



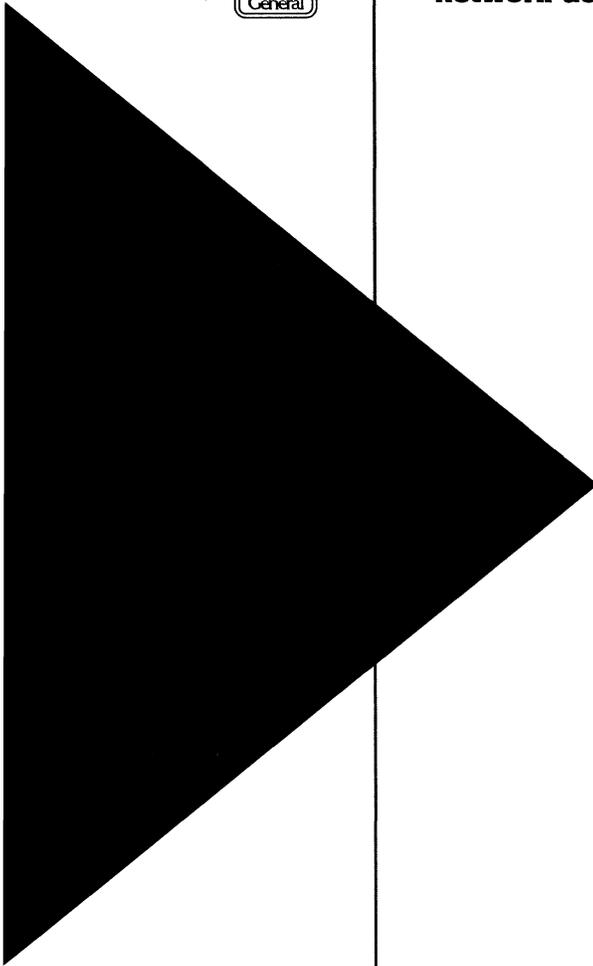
Network General Corporation

SNIFFER[®] NETWORK ANALYZER

DCA REMOTE² SUPPLEMENT



Network General Corporation



SNIFFER[®] NETWORK ANALYZER
DCA REMOTE² SUPPLEMENT

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Document prepared by Sid Heaton and Donna Ono.

March 1993

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Preface

About This Manual

This manual describes the functions and operations of Version 3.0 of DCA Remote2[®], a software component of the Sniffer[™] Network Analyzer. DCA Remote2 software allows you to operate the Sniffer Network Analyzer remotely from an IBM-compatible personal computer (PC) via telephone link.

Manuals for the Sniffer Network Analyzer

Figure i lists the manuals that accompany the Sniffer Network Analyzer. These manuals describe normal operations.

If the product shipment includes release notes or README files on disks, the information in the notes or files supersedes the information in this manual.

For Information On....	Read...
Installing and configuring the Sniffer Network Analyzer.	<i>Sniffer Network Analyzer: Model xx Installation Guide</i>
Operating the Classic features of the Sniffer Network Analyzer. General information on the Sniffer Network Analyzer.	<i>Sniffer Network Analyzer Operations</i>
Operating the Expert features of the Sniffer Network Analyzer.	<i>Expert Sniffer Network Analyzer Operations</i>
Accelerated overview of Expert analyzer operations. For those who don't like to read documentation.	<i>Quickstart</i>
Operating the monitor functions on an Ethernet network. Using the monitor features effectively to detect network abnormalities.	<i>Sniffer Network Analyzer: Ethernet Monitor Operations</i>
Operating the monitor functions on a token ring network. Using the monitor features effectively to detect network abnormalities.	<i>Sniffer Network Analyzer: Token Ring Monitor Operations</i>
Operating the monitor functions on an FDDI network. Using the monitor features effectively to detect network abnormalities.	<i>Sniffer Network Analyzer: FDDI Monitor Operations</i>
Various network and protocol types.	<i>Sniffer Network Analyzer: Network and Protocol Reference</i>

Figure i. Manuals for the Sniffer Network Analyzer.

For Information On....	Read...
Remote ² Manager.	<i>DCA Remote2 Supplement</i> (this manual)

Figure i. Manuals for the Sniffer Network Analyzer.

Organization of This Manual

Figure ii describes the organization of this manual.

Chapter/Appendix	Contents
Table of Contents Preface	For many tasks, the manual includes a step-by-step procedure.
Chapter 1, "DCA Remote ² Supplement."	Provides instructions for Version 3.0 of the DCA Remote ² software package provided with your Sniffer Network Analyzer.
Section 1, "Overview."	Describes what you need to use DCA Remote ² and how the main modules work.
Section 2, "Setting Up the Host Sniffer Network Analyzer."	Describes how to install the hardware and software that a Sniffer Network Analyzer needs to serve as host to a remote PC.
Section 3, "Setting Up the Remote PC."	Describes how to install the hardware and software that a remote PC will need so that it can call a host Sniffer Network Analyzer.
Section 4, "Running R2HOST on a Host Sniffer Network Analyzer."	Describes how to start R2HOST from the host Sniffer Network Analyzer so that it is ready to accept calls from a remote PC.
Section 5, "Running R2CALL on a Remote PC."	Describes how to use a PC or another Sniffer Network Analyzer as a remote station connected to a host analyzer.
Appendix A, "Modems."	Provides cabling and configuration information necessary for proper operation of supported modems with Remote ² software.
Appendix B, "Troubleshooting Guide."	Provides a list of solutions to common problems.
Appendix C, "Technical Support"	Describes the procedure for contacting Network General's Technical support department.

Figure ii. Scope of each chapter or appendix in this manual.

Audience of This Manual

The DCA Remote² Supplement has been prepared with the following assumptions:

- You are a network manager or troubleshooter who understands your network's operation.
- You are familiar with DOS.
- You have properly started the Sniffer Network Analyzer.

Navigational Aids Used in This Manual

This manual uses icons in the margin to help you locate information as explained below:



IMPORTANT INFORMATION. Next to this icon is information that is especially important; you should be certain to read it carefully before you proceed. This icon also indicates useful and valuable ways of using the product.



CAUTION. Next to this icon is information that you must know to avoid damage to data files, program files, or hardware devices. This icon also indicates information that you must know to avoid possible injury to yourself or others.



PROCEDURE. Next to this icon is a series of steps you must follow to accomplish a particular task.

Conventions Used in This Manual

Special Notations

The following describes the conventions used in this manual:

Bold	Menu options and menu names are in bold type. For example: Move to Display and press Enter. Move to the Report \ Print menu.
UPPERCASE	The filenames and command names you type at a DOS prompt are in uppercase. For example: Modify the AUTOEXEC.BAT file if necessary. To duplicate the file, use the COPY command.
<i>Bold italics</i>	Variables, for which you insert values, are in bold italics. For example: Type the number of minutes and seconds in the <i>mm:ss</i> format.

Screen font Screen messages are printed in monospaced font. For example:
You must stop monitoring before you can use this feature.

Terminology

Hexadecimal numbers mentioned in the manual are followed by "(hex)"; numbers without any notations are decimal. For example, "The maximum number of stations is 75. The default memory address is D8000 (hex)."

The term "application" refers to a software component (that is, the monitor or analysis program) running on the Sniffer Network Analyzer.

This manual sometimes uses abbreviated names for the various components of the Sniffer Network Analyzer. The term "analyzer" stands for the analysis application.

Screen Displays

The screen displays in this manual may not exactly match what you see on your screen. There may be certain minor differences that do not affect the functions of the displays.

Other Sources of Information

Network General Corporation (NGC) provides other sources of information that can help you become familiar with DCA Remote2.

On-Line Help

After highlighting an item in the R2HOST or R2CALL menu, a phrase or sentence in a panel near the bottom of the screen explains the meaning of the highlighted item.

If you want to obtain general information on a particular option of the R2HOST or R2CALL menu, highlight the item press Alt-H. You will receive detailed information on the highlighted option.

Technical Support

If you have problems with the Sniffer Network Analyzer, refer to the troubleshooting section of this manual in Appendix B. For the procedure to contact Network General's technical support, refer to Appendix C.

Training

NGC offers a comprehensive set of training courses focused on hands-on network analysis and troubleshooting using the Sniffer Network Analyzer. For more information, contact your sales representative.

SNIFFER NETWORK ANALYZER

CHAPTER ONE: DCA REMOTE² SUPPLEMENT

1



DCA Remote² Supplement

Overview

This supplement provides instructions for Version 3.0 of the DCA Remote²® software package provided with your Sniffer™ Network Analyzer. DCA Remote² software allows you to operate the Sniffer Network Analyzer remotely from an IBM-compatible personal computer (PC) via telephone link. You attach one modem to the Sniffer Network Analyzer's serial port and a corresponding modem at the remote PC.

When a PC is connected via DCA Remote², it becomes a remote screen and keyboard for a Sniffer Network Analyzer located somewhere else. The remote PC can see anything the Sniffer Network Analyzer sees, select anything the analyzer's menus offer, and type anything an operator at the analyzer's keyboard could type.



DCA Remote² provides a comprehensive context-sensitive on-line help system. You can highlight any item in the Remote² menus and press Alt-H to receive an informative description of the highlighted option. This document is intended solely as a supplement to the information found in these help screens.

What You Need to Use DCA Remote²

To use DCA Remote², you will need the following items:

- A PC. You supply your own PC to act as the remote station. Because the Sniffer Network Analyzer is PC-based, it is possible to use another Sniffer Network Analyzer as the remote PC.
- A modem link. You supply the connection between your remote PC and your Sniffer Network Analyzer. This connection requires:
 - Access to telephone lines at each end of the connection.
 - Two supported modems; one for the host Sniffer Network Analyzer, and one for the remote PC. The modems must be capable of running at the same speed, preferably 2400 baud or faster. For more information on modems, see "This appendix contains cabling and configuration information necessary for proper operation of supported modems with Remote2 software." on page 33.
- The DCA Remote² Version 3.0 software. The Sniffer Network Analyzer has all the needed files installed in two directories:
 - C:\REMOTE2\R2CALL
 - C:\REMOTE2\R2HOST

To operate a remote PC, first copy the files from the Sniffer Network Analyzer's directory C:\REMOTE2\R2CALL to a similar directory on the remote PC. This is described further in "Setting Up the Remote PC" on page 22.



Be sure that you are running the *same version* of DCA Remote² software on the Sniffer Network Analyzer and the remote PC. Version 2.1 of DCA Remote² is not compatible with Version 3.0 of DCA Remote².

For example, your Sniffer Network Analyzer may be running Remote² Version 3.0. You may want to access your Sniffer Network Analyzer from a remote PC that has been successfully running Remote² Version 2.1. You *must* copy the Version 3.0 files from the Sniffer's directory C:\REMOTE2\R2CALL to a similar directory on the remote PC. Then be sure to use the Version 3.0 software to call the Sniffer host.

How it Works: DCA Remote²'s Main Modules

Each copy of DCA Remote² provides two key modules that operate together in complementary fashion; one on the host analyzer and the other on the remote PC. Each module provides a comprehensive configuration utility that allows you to set or review parameters that govern the way in which R2HOST and R2CALL interact with the equipment and with each other.

The principal modules are:

R2HOST

This is the program that runs on the host Sniffer Network Analyzer. Once started, it remains memory resident, awaiting a call from a remote PC. R2HOST remains active in the background while the Sniffer Network Analyzer proceeds to capture packets, analyze network traffic, and so on.

R2CALL

This is the program that runs on the remote PC. You use it to call the host analyzer and then to communicate with the Sniffer Network Analyzer. Once the link is established, the remote PC's display shows whatever is on the screen of the host Sniffer Network Analyzer. The remote PC's keyboard controls the host Sniffer Network Analyzer as if it were directly attached.

Setting Up the Host Sniffer Network Analyzer

This section describes what you need to do to install the hardware and software that a Sniffer Network Analyzer needs to serve as host to a remote PC.

Setting up the host Sniffer Network Analyzer consists of the following main steps:

1. Connecting a supported modem to the serial port.
2. Configuring the various options in the Remote² Manager menus.

Each of these steps is described below.

Connecting the Modem to the Serial Port

Attach the modem's data port to an available serial port on the Sniffer Network Analyzer. Note the port to which you attach the modem; this port number must be configured in the Port setup menu.

For more information on modems, see "This appendix contains cabling and configuration information necessary for proper operation of supported modems with Remote2 software." on page 33.

Configuring the R2HOST Options

Before you start the R2HOST application at the Sniffer Network Analyzer, you will need to configure the various options that govern how R2HOST interacts with R2CALL and the corresponding hardware. Among other options, the **Configure Sniffer Host** utility allows you to:

- Select the type of modem you've installed and other characteristics of your communication link. It is important that the two modems match in terms of the baud rate, data encoding parameters, and so on.
- Choose the passwords you'll require of remote PCs that call the host analyzer, and the powers you grant to each caller.

The following procedure describes how to configure the R2HOST options.



To configure the R2HOST options:

1. Power on the Sniffer Network Analyzer.

Result: The Main Selection Menu appears, as in Figure 3.

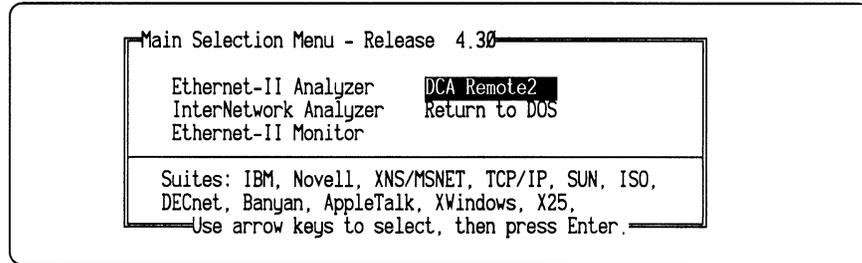


Figure 3. The Sniffer Network Analyzer Main Selection Menu.

2. Use the cursor keys to highlight the **DCA Remote2** entry. Press Enter.

Result: The Remote2 Selection Menu appears, as in Figure 4.

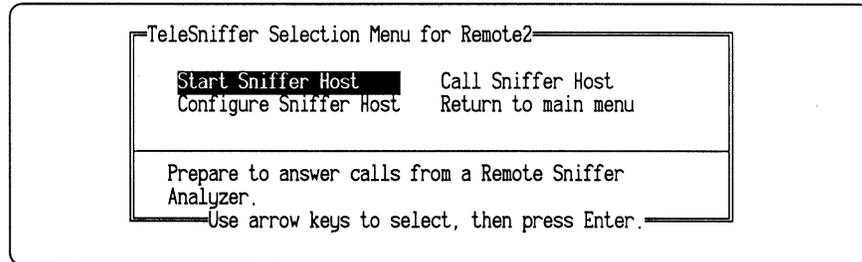


Figure 4. Remote2 Selection Menu.

3. Use the cursor keys to highlight **Configure Sniffer Host**. Press Enter.

Result: The Remote² Manager prompts you for a System Manager ID and password. Network General provides Remote² Manager with the following default System Manager ID and password:

Default System Manager ID MANAGER

Default System Manager Password MANAGER

Figure 5 shows the system manager verification screen for entering the System Manager ID and password.

Note: You can use the Remote² Manager to change this password.

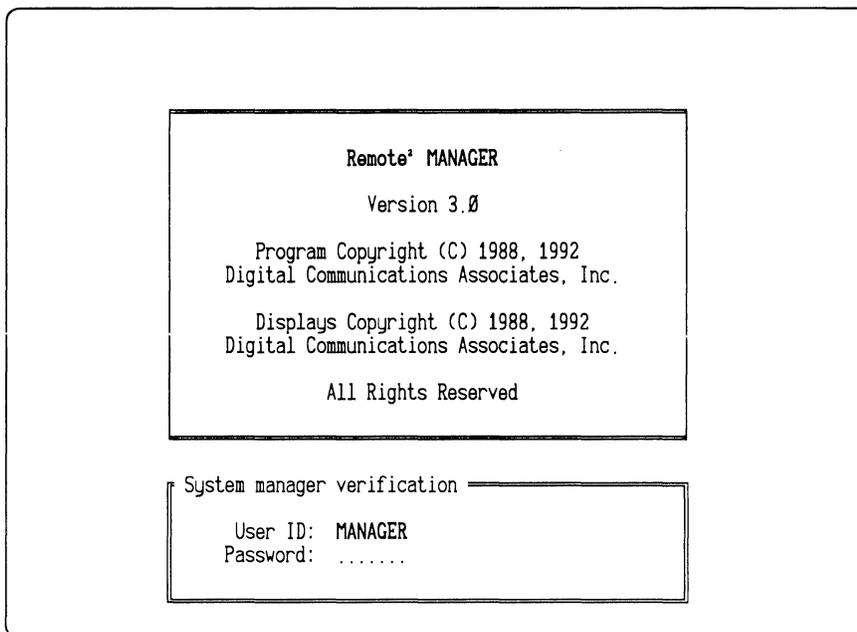


Figure 5. Remote2 Manager system manager verification screen.

4. Type in the ID and password as provided by Network General. See the previous step.

Result: The main menu of the Remote² Manager appears, as in Figure 6. From here you can decide on the Remote² Host configuration and setup or change the operating parameters for Remote² Host users.

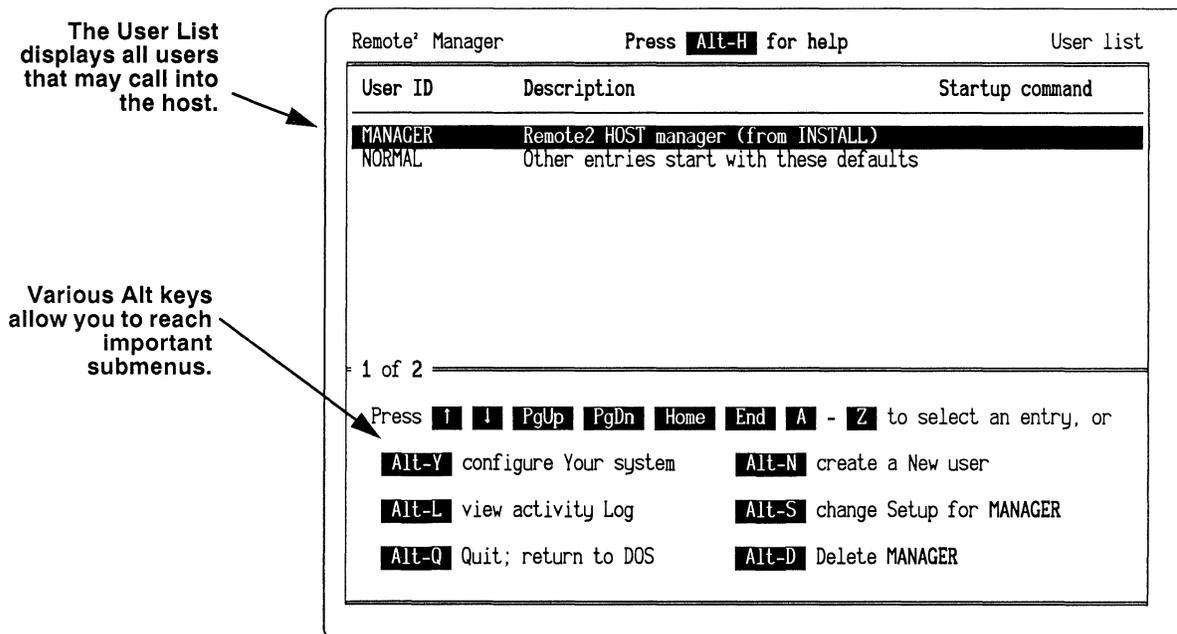


Figure 6. Main Menu (user list) of the Remote2 Manager.

About the R2HOST Menus

The Remote² Manager menu provides your “home base” for configuring the various available host options. There are three important submenus that you can reach from the Remote² Manager menu, including:

- System Setup menu (Alt-Y)
- Port Setup menu (Alt-P)
- User Setup menu (Alt-N)

Each is described on the following pages.

System Setup Menu

The System Setup menu lists parameters related to system operation. This menu is reached by typing Alt-Y from the Remote² Manager menu. Figure 7 shows the System Setup menu.

Determines how R2HOST answers calls: manual or always ready.

EMS option must always be disabled!

Figure 7. The System Setup menu.



The **Answer method** specified for R2HOST determines how R2HOST answers calls. Your choice will depend on how you plan to use R2HOST. The four possible answer methods are described on page 27. Of the four answer methods, only **always ready** and **manual** are supported by the Sniffer Network Analyzer.



It is important that R2HOST be loaded in *conventional memory* only. The R2HOST program requires about 70K of conventional RAM. Network General provides Remote² Manager with the following default setting for the EMS option:

Load in EMS: **no**

DCA R2HOST is compatible with expanded memory (EMS) products that adhere to the Lotus-Intel-Microsoft (LIM) 4.0 specification for expanded memory. The Sniffer Network Analyzer, however, does not support EMS.

If R2HOST is loaded in upper memory, the Sniffer Network Analyzer may issue error messages and then halt. For a list of possible error messages seen when R2HOST is loaded into EMS, see "Sniffer Network Analyzer Error Messages" on page 46.



For more information on the options in the System Setup menu, highlight an item and press Alt-H. You will receive detailed information on the highlighted option.

Port Setup Menu

The Port Setup menu lists parameters related to modem operation. These parameters give the R2HOST program information about your modem and how you want it to operate. This menu is reached by typing Alt-P from the System Setup menu. The Port Setup menu is shown in Figure 8.

Specify the modem you will use. Choose from the list of "Supported Modems" on page 33.

The serial port is preset to COM1 at the factory.

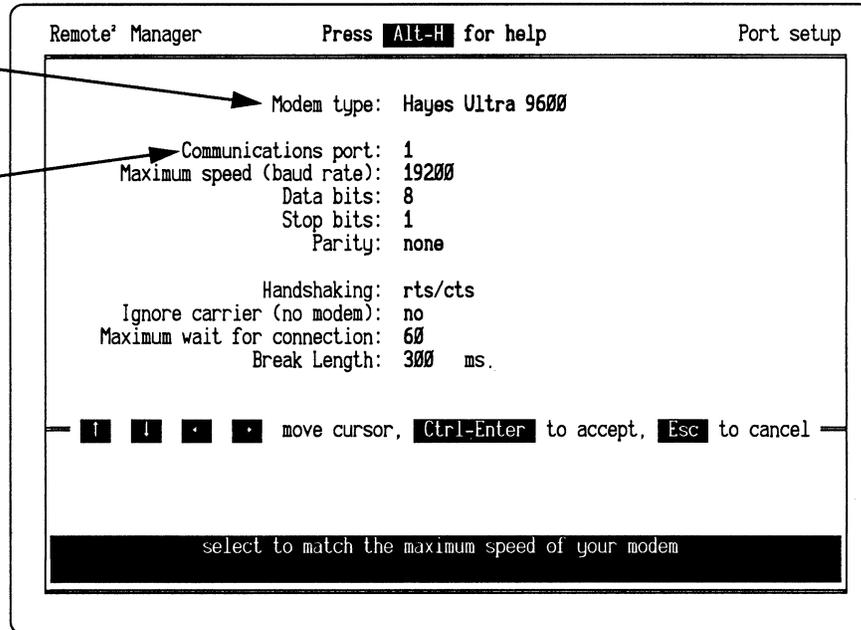


Figure 8. The Port Setup menu.



You *must* choose a modem from the list of "Supported Modems" on page 33.

The Port Setup menu allows you to specify the type of supported modem you are using. Press Spacebar to see the list of **Modem type** options. Use the arrow keys to move the highlight bar to the selection that matches your supported modem, then press Enter.



For more information on the options in the Port Setup menu, highlight an item and press Alt-H. You will receive detailed information on the highlighted option.

User Setup Menu

This menu allows you to define the users who may call in to the Sniffer host. Each person calling into the R2HOST system must have a unique name and password. There are various security parameters for each user you create. This menu is reached by typing Alt-N from the Remote² Manager menu. Alternatively, you can use the cursor keys to highlight NORMAL in the table at the top of the Remote² Manager menu and press Enter. This allows you to create a new user from the system-selected defaults. Figure 9 shows the User Setup menu.

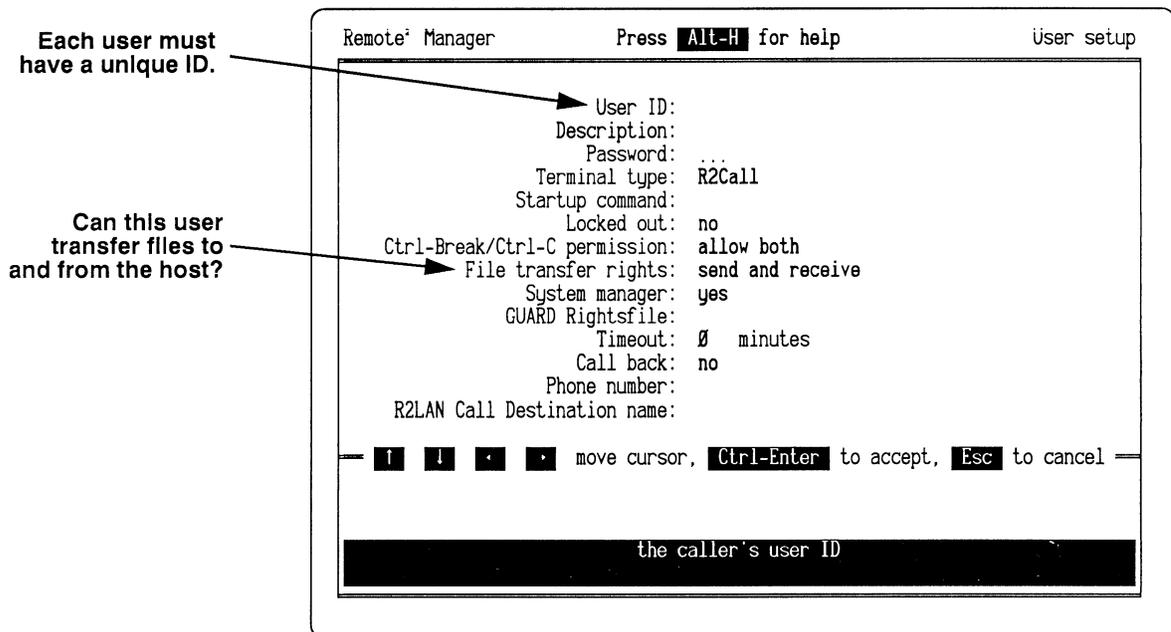


Figure 9. User Setup menu.



For more information on the options in the User Setup menu, highlight an item and press Alt-H. You will receive detailed information on the highlighted option.

Setting Up the Remote PC

This section describes what you need to do to install the hardware and software that a remote PC will need so that it can call a host Sniffer Network Analyzer.

Setting up a remote PC consists of the following main steps:

1. Connecting a supported modem to the serial port.
2. Installing software for the remote PC.
3. Configuring the various options in the R2CALL menus.

Each of these steps is described below.

Connecting the Modem to the Serial Port

Attach the modem's data port to an available serial port on the remote PC. Note the port to which you attach the modem; this port number must be configured in the System setup menu.

For more information on modems, see "This appendix contains cabling and configuration information necessary for proper operation of supported modems with Remote2 software." on page 33.

Installing Software for the Remote PC

Unless you are using a second Sniffer Network Analyzer as the remote PC (in which case the R2CALL software is already installed), you will need to copy the R2CALL software from the Sniffer Network Analyzer and install it on the remote PC.

The software you will need is located in the C:\REMOTE2\R2CALL directory on the Sniffer Network Analyzer's hard drive. You should copy all the files in this directory to a diskette. Then, you should copy the files on the diskette to a similar directory on the remote PC.



Be sure that you are running the *same version* of DCA Remote² software on the Sniffer and the remote PC. Version 2.1 of DCA Remote² is not compatible with Version 3.0 of DCA Remote².

For example, your Sniffer Network Analyzer may be running Remote² Version 3.0. You may want to access your Sniffer Network Analyzer from a remote PC that has been successfully running Remote² Version 2.1. You *must* copy the Version 3.0 files from the Sniffer's directory C:\REMOTE2\R2CALL to a similar directory on the remote PC. Then be sure to use the Version 3.0 software to call the Sniffer host.

Configuring the R2CALL Options

Before you dial out with the R2CALL application at the remote PC, you will need to configure the various options that govern how R2CALL interacts with the hardware in use, as well as with R2HOST. Most importantly, you should:

- Select the type of modem you've installed and other characteristics of your communication link. It is important that the two modems match in terms of the baud rate, data encoding parameters, and so on.
- Add the telephone numbers of the Sniffer Network Analyzers you may call to R2CALL's dialing directory.
- Define the R2CALL User ID and password that the host Sniffer Network Analyzer will expect. The User ID and password must exactly match those that the host Sniffer Network Analyzer is expecting (defined in the R2HOST User Setup menu).

The following procedure describes how to configure the R2CALL options.



To configure the R2CALL options:

1. From the remote PC on which you have installed the R2CALL software, type the following command to the C:\ prompt:

R2CALL

Alternatively, if you are using a Sniffer Network Analyzer as your remote PC, you can use the cursor keys to highlight the **Call Sniffer Host** entry in the Remote2 Selection menu (shown in Figure 4), and press Enter.

Result: The R2CALL application is loaded. The R2CALL main menu (or, dialing directory) appears. Figure 10 shows the main menu of the R2CALL application. From here you can decide on the R2CALL configuration and set up or change the operating parameters for the Sniffer Network Analyzers to be called. Once you have defined the various hosts to call, you will also use this menu to dial out.

Lists all R2HOST systems you are currently set up to dial. Pressing Enter here would call the "Sales Sniffer analyzer."

Various Alt keys allow you to reach important submenus.

Remote' Call Press **Alt-H** for help Dialing directory

Name	Description	Phone number
NORMAL	New entries start with these defaults	
SALES	Sales Sniffer analyzer	688-2877

2 of 2

Press **↑ ↓ PgUp PgDn Home End A - Z** to select an entry, or

Enter call SALES	Alt-D Delete SALES
Alt-Y configure Your system	Alt-S change Setup for SALES
Alt-Q Quit; return to DOS	Alt-N create a New entry

Figure 10. Main menu (dialing directory) of the R2CALL application.

About the R2CALL Menus

The R2CALL main menu provides your “home base” for configuring the various available remote PC options. There are two important submenus that you can reach from the R2CALL main menu, including:

- System Setup menu (Alt-Y)
- Host Setup menu (Alt-N)

Each is described on the following pages.

System Setup Menu

The System Setup menu lists parameters related to system operation. These parameters give the R2CALL program information about how you want it to operate and what type of hardware you are using. This menu is reached by typing Alt-Y from the R2CALL main menu. Figure 11 shows the R2CALL System Setup menu.

Specify the modem you will use. Choose from the list of “Supported Modems” on page 33.

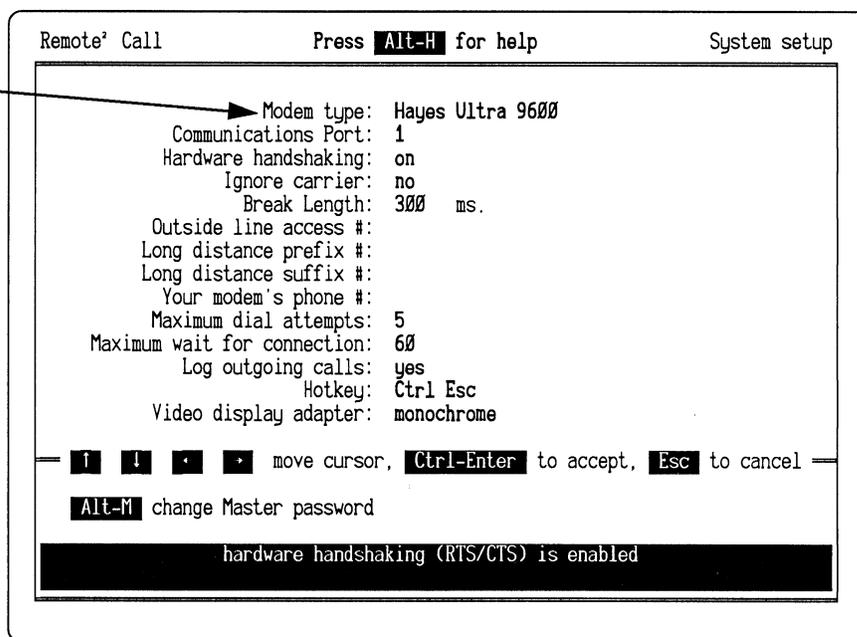


Figure 11. The R2CALL System Setup menu.



You *must* choose a modem from the list of “Supported Modems” on page 33.

The System Setup menu allows you to specify the type of supported modem you are using. Press Spacebar to see the list of **Modem type** options. Use the arrow keys to move the highlight bar to the selection that matches your supported modem, then press Enter.



For more information on the options in the System Setup menu, highlight an item and press Alt-H. You will receive detailed information on the highlighted option.

Host Setup Menu

This menu allows you to create or change a host entry's setup information. Each host Sniffer Network Analyzer you call with R2CALL will need to have its own entry. The menu allows you to enter host-specific information such as telephone number, the speed to use, whether to use error checking, and so on. This menu is reached by typing Alt-N from the R2CALL main menu. Figure 12 shows the Host Setup menu.

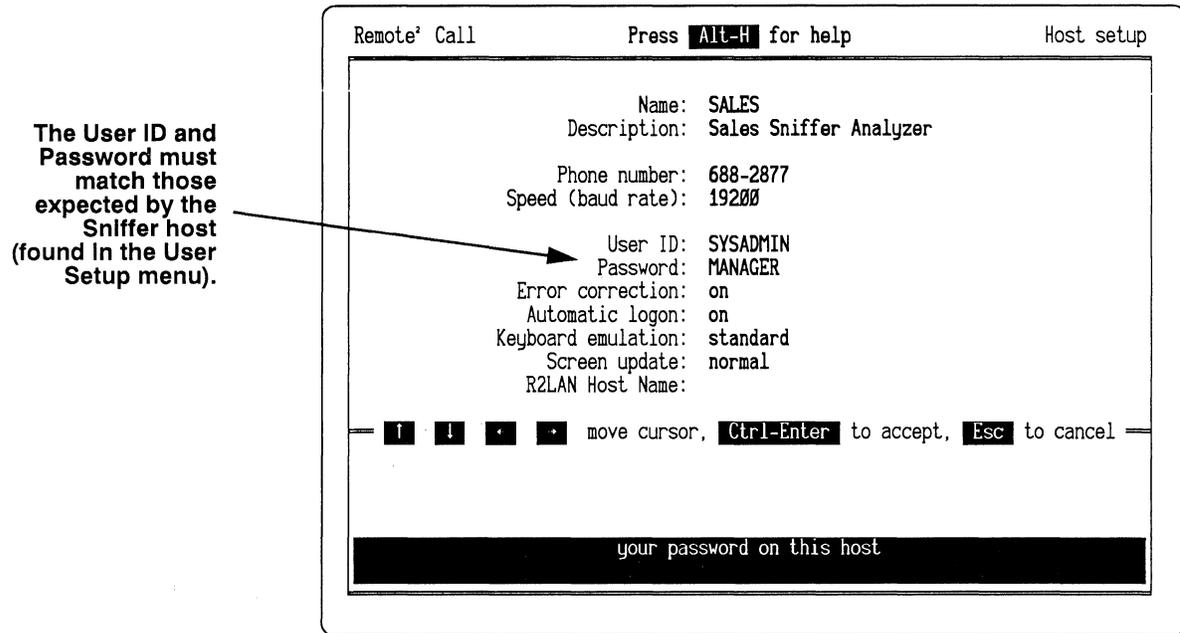


Figure 12. The Host Setup menu.



For more information on the options in the Host Setup menu, highlight an item and press Alt-H. You will receive detailed information on the highlighted option.

Running R2HOST on a Host Sniffer Network Analyzer

This section describes how to start R2HOST from the host Sniffer Network Analyzer so that it is ready to accept calls from a remote PC. This section assumes that R2HOST has already been configured, as described in "Setting Up the Host Sniffer Network Analyzer" on page 15.



If the Sniffer Network Analyzer is capturing in **highspeed mode**, the remote PC display may be either partially visible or blank, and the remote PC function keys may not work.

Loading R2HOST



To start the Sniffer host:

1. Power on the Sniffer Network Analyzer.

Result: The Main Selection Menu appears, as in Figure 13.

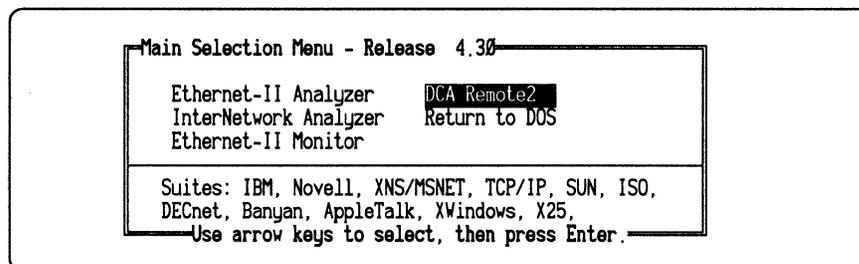


Figure 13. The Sniffer Network Analyzer Main Selection Menu.

2. Use the cursor keys to highlight the **DCA Remote2** entry. Press Enter.

Result: The Remote2 Selection Menu appears, as in Figure 14.

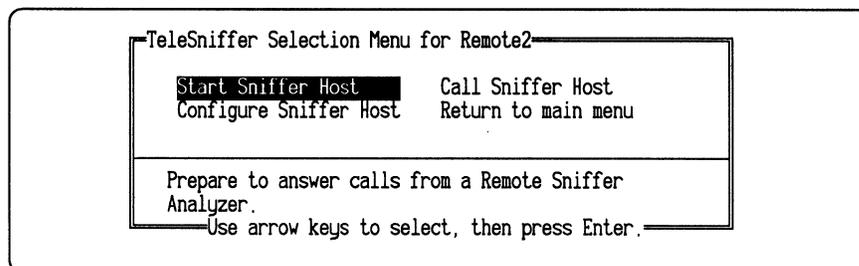


Figure 14. Remote2 Selection Menu.

3. Use the cursor keys to highlight the **Start Sniffer Host** entry. Press Enter.

Result: R2HOST is made memory resident and is ready to receive calls from a remote PC.

R2HOST Remains Resident

Once R2HOST has started, it sets aside a portion of memory and remains resident. It does nothing further until it is alerted by either one of the following:

- A phone call arriving at the modem connected to the host Sniffer Network Analyzer's serial port.
- The DCA Remote² hot-key sequence typed from the keyboard. The hot-key sequence is Ctrl-Esc (unless you changed it to something else using the Remote² Manager menus).

When the hot-key is pressed, R2HOST presents one of several windows, depending on the answer method selected for R2HOST:

- **always ready** (the default): If you press the hot-key when using this answer method, R2HOST presents a window from which you can allow a selected user to call.
- **manual**: While using **manual** answer method, R2HOST presents a window that asks whether to call or answer an R2CALL user. If "A" is entered at the Call or Answer prompt, R2HOST initializes the modem and displays a window to indicate that R2HOST is waiting for a call. If "C" is entered, R2HOST begins a host-initiated call.
- **server**: Not supported by the Sniffer Network Analyzer.
- **restart**: Not supported by the Sniffer Network Analyzer.

Response to an Incoming Call

When the host Sniffer Network Analyzer receives a call, a window appears reading, "Call Detected." If another program is running (for example, the analyzer is capturing traffic), that activity continues uninterrupted.

If the connection is successful, the remote PC starts to see the image displayed on the host Sniffer Network Analyzer's screen.

If the operator of the remote PC presses keys on the remote keyboard, what the remote operator types appears on the host Sniffer Network Analyzer's screen as though typed by the host operator.

Running R2CALL on a Remote PC

This section describes how you use a PC or another Sniffer Network Analyzer as a remote station connected to a host analyzer. This section assumes that R2CALL has already been configured, as described in "Setting Up the Remote PC" on page 22.

Loading R2CALL



To start R2CALL from a remote PC:

1. From the remote PC on which you have installed the R2CALL software, type the following command to the C:\ prompt:

```
R2CALL
```

Alternatively, if you are using a Sniffer Network Analyzer as your remote PC, you can use the cursor keys to highlight the **Call Sniffer Host** entry in the Remote2 Selection menu (shown in Figure 4), and press Enter.

Result: The R2CALL application is loaded. The R2CALL main menu (or, dialing directory) appears. Figure 10 shows the main menu of the R2CALL application. From here you can dial out to the various Sniffer Network Analyzers you defined during configuration.

2. Use the cursor keys to move the highlight to the Sniffer Network Analyzer you want to call. Press Enter.

Result: R2CALL initializes the modem and dials out to the number specified in the R2CALL main menu (dialing directory). R2CALL waits for a connection to the host system for the number of seconds specified by the Host setup menu's **Wait for connection** parameter. When the connection is made, R2CALL can log into the R2HOST system. If there is no answer, R2CALL redials the Host system until it reaches the number of times specified in **Maximum redial attempts**.

Initiating a Connection

R2CALL and R2HOST make the connection process simple. Execution of the log-on process depends on the setting of **Automatic logon**. If **Automatic logon** is on (the default), R2CALL automatically logs into the host Sniffer Network Analyzer without any user input and sounds a tone to indicate the **User ID** and **Password** (as specified in the dialing directory) have been accepted by the host Sniffer Network Analyzer.

If **Automatic logon** is off, the systems connect, but R2CALL does not automatically log on until three conditions are met:

1. R2CALL must be fully connected to R2HOST. If you are calling through a network node or PBX system, this may not happen immediately. You may need to send some commands to these intermediate devices before actually connecting to the host Sniffer Network Analyzer. For example, you may need to send a break signal (Alt-B) to a PBX system before it connects you with the host Sniffer Network Analyzer.

2. Once a connection to the host Sniffer Network Analyzer has been made, you must press Enter twice to tell R2CALL to attempt a logon. R2CALL then automatically sends the **User ID** and **Password** entered in the R2CALL Host Setup menu. A tone indicates that the host Sniffer Network Analyzer has accepted the **User ID** and **Password**.
3. If the host Sniffer Network Analyzer has **Callback** enabled, R2HOST will disconnect from the caller and dial the number that is either entered in the host or provided by the caller. R2CALL waits until the call is received, then displays the host screen once the connection is made.

If connection is successful, you will be on line with the host Sniffer Network Analyzer. You can operate the analyzer just as if you were right in front of it.

Other Options

Once connection is established, you can use the hot-key sequence Ctrl-Esc to display the R2CALL Online Menu. Among other options, this menu allows you to transfer files between the remote PC and the host Sniffer Network Analyzer. Some of these options are described below. For more information on this capability and some other specialized features, refer to the help screens for this menu. On-line help is accessed by pressing Alt-H.

Hang Up

The connection is terminated from the R2CALL Online Menu. Press the hot-key sequence Ctrl-Esc to display the R2CALL Online Menu and select the Hang up (Disconnect) option.

Exit to DOS



To unload R2CALL from memory and exit to DOS:

1. If you are not at the R2CALL main menu, press Esc.
Result: You are returned to the R2CALL main menu (or dialing directory).
2. From the R2CALL main menu, press Alt-Q.
Result: The R2CALL application is unloaded from memory, and control is returned to your local DOS environment.

Temporary Exit to DOS

You may temporarily exit from R2CALL to DOS without unloading R2CALL from memory. If you are exiting to DOS while on line with an R2HOST system, more memory must be set aside in order to maintain the connection.

No Connection to an R2HOST System



To temporarily exit to DOS from R2CALL while you are not on line with an R2HOST system:

1. If you are not at the R2CALL main menu, press Esc.
Result: You are returned to the R2CALL main menu (or dialing directory).
2. From the R2CALL main menu, press Alt-X.
Result: Control is returned to your local DOS environment, and you can then run other programs provided there is sufficient memory available.
3. To return to R2CALL, type the following command at the C:\ prompt:
EXIT

When exited to DOS while there is no connection to a host, R2CALL remains loaded in memory and uses about 106K of memory. COMMAND.COM requires about 5K. This may not leave enough available memory to run an application program which requires large amounts of memory. If this is the case, you can unload R2CALL and exit to DOS using the Alt-Q command.

While Maintaining a Connection



To temporarily exit to DOS from R2CALL while you are on line with an R2HOST system:

1. While you are online with an R2HOST system, press the hot-key sequence Ctrl-Esc.
Result: The R2CALL Online menu is displayed.
2. From the Online menu, use the cursor keys to highlight **Exit temporarily to DOS**. Press Enter.
Result: Control is returned to your local DOS environment, and you can then run other programs provided there is sufficient memory available.
3. To return to R2CALL, type the following command at the C:\ prompt:
EXIT

When exited to DOS while you are maintaining a connection to a host, R2CALL remains loaded in memory and uses about 127K of memory. COMMAND.COM requires about 5K. This may not leave enough available memory to run an application program which requires large amounts of memory. If this is the case, you can unload R2CALL and exit to DOS using the Alt-Q command.

SNIFFER NETWORK ANALYZER

APPENDIX A: MODEMS

A



Appendix A. Modems

This appendix contains cabling and configuration information necessary for proper operation of supported modems with Remote² software.

Supported Modems

You will need two supported modems; one for the host Sniffer Network Analyzer, and one for the remote PC.

Only the five modems listed below are supported with the Sniffer Network Analyzer:

- Hayes Ultra 9600
- Microcom QX/4232hs
- Telebit Trailblazerr
- UDS FasTalk V.32/5
- USRobotics Courier V.32

Modem Speed

The modems must be capable of running at the same speed, preferably 2400 baud or faster. DCA Remote² supports baud rates from 300 to 19,200 bps with automatic speed detection. Modem speeds above 19,200 bps are not supported with the Sniffer Network Analyzer.

Modem Switch Settings

Most modems come from the factory ready for Remote² operation. However, you should verify two signal settings, CD and DTR.

The modem's carrier detect (CD) signal setting must be set so that it reports the actual state of carrier detect. Verify that the CD signal is not "forced true."

The modem must not ignore the data terminal ready (DTR) signal from the Sniffer Network Analyzer or the Remote PC. The Remote² software uses this signal to control the modem.

Modem Cables

Most external modems are equipped with a female DB-25 connector. The Sniffer Network Analyzer's COM1 serial port terminates in a male DB-25 or DB-9 connector, depending on the model. The Model 70 Sniffer Network Analyzer has a DB-25 connector, and all other models have a DB-9 connector.

The cable required between the modem and the remote PC varies, depending on the PC and the modem. Machines of the PC and XT type usually have DB-25 connectors, while machines of the AT type usually have DB-9 connectors.

9-Pin Serial Port “AT-to-Modem” Cabling

The DB-9 configuration on the Sniffer Network Analyzer (other than the Model 700) is the same as that used on the IBM PC-AT, so the modem can be connected by a standard “AT-to-modem” cable. Its pin connections are shown in Figure 13.

Attach the DB-9 connector on the modem cable to the Sniffer Network Analyzer. Then, attach the DB-25 connector on the modem cable to the back of the modem.

Signal Name	Sniffer or PC DB-9	Modem DB-25
Carrier Detect (DCD)	1	8
Receive Data (RCV)	2	3
Transmit Data (XMIT)	3	2
Data Terminal Ready (DTR)	4	20
Signal Ground (GND)	5	7
Data Set Ready (DSR)	6	6
Request to Send (RTS)	7	4
Clear to Send (CTS)	8	5
Ring Indicator	9	22

Figure 15. Connections from Sniffer DB-9 to modem DB-25.

25-Pin Serial Port Cabling

If you are connecting a 25-pin serial port on a Sniffer Network Analyzer or remote PC to a 25-pin modem data port, you will need a 25-pin serial port cable.

You will probably need a female connector at the PC end of the cable and a male connector at the modem end. The following table shows the minimum connections required in the cable. Note that pins 1 through 8 and pin 20 are connected "straight across."



Some "pre-wired" modem cables do not have all of these pins connected. Be sure you use the correct cable.

Signal Name	Serial Port DB-25	Modem DB-25
Chassis Ground	1	1
Transmit Data (XMIT)	2	2
Receive Data (RCV)	3	3
Request To Send (RTS)	4	4
Clear To Send (CTS)	5	5
Data Set Ready (DSR)	6	6
Signal Ground (GND)	7	7
Carrier Detect (DCD)	8	8
Data Terminal Ready (DTR)	20	20

Figure 16. Connections for DB-25 to DB-25 cabling.

SNIFFER NETWORK ANALYZER

APPENDIX B: TROUBLESHOOTING GUIDE

B



Appendix B. Troubleshooting Guide

This appendix lists some common problems you may have with the DCA Remote² package. Hopefully this information will save you some time, some worry, or the need to call Network General Technical Support for help.

If you suspect a problem related to the DCA Remote² utilities, please look through this guide before contacting Technical Support.

Troubleshooting Checklist

There are a few common problems you should be aware of:

Phone Line

- Verify the phone line is plugged into the modem's LINE, TELCO, or WALL jack. Do not plug the phone line into the jack labeled PHONE or TELSET.
- Verify the line has dial tone. Connect a handset or a regular phone to the line and listen.
- Verify the phone line is an analog line and not a digital line as might be used on some PBXs.
- Verify the destination phone number is correct. What happens if you dial the number manually from the same line to which your modem is connected?

Modems

- Use supported modems. Refer to "Supported Modems" on page 33.
- Verify the modem is powered on.
- Verify that both of the modems are working properly. If the modem has indicators, verify the MODEM READY and TERMINAL READY indicators are on. Consult the modem manufacturer's manual.
- Verify that the two modems are running at the same speed, preferably 2400 baud or faster. Refer to "Modem Speed" on page 33.
- Check the CD and DTR signal settings of both modems. Refer to "Modem Switch Settings" on page 33.

Modem Cables

- Use the proper modem cables for your particular Sniffer Network Analyzer and remote PC platforms. Use the proper straight-through modem cable, not a null modem cable. Refer to "Modem Cables" on page 33.
- Verify the modem cable is firmly attached at both ends.

- Verify that the modem cables work properly. Use a breakout box and refer to “Modem Cables” on page 33.
- Verify the modem is attached to the correct port connector. For the Sniffer host, refer to “Port Setup Menu” on page 20. For the remote PC, refer to “System Setup Menu” on page 19.

Software Configuration

- If the Sniffer host does not respond to R2CALL, check that the host software has been loaded into memory. See “Running R2HOST on a Host Sniffer Network Analyzer” on page 17.
- If the Sniffer host hangs after selecting Start Sniffer Host, check that R2HOST is loaded in conventional memory rather than EMS. See “System Setup Menu” on page 19.
- If the Sniffer host does not respond to R2CALL, check that the version of R2CALL on your remote PC matches the version of Remote² Manager and R2HOST on your Sniffer host. Refer to “Installing Software for the Remote PC” on page 22.
- If the Sniffer host still does not respond to R2CALL, check the answer method setting on the Sniffer host. The answer method is configured in the System setup menu of the Remote² Manager utility as described under “System Setup Menu” on page 19. The four possible answer methods are described under “R2HOST Remains Resident” on page 26. Of the four possible answer methods, only **always ready** and **manual** are supported by the Sniffer Network Analyzer.
- You may be able to establish a connection between a remote PC and a Sniffer host, but the remote PC keyboard and monitor may appear to malfunction. If the remote PC display is either partially visible or blank, and the remote PC function keys do not work, check the operation of the Sniffer host. If the Sniffer Network Analyzer is capturing in **highspeed mode**, R2CALL can malfunction as described. Disable highspeed mode and R2CALL will function properly.

Error Messages

This section provides a partial listing of error messages produced by the Remote² applications. Some messages are self-explanatory. Others are listed with more information and suggest corrective action where possible.

R2HOST Errors

These errors may be issued from the Remote² application that is invoked when the **Start Sniffer Host** entry is selected at the Main Selection Menu of the Sniffer Network Analyzer.

Error ID	Description
10	Cannot change to Restart mode: R2HOST is already loaded in an answer method other than Restart. Unload R2HOST before changing the answer method to Restart.
11	Answer method cannot be changed while on line: The answer method cannot be changed at DOS while a caller is on line with R2HOST. If the answer method must be changed, it may be done with Remote ² Manager. Changes will not take effect until after the caller disconnects.
13	No users defined: There must be at least one user setup (besides the NORMAL entry) in the User list before R2HOST can be loaded. See "About the R2HOST Menus" on page 18 for information on adding users to the list.
14	Only system managers have access at this time: A valid user who is not a system manager called R2HOST while the Remote ² Manager program was loaded.
16	User not found: An incorrect or invalid user ID was entered while attempting to place a Host-initiated call.
18	Insufficient memory to run R2HOST: There is not enough memory to run the R2HOST program. Check for TSRs and other programs which may be in memory. Try unloading them and running R2HOST again.
19	Unable to load program.
20	EMS 4.0 not found. R2HOST will load in low memory.
21	LIM 4.0 or newer required to load in EMS. R2HOST will load in low memory.
22	Insufficient EMS memory to run R2HOST. R2HOST will load in low memory.
23	R2HOST requires DOS 3.0 or newer.
24	<Program> cannot be run while caller is in Online Menu.

Error ID	Description
25	Do not use Ctrl Esc as the Hotkey while running under Windows.
26	Invalid terminal type for Server answer method.

Remote² Manager Errors

These errors may be issued from the Remote² application that is invoked when the **Configure Sniffer Host** entry is selected at the Main Selection Menu of the Sniffer Network Analyzer.

Error ID	Description
30	Access denied--not a system manager: Only system managers can access the Remote ² Manager program. See page 8 for the default system manager password and ID provided by Network General.
31	There must be at least one system manager: There are currently no system managers in the User list. Note that Network General provides Remote ² Manager with a default system manager. See "Configuring the R2HOST Options" on page 15 for more information.
32	You cannot delete the last system manager: There must always be at least one entry in the User list who is a system manager. If you wish to delete the last system manager, create a new user with system manager rights and then delete the desired user.
33	You cannot change the last system manager: Same work-around as above.
34	Phone number is required for call back: You set Call back to "yes", but did not provide a Call back number .
36	Call back requires Call back number and ACS Name.
37	Password verification error.

R2CALL Errors

These errors may be issued from R2CALL which is invoked from the remote PC.

Error ID	Description
50	Access denied-- invalid master password: An invalid master password was entered when R2CALL was invoked and access to R2CALL was denied.
51	No such host in dialing directory: R2CALL was given an invalid Host name from DOS. Check host names in the Remote ² dialing directory menu and try again.
52	You cannot call the NORMAL entry: The NORMAL entry is provided only to contain default information used when adding host entries to R2CALL.
53	This Host entry does not have a User ID: You need a User ID to log on to a R2HOST system. User IDs can be added at the Host setup menu.
54	This Host entry does not have a phone number: You need a phone number to call an R2HOST system.
55	No answer from host: No connection was established when trying to place this call. Check your system configuration and ensure the modem is on and dialing properly.
56	Cannot wake up host: R2CALL connected to the R2HOST system's modem, but R2HOST did not respond to R2CALL. Possible causes include speed problems or because R2HOST is not running. Check the host system's status and try again.
57	Incorrect User ID or Password--login failed: An incorrect User ID and/or password was used to attempt access to the R2HOST system. Verify your User ID and password with a system manager at the R2HOST system.
58	User cancelled: The action was cancelled by the user at the calling system.
59	Incorrect verification of new password: While attempting to change the R2CALL master password, you incorrectly entered your new password at one of the two prompts. R2CALL will not change the master password.
60	Cannot transfer files at this time: You are using an application which is currently performing a DOS function, and R2HOST could not find a "safe" time to interrupt it. Allow the application to complete its function, then try the file transfer again.

Error ID	Description
61	Unable to empty picture file A picture has not been taken and there is no file to empty.
62	Cannot take a picture of a graphics screen: Only text information can be stored in a picture file.
63	Database too large--entry not saved: You have too many Host entries in the Dialing directory. Some entries must be deleted before you can add more. The maximum number of Host entries is dependent on the amount of data stored in each entry. You can also remove text from the "Description" field to make additional room for new Host entries.
64	Error in voice mode -- connection lost: An error has occurred while switching from data to voice mode and the connection is no longer active.
65	This host entry does not have a server name.
67	Hotkey and DOS Hotkey must be different.
68	Duplicate network name.
75	Voice mode not available when calling a LAN Host: When a standard (asynchronous) R2CALL is calling an R2LAN Host, voice mode is not available.
76	The host must be the XXXX version. Connection canceled.
77	The new password must be different than the old password.

Sniffer Network Analyzer Error Messages

Memory Errors

If R2HOST is loaded into EMS instead of in conventional memory, the Sniffer Network Analyzer may hang after displaying any of the following error messages. The message displayed depends in part on which Sniffer operation is performed.

- memory translate error
- not enough memory for the capture buffer
- error creating overlay vector
- error creating overlay vector, segment mismatch
- INTERNAL ERR fix_buffers 2

To load R2HOST in conventional memory rather than into EMS, see “System Setup Menu” on page 19.

Keyboard and Monitor Problems

You may be able to establish a connection between a remote PC and a Sniffer host, but the remote PC keyboard and monitor may appear to malfunction. If the remote PC screen is either partially visible or blank, and the remote PC function keys do not work, check the operation of the Sniffer host. If the Sniffer Network Analyzer is capturing in **highspeed mode**, R2CALL can malfunction as described. Disable highspeed mode and R2CALL will function properly.

Other Remote²-Specific Errors

These errors may be issued from the Remote² package.

Error ID	Description
90	This program can only be used when a caller is online.
91	Lost connection unexpectedly.
92	NetBIOS has not been installed.
93	No network adapter.
120	Incorrect command line option.
121	Hardware necessary to use this program is not present.
122	Data file <filename> unavailable or corrupted.
123	Protocol timeout failure.
124	Protocol failure.
125	File transfer cancelled.

Error ID	Description
126	There are currently no entries in the activity log.
127	Name not found in log.
128	<application> is already installed.
129	<application> is not loaded yet.
130	R2HOST must be loaded to use this program.
131	Unable to unload <application>.
132	Calling terminal is incompatible with this program.
133	Caller must be using R2CALL to use this program.
134	This program cannot be used when calling with R2CALL.
135	Incorrect version of R2CALL.
136	Incorrect version of R2HOST.
137	You cannot delete the NORMAL entry.
138	Not enough memory to use <application>.
139	Not enough memory to complete operation.
140	No match for string in User list.
141	Transfer rights not available.
143	<application> cannot be run from distribution diskette.
144	Old database version.
145	Cannot disable host's keyboard under DESQview.
146	Cannot disable host's video under DESQview.
147	This version of R2CALL does not support /B, /A, /D, and /N.
170	Invalid drive or path.
171	File not found.
172	Access denied.
173	Too many open files.
174	Disk full.
175	Drive not ready.
176	Printer not ready.

Error ID	Description
177	Unable to load COMMAND.COM.
180	Cannot quit without rebooting.
181	Cannot write to temporary file--conversion cancelled.
255	Undefined error: Check to make sure you are using the correct procedure for the function you are performing and try again.

SNIFFER NETWORK ANALYZER

APPENDIX C: TECHNICAL SUPPORT

C



Appendix C. Technical Support

Network General Technical Support

If you encounter a problem you cannot solve, please call Network General Corporation's Technical Support department.

Before you call, please have the following information immediately available:

- The unit and network interface card serial numbers. These numbers are located on the initialization screen of the Sniffer analyzer (the screen that first appears when the Sniffer analyzer application is launched from the main selection menu).
- An accurate description of all symptoms of the problem, including any error messages, word for word.
- If possible, a description of how to replicate the problem.

Network General Corporation's Technical Support department is available from 6 am to 6 pm Pacific time, weekdays. Outside of support hours, you may leave a detailed voice message.

**Network General Corporation
Technical Support Department**

Telephone Number	(800) 395-3151
FAX Number	(415) 327-9436
Internet Address	support@ngc.com

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