verify package contents

Verify that the following items are included in your AccessSwitch Remote Access Kit (RAK) modem package:

- Modem
- RJ45-to-RS232 cable
- Modem Installation Guide

Modem Installation Guide

1.3 Connect Modem to AccessSwitch

The AccessSwitch must be connected to a modem if it will be accessed from remote AccessWare LMC/NMC Network Management software via dialed-up connections. A Plain Old Telephone Service (POTS) line or Direct Inbound Dial (DID) line (via a PBX) must be accessible from the AccessSwitch location for public network access for the modem.

Once you connect the modem to the AccessSwitch, you must define the modem type via *AccessWare LMC/NMC Network Management Software*.

The sections which follow provide detailed instructions for connecting the modem to the following AccessSwitch types: AccessSwitch 60, AccessSwitch 200_EX, and AccessSwitch 20.

NOTE: Before connecting a modem to the AccessSwitch NMC port, ensure the modem is configured with the correct initialization strings via Remote Parameters window (available in *AccessWare LMC/NMC Network Management* software, see section 1.3.3).

1.3.1 Connect Modem to AccessSwitch 60 or AccessSwitch 200_EX

Connect a modem to an AccessSwitch 60 or AccessSwitch 200_EX as follows:

1. Position the modem so that it can be connected easily to the AccessSwitch, to a standard power outlet, and to a wall jack for the POTS or DID line.
2. Connect the male DB25 (RS232) end of a DCE cable to the female DB25 serial data port on the rear of the modem.
3. Connect the RJ45 end of the cable into the port labeled “NMC” on the back of the INP4 board.
4. Use an RJ11-to-RJ11 cable (usually provided with the modem) to connect the modem to the wall jack. Connect the one end of the selected cable to the port usually labeled “Wall” or “Line” on the rear of the modem. Connect the other end of the selected cable to the wall jack.
5. Connect the modem end of the A/C Adapter to the power connector on the rear of the modem. Connect the adapter to a standard wall outlet. Turn on the modem (if equipped with an on/off switch) and ensure that the modem is powered up. See Figure 1-2 and Figure 1-3.

Figure 1-2 Cable to AccessSwitch 60 connection

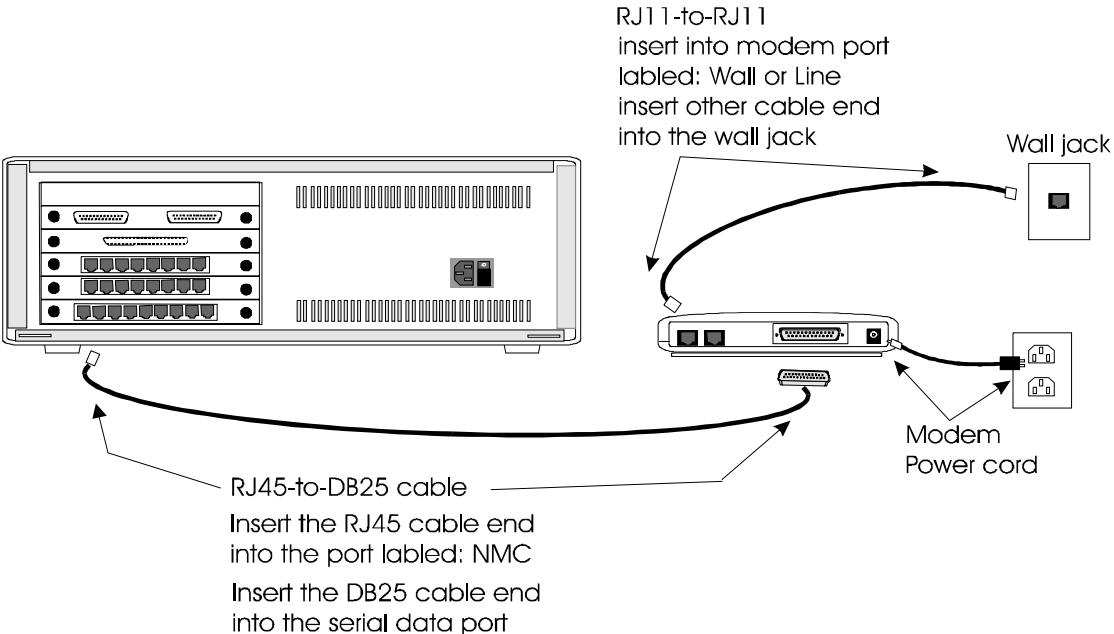
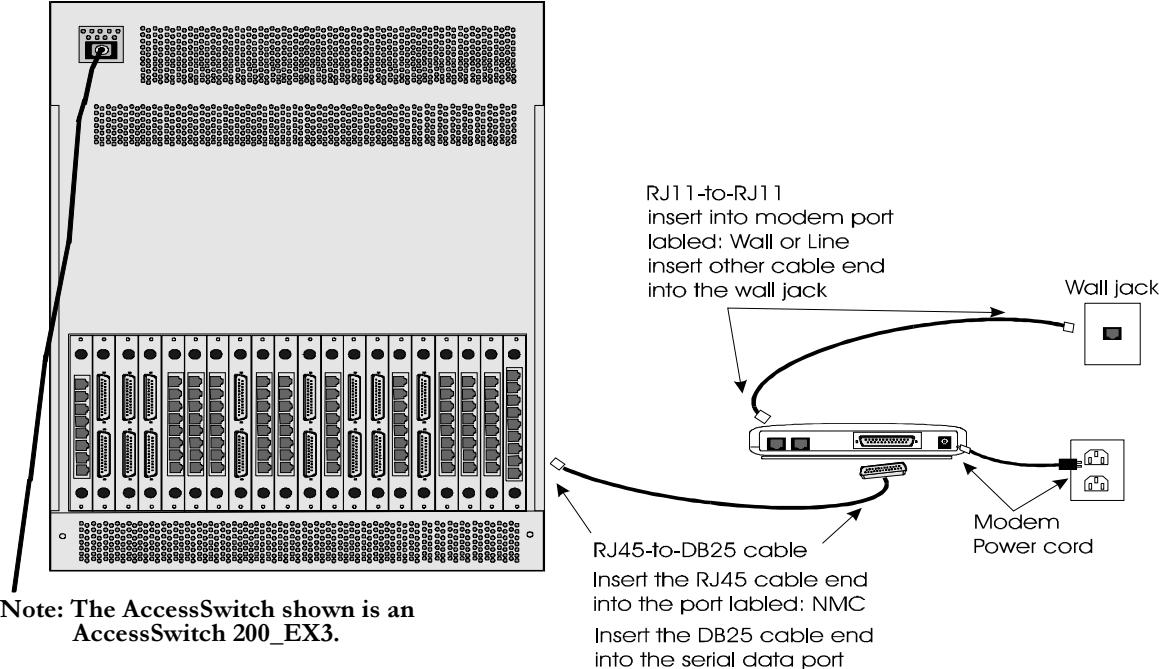


Figure 1-3 Cable to AccessSwitch 200_EX connection



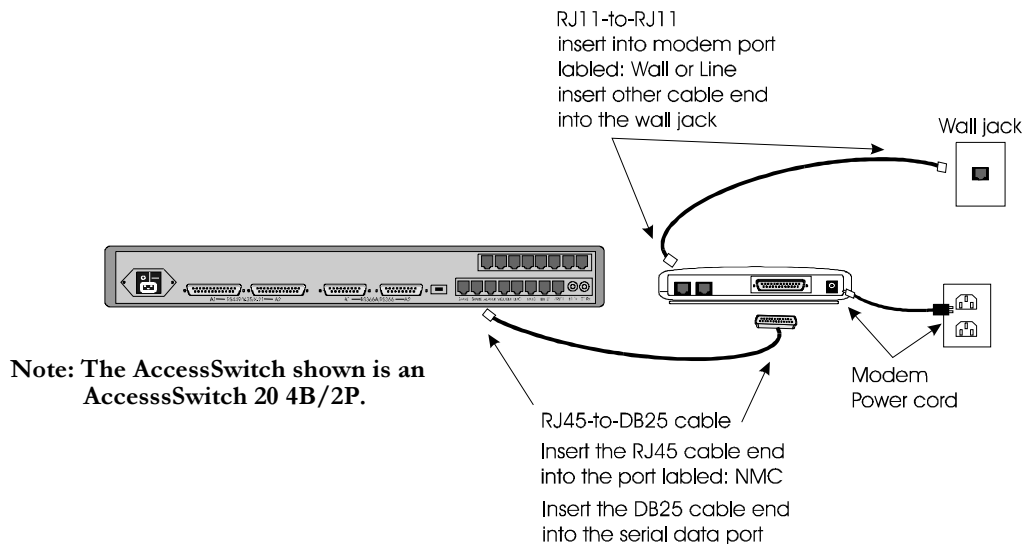
Modem Installation Guide

1.3.2 Connect the Modem to AccessSwitch 20

Connect a modem to an AccessSwitch 20 as follows:

1. Locate the modem so that it can be connected easily to the AccessSwitch, to a standard power outlet, and to a wall jack for the POTS or DID line.
2. Connect the male DB25 (RS232) end of the DCE cable to the female DB25 serial data port on the rear of the modem.
3. Connect the RJ45 end of the RJ45-to-DB25 cable into the port designated on the back of the PC. (See your PC documentation for detailed instructions.)
4. Use an RJ11-to-RJ11 cable (is usually provided with the modem) to connect the modem to the wall jack. Connect the one end of the selected cable to the port usually labeled “Wall” or “Line” on the rear of the modem. Connect the other end of the selected cable to the wall jack.
5. Connect the modem end of the A/C Adapter to the power connector on the rear of the modem. Connect the adapter to a standard wall outlet. Turn on the modem (if equipped with an on/off switch) and ensure that the modem is powered-up. See Figure 1-4.

Figure 1-4 Cable to AccessSwitch connection



1.3.3 Define modem type via AccessWare LMC/NMC software

NOTE: These instructions assume AccessWare LMC/NMC software is running.

1. Select *System > Remote Parameters*. The *Remote Console Parameters* window will appear.
2. Select the applicable modem type from the *Modem Used* drop down list. Supported modem types are listed in Table 1-1. (For the Multitech 56.6 V90 or Motorola ModemSURFR 56K, go to step 3.) Click **OK**.

Modem Installation Guide

Table 1-1 Modem types available

Modems Available via drop down list	Modems types supported with selection from drop down list*
UDS FasTalk v.32/42b	Motorola UDS FasTalk v.32/42b modem
UDS FasTalk II	Motorola UDS FasTalk II
Multitech	MultiTech Multimodem II MT 932 and MT 1432
Other	Multitech 56.6 V90
Generic	Motorola ModemSURFR 56K Motorola Lifestyle Motorola BitSURFR Motorola 33.6 Multitech 33.6
None	When no modem is used.
*All other modem types: If your modem is not listed as one supported, it may or may not work with our system. To try your modem, you can choose the Generic modem type.	

- If you choose Other (to support the Multitech 56.6 V90 modem or Motorola 56K modem), the *Modem Control Parameters* window will be displayed. Enter the valid entry codes listed Table 1-2.

Table 1-2 Modem Control Parameters for Multitech 56.6 V90 Modem

Field Name	Valid Entry
Init Codes	AT &C1 &D0 S0=1 S12=30
Reset	AT&F
NoEcho	ATE
Dial	ATDT
HangUp	ATH
SaveProfile	AT&W
ShortForm	ATV
Load Profile	Not required.

- Click **OK**.

Modem Installation Guide

1.4 Connect modem to PC

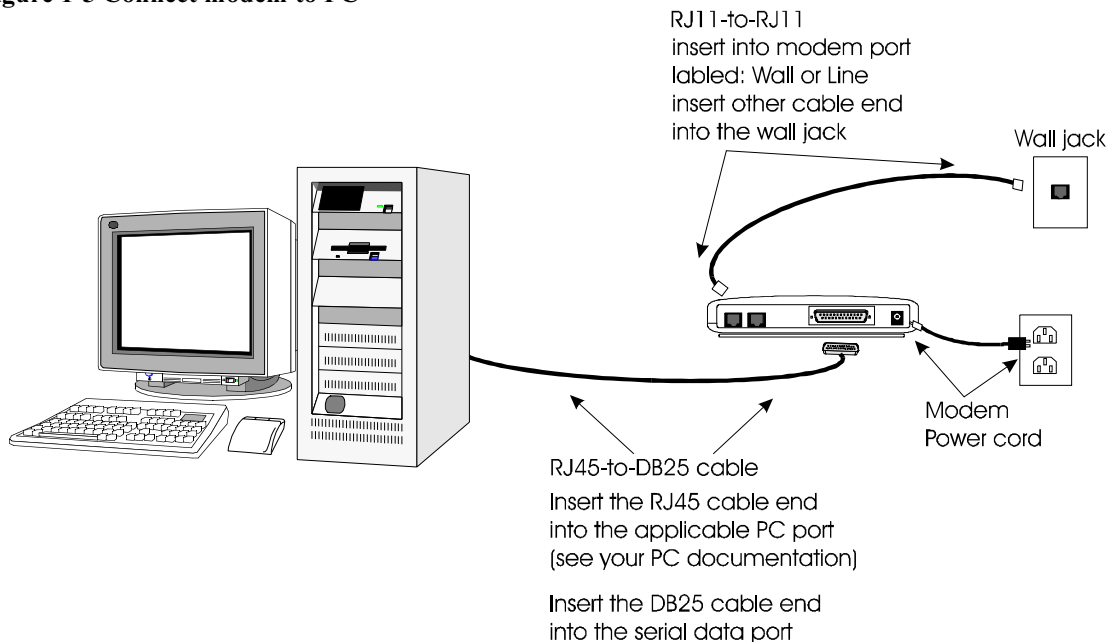
The PC must be connected to a modem for AccessWare LMC/NMC software to communicate successfully with a remote AccessSwitch. You already may have an internal or external modem connected to your PC. If you do not have a modem, you can install the modem sent with the RAK kit using the instructions which follow.

A Plain Old Telephone Service (POTS) line or Direct Inbound Dial (DID) line (via a PBX) must be accessible from the PC location for public network access for the modem.

Connect the modem to the PC as follows:

1. Locate the modem so that it can be connected easily to the PC, to a standard power outlet, and to a wall jack for the POTS or DID line.
2. Connect the male DB25 (RS232) end of the DCE cable to the female DB25 serial data port on the rear of the modem.
3. Connect the RJ45 end of the RJ45-to-DB25 cable into the appropriate port on the back of your PC. (See the user guide that accompanied your PC for port location.)
4. Use an RJ11-to-RJ11 cable (usually provided with the modem) to connect the modem to the wall jack. Connect the one end of the selected cable to the port usually labeled “Wall” or “Line” on the rear of the modem. Connect the other end of the selected cable to the wall jack.
5. Connect the modem end of the A/C Adapter to the power connector on the rear of the modem. Connect the adapter to a standard wall outlet. Turn on the modem (if equipped with an on/off switch) and ensure that the modem is powered-up. See Figure 1-4.

Figure 1-5 Connect modem to PC



1.4.1 Configure modem strings

For any modem you are connecting to the PC, you must either provision modem strings or activate current modem strings via *nmc.ini* (this file was created when you installed AccessWare LMC/NMC). See below.

Set Modem Strings for Multitech 56.6 V90 modem

1. For Windows® 3.x users:
Double-click on the *Accessories* icon to show all available Windows accessories. Double-click on *Notepad*. Notebook will open.
2. For Windows 95 users:
Click on the *Start> Programs> Accessories> Notepad*. Notepad will open.
3. Select *File> Open*. The *File Open* dialog box appears. By default, the directory is set to C:\windows and the file search is set to *.txt. Change the directory to C:\nmc (or the directory in which you installed AccessWare software) and locate the nmc.ini file. Click on **Open**.
4. Scroll down to look for the section entitled “Generic Modem Strings.”
5. Ensure all lines within “Generic Modem Strings” are not commented out. All other modem strings (e.g., Motorola UDS FasTalk II, Motorola UDS FasTalk V.32/42b) should be commented out.
6. Add S12=30 (one space before) to the line that begins ATInitCodes. See below.

```
ATReset=AT&F
ATNoEcho=ATE
ATShortForm=ATV
ATInitCodes=AT &C1 &D0 S0=1 S12=30
ATSaveProfile=AT&W
ATDial=ATDT
ATAttnStr=+++
ATHangUp=ATH
#ATConn9600=12*
```
7. Select *File> Save*. The modem strings will be saved.

Set Modem Strings for Motorola ModemSURFR 56K

1. For Windows® 3.x users:
Double-click on the *Accessories* icon to show all available Windows accessories. Double-click on *Notepad*. Notebook will open.
2. For Windows 95 users:
Click on the *Start> Programs> Accessories> Notepad*. Notepad will open.
3. Select *File> Open*. The *File Open* dialog box appears. By default, the directory is set to C:\windows and the file search is set to *.txt. Change the directory to C:\nmc (or the directory in which you installed AccessWare software) and locate the nmc.ini file. Click on **Open**.
4. Scroll down to look for the section entitled “Generic Modem Strings.”
5. Ensure all lines within “Generic Modem Strings” are not commented out. All other modem strings (e.g., Motorola UDS FasTalk II, Motorola UDS FasTalk V.32/42b) should be commented out.
6. Add \V1 (one space before and one space after) to the line that begins ATInitCodes. See below.

```
ATReset=AT&F
ATNoEcho=ATE
```

Modem Installation Guide

```

ATShortForm=ATV
ATInitCodes=AT &C1 &D0 \W1 S0=1
ATSaveProfile=AT&W
ATDial=ATDT
ATAtnStr=+++
ATHangUp=ATH
#ATConn9600=12*
    
```

7. Select *File> Save*. The modem strings will be saved.

Activate modem strings for other supported modem types

1. For Windows® 3.x users:
Double-click on the *Accessories* icon to show all available Windows accessories. Double-click on *Notepad*. Notebook will open.
2. For Windows 95 users:
Click on the *Start> Programs> Accessories> Notepad*. Notepad will open.
3. Select *File> Open*. The *File Open* dialog box appears. By default, the directory is set to C:\windows and the file search is set to *.txt. Change the directory to C:\nmc (or the directory in which you installed AccessWare software) and locate the nmc.ini file. Click on **Open**.
4. If using Motorola UDS FasTalk, Motorola UDS FasTalk II or Multitech Multimodem II (MT 932 or MT 1432), scroll down to the applicable modem name and remove comment marks (numeric signs). All other modem strings should be commented out.

If using Motorola ModemSURFR 56K, Motorola Lifestyle, Motorola BitSURFR, Motorola 33.6, or Multitech 33.6 modem types, scroll down to the section entitled “Generic Modem Strings,” and make sure they are not commented out. All other modem strings should be commented out.

If using any other modem type (which is not listed in above steps), it may or may not work with our system. Table 1-3 provides the list of generic modem strings we support (listed in the c:\nmc\nmc.ini file) and their corresponding definitions. Compare these modem strings with the modem strings supported with your modem. If the modem string functions are different, you can make changes to the nmc.ini file.

Table 1-3 Generic modem string definitions

String	Function
AT &C1	Carrier detect follows carrier signal
AT&F 0 or 1	Restore profile
ATE0	NoEcho
ATDT	Tone dialing
ATH0	On hook hanging
AT&W0	Save Profile

String	Function
ATV0	Short Form
AT&Y	Load Profile
AT&D0	Ignore DTR
S0=1	Set Auto Answer
S9=10	Carrier Detect Time
S12=30	Escape code guard time
S109=0	Sets modem to 33.6

5. Select *File> Save*. The new *nmc.ini* file will be saved.

Modem Installation Guide

1.5 Troubleshooting

If a remote modem (for example, Multitech 56.6 V90 modem) is initialized incorrectly according to the information entered in the *Remote Parameters > Other* window via *AccessWare LMC/NMC Network Management Software*, you must reset the modem as follows:

NOTE: You must be at the remote site with a PC to reset the modem.

1. Disconnect the modem from the AccessSwitch and attach it to the PC.
2. Establish local communications with the modem via a terminal session from your PC (be sure that the NMC is not connected).
3. For Windows 3.1, start the terminal program from the *Accessories* group.
For Windows 95, start HyperTerminal from the *Accessories* group.
4. Select the correct COM port for the cable.
5. Turn on the modem.
6. Type the following command to reset the modem back to its factory defaults (in either all caps or lower case) and store it in the profile:

AT &F &W
7. Press the RESET button on the modem. If the modem does not have a RESET button, turn off the modem for 30 seconds.
8. Release the RESET button, or turn on the modem, and enter the appropriate command in the Auto answer function field. See section 1.4.1 for valid modem string information.
9. If your modem has an Auto Answer indicator (noted on the modem by AA) be sure that it is lit. If it is not lit, repeat step 8 and refer to the troubleshooting section of your modem user guide.
10. If your PC is running AccessWare software local to the AccessSwitch:

Connect PC to LMC port.

Start AccessWare software.

Configure Remote Parameters via AccessWare LMC/NMC software Remote Parameters window. See section 1.3.3 for choosing a modem and configuring modem strings. Go to step 12.
11. If your PC is running AccessWare software remotely from the AccessSwitch:

Connect modem to LMC port.

Start AccessWare software and dial into the AccessSwitch.

Configure Remote Parameters via AccessWare LMC/NMC software Remote Parameters window. See section 1.3.3 for choosing a modem and configuring modem strings.

Disconnect the modem on the hub for at least 30 seconds. Redial and verify that you can connect successfully.

Disconnect the modem on the hub from the LMC port and reattach to the NMC port. Redial and verify connection.