

Home Wireless Networks™

HWN500

Network Reference Manual

(working copy)

P R E L I M I N A R Y - v 0 . 5 - 4

Printed 11/6/98

Note:

Record your Controller serial number and system password on the lines below.

You will need the Controller serial number during the system set-up procedure (see page 14 for information on locating the Controller serial number). You will need the system password in order to make changes to the system set-up (see page 64 for information on the system password).

Controller S/N _____

System password _____

If you plan to use your network for voice communications, record the number of each incoming telephone line in the spaces below.

Line 1 _____

Line 2 _____

Line 3 _____

Line 4 _____

Keep the above information in a safe place. You will need to refer to it during system set-up and/or system administration.

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Before you begin

Overview

Your Home Wireless Networks™ integrated communications system is the world's first wireless networking product designed to provide both voice and data networking capabilities to the home and small business.

No additional phone lines to run!

With the Home Wireless Networks system, you can easily build a wireless network that includes PCs, wireless handsets, standard telephones, fax machines, modems, etc., without the hassle and expense of running additional phone lines or data cables throughout your building. Because the networked devices are connected together wirelessly, you can move them virtually anywhere within your premises, anytime you wish, again without having to rewire your building.

Share PC data, peripherals and Internet accounts!

Not only can you share files and peripherals such as printers, scanners, etc. from networked PCs, but your Home Wireless Networks system also allows multiple PC users on the network to share a single Internet account - all at the same time.

Advanced telephone features on a wireless handset!

When you add Home Wireless Networks wireless handsets to your system, you gain not only the convenience and portability of a wireless handset, but also such advanced telephone features as answering a call on any line from any handset, making conference calls, saving Caller ID calls to a dialing directory, dialing from your Caller ID Log or directory, calling other extensions on the network, transferring calls to other extensions, etc.

About system security

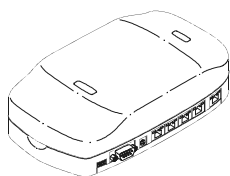
Your Home Wireless Networks communications system uses direct sequence spread spectrum technology to help ensure secure communications. (Stuckey to provide verbiage.)

A system password is also used to help prevent unauthorized individuals from registering a handset or other device on your network.

Note: You should change the default system password to one of your own choosing after adding the first Data Jack or Handset to the system. For information on this procedure, see “Changing the system password” on page 61 .

Network components

Controller



The Controller is the primary component of your Home Wireless Networks communications system. The Controller connects to your incoming telephone lines and controls all communications between devices on the network.

The Controller also contains internet gateway software that allows any PCs connected to the network via Data Jacks to simultaneously share the same internet account.



Data Jack

The Data Jack allows you to wirelessly connect a PC to your Home Wireless Networks communications system. By adding several PCs to the network, you can build a wireless Local Area Network (LAN) that allows you to share files, printers, modems, Internet account, etc. between the networked PCs.

Connecting a PC to the network via a Data Jack also allows you to perform system administration tasks from the PC.



Handset

The Handset is an advanced wireless display telephone. It can support up to four telephone lines and can also be used for system administration purposes. In addition, it allows users to see at a glance the status of all lines on the network.



Phone Jack

The Phone Jack allows you to wirelessly connect an analog device such as a standard telephone, modem, FAX machine, or answering machine to your Home Wireless Networks communications system.

Installation sequence

Network components must be installed in the following order:

1. Controller (see page 13);
2. Data Jack (see page 25) or Handset (see page 30);
3. Phone Jacks (see page 45).

Safety instructions

When using your telephone equipment, basic safety precautions should always be followed to reduce the risk of fire, electric shock, and injury.

1. Read and understand all instructions.
2. Follow all warnings and instructions marked on the product.
3. Do not use this product near water or when you are wet (for example, near a bath tub, kitchen sink, laundry tub, wash bowl, wet basement, or swimming pool). Unplug this product from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning. Do not plug the product back in until it is thoroughly dry.
4. Avoid using a telephone (other than a cordless one) during an electrical storm. There may be a remote risk of electric shock.
5. Do not use a telephone in the vicinity of a gas leak. If you suspect a gas leak, report it immediately using a telephone located away from the area where the gas is leaking. Also make sure the Controller unit is located away from the area of the suspected leak.
6. This product should be operated only from the type of power source indicated on the marking label. If you are not sure of

the type of power that is supplied to your location, consult your dealer or local power company.

7. Do not overload the wall outlets or extension cords as this can result in the risk of fire or electric shock.
8. Do not allow anything to rest on the power cord. Do not locate this product where the cord will be abused by people walking on it.
9. This product must not be installed in an attic, garage or other temperature-extreme environment.
10. To reduce the risk of electric shock, do not disassemble the telephone equipment. Opening or removing covers may expose you to dangerous voltages or other risks. Incorrect reassembly could cause electric shock. If service or repair work is required, take the unit to a qualified technician.
11. Unplug this product from the wall outlet and refer servicing to qualified service personnel under the following conditions:
 - The power cord is damaged or frayed.
 - Liquid has been spilled into the product.
 - The product has been exposed to rain or water.
 - The product has been dropped or the cabinet has been damaged.
 - The product exhibits a distinct change in performance
 - The product does not operate normally by following the operating instructions.
12. Unplug the Controller from the wall outlet before removing the cover.

Battery cautions

To reduce the risk of fire or injury to persons caused by batteries, read and follow these instructions.

1. Use only the proper type and size batteries.
2. Do not dispose of batteries in a fire. The cell may explode. Check with local codes for possible special disposal instructions.
3. Do not open or mutilate the battery. Released electrolyte is corrosive and may cause damage to eyes or skin. It may be toxic if swallowed.
4. Exercise care in handling the battery in order not to short the battery with conducting materials such as rings, bracelets, and keys. The battery or conductor may overheat and cause burns.
5. Charge the Handset battery pack provided with or identified for use with this product only in accordance with the instructions and limitations specified for this product.
6. Observe proper polarity orientation when installing batteries.

Preventing static electricity damage

The components inside your system are extremely sensitive to static electricity, also known as electro-static discharge (ESD). Static electricity can cause irreparable damage to your system. You can help prevent such damage by taking the following precautions:

- Avoid touching expansion slot connectors.
- Avoid static-causing surfaces such as plastic and Styrofoam near your unit.
- Never slide your unit across any surface.

Notice regarding line interference

Connecting equipment not produced by Home Wireless Networks to a line used by the Controller may cause interference with the network under the following circumstances:

- When the non-Home Wireless Networks device is in use and a wireless network device attempts to use the same line, the Controller may not be able to acquire the line for the wireless device.
- When the non-Home Wireless Networks device attempts to place or receive a call while a wireless network device is using the same line, the wireless device may lose connection to the line.

Use one of the following suggestions to resolve the problem:

- Do not use the non-Home Wireless Networks device during an active call on the Controller.
- Disconnect the non-Home Wireless Networks device from the line and move it to another telephone line not used by the Controller, or to the Controller E-Jack.

Installing the Controller

Checking parts

The Controller kit should contain the following parts:

- Controller
- Transformer
- 9V Battery
- 6' RJ-14 Cables (2)
- Rubber mounting feet

If any parts are missing or broken, call your dealer.

Controller Installation Sequence

Use the following steps to install the Controller.

1. Record the Controller serial number.
2. Choose a location for the Controller.
3. Attach protective rubber feet to Controller base (unless wall-mounting the Controller).
4. Connect incoming telephone lines (if installing Handsets or Phone Jacks on the network).
5. Install the battery.

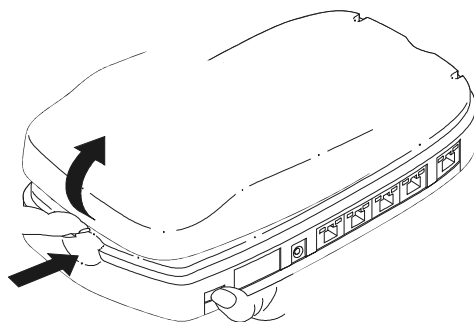
6. Connect the power.
7. Connect a wired device to Controller E-Jack (optional).

Recording the Controller Serial Number

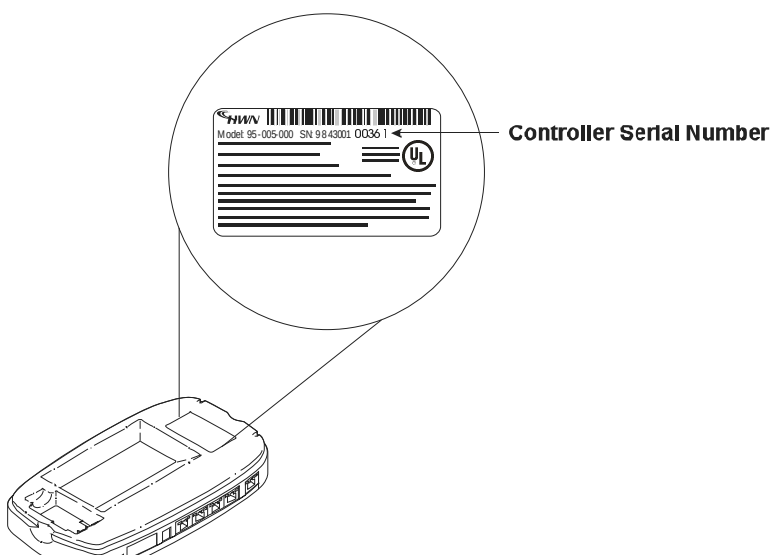
Before you begin installing your Controller, be sure to record the unit's serial number in the space provided on the inside front cover of this manual. You will need this information in order to add the first handset or data or phone jack to the network.

The Controller serial number is located on the inside top surface of the Controller. It can be found by removing the Controller cover. Refer to the following figures.

Note: Be sure the Controller is unplugged before removing the cover.



Opening the Controller



Locating the Controller serial number

Choosing a location

The Controller can be placed either on a horizontal service such as a desk or counter top, or it can be wall-mounted.

Remember the following points when deciding where to install the Controller.

- The Controller must be placed in an easily-accessible location to facilitate battery replacement.
- The Controller should be either wall-mounted or placed on a stable horizontal surface such as a desk or countertop.

- The Controller must be located within 6 feet of an electrical outlet that is not controlled by a wall switch, and within 6 feet of a telephone jack or jacks that contain all the telephone lines coming into your home.

Note: If there is no single location where all telephone lines are present in the home, you will need to reroute the lines so they have a common entry point into the building. Contact a qualified telephone technician or your local telephone service provider to arrange for this service.

- Avoid placing the Controller in the following locations:
 - on top of or immediately adjacent to a TV, VCR, stereo system, or personal computer
 - beside a window facing a street with heavy traffic
 - near heat sources such as radiators or air ducts
 - in direct sunlight
 - where it is subject to water splash, dust or mechanical vibration
 - near a microwave oven
 - near large metal surfaces or objects, such as metal shelving, etc.
- Do not place the Controller in an attic, garage, or other temperature-extreme location.

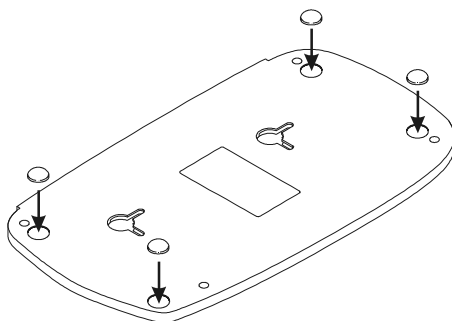
Attaching rubber feet to Controller base

Use the following procedure only if placing the Controller on a horizontal surface.

Note: To mount the Controller on a wall, refer to the wall-mounting instructions on page 101.

Procedure

- 1** Attach the included protective rubber feet to the underside of the Controller as shown in the following illustration.



Attaching protective feet to base

- 2** Place the unit far enough away from the edge of the desk to minimize the risk of it being knocked off.

Connecting the incoming telephone lines

This step is necessary only if you intend to add a handset or phone jack to the network. If you are adding only Data Jacks to the network, you may skip this step.

Note: It is recommended that you record the telephone number for each incoming line in the same location where you recorded your Controller serial number. This information will be helpful should you want to restrict specific devices on the network from accessing certain lines.

For single-line telephone wiring

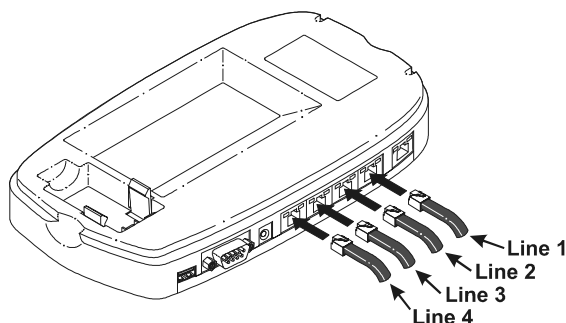
Use the following procedure if the telephone wiring coming into your building consists of single-line wires (that is, each cable carries only one telephone line).

Procedure

1. Connect one of the RJ-14 cables from your Controller kit to your primary incoming telephone line. Plug the other end of the cable to the Line 1 Connector on the Controller.
2. Use the second RJ-14 cable to connect your secondary incoming line to the Line 2 Connector.

See the following illustration.

Note: The green Line Status Indicator on a connector will illuminate within 10 seconds after the line has been properly connected.

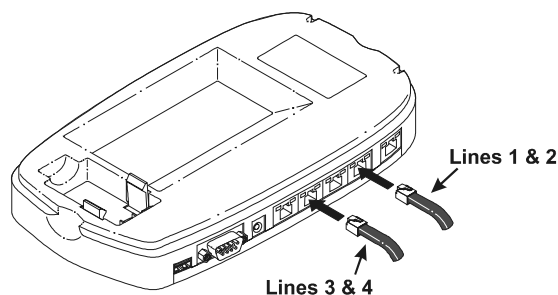


Connecting single-line telephone cables

For 2-line telephone wiring

If the telephone wiring coming into your building consists of 2-line wires (each cable carries two telephone lines), use the RJ-14 cables supplied with the Controller to plug the primary incoming line (Lines 1 and 2) into the Line 1 Connector.

If you have a second incoming 2-line cable (Lines 3 and 4), plug it into the Line 3 Connector. Be sure in this instance to leave the Line 2 and Line 4 Connectors empty - see the following illustration.



Connecting 2-line telephone cables

Note: The green Line Status Indicators on the Lines 1 and 2 connectors will illuminate within 10 seconds after the line has been properly connected. If you have connected a second 2-line cable into the Line 3 connector, the Line Status Indicators on the Lines 3 and 4 connectors will also illuminate.

Installing the battery

The Controller battery provides back-up power to your network in the event of a power outage.

When the Controller battery needs to be replaced, a low-battery warning is displayed on the screen of all handsets in the network. You should replace the Controller battery as soon as possible when you see this warning.

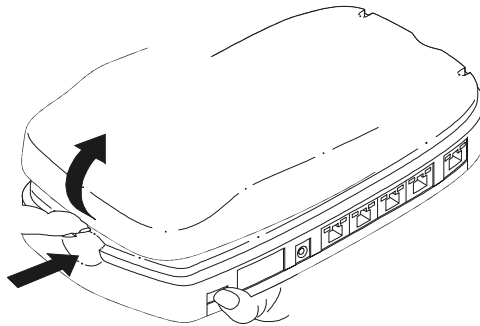
Notes:

- Use only non-rechargeable 9V alkaline batteries in the Controller.

- To preserve battery life, you should limit use of the network to emergencies only when the power is out.
- It is a good idea to change your Controller batteries at least once a year.

Procedure

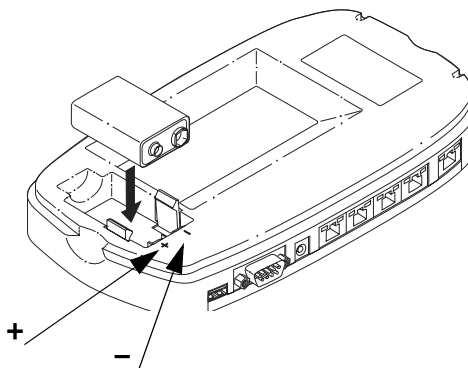
- 1** Remove the Controller cover. (Be sure the Controller is unplugged first.)



Opening the Controller

- 2 Insert the 9V battery.

Note: Be sure to observe proper polarity of the connectors.

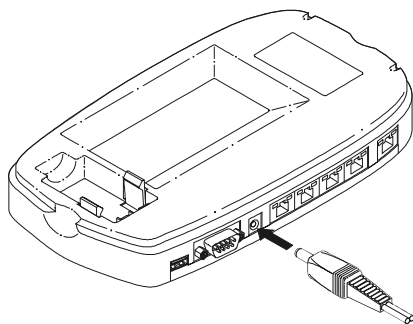


Installing the battery

Connecting the power cord

Procedure

- 1 Connect the transformer power cord to the Controller.



Connecting the power cord

- 2** Plug the transformer into a standard 110V AC electrical outlet.

Note: The green line status indicator on the E-Jack connector illuminates when the Controller has AC power.

Connecting a device to the E-Jack

The E-Jack connector on the Controller allows you to connect existing inside wiring or a single-line device such as a standard telephone, FAX machine, modem, or answering machine to the network.

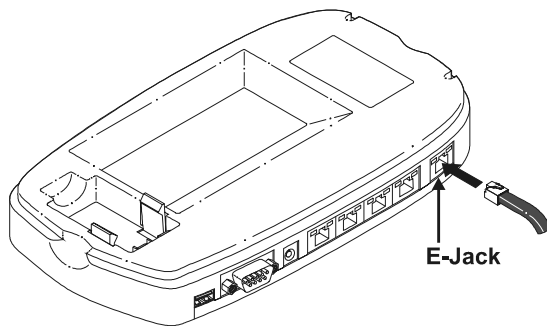
In the case of a power outage along with Controller battery failure, the E-Jack provides a connection to the public telephone network and allows the connected device to communicate.

Points to remember about the E-Jack:

- All incoming calls on Line 1 are automatically routed to the device connected to the E-Jack.
- All calls originating from a device connected to the E-Jack automatically go out on Line 1.
- Devices connected to the E-Jack can break in on any call on Line 1, even a call that has been made "Private."
- Telephone company calling services such as Call Waiting, Caller ID, Distinctive Ringing, etc., are passed through to the device connected to the E-Jack.

Procedure

Plug the cable from the single-line device into the E-Jack connector.



Connecting a device to the E-Jack

Installing Data Jacks

The Data Jack allows you to connect a PC to your Home Wireless Networks communication system. By adding several PCs to the network in this manner, you can build a wireless Local Area Network (LAN) that allows you to share files, printers, modems, etc., between the networked PCs.

If you have an Internet account, you can also use the network as an Internet gateway to provide simultaneous internet access to each PC in the network.

Checking parts

The Data Jack kit should contain the following parts.

- Data Jack
- 6' Serial Cable (9-pin)
- HWN driver diskette

If any parts are missing or broken, call your dealer.

System requirements

- You must have Windows 95, Windows 98, or Windows NT 4.0 or higher installed on your PC.
- The network Controller must already be installed before you can install a Data

Jack. See page 13 for information on installing the Controller.

- You must have an available 9-pin serial port on your PC. Refer to your PC's user manual for information on serial ports.

Installation Procedure

Use the following steps to install the Data Jack.

1. Complete the Installation Worksheet;
2. Connect the Data Jack;
3. Run the installation wizard included on the driver diskette.

Note: The Data Jack driver software is provided on a 3-1/2" diskette. If you need a different media, contact HWN Customer Service at 1-888-WHY-WIRE.

Installation Worksheet

You will need to have the following information handy in order to install the Data Jack. Be sure to fill in all the blanks on the worksheet before beginning the installation process.

Part 1

1. What is the serial number of your network Controller? (See page 13 for information on locating your Controller serial #.)

2. What is the serial number of the Data Jack? (Located on the plug side of the jack.)

3. What name do you want to give your network?

4. What name do you want to give your computer?

5. Type of modem (manufacturer and model) connected to the Controller:

6. For the line attached to the modem described above, do you have to dial "9" to reach outside numbers?

7. If you subscribe to your telephone company's call waiting service, what code do you dial to disable it?

Part 2

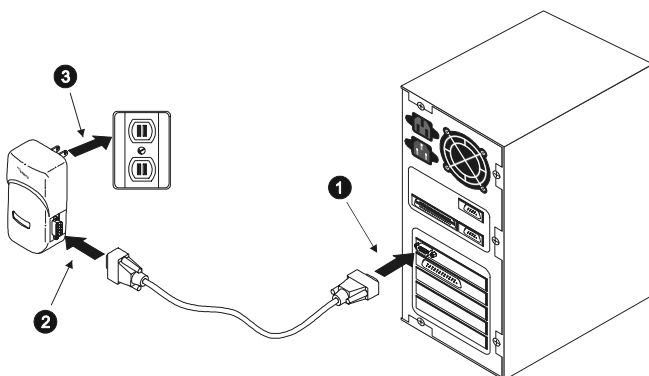
If you have an Internet account and plan to use your Home Wireless Networks communication system to connect to the Internet, obtain the following information from your Internet Service Provider:

1. Is your IP address assigned automatically or manually?

2. If IP address is assigned manually:
IP Address: ____ . ____ . ____ . ____
Subnet Mask: ____ . ____ . ____ . ____
3. Domain Name Server #1:
____ . ____ . ____ . ____
4. Domain Name Server #2:
____ . ____ . ____ . ____
5. Is there a remote gateway address? If yes: ____ . ____ . ____ . ____
6. Dial-in Phone Number _____

Connecting the Data Jack

- 1** Connect the female end of the Data Jack cable to an available 9-pin serial port on your computer.
- 2** Connect the male end of the cable to the Data Jack.
- 3** Plug the Data Jack into a standard 110v power outlet.



Running the Installation Wizard

- 1** If Windows isn't running on your PC, start it now.
- 2** Insert the driver diskette included with the Data Jack into your PC's floppy drive.
- 3** Click the Start button on the Taskbar.
- 4** Click **Run**.
- 5** In the Run dialog box, click the down arrow to the right of the "Open" field.
- 6** Click "a:\setup" or "b:\setup" (whichever is appropriate).
- 7** Click **OK**.
- 8** Follow the on-screen prompts to complete the installation.

Installing Handsets

Checking parts

The handset kit should contain the following parts.

- Handset
- Charging Cradle
- AC Adaptor
- Ni-Cd Battery Pack

If any parts are missing or broken, call your dealer.

Battery recycling instructions



The RBRC Battery Recycling Seal on the Nickel-Cadmium (Ni-Cd) battery pack indicates that Home Wireless Networks is voluntarily participating in an industry program to collect and recycle these batteries at the end of their useful life, when taken out of service within the United States and Canada. The RBRC program provides a convenient alternative to placing spent Ni-Cd batteries into the trash or municipal waste streams, which is illegal in some areas.

Please call 1-800-8-BATTERY for information on Ni-Cd recycling in your area. Home Wireless Networks' involvement in this program is part of our commitment to protecting and conserving our natural resources.

Handset installation sequence

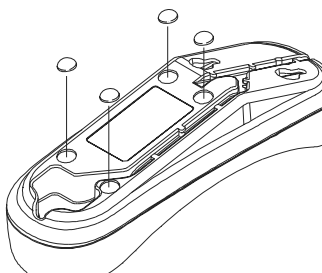
Use the following steps to add a handset to the network.

1. Attach protective rubber feet to charging cradle (unless wall-mounting the cradle).
2. Install the battery pack.
3. Charge the handset.
4. Register the handset with the Controller.

Attaching rubber feet to charging cradle

If you are placing the handset charging cradle on a desk or other horizontal surface, attach the included protective rubber feet to the underside of the cradle as shown in the following illustration.

Note: If you are mounting the charging cradle on a wall, refer to the wall-mounting instructions at the end of this manual.



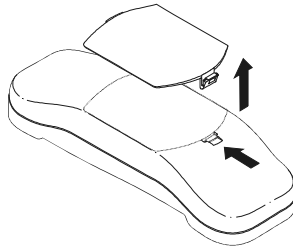
Installing the battery pack

Notes:

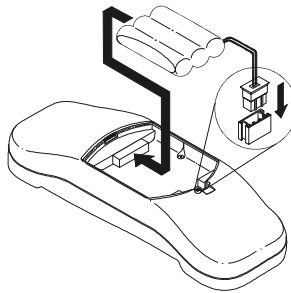
- Use only Nickel Cadmium (Ni-Cd) batteries supplied by Home Wireless Networks in the handset. For information on ordering replacement batteries, call 1-888-WHY-WIRE.

Procedure

- 1** Remove the battery cover.



- 2** Connect the battery jack and insert the battery pack into place.

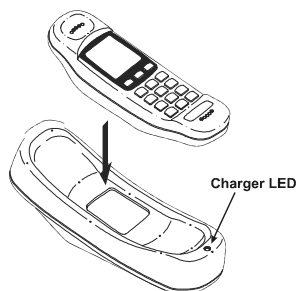


Note: Be sure to place the end of the battery pack against (not on top of) the rubber spacer in the battery well.

- 3 Replace the battery cover.

Charging the Handset battery

- 1 Connect the handset AC Adaptor to the charging cradle and plug it into a standard 110V electrical outlet.
- 2 Place the handset in the charging cradle and charge the battery for 24 hours.



Notes:

- The battery must be installed in the handset in order to recharge it.
- The handset can be placed either face up or face down in the charging cradle. The LED on the cradle illuminates when the handset is properly seated.
- Be sure to charge a new handset battery for a full 24 hours.
- For best results and to prolong battery life, be sure to fully drain the battery before recharging it.

Registering a Handset with the Controller

Before you can use a handset, it must be registered with the network controller so the two devices can communicate with each other.

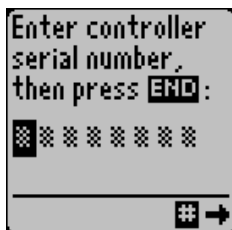
If you change Controllers for any reason, you must re-register the handset with the new Controller.

Note: Be sure to fully charge your new handset battery before beginning the handset registration procedure. See page 32 for information on installing and charging the handset battery.

There are three ways to register a handset with its Controller:

- Self-registration (registering the handset from itself) - see the following section.
- Registering the handset from another handset that is already installed on the system - see page 62, "Adding devices to the network."
- Registering the handset via a PC connected to a Data Jack - see page xx.

- 1 During the charging process, the handset will begin displaying the following screen. Wait until the handset has charged for a full 24 hours, then enter the last five digits of your network Controller serial number. Press **END** when finished.



Note: See page 14 for information on locating your Controller serial number.

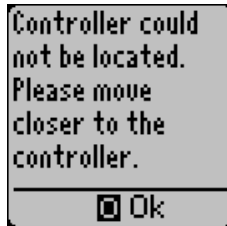
- 2 You will be asked to confirm that the entered serial number is correct. Press **1** (Yes) to confirm or **2** (No) to re-enter the Controller serial number.
- 3 After confirming that the serial number is correct, the handset displays the following screen:



Enter your Controller password, then press **0** (OK) to continue.

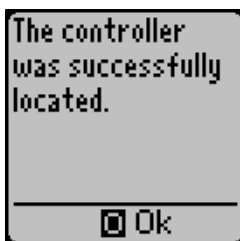
Note: The default Controller password is "4961." You should change this password to one of your own choosing as soon as you finish installing and setting up your network. The password can be changed via either the handset Setup menu (see "Changing the system password" on page 61), or via a PC connected to a Data Jack.

Note: If the Controller cannot be located, the handset displays the following screen:



Move closer to the Controller and press **0** to restart the handset registration process.

- 4 If the password is correct, the handset displays the following screen:



Press **0** to continue.

- 5 The handset next displays the following screen.



Enter a name that identifies the handset with a particular location or individual.

Note: Handset names can be up to 10 characters in length and are entered using the handset keypad.

Example:

To enter the name "Tim" -

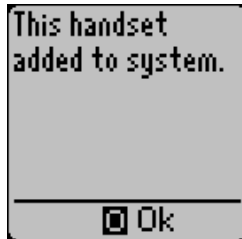
- Press 8 one time to add "T";
- Press 4 three times to add "i";
- Press 6 one time to add "m";

- Press # to advance to the next space;
- Press 0 as many times as necessary to delete the remaining unwanted text.
- Press **END** when finished.

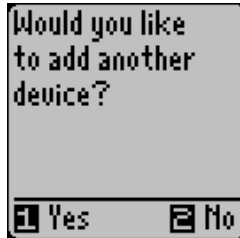
6 When asked if the entered data is correct, press **1** for Yes or **2** for No.

Note: Handset names can be changed at a later date via the Setup menu. For details, see “Changing a device name” on page 64.

7 When the handset displays the following screen, press **0** (OK) to continue:.

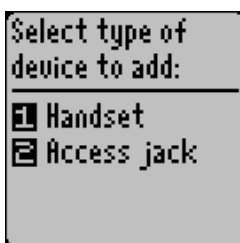


- 8** When the handset displays the following screen, press **1** (YES) if you want to add another handset or a data or phone jack to the system. Proceed to Step 9 when finished.



If you do not want to add another handset or a data or phone jack at this time, press **2** (NO) and proceed to Step 10.

- 9** If you pressed **1** (YES) in the preceding step, the following screen is displayed.



Press **1** to add another handset, or **2** to add a data or phone jack.

Note: If you press 1, you will be asked to enter the serial number and name of the additional device.

Handset serial numbers are located on the underside of the battery cover. Data and phone jack serial numbers are located on the plug side of the jack.

When you have finished adding devices to the network, proceed to the next step.

- 10** If this is the first handset you have added to the network and you have not yet specified dialing rules via a PC connected to a Data Jack, you will be prompted to define these rules now. See page 41 for information on this procedure.

- 11** When the following screen is displayed, press **0** to begin using the handset.



Establishing dialing rules

If you have not already specified dialing rules via a PC connected to a Data Jack, you will be asked to specify them during installation of the first handset.

Note: Dialing Rules tell the system how to dial local and long-distance calls (for example, when to dial "1" before an area code).

Once established, dialing rules can be changed via the handset Setup menu (see "Defining Dialing Rules" on page 70), or via a PC connected to the network via a Data Jack.

Procedure

- 1** When the following screen is displayed, press **1** (YES) if you must dial 10 digits to reach local numbers, then proceed to Step 2.

Press **2** (NO) if you do not need to dial 10 digits to reach local numbers, then proceed to Step 3.



Note: 10-digit dialing is most common in rapidly growing major metropolitan areas that have more than one area code in a dialing area.

Example

Metro Atlanta, Georgia, is a good example of a 10-digit dialing area. Callers from within any of three Atlanta area codes can place local (non-toll) calls to any other number within those three area codes by dialing xxx-xxx-xxxx.

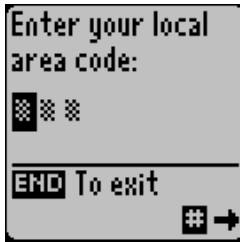
- 2** If you pressed **1** (YES) in the preceding step, the following screen is displayed.



Follow the instructions on the display to enter all local area codes that do **not** require “1” before dialing.

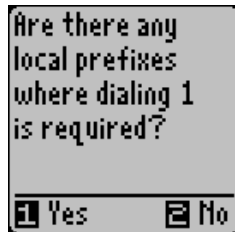
When finished, proceed to Step 6.

- 3** If you pressed **2** (NO) in Step 1, the following screen is displayed.



Follow the instructions on the display to enter your local area code.

- 4** After confirming your local area code, the following screen is displayed.

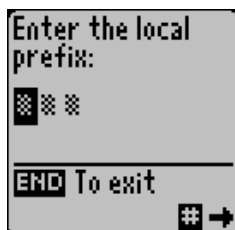


If you must dial “1” to reach any local prefixes, press **1** (YES) and proceed to Step 5.

If you do not need to dial “1” to reach any local prefixes, press **2** (NO) and proceed to Step 6.

Note: These are numbers that you must dial 1+xxx+xxxx (no area code) to reach.

- 5** If you pressed 1 (YES) in the preceding step, the following screen is displayed.



Follow the instructions on the display to enter all local prefixes that you must dial “1” to reach.

- 6** When the following screen is displayed, press **0** to begin using the handset.



Installing Phone Jacks

Phone Jacks allow you to connect analog devices such as standard telephones, FAX machines, modems, and answering machines to your Home Wireless Networks communication system.

Registering the Phone Jack with the Controller

- 1** From a handset that is registered with the Controller, press **MENU** until you reach the screen containing the Setup function.
- 2** Select **Setup**.
- 3** Select **Network**.
- 4** Select **Access Jacks**.
- 5** Select **Add**.
- 6** Enter the serial number of the phone jack being added to the network. Press **END** when finished.

Note: The serial number is located on the plug side of the jack.

- 7** When asked to enter the name of the jack, enter a name that defines the purpose of the jack.

Examples: FAX, kitchen, etc.

Note: Device names can be up to 10 characters in length.

Example:

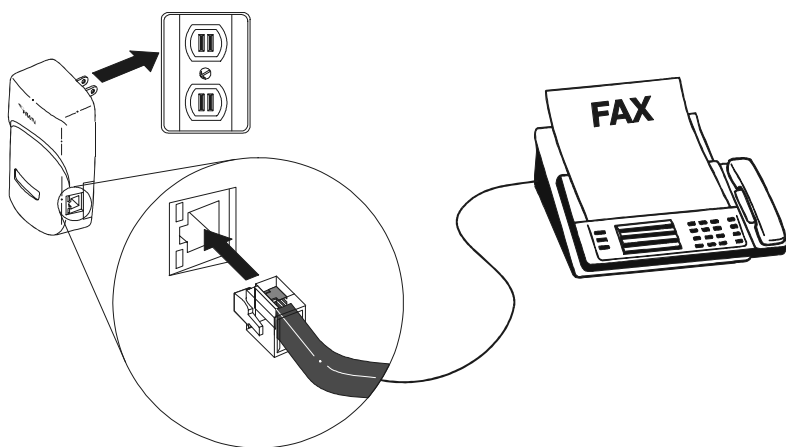
To enter the name "FAX" -

- Press 3 three times to add "F";
- Press # to advance to the next space;
- Press 2 two times to add "A";
- Press # to advance to the next space;
- Press 9 seven times to add "X"
- Press 0 as many times as necessary to delete the remaining unwanted text;
- Press **END** when finished.

- 8** After confirming that the serial number and name are correct, press **0**.

Connecting the Phone Jack

- 1** Plug the phone line from the fax machine, standard telephone, modem, etc. into the phone jack.
- 2** Connect the phone jack to the transformer.
- 3** Plug the transformer into a standard 110v power outlet.

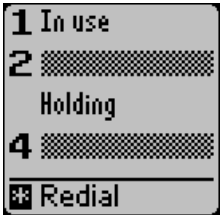


Note: The LED on the phone jack connector illuminates when it is receiving power and in communication with the Controller.

Handset Operation

Viewing Line Status

To view the status of each line, press **MENU** until you reach the Line Status screen. See the following example.



Basic Calling Features

<i>Answering an incoming call</i>	Press TALK .
<i>Answering a specific line</i>	Select the desired ringing line number. Example: To answer a call on line 3, press 3.
<i>Making a call on the first available line</i>	1. Press TALK or press the number associated with a particular line. 2. When you hear dial tone, dial the desired number.

<i>Making a call on a specific line</i>	1. Select the desired line number. 2. Dial the phone number. Example: To make a call on Line 3, press 3, then dial the phone number.
<i>Ending a call</i>	Press END .
<i>Placing a call on hold</i>	While on an active call, press HOLD .
<i>Retrieving a held call</i>	Press MENU until you reach the screen showing the held call.
<i>Call Waiting</i>	When you hear the Call Waiting tone, press FLASH to answer the waiting call. Your original call will be placed on hold. Press FLASH again to return to your original call. You can then toggle between the two calls using FLASH. Note: You must subscribe to your telephone company's Call Waiting service in order to use this feature.
<i>Calling another extension</i>	Press the desired extension number. Example: To call extension 12, press 12.
<i>Calling all extensions in the network</i>	1. Press MENU until you reach the screen containing the Extensions function. 2. Select Extensions from the list of menu items. 3. Scroll through the list until Ring All is highlighted. 4. Press 0 to dial all extensions in the network.
<i>Redialing the last number called</i>	From a non-menu screen, press * .

<i>Transferring a call</i>	1. Press MENU until you reach the screen containing the Transfer function. 2. Select Transfer from the list of menu options. 3. Select the extension number you want to transfer the call to. 4. Press 0 (Okay) to transfer the call.
<i>Using the Mute function</i>	The Mute function turns the handset microphone off. You can still hear the party on the other end, but they can't hear you. 1. While on a call, press MENU until you reach the screen containing the Mute function. 2. Select Mute to toggle the Mute function on and off.
<i>Making the current call private</i>	While on a call, you can prevent other devices on the network (except one connected to the Controller E-jack) from accessing that line. 1. Press MENU until you reach the screen containing the Private feature. 2. Select Private to toggle Call Privacy on and off. Note: The above procedure makes only the current call private. To make all calls on a particular line private, see page 68, "Setting Call Privacy for all calls on a particular line."

Caller ID and Directory Services Features

Notes:

- You must subscribe to the Caller ID service provided by your phone company in order to use the following Caller ID features.
- Two types of directories are available - a System Directory and a Personal Directory. The System Directory can store up to 50 entries and is available to all handsets and PCs in the network. The Personal Directory can store up to 40 entries per handset (up to a maximum of 400 Personal Directory entries). Entries stored in the Personal Directory are available only to the handset that stored them.

<i>Dialing from the Caller ID log</i>	1. Press MENU until you reach the screen containing the Caller ID function. 2. Select Caller ID from the list of menu options. 3. Scroll through the Caller ID records until the desired entry appears. 4. Press 5 to dial the number.
<i>Deleting a specific record from the Caller ID Log</i>	1. Press MENU until you reach the screen containing the Caller ID function. 2. Select Caller ID from the list of menu options. 3. Scroll through the Caller ID records until the desired entry appears. 4. Press 9 to delete the record from the Caller ID log.

<i>Deleting all records from the Caller ID log</i>	1. Press MENU until you reach the screen containing the Caller ID function. 2. Select Caller ID from the list of menu options. 3. Press 9 and hold for at least 3 seconds. 4. When the confirmation screen appears, press 1 (Yes) to clear all records from the Caller ID log.
<i>Saving a Caller ID record to the Directory</i>	1. Press MENU until you reach the screen containing the Caller ID function. 2. Select Caller ID from the list of menu options. 3. Scroll through the Caller ID records until the desired entry appears. 4. Press 6 to save the Caller ID information to the Directory. 5. If you have the Key System Software Package, you will be prompted to press 1 to save to the System Directory or 2 to save to the Personal Directory. <i>(See note regarding Directory Services on page 51.)</i>

<i>Dialing from the Directory</i>	1. Press MENU until you reach the screen containing the Directory function. 2. Select Directory from the list of menu options. If you have the Key System software package, you will be prompted to press 1 to reach the System Directory or 2 to reach the Personal Directory. (<i>See note regarding Directory Services on page 51.</i>) 3. Select the desired Directory category (2 - ABC, 3 - DEF, etc.). 4. Locate the desired Directory entry. 5. Press 5 to dial the number.
---	---

Manually adding an entry to the Directory

1. Press **MENU** until you reach the screen containing the Directory function.
2. Select Directory from the list of menu options.

If you have the Key System Software Package, you will be prompted to press **1** for the System Directory or **2** for the Personal Directory. (*See note regarding Directory Services on page 51.*)

3. Press **0** to add an entry.
4. Use the keypad to enter the desired name.

Example: To enter the name "Tim" -

- Press 8 one time to add "T"
- Press # to advance to the next space
- Press 4 three times to add "I"
- Press # to advance to the next space
- Press 6 one time to add "M"
- Press **END** when finished.

5. Press **END**.

<i>Deleting an entry from the Directory</i>	1. Press MENU until you reach the screen containing the Directory function. 2. Select Directory from the list of menu options. If you have the Key System Software Package, you will be prompted to press 1 for the System Directory or 2 for the Personal Directory. (<i>See note regarding Directory Services on page 51.</i>) 3. Select the desired Directory category. 4. Locate the desired Directory entry. 5. Press 9 to delete the record from the Directory.
---	---

Conference Calling Features

Your Home Wireless Networks communications system allows up to 11 parties to participate in a conference call at the same time (assuming all 4 lines and the Controller E-Jack are used).

<i>Initiating a Conference Call</i>	1. Place all parties on hold. 2. Press MENU until you reach the screen containing the Conference function. 3. Select Conference from the list of menu options.
<i>Adding another member to a Conference Call</i>	1. Place all parties on hold. 2. Press MENU until you reach the screen containing the conference function. 3. Press 1 to add a member. 4. Press # to scroll through the available parties. 5. When the desired party is highlighted, press 0 (OK) to add the party to the conference.
<i>Dropping out of a Conference Call</i>	Press END. Note: The last internal extension to drop out of a Conference Call will terminate the conference.

<i>Dropping another member from a Conference Call</i>	1. During a Conference Call, press MENU until you reach the screen containing the Conference function. 2. Select Conference from the list of menu options. 3. Press 2 to drop a member. 4. Press # to scroll through the available members. 5. When the desired member is highlighted, press 0 (OK) to drop the member from the conference.
---	---

Miscellaneous General Features

<i>Adjusting the Handset Volume</i>	1. Press MENU until you reach the screen containing the Volume function. 2. Select Volume from the list of menu options to adjust the handset volume up and down.
<i>Adjusting the Ringer Volume</i>	1. Press MENU until you reach the screen containing the Ringer volume. 2. Select Ringer from the list of menu options to adjust the handset volume up and down.
<i>Scrolling through the menus</i>	When in menu mode, press END to return to the previous screen.

<i>Locating a misplaced handset</i>	Option 1 Call the missing extension from another handset. This option causes the called handset to ring. Example: To locate extension 12, press “12.” Option 2 If you don't know the extension number of the missing handset, you can use another handset to cause all handsets in the network to ring. 1. Press MENU until you reach the screen containing the Extensions menu item. 2. Press 7 (Extensions). 3. Scroll through the displayed items until “Ring all” is highlighted. 4. Press 0 (Ring all).
---	--

Phone Company Calling Features

If you subscribe to optional line calling services available from your phone company, the Home Wireless Networks communications system allows you to take advantage of them as described below.

Note: Optional line calling features include such services as Call Waiting, Caller ID, Distinctive Ringing, Call Forwarding, etc.

<i>Caller ID</i>	All handsets in the network will display available Caller ID information, unless inbound ringing for the line handling the call has been disabled for a particular handset.
<i>Call Forwarding</i>	All calls to your phone number will be forwarded as specified.
<i>Call Waiting</i>	If you are on a call and another call comes in on that line, you will hear a Call Waiting tone on your handset. To answer the waiting call, press FLASH. Your original call will be placed on hold. Press FLASH again to return to your original call. You can then toggle between the two calls using FLASH. If you have Caller ID w/Call Waiting, the Call Waiting party's Caller ID information will appear on the handset display. Note: If you have disabled inbound ringing on your handset for a particular line and a Call Waiting signal is sent on that line, you will not hear the Call Waiting tone on your handset.

<i>Distinctive Ringing</i>	All handsets in the network will ring with the phone company distinctive ringing pattern, UNLESS you have selected a different distinctive pattern for a particular extension via the Setup menu.
<i>Voice Mail</i>	If the Voice Mail feature is activated on your system, when a voice mail message waiting signal is sent by the telephone company, all handsets in the network will display a "Message Waiting Line x" message when on the Idle screen. Note: For information on activating the Voice Mail feature on your network, see "Setting voice mail options" on page 78.

System Administration via the Handset

You can perform the following system administration tasks from any Handset on the network. (You will be required to first enter the system password.)

General

- Set system time/date
- View software version
- Change system password

Network Setup

- Add, remove, or configure Handsets or Phone and Data Jacks (including editing names and specifying lines for inbound ringing and outbound dialing)
- Set Call Forwarding, Call Privacy, Ring Pattern, or Tone/Pulse Dialing for each line
- Define dialing rules - local area code(s), 10-digit dialing area codes, local and/or long distance access codes (when dialing from behind a PBX or Key system)
- Set Hold Recall and Transfer Recall system timers

Voice Mail

- Turn message waiting detection on or off for each line.
- Specify message detection method.

Internal Modem

- Specify outbound information such as location name and number, dialing schedule, and line to be used for the outdial.
- Specify inbound information such as whether modem should answer incoming calls or not and specify which line the modem should answer on.

General System Info

Setting the time and date



When there is no activity on outside lines, the idle screen on your handset displays the date, time, and day of the week.

If you subscribe to your local telephone company's Caller ID service, the system time and date is reset with each incoming Caller ID call. If you do not subscribe to Caller ID service, you can manually reset the system time using the following procedure.

Procedure

1. Press **MENU** until you reach the screen containing the Setup function.
2. Press **9** (Setup).

3. Enter your system password, then press **END**.
4. Press **1** (General).
5. Press **1** (Time/Date).
6. Enter the correct time and date as follows:
 - Press **1** to increment the hour
 - Press **2** to increment the minute
 - Press **3** to increment the day
 - Press **4** to increment the month
 - Press **5** to increment the date.
 - Press **END**.

Verifying the system software version

You can verify your system's software version using the following procedure.

Procedure

1. Press **MENU** until you reach the screen containing the Setup function.
2. Press **9** (Setup).
3. Enter your system password, then press **END**.
4. Press **1** (General).
5. Press **2** (System Info).

Changing the system password

You may find it necessary to change your system password from time to time. The password is used to prevent unauthorized





individuals from registering devices on your system.

The Controller comes with a default system password of "4961." You should change this password to one of your own choosing as soon as you finished installing and setting up your network.

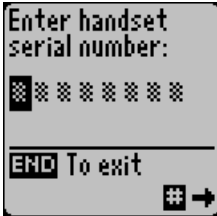
Passwords must be a 4-digit number. Write your password down and keep it in a safe place. You will need it to perform all system administration tasks.

Procedure

1. Press **MENU** until you reach the screen containing the Setup function.
2. Press **9** (Setup).
3. Enter your system password, then press **END**.
4. Press **1** (General).
5. Press **3** (Password).
6. Enter the current password, then press **END**.
7. Enter the new password, then press **END**.
8. Press **1** (Yes) to confirm the new password. Press **2** (No) to re-enter the new password.

Managing devices

Adding devices to the network



If you have already added a handset to the network, you can use the following procedure to add additional handsets, data jacks, or phone jacks.

Note: Be sure to fully charge the battery pack before attempting to use a new handset. See page 32 for information on installing and charging handset batteries.

Procedure

1. Press **MENU** until you reach the screen containing the Setup function.
2. Press **9** (Setup).
3. Enter your system password, then press **END**.
4. Press **2** (Network).
5. Press **1** if adding a handset or **2** if adding a data or phone jack.
6. Press **1** (Add).
7. Enter the serial number of the device being added.
8. Enter the device name.
9. Press **1** to verify the serial number and name, **2** to re-enter the data, or **MENU** to cancel.

10. When the display reads "Handset Added" (or "Access Jack Added"), press **0**.

Removing devices from the network



You can remove a handset, data jack, or phone jack from the network by using the following procedure. Removing a device disables the Controller's ability to communicate with that device. It is a generally a good security measure to remove a device that has been lost.

Procedure

1. Press **MENU** until you reach the screen containing the Setup function.
2. Press **9** (Setup).
3. Enter your system password, then press **END**.
4. Press **2** (Network).
5. Press **1** if removing a handset or **2** if removing a data or phone jack.
6. Press **2** (Remove).
7. Enter the extension number of the device to be removed.

Note: You can also use * and # to scroll through the entries. When the desired device is highlighted, press **0** (OK).

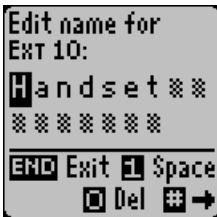
8. Press **1** to verify removal of the device, **2** to end the procedure without removing the device, or **MENU** to cancel.

Note: Pressing **2** will return you to the “Add, Remove, Configure” menu screen. Pressing **MENU** will exit the Setup function entirely.

9. When the display reads “Handset Removed” or (“Access Jack Removed”), press **0**.

Changing a device name

You can change the name of a device using the following procedure.



Procedure

1. Press **MENU** until you reach the screen containing the Setup function.
2. Press **9** (Setup).
3. Enter your system password, then press **END**.
4. Press **2** (Network).
5. Press **1** for a handset or **2** for an data or phone jack.
6. Press **3** (Configure).
7. Enter the extension number of the device to be renamed.

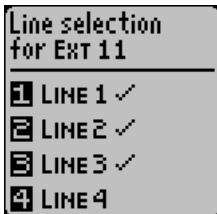
Note: You can also use ***** and **#** to scroll through the entries. When the desired device is highlighted, press **0** (OK).

8. Press **1** (Edit Name).
9. Use the keypad to enter the new name. (See page 37 or page 46 for information

on naming handsets and data or phone jacks.)

10. Press **END** when finished editing the device name.

Setting outbound line selection options



Outbound Line Selection options determine which lines an extension uses for outgoing calls. You can specify that a particular extension use only one line, or all lines in the network.

Example: You have three handsets on Extensions 10, 11, and 12, and four phone lines. One of the handsets (Extension 11) is assigned to a warehouse worker. You do not want that person to be able to access Line 3, which you want to keep free for your sales group.

By turning off outbound dialing on Line 3 from Extension 11, you prevent the warehouse worker from placing calls on Line 3.

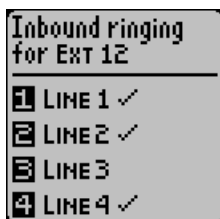
Procedure

1. Press **MENU** until you reach the screen containing the Setup function.
2. Press **9** (Setup).
3. Enter your system password, then press **END**.
4. Press **2** (Network).
5. Press **1** if the extension being configured is a handset, or **2** if the extension being configured is for a data or phone jack.

6. Press **3** (Configure).
7. Enter the extension number you want to set outbound line selection for.

Note: You can also use * and # to scroll through the entries. When the desired device is highlighted, press **0** (OK).
8. Press **2** (Outbound line selection).
9. Toggle the desired lines on or off by pressing the corresponding line number. A check mark indicates that the extension can use that line for outbound calls.

Setting inbound ringing options



Inbound Ringing options determine which extensions will ring during incoming calls on each line. If desired, you can restrict certain extensions from ringing when calls come in on a particular line.

Example: You have three handsets on Extensions 10, 11, and 12, and four phone lines. One of the phone lines (Line 3) is your 800 sales line. You do not want the extension assigned to your warehouse worker (Extension 11) to ring with incoming sales calls, so you turn off inbound ringing for Line 3 on Extension 11.

Procedure

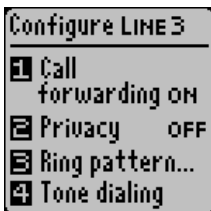
1. Press **MENU** until you reach the screen containing the Setup function.
2. Press **2** (Network).

3. Press **1** if the extension being configured is a Handset, or **2** if the extension being configured is for a data or phone jack.
4. Press **3** (Configure).
5. Enter the extension number you want to set inbound ringing for.

Note: You can also use * and # to scroll through the entries. When the desired device is highlighted, press **0** (OK).
6. Press **3** (Inbound ringing).
7. Toggle the desired lines on or off by pressing the corresponding line number. A check mark indicates that incoming calls on that line will ring the extension.

Setting phone line options

Setting Call Forwarding for a particular line



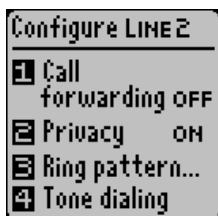
Your Home Wireless Networks communications system allows you to forward incoming calls on a specific line to another external phone number. If desired, a different external Call Forwarding number can be set for each line in the network.

Procedure

1. Press **MENU** until you reach the screen containing the Setup function.
2. Press **9** (Setup).
3. Enter your system password, then press **END**.

4. Press **2** (Network).
5. Press **3** (Lines).
6. Select the desired line number.
7. Press **1** to toggle Call Forwarding on or off.
8. If you turned Call Forwarding "ON" in the preceding step, enter the number the calls should be forwarded to. Press **END** when finished.

Setting Call Privacy for all calls on a particular line



The Home Wireless Networks communications system allows you to specify that all calls on a particular line be Private. This means that other devices on the network (except one connected to the Controller E-jack) cannot listen in or break in on the call.

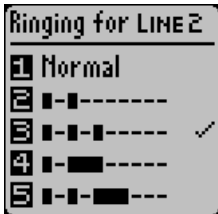
Note: Once turned on for a particular line, Call Privacy will remain in effect for that line until turned off. If you wish to make only the current call Private, see "Making the current call private" on page 50.

Procedure

1. Press **MENU** until you reach the screen containing the Setup function.
2. Press **9** (Setup).
3. Enter your system password, then press **END**.
4. Press **2** (Network).

5. Press **3** (Lines).
6. Select the desired line number.
7. Press **2** to toggle Privacy on or off.

Specifying the ring pattern for a particular line



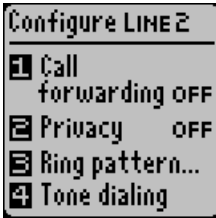
You can specify a different ring pattern for all incoming calls on a specific line. This is convenient if you have a particular line dedicated for business calls, for instance, and you want to be able to distinguish incoming calls on that line from other incoming calls.

Procedure

1. Press **MENU** until you reach the screen containing the Setup function.
2. Press **9** (Setup).
3. Enter your system password, then press **END**.
4. Press **2** (Network).
5. Press **3** (Lines).
6. Select the desired line number.
7. Select **3** (Ring pattern).
8. Select one of the five ringing pattern options.

Note: If you subscribe to your telephone company's Distinctive Ringing service and want to use that pattern instead of one of the network patterns, be sure to select Normal.

Specifying Tone or Pulse dialing for a particular line



You can specify either tone or pulse dialing for all outgoing calls on a particular line. All calls dialed out on that line from either a handset or a device connected to a Phone Jack will use the specified dialing type.

Procedure

1. Press **MENU** until you reach the screen containing the Setup function.
2. Press **9** (Setup).
3. Enter your system password, then press **END**.
4. Press **2** (Network).
5. Press **3** (Lines)
6. Select the desired line number.
7. Press **4** (Tone) to toggle between Tone and Pulse dialing.

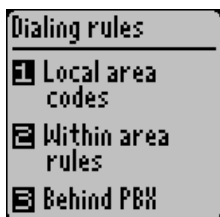
Defining Dialing Rules

Dialing Rules tell the system how to dial local and long-distance calls (for example, when to dial "1" before an area code). These rules were established during installation of the first handset (unless specified first from a PC connected to the network via a Data Jack).

You may find if necessary to change your system's dialing rules from time to time (for instance, if a new area code is added to your local dialing area).

Use the following procedures to change dialing rules via the handset.

Local area codes

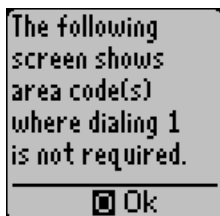


This section is used to define area codes that can be reached without dialing "1." This includes your area code (xxx-xxxx), as well as any local area codes that require 10-digit dialing (xxx-xxx-xxxx).

Viewing local area code settings

Procedure

1. Press **MENU** until you reach the screen containing the Setup function.
2. Press **9** (Setup)
3. Press **2** (Network).
4. Press **4** (Dialing rules).
5. Press **1** (Local area codes).
6. If your system is set to use 10-digit dialing, the handset displays the screen shown at left. Press **0** (Ok) to display area codes where dialing 1 is not required.



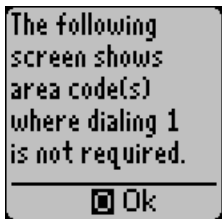
If your system is not set to use 10-digit dialing, the handset displays the local area code.

Adding a local area code

Procedure

1. Press **MENU** until you reach the screen containing the Setup function.

2. Press **9** (Setup)
3. Press **2** (Network).
4. Press **4** (Dialing rules).
5. Press **1** (Local area codes).



The following
screen shows
area code(s)
where dialing 1
is not required.

 Ok

If your system is set to use 10-digit dialing, the handset displays the screen shown at left. Press **0** (Okay) to display area codes where dialing 1 is not required.

If your system is not set to use 10-digit dialing, the handset displays the local area code and asks if you would like to make changes. Press **1** (Yes) to make changes to the local area code.

6. Press **1** (Add).
7. Enter the new local area code. Press **END** when finished
8. Press **1** (Yes) to confirm that the new area code is correct, or **2** (No) to re-enter the new area code.
9. Press **0** (Ok) when you have finished adding area codes.
10. You will be asked if 10-digit dialing is required at the new location. Press **1** (Yes) to set 10-digit dialing for your area. Press **2** if your area does not use 10-digit dialing.

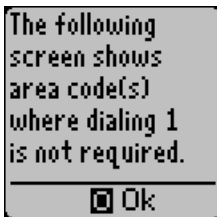
Note: You may not have more than one area code listed without activating 10-

digit dialing. If your area does not use 10-digit dialing, you must delete all area codes but one.

Deleting a local area code

Procedure

1. Press **MENU** until you reach the screen containing the Setup function.
2. Press **9** (Setup)
3. Press **2** (Network).
4. Press **4** (Dialing rules).
5. Press **1** (Local area codes).



If your system is set to use 10-digit dialing, the handset displays the screen shown at left. Press **0** (Okay) to display area codes where dialing 1 is not required, then use the # and * keys to highlight the area code to be deleted.

If your system is not set to use 10-digit dialing, the handset displays the local area code and asks if you would like to make changes. Press **1** (Yes) to make changes to the local area code.

6. Press **2** (Del).
7. Press **1** (Yes) to confirm the deletion.

When the handset displays the "Area code removed" screen, press **0**.

Within Area Rules

This section is used to define prefixes within the local area code that you must dial "1" to reach (1-xxx-xxxx).

Viewing settings for within area rules



Procedure

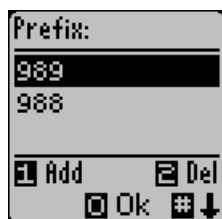
1. Press **MENU** until you reach the screen containing the Setup function.
2. Press **9** (Setup)
3. Press **2** (Network).
4. Press **4** (Dialing rules).
5. Press **2** (Within area rules).
6. When the screen shown above is displayed, press **0** (Ok).
7. The handset displays all local prefixes where dialing 1 is required.

Adding a 1+ local prefix

Procedure

1. Press **MENU** until you reach the screen containing the Setup function.
2. Press **9** (Setup)
3. Press **2** (Network).
4. Press **4** (Dialing rules).
5. Press **2** (Within area rules).





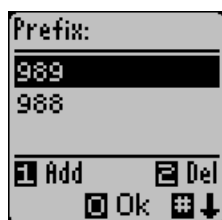
6. When the screen shown above is displayed, press **0** (Ok).
7. The handset displays a screen similar to the one shown at left.

Press **1** (Add).
8. Enter the local prefix to be added. Press **END** when finished.

The new prefix is added to the list.

Deleting a 1+ local prefix

1. Press **MENU** until you reach the screen containing the Setup function.
2. Press **9** (Setup)
3. Press **2** (Network).
4. Press **4** (Dialing rules).
5. Press **2** (Within area rules).
6. When the screen above is displayed, press **0** (Ok):
7. The handset displays a screen similar to the one shown at left.
8. Use the # and * keys to highlight the prefix you want to delete.



When the desired prefix is highlighted, press **2** (Del).

Press **1** (Yes) to confirm removal of the selected prefix.

Behind a PBX or Key System

This section is used to define local and/or long distance codes that must be dialed in order to access an outside line (common in office settings that use a PBX or Key telephone system).

Viewing access code settings

Procedure

1. Press **MENU** until you reach the screen containing the Setup function.
2. Press **9** (Setup)
3. Press **2** (Network).
4. Press **4** (Dialing rules).
5. Press **3** (Behind PBX).
6. To view the local access code setting, press **1**.

To view the long distance access code setting, press **2**.

Defining an access code

Procedure

1. Press **MENU** until you reach the screen containing the Setup function.
2. Press **9** (Setup)
3. Press **2** (Network).
4. Press **4** (Dialing rules).
5. Press **3** (Behind PBX).

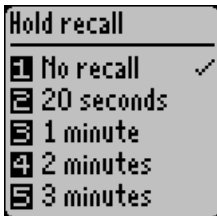
6. To define the local access code setting, press **1**.

To define the long distance access code setting, press **2**.

7. Enter the access code.
8. When asked to confirm the access code, press **1** for Yes, or **2** for No.

Setting System Timers

Setting the Hold Recall Timer



The Hold Recall Timer determines how long a call will remain on hold before a reminder ring sounds on the extension that placed it on hold. When a held call recalls back to the extension, the user hears a ring tone and the handset displays "Recall Line X."

You can choose from 5 different timer settings:

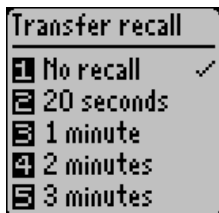
- No recall
- 20 seconds
- 1 minute
- 2 minutes
- 3 minutes

Procedure

1. Press **MENU** until you reach the screen containing the Setup function.
2. Press **9** (Setup).
3. Enter your system password, then press **END**.
4. Press **2** (Network).

5. Press **5** (Timers).
6. Press **1** (Hold recall).
7. Select one of the five timer options.

Setting the Transfer Recall Timer



The Transfer Recall Timer determines how long a transferred call will go unanswered before it rings back to the transferring extension. When a transferred call recalls to the transferring extension, the user hears a ring tone and the handset displays "Recall Line X."

You can choose from 5 different timer settings:

- No recall
- 20 seconds
- 1 minute
- 2 minutes
- 3 minutes

Procedure

1. Press **MENU** until you reach the screen containing the Setup function.
2. Press **9** (Setup).
3. Enter your system password, then press **END**.
4. Press **2** (Network).
5. Press **5** (Timers).
6. Press **2** (Transfer recall).
7. Select one of the five timer options.

Setting voice mail options

If you subscribe to your telephone company's voice mail service, you can configure your network to display a "Message Waiting" indicator on each handset in the network.

To set your network up for voice mail, you must turn message detection on for the desired lines (Line Setup), and also tell the network which detection method to use (Detection Method).

Line Setup

Procedure

1. Press **MENU** until you reach the screen containing the Setup function.
2. Press **9** (Setup).
3. Enter your system password, then press **END**.
4. Press **3** (Voice Mail).
5. Press **1** (Line Setup).
6. Press the desired line number to toggle message waiting detection on and off. A checkmark indicates that message waiting detection is turned on.

Detection Method

Procedure

1. Press **MENU** until you reach the screen containing the Setup function.
2. Press **9** (Setup).

3. Enter your system password, then press **END**.
4. Press **3** (Voice Mail).
5. Press **2** (Message Detection).
6. If your telephone company does not use stutter dial tone to indicate a waiting voice mail message, press **1** (FSK). If your telephone company uses stutter dial tone for voice mail messages, press **2** (FSK/Stutter Tone).

Setting the internal modem options

Your network Controller contains an internal modem that can be used to place data calls to remote modems, and to receive pre-arranged inbound troubleshooting calls from Home Wireless Networks Tech Support.

Specifying Outbound Settings

Up to five separate locations may be programmed for outbound dialing. The first location is set by default to Home Wireless Networks Tech Support. Other options could include dialing a remote server for news headlines, stock quotes, traffic information, weather reports, sports scores, etc.

Editing a location's name

Procedure

1. Press **MENU** until you reach the screen containing the Setup function.
2. Press **9** (Setup).



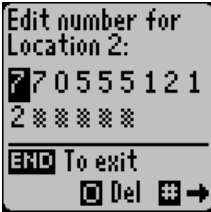
3. Enter your system password, then press **END**.
4. Press **4** (Internal Modem).
5. Press **1** (Outbound Settings).
6. Select the location to be modified.
7. Press **1** (Edit name).

Use the keypad to enter the desired name.
Press **END** when finished.

Example:

To enter the name "News" -

- Press 6 as many times as necessary to add "N";
 - Press # to advance to the next space;
 - Press 3 as many times as necessary to add "e";
 - Press # to advance to the next space;
 - Press 9 as many times as necessary to add "w";
 - Press # to advance to the next space;
 - Press 7 as many times as necessary to add "s";
 - Press # to advance to the next space;
 - Press **END**.
8. Press **1** (Yes) to accept the name, or **2** (No) to cancel and start over.

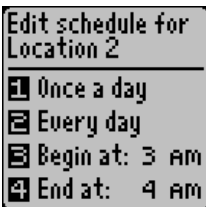


Editing a location's number

Procedure

1. Press **MENU** until you reach the screen containing the Setup function.
2. Press **9** (Setup).
3. Enter your system password, then press **END**.
4. Press **4** (Internal Modem).
5. Press **1** (Outbound Settings).
6. Select the location to be modified.
7. Press **2** (Edit number).
8. Enter the desired number.
9. Press **END** when finished.

Editing a location's dialing schedule



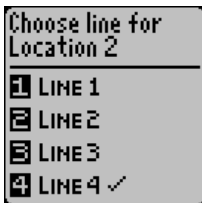
Procedure

1. Press **MENU** until you reach the screen containing the Setup function.
2. Press **9** (Setup).
3. Enter your system password, then press **END**.
4. Press **4** (Internal Modem).
5. Press **1** (Outbound Settings).

6. Select the location to be modified.
7. Press **3** (Edit schedule).
8. Specify the desired schedule:
 - Press **1** as many times as necessary to specify the daily frequency;
 - Press **2** as many times as necessary to specify the monthly frequency or day of week;
 - Press **3** as many times as necessary to specify the desired start time;
 - Press **4** as many times as necessary to specify the desired ending time.
9. Press **END** when finished.

Specifying a line for the outdial

Procedure



1. Press **MENU** until you reach the screen containing the Setup function.
2. Press **9** (Setup).
3. Enter your system password, then press **END**.
4. Press **4** (Internal Modem).
5. Press **1** (Outbound Settings).
6. Select the location to be modified.
7. Press **4** (Choose line).
8. Specify the desired line for the outdial.

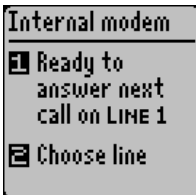
Note: If the specified line is busy when the scheduled time arrives, the Controller will try every 30 minutes for the next 12 hours to access the line.

Specifying Inbound Settings

You can set your Controller's internal modem to answer the next incoming call on a specific line. This feature is intended to allow Home Wireless Networks Tech Support to dial into your system at a pre-arranged time for troubleshooting purposes.

Note: Since this procedure will cause the modem to answer the next incoming call on the specified line, you should not turn this setting on unless so directed by Home Wireless Networks Tech Support.

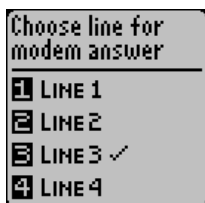
Turning the internal modem on or off



Procedure

1. Press **MENU** until you reach the screen containing the Setup function.
2. Press **9** (Setup).
3. Enter your system password, then press **END**.
4. Press **4** (Internal Modem).
5. Press **2** (Inbound Settings).
6. Press **1** to toggle Internal Modem Answer on or off.

Specifying the incoming line



Procedure

1. Press **MENU** until you reach the screen containing the Setup function.
2. Press **9** (Setup).
3. Enter your system password, then press **END**.
4. Press **4** (Internal Modem).
5. Press **2** (Inbound Settings).
6. Press **2** (Choose Line).
7. Select the desired line. Remember that if internal modem answer is toggled ON, the next incoming call on the specified line will be answered by the Controller's internal modem.

System Administration via your PC

All system administration tasks available via a Home Wireless Networks handset can also be accomplished via a PC connected to a Data Jack.

Note: You must have an Internet browser such as Netscape or MS Internet Explorer installed on your PC.

Procedure

1. Launch your Internet browser.
2. Type in the following URL:

????????
3. When the Home Wireless Networks screen appears, select "User Setup."
4. Select the desired setup category:

General

- Set system time/date
- View software version
- Change system password

Network Setup

- Add, remove, or configure Handsets or Phone and Data Jacks (including editing names and specifying lines for inbound ringing and outbound dialing)
- Set Call Forwarding, Call Privacy, Ring Pattern, or Tone/Pulse Dialing for each line
- Define dialing rules - local area code(s), 10-digit dialing area codes, local and/or long distance access codes (when dialing from behind a PBX or Key system)
- Set Hold Recall and Transfer Recall system timers

Voice Mail

- Turn message waiting detection on or off for each line.
- Specify message detection method.

Internal Modem

- Specify outbound information such as location name and number, dialing schedule, and line to be used for the outdial.
- Specify inbound information such as whether modem should answer incoming calls or not and specify which line the modem should answer on.

Troubleshooting

Handset displays “Controller not located”

1. You may be out of range - move closer to the Controller unit.
2. Your handset battery may be dead. Replace the battery and charge the handset for 24 hours before attempting to use it again.

Non-Home Wireless Networks device connected to a line also used by the Controller causes interference with network devices

Non-Home Wireless Networks equipment connected to the same line as the Controller may cause interference if the non-network device and a network device attempt to use the line at the same time.

- If the non-network device is in on an active call when the network device attempts to use the same line, the Controller may not be able to acquire the line for the wireless device.
- If the non-network device initiates or receives a call while a wireless network device is using the same line, the Controller (and wireless device) may lose connection to the line.

One one of the following suggestions to resolve the problem:

1. Do not use the non-network device at the same time the line is being used by a wireless network device.
2. Disconnect the non-network device from the line and move it to another telephone line not used by the Controller, or to the network E-Jack

The network is not operational during a power outage condition

Your Controller back-up battery may be dead. Replace the battery and limit use of the network to emergencies only until power is restored. (See “Installing the battery” on page 20 for information on this procedure.)

You forgot your system password

You can reset your system to the default of “4961” by disconnecting the Controller power cord and removing the Controller battery, then reinstalling the battery and reconnecting the power. Remember to change the password to one of your own choosing as soon as the network is operational again. (See “Changing the system password” on page 64 for information on changing the system password.)

Regulatory

Information for general telephones

1. This equipment complies with Part 68 of the FCC rules. On the bottom of this equipment is a label that contains, among other information, the FCC registration number and ringer equivalence number (REN) for this equipment. If requested, this information must be provided to the telephone company.
2. The applicable registration jack (connector) USOC-RJ11C is used for this equipment.
3. This equipment is designed to be connected to the telephone network or premises wiring using a compatible modular jack which is Part 68 compliant. The FCC compliant telephone cord and modular plug is provided with this equipment.
4. The REN is used to determine the quantity of devices which may be connected to the telephone line. Excessive RENs on the telephone line may result in the devices not ringing in response to an incoming call. In most, but not all areas, the sum of the RENs should not exceed five (5.0). To be certain of the number of devices that may be connected to a line, as determined by the total RENs, contact the local telephone company.
5. If your equipment causes harm to the telephone network, the telephone company will notify you in advance that temporary discontinuance of service may be required. If advanced notice is not practical, the telephone company will notify the customer as soon as possible. Also, you will be advised of your right to file a complaint with the FCC if you believe it is necessary.
6. The telephone company may make changes in its facilities, equipment, operations, or procedures that could affect the operation of the equipment. If this happens, the telephone company will provide advance notice in order for you to make necessary modifications to maintain uninterrupted service.

7. If trouble is experienced with this equipment, for repair or warranty information, please contact the Home Wireless Networks Customer Service Center at 1-888-WHY-WIRE. If the equipment is causing harm to the telephone network, the telephone company may request that you disconnect the equipment until the problem is resolved.
8. All repairs will be performed in an authorized Home Wireless Networks service station. This equipment cannot be used for party lines or coin lines.
9. This equipment is hearing aid compatible.

For telephones equipped with automatic dialers

When programming emergency numbers and/or making test calls to emergency numbers:

1. Remain on the line and briefly explain to the dispatcher the reason for the call.
2. Perform such activities in off-peak hours, such as early morning or late evenings.

Caution

You are cautioned that any changes or modifications not expressly approved in the product documentation could void your authority to operate this equipment.

Interference information

Some telephone equipment generates, uses, and can radiate radio frequency energy, and if not installed and used properly, may cause interference to radio or TV reception.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses, and can radiate radio frequency energy, and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures.

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment to an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

Note: Privacy of communications may not be ensured when using this phone.

Specifications

General

Frequency range	902-928 MHz
RF Bandwidth	approx. 3 MHz 10dB BW
Effective range	500 - 1000 feet
Number of devices allowed on network (Handsets, Data Jacks, and/or Phone Jacks)	12 (6 can be active at any one time)

Controller

Size	8.5" x 4.75" x 2.25"
Weight	
Channels	37
Bit Rate	
Ambient temperature range	-22°F to 122°F
Humidity	20% to 90% (non-condensing)
Power Source	7.2v DC via external transformer 9v alkaline battery backup

Handset

Size	6.75" x 2" x 1.25"
Weight	< 7 oz
Channels	37
Voice Channel Data Rate	80 Kbits/sec
Ambient temperature range	-32°F to 122°F
Humidity	20% to 90% (non-condensing)
Power Source	3-cell AA rechargeable Ni-Cd battery pack
Charging Cradle Transformer	+9v/100mA

Data Jack

Size	4.5" x 2.75" x 1.25"
Weight	14 oz
Connectors	One DB-9 Female
Channels	7
Channel Data Rate	6 x 80 Kbits/sec each direction
Ambient temperature range	-32°F to 122°F
Humidity	20% to 90% (non-condensing)
Power Source	100v AC power line

Phone Jack

Size	4.5" x 2.75" x 1.25"
Weight	14 oz
Connectors	One RJ-14
Channels	7
Channel Data Rate	6 x 80 Kbits/sec each direction
Ambient temperature range	-32°F to 122°F
Humidity	20% to 90% (non-condensing)
Power Source	100v AC power line

Warranty Information

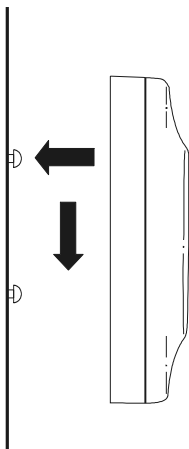
Wall Mounting Instructions

Mounting the Controller on a wall

Procedure

Use the template on page 103 to help position the Controller on the wall.

- 1** Locate a wall stud in the area where you want to mount the Controller.
- 2** Hold the template against the wall with the crossmarks centered on the stud and mark through the center of each crossmark with a pencil or other sharp-pointed object.
- 3** Insert the mounting screws through the wallboard and into the stud at the marked locations. Leave enough of the screw protruding to hold the Controller.
- 4** Position the Controller against the wall so the mounting screws align with the holes on the underside of the Controller base.
- 5** Slide the Controller down until it seats firmly on the mounting screws. See the illustration at left.

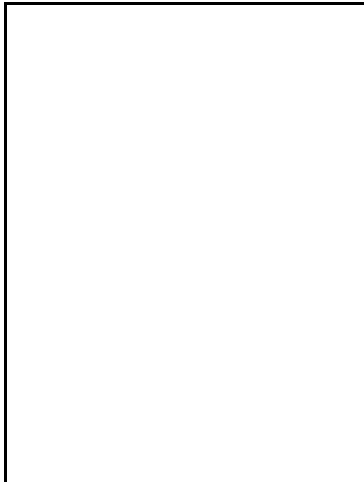


Mounting the Handset charging cradle on a wall

Procedure

Use the template on page 104 to help position the Handset charging cradle on the wall.

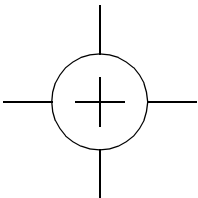
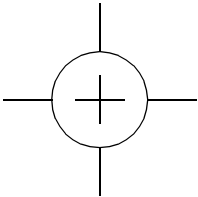
- 1** Locate a wall stud in the area where you want to mount the charging cradle.
- 2** Hold the template against the wall with the crossmarks centered on the stud and mark through the center of each crossmark with a pencil or other sharp-pointed object.
- 3** Insert the mounting screws through the wallboard and into the stud at the marked locations. Leave enough of the screw protruding to hold the cradle.
- 4** Connect the handset AC adaptor to the charging cradle and route the adaptor cord through the channel in the base.
- 5** Position the cradle against the wall so the mounting screws align with the holes on the underside of the unit.
- 6** Slide the cradle down until it seats firmly on the mounting screws. See the illustration at left.



Controller Wall Mounting Template

Use this template when mounting the Controller on a wall.

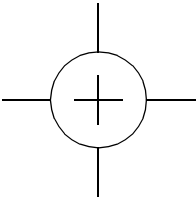
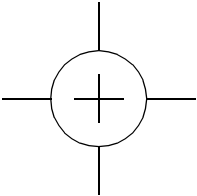
To mark the positions of the mounting screws, hold the template against the wall with the crossmarks centered on a wall stud. Push a pencil or pen point through the center of each crossmark to mark the wall.



Handset Charging Cradle Wall Mounting Template

Use this template when mounting the Handset charging cradle on a wall.

To mark the positions of the mounting screws, hold the template against the wall with the crossmarks centered on a wall stud. Push a pencil or pen point through the center of each crossmark to mark the wall.





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