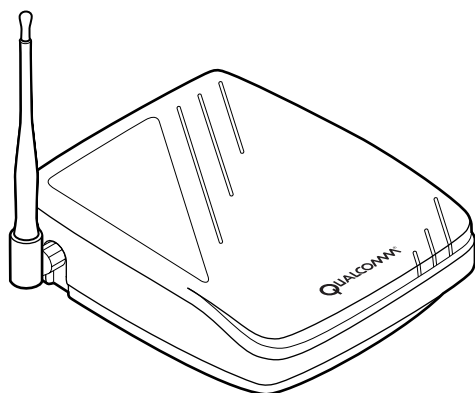


QCT-™ 7000/QCT-™ 7200 Network Interface Unit User's Guide



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Software changes may have occurred after this printing. QUALCOMM reserves the right to make changes in technical and product specifications without prior notice. The products and equipment described in this documentation are manufactured under one or more of the following U.S. Patents:

4,901,307	5,056,109	5,099,204	5,101,501	5,103,459	5,107,225	5,109,390
5,193,094	5,228,054	5,257,283	5,265,119	5,267,261	5,267,262	5,280,472
5,283,536	5,289,527	5,307,405	5,309,474	5,337,338	5,339,046	5,341,456
5,383,219	5,392,287	5,396,516	D356,560	5,408,697	5,414,728	5,414,796
5,416,797	5,426,392	5,437,055	D361,065	5,442,322	5,442,627	5,452,473
5,461,639	5,469,115	5,469,471	5,471,497	5,475,870	5,479,475	5,483,696
5,485,486	5,487,175	5,490,165	5,497,395	5,499,280	5,504,773	5,506,865
5,509,015	5,509,035	5,511,067	5,511,073	5,513,176	5,515,177	5,517,323
5,519,761	5,528,593	5,530,928	5,533,011	5,535,239	5,539,531	5,544,196
5,544,223	5,546,459	5,548,812	5,559,881	5,559,865	5,561,618	5,564,083
5,566,000	5,566,206	5,566,357	5,568,483	5,574,773	5,574,987	D375,740
5,576,662	5,577,022	5,577,065	D375,937	5,588,043	D376,804	5,589,756
5,590,069	5,590,406	5,590,408	5,592,548	5,594,718	5,596,570	5,600,754
5,602,834	5,602,833	5,603,096	5,604,459	5,604,730	5,608,722	5,614,806
5,617,060	5,621,752	5,621,784	5,621,853	5,625,876	5,627,857	5,629,955
5,629,975	5,638,412	5,640,414	5,642,398	5,644,591	5,644,596	5,646,991
5,652,814	5,654,979	5,655,220	5,657,420	5,659,569	5,663,807	5,666,122
5,673,259	5,675,581	5,675,644	5,680,395	5,687,229	D386,186	5,689,557
5,691,974	5,692,006	5,696,468	5,697,055	5,703,902	5,704,001	5,708,448
5,710,521	5,710,758	5,710,768	5,710,784	5,715,236	5,715,526	5,722,044
5,722,053	5,722,061	5,722,063	5,724,385	5,727,123	5,729,540	5,732,134
5,732,341	5,734,716	5,737,687	5,737,708	5,742,734	D393,856	5,748,104
5,751,725	5,751,761	5,751,901	5,754,533	5,754,542	5,754,733	5,757,767
5,757,858	5,758,266	5,761,204	5,764,687	5,774,496	5,777,990	5,778,024
5,778,338	5,781,543	5,781,856	5,781,867	5,784,406	5,784,532	5,790,589
5,790,632	5,793,338	D397,110	5,799,005	5,799,254	5,802,105	5,805,648
5,805,843	5,812,036	5,812,094	5,812,097	5,812,538	5,812,607	5,812,651
5,812,938	5,818,871	5,822,318	5,825,253	5,828,348	5,828,661	5,835,065
5,835,847	5,839,052	5,841,806	5,842,124	5,844,784	5,844,885	5,844,899
5,844,985	5,848,063	5,848,099	5,850,612	5,852,421	5,854,565	5,854,786
5,857,147	5,859,612	5,859,838	5,859,840	5,861,844	5,862,471	5,862,474
5,864,760	5,864,763	5,867,527	5,867,763	5,870,427	5,870,431	5,870,674
5,872,481	5,872,774	5,872,775	5,872,823	5,877,942	5,878,036	5,870,631
5,881,053	5,881,368	5,884,157	5,884,193	5,884,196		

Other patents pending

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Important Information

FCC/IC Notice

This computer peripheral complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesirable operation. This receiver complies with part 15 of the FCC Rules. Operation is subject to the condition that this device does not cause harmful interference.

Caution

The user is cautioned that any changes or modifications not expressly approved by the party responsible for compliance could void the warranty and user's authority to operate the equipment.

Warning

Use only QUALCOMM-approved accessories with QUALCOMM phones. Use of any unauthorized accessories may be dangerous and will invalidate the phone warranty if said accessories cause damage or a defect to the phone. The use of any other type will invalidate the warranty and may be hazardous.

Customer Service

Your service provider's customer support department should be able to answer all of your questions. To reach them, dial *611 or the phone number on your monthly bill.

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QUICK START: CONNECTING UNIT

① Connect your phone to the Network Interface Unit (NIU).

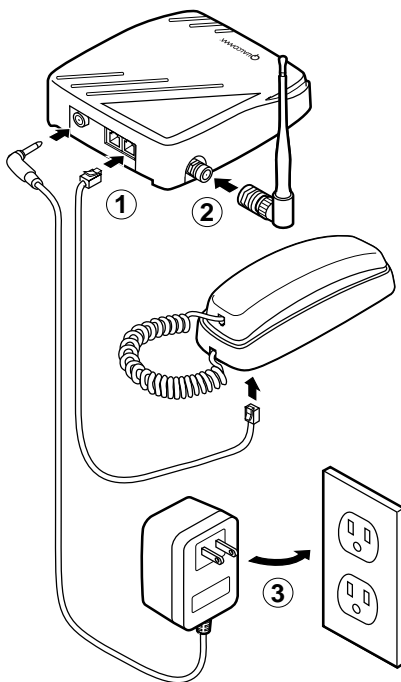
- Slide connector panel cover (see illustration on page 3) off back of NIU.
- Plug telephone connector into one of the telephone jacks on the NIU. Be sure the phone is set for touchtone dialing (see page 6).
- Plug the other end of the connector into your touchtone telephone.

② Connect the antenna.

- Align the nut on the antenna with the thread on the NIU.
- Thread the antenna onto the NIU's antenna connector and hand-tighten.
- Position the antenna vertically for optimal reception.

③ Attach the power source.

- Insert the small plug on the AC adaptor into the DC jack on the back of the NIU.
- Plug the AC adaptor into any available AC wall outlet providing the voltage specified on the adaptor.
- Reattach connector panel cover if desired (see illustration on page 3).



Make a call

1. Lift the handset.
2. Listen for a dial tone. (If dial tone is not present, see the "Troubleshooting" section.)
3. Press the appropriate digit keys to dial the desired phone number.
4. Replace the handset in the cradle to end the call.

QUICK START: USING FEATURES

Task	Dialing Code	Page
Dialing a speed dial number	<speed dial>* Note: <speed dial> = 1–20	8
Storing a speed dial number	#10<speed dial location> <phone number># Notes: <speed dial location> = 01–20 Enter a zero when storing locations 1 through 9; for example, 01 or 03.	8
Storing a hotline number	#20<phone number>#	10
Canceling a hotline number	#200#	10
Setting an occasional alarm	#16<hhmm># Note: <hhmm> = time in hours and minutes based on a 24-hour clock format.	11
Canceling an occasional alarm	#17<hhmm>#	11
Setting a standing alarm	#19<hhmm>#	11
Canceling a standing alarm	#190#	12
Voice mail retrieval	99* (reserved speed-dial number if supported by your service provider)	13
Making a data call	#3282<phone number>	16
Making a fax call	#329<phone number>	16
Resetting to default values	#9190 0000#	19

WARNING: IMPORTANT SAFETY INFORMATION

When using your Network Interface Unit (NIU), follow these safety precautions to reduce the risk of fire, electrical shock, and injury.



Caution

- Never spill liquid onto the NIU. Do not use it near water (a bathtub, sink, wet basement, or swimming area) or during an electrical storm.
- Do not use the NIU to report a gas leak if you are in the vicinity of the gas leak.
- Do not overload wall outlets and extension cords. This can result in risk of fire or electric shock.
- Never push objects of any kind through slots in the casing. They could contact dangerous voltage points or short out parts, resulting in risk of fire or electric shock.
- Slots and other openings in the NIU are provided for ventilation. To protect it from overheating, do not block or cover these openings. Do not place the product on a rug, sofa, or similar surface that could obstruct these openings.
- Do not place the NIU near or over a radiator or other heat source.
- Use caution when handling a damaged or leaking battery. Do not dispose of batteries in a fire, as they may explode.
- Do not open or mutilate the batteries. Use only proper QUALCOMM charging accessories. Unapproved charging equipment may cause batteries to explode or leak corrosive electrolyte.

- Dispose of batteries in accordance with local codes. In many areas the disposal of batteries in household or business trash receptacles may be prohibited. You can help preserve our environment by returning unwanted batteries to the nearest qualified recycling center.
- The NIU emits radio frequency (RF) energy. While no health risks have been shown to be caused by this energy, compliance with U.S. Federal Communications Commission RF exposure regulations requires maintenance of at least 20 cm (8 inches) between the user and either the dipole antenna (page 2) or panel antenna (page 5) during normal operation.

QUALCOMM-Approved Accessories

Use only the AC adaptor, battery, and antenna supplied or approved by QUALCOMM. Unauthorized power supplies, batteries, antennas, modifications, or attachments could violate local regulations, damage your equipment, and void your warranty.

Repair

Do not disassemble this product. Take it to a qualified service technician or your dealer under the following conditions:

- If the NIU does not operate normally when used in accordance with the operating instructions.
- If liquid was spilled into the NIU or it was exposed to rain.
- If the NIU has been physically damaged.

Contents

Quick Start: Connecting Unit	iii
QUICK START: USING Features	iv
WARNING: Important Safety Information.....	v
Introduction	1
NIU Package Contents.....	2
Parts of the NIU.....	3
Optional Equipment	5
Uses of Your NIU	6
Connecting equipment directly to the NIU	6
Connecting a single phone	6
Connecting additional telephone devices.....	7
Connecting devices in other rooms	7
Using Basic Features	8
Making a call	8
Speed dialing	8
Storing a speed-dial number	8
Dialing a speed-dial number	9
Canceling a speed-dial number.....	9
Hotline phone number	9
Storing a hotline number	10
Canceling the stored hotline number	10
User-programmable alarms.....	10
Occasional alarms	11
Standing alarms.....	11
Using Network Services.....	13
Call forwarding	13
Call waiting.....	13
Three-way calling	13
Initiating a three-way call.....	14
Ending a three-way call	14
Voice mail.....	14
Caller ID	14
Data features.....	15
Connecting data equipment	15
Making a data call	16
Making a fax call	16
Receiving a data call or fax call	16

Using Advanced Features.....	18
Customizing features.....	18
Adjusting earpiece volume.....	18
Adjusting send time.....	18
Adjusting key beep length.....	18
Checking signal strength.....	19
Resetting defaults.....	19
Call Restriction.....	19
Call restriction levels.....	20
Setting the call restriction password.....	20
Changing the call restriction password.....	21
Setting the call restriction level.....	21
Storing a restriction override number.....	22
Blocked numbers.....	23
Connecting Accessories.....	24
Connecting the internal battery to the NIU.....	24
Connecting the external BBPS to the NIU.....	25
Connecting the panel antenna to the NIU.....	25
Specifications.....	26
QCT-7000.....	26
QCT-7200.....	26
QCT-7000/QCT-7200.....	26
Tested modems.....	27
Troubleshooting.....	28
Guidelines for Safe and Efficient Use.....	31
Local laws and regulations.....	31
Background.....	31
Exposure to radio frequency energy.....	31
For best performance.....	32
Antenna care.....	32
Cleaning.....	32
Electronic devices.....	32
Pacemakers.....	33
Hearing aids.....	33
Other medical devices.....	33
Vehicles.....	33
Posted facilities.....	33
Children.....	34
Blasting areas.....	34
Potentially explosive areas.....	34
Standards.....	34
Customer Service.....	35

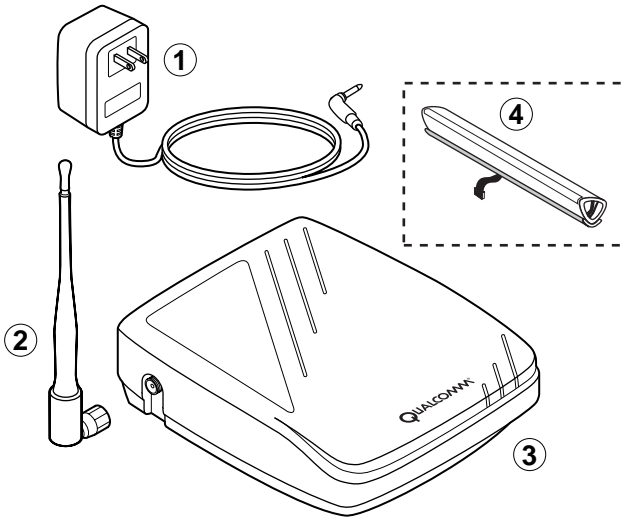
INTRODUCTION

QUALCOMM appreciates your business and is pleased that you have selected the QCT-™7000 or QCT-™7200 Network Interface Unit (NIU). This easy-to-use, dependable wireless local loop terminal offers superior voice quality, advanced features, and caller privacy using QUALCOMM's advanced code division multiple access (CDMA) technology. It can operate multiple extensions of touchtone phones, modems, and fax machines on a single phone line. The NIU also provides the following features:

- Support of custom calling options:¹
 - Call forwarding
 - Call waiting
 - Three-way calling
 - Caller ID presentation
 - Voice mail
- 20 speed-dial numbers
- Advanced call restriction with customizable restriction levels
- Six occasional (one-time) alarms and one standing alarm
- Support of 8K QCELP, 8K EVRC, or 13 kbps PureVoice™ Vocoder
- Desktop and wall-mount options
- Optional internal battery backup with on/off switch (shown on page 24)

¹ Depending on services available from your service provider.

NIU Package Contents



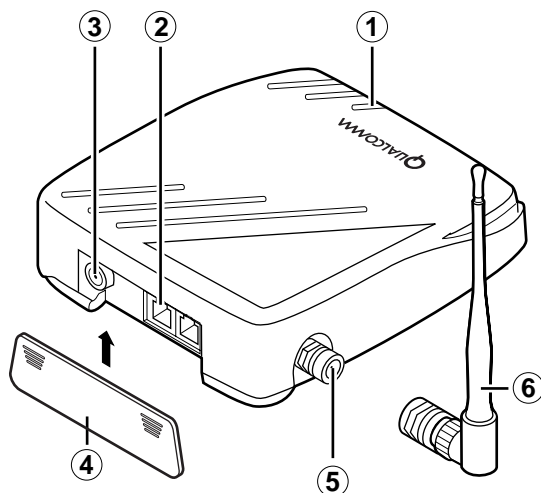
- | | |
|-----------------------------|--|
| ① AC adaptor | Provides power for the NIU. |
| ② Dipole antenna | Transmits and receives radio frequency signals.
(Position it vertically for optimum performance.) |
| ③ NIU | QCT-7000 or QCT-7200 Network Interface Unit. |
| ④ Optional internal battery | Provides temporary backup power in the event of a power outage. |

Not shown above:

User guide

Warranty card

Parts of the NIU



① Power light

When illuminated green or blue, indicates power is on.

When flashing green or blue, indicates NIU is operating from internal battery.

When flashing red, indicates NIU is operating from internal battery and battery power is low.

When illuminated red, indicates internal battery is charging.

② Telephone jacks (2)

Connect multiple devices (such as touchtone telephones, answering machine, fax machine, or modems) to the NIU simultaneously, up to a maximum sum of 5 REN B (see pages 6 and 34).

③ DC jack

Connects the AC adaptor to the NIU.

④ Connector panel cover

Covers the telephone jacks and DC jack.

⑤ Antenna connection

Connects the dipole antenna or panel antenna cable to the NIU.

⑥ Dipole antenna

Transmits and receives radio frequency signals.
(Position it vertically for optimum performance.)

Internal battery on/off switch
(shown on page 24)

Disables the internal battery backup power source.
The NIU's power light will not be illuminated when the switch is set to the off (O) position, although the battery will still charge normally while the AC adaptor is plugged into a wall outlet.

NOTE

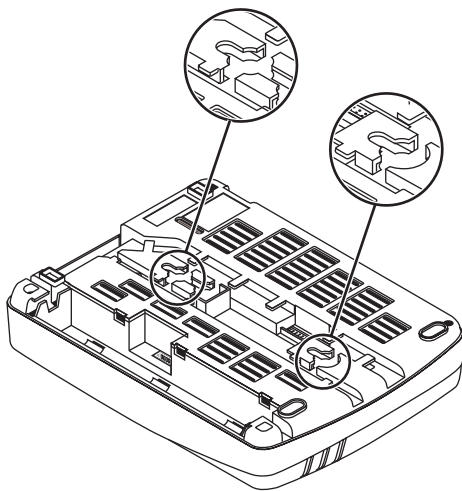
When taking the NIU out of service for an extended period of time, move the switch to the off (O) position. This avoids deeply discharging the battery and damaging its ability to retain a charge.

Wall mounting slots (shown below)

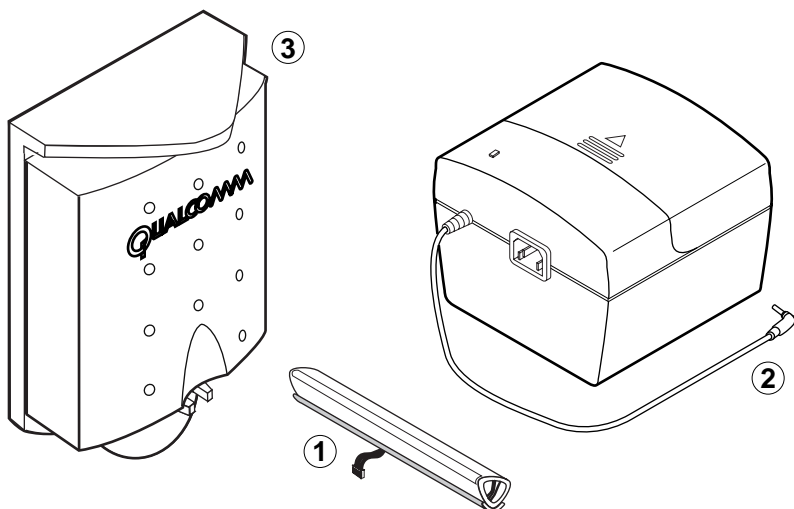
Mate with a standard wall mounting plate or fit over the heads of screws placed in the wall.

NOTE

Mounting screws must be securely driven into wood or concrete/brick with appropriate anchors.



Optional Equipment



① Internal battery

Provides temporary backup power in the event of a power outage for up to 1 hour talk time and 8 hours standby.

② Battery Backed Power Supply (BBPS)

Provides temporary backup power in the event of a power outage for up to 6 hours talk time and 48 hours standby.

③ Panel antenna (QCT-7200 only)

Improves transmission and reception. Use it in areas with marginal coverage.

NOTE

Use only QUALCOMM-authorized accessories. Use of any other accessories could void your warranty for this equipment. See pages 24 and 25 for instructions on how to connect the internal battery, the BBPS, and the panel antenna.

USES OF YOUR NIU

Connecting equipment directly to the NIU

You can connect devices directly to the NIU, through existing premises telephone wiring, or with jacks to equipment in other rooms. The NIU has two telephone jacks to connect multiple touchtone telephones approved for home use. Multiple devices (touchtone telephones, fax machine, etc.) can be connected, to a maximum sum of 5 REN B. Check the REN B rating of your equipment to determine how many devices you can connect. The REN B rating is typically located on the bottom of the phone or other device.

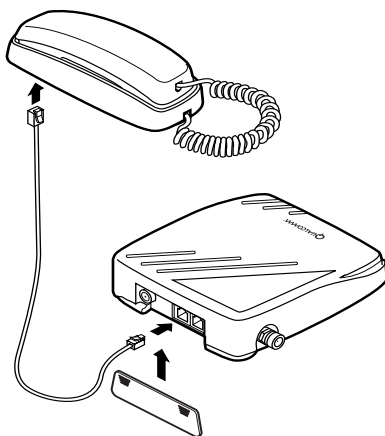
NOTE

The NIU does not support calls from a rotary or pulse dialing telephone. Refer to your touchtone telephone's user guide to set it to "tone" instead of "pulse."

Before connecting any fax or modem devices to the NIU, check with your service provider to be sure that these services are available.

Connecting a single phone

1. Remove the connector panel cover on the NIU by pressing down on the arrows and sliding the cover away from the unit.
2. Plug a touchtone phone connector into one of the telephone jacks on the NIU. Plug the other end of the connector into your touchtone telephone.

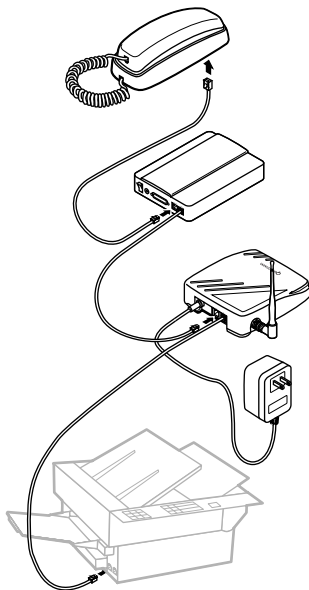


Connecting additional telephone devices

You can connect several telephone devices directly to the NIU, up to a limit of 5 REN B (see page 6).

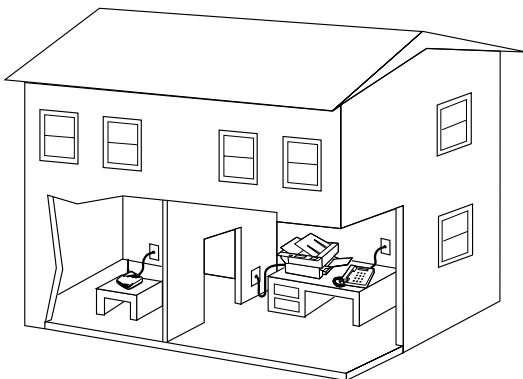
NOTE

For best performance, the NIU should be at least 1.3 meters (4 feet) away from any connected device.



Connecting devices in other rooms

The NIU is designed to operate several devices throughout a home prewired for telephones¹ (see caution below). Connect it to a telephone jack that is wired to telephone jacks in other rooms.



CAUTION

Do NOT connect the NIU to a live wireline phone jack. Damage could result. If you have standard wireline phone service (a physical phone line connection to your telephone company), contact a professional telephone installer for assistance before connecting the NIU to a telephone jack on the wall.

¹ The NIU can support a maximum cable run of 150 m (500 ft).

USING BASIC FEATURES

Speed dialing, setting a hotline number, and setting alarms are some of the basic features of the NIU.

Making a call

To make a call using a touchtone telephone connected to your NIU:

1. Lift the telephone handset.
2. Listen for the dial tone. (If you don't hear a dial tone, see "Troubleshooting" on page 28.)
3. Press the appropriate numbers on the telephone keypad to dial the desired phone number.

NOTE

When making an international call, you can accelerate the connection by pressing the # (pound) key after dialing the number (see page 18).

Speed dialing


The NIU can store up to 20 of your most frequently dialed phone numbers. Each stored phone number can contain up to 32 key presses.

NOTE

These numbers are separate from any speed-dial numbers that may be stored in your telephone.

Storing a speed-dial number

- Dial on your touchtone telephone:

   <speed dial location> <phone number> 

<speed dial location> = 01 through 20 for stored phone numbers
(Programming speed dial locations 1 through 9 requires a leading zero; that is, 01 through 09.)

<phone number> = phone number you want to store

You will hear a confirmation tone, and the dial tone will resume.

EXAMPLE


To store the local phone number **555-1212** in location **1** on your speed dialer, dial **#10 01 555 1212#**

NOTE

Be sure to include any additional digits needed for long distance dialing, such as the area code.

Dialing a speed-dial number

- Dial on your touchtone telephone:

<speed dial> 





<speed dial> = 1 through 20 for phone numbers stored. No leading zero is necessary for dialing single-digit codes.

EXAMPLE

To speed dial the phone number that you stored, **555-1212**, dial **1 ***

Canceling a speed-dial number

- Dial on your touchtone telephone:

   <speed dial location> 

<speed dial location> = 01 through 20 for stored phone numbers (Erasing speed dial locations 1 through 9 requires a leading zero; that is, 01 through 09.)

You will hear a confirmation tone, and the dial tone will resume.

EXAMPLE

To erase the phone number **555-1212** that you stored in your speed dialer dial **#10 01#**

Hotline phone number

The hotline feature on the NIU allows you to set up a special hotline phone number. This number will be dialed automatically when the handset has been lifted from your telephone and no dialing has occurred for approximately 8 seconds.

NOTE

When using the hotline feature, do not take the handset off-hook to avoid receiving calls.

Storing a hotline number

- Dial on your touchtone telephone:

   <phone number> 

<phone number> = the hotline phone number that you want stored

You will hear a confirmation tone, and the dial tone will resume.

EXAMPLE

*To program the local phone number 555-1212 as a hotline number, dial:
#20 555 1212 #*

Canceling the stored hotline number

- Dial on your touchtone telephone:

You will hear a confirmation tone, and the dial tone will resume.

User-programmable alarms

With the NIU you can set from one to six occasional alarms to sound within a 24-hour period. One standing alarm can also be set to ring at the same time every day.

If an alarm sounds for a full minute and no one stops it, it will ring again five minutes later. To stop the ringing, momentarily lift the telephone handset. If you are on a call, the alarm will automatically be rescheduled to ring five minutes later.

NOTE

The time and date is automatically acquired from the CDMA digital network. You do not need to set it.

NOTE

If a fax machine or answering machine is connected to your telephone, it may interfere with the operation of alarms.

Occasional alarms

An occasional alarm is a one-time setting. It causes the telephone to ring for one minute at the designated time and is automatically canceled when it is answered.

Setting an occasional alarm

- Dial on your touchtone telephone:

<hhmm>

<hhmm> = desired time in hours and minutes based on a 24-hour clock format. For example, 11:24 p.m. would be 2324 and 11:24 a.m. would be 1124.

You will hear a confirmation tone, and the dial tone will resume.

EXAMPLE

*To program an occasional alarm to go off at 8:30 a.m., dial **#16 0830#***

Canceling an occasional alarm

- Dial on your touchtone telephone:

<hhmm>

You will hear a confirmation tone, and the dial tone will resume.

EXAMPLE

*To cancel an occasional alarm programmed to go off at 8:30 a.m., dial **#17 0830#***

Canceling all occasional alarms

- Dial on your touchtone telephone:





You will hear a confirmation tone, and the dial tone will resume.

Standing alarms

The standing alarm is a recurring alarm that will cause the phone to ring for one minute at the same time every day.

Setting a standing alarm

- Dial on your touchtone telephone:

   <hhmm> 

<hhmm> = desired time in hours and minutes based on a 24-hour clock format. For example, 11:24 p.m. would be 2324 and 11:24 a.m. would be 1124.

You will hear a confirmation tone, and the dial tone will resume.

EXAMPLE

To set a standing alarm for 10:15 p.m., dial: #19 2215#

Canceling a standing alarm

- Dial on your touchtone telephone:

You will hear a confirmation tone, and the dial tone will resume.

USING NETWORK SERVICES

The NIU supports call forwarding, call waiting, three-way calling, voice mail, and data and fax services. You can use these features if they are offered by your service provider.

Call forwarding

The NIU is configured to support the following call forwarding features:

- Call Forwarding Unconditional (CFU) allows you to automatically reroute all incoming calls to a different number.
- Call Forwarding Busy (CFB) allows you to automatically reroute calls to a different number when you are in the middle of a call.
- Call Forwarding No Answer (CFNA) allows you to automatically reroute calls to a different number when you do not answer the phone.

NOTE

Call forwarding features are service provider-dependent. Check with your service provider for more information.

Call waiting

The NIU supports call waiting. Call waiting allows you to receive an incoming call without terminating a previous call that is still in progress.

- To put the first call on hold while answering the second call, momentarily press the hook switch or the flash key.
- To return to the first call, press the hook switch or flash key again.

Repeat this action to continue switching between calls.

NOTE

Pressing the hook switch momentarily (for less than 1.5 seconds) will activate this feature. Pressing it for more than 1.5 seconds will terminate the call.

Three-way calling

The NIU supports three-way calling. This feature allows you to initiate a second call without terminating the one in progress, and to bring both calls together after the second call is established.

Initiating a three-way call

1. Momentarily press the hook switch or flash key on the telephone while in a two-way phone conversation.
2. When you hear the dial tone, dial the telephone number of the third party you wish to add.
3. When the connection is made with the third party, momentarily press the hook switch or flash key again to add the first party back into the conversation.

Ending a three-way call

- To end the three-way calling session and return to your original two-way call, simply press the hook switch again.
- To end the two-way or three-way calling session completely, simply place the handset on the hook switch.

NOTE

Pressing the hook switch momentarily (for less than 1.5 seconds) will activate this feature. Pressing it for more than 1.5 seconds will terminate the call.

Voice mail

The NIU supports standard voice mail systems offered by your service provider.

A special stutter dial tone will be played if unheard messages are in your voice mail box. To access your voice mail, you must dial the appropriate number and codes given by your service provider, or if supported:

- Dial on your touchtone telephone:



Caller ID

If you have a telephone or display box that supports caller ID display capability, and your service provider supports this feature, you can use caller ID with your NIU. Caller ID shows you the caller's telephone number after the first ring. The number will not appear if the caller has blocked delivery of the number, or if it is otherwise restricted.

Data features

Making and receiving a data call is similar to the procedure for voice calls. As with all other network services, this data feature requires service provider support. Before you make a data call, you should have the required equipment and refer to your modem manual for optimal settings for your communication software.

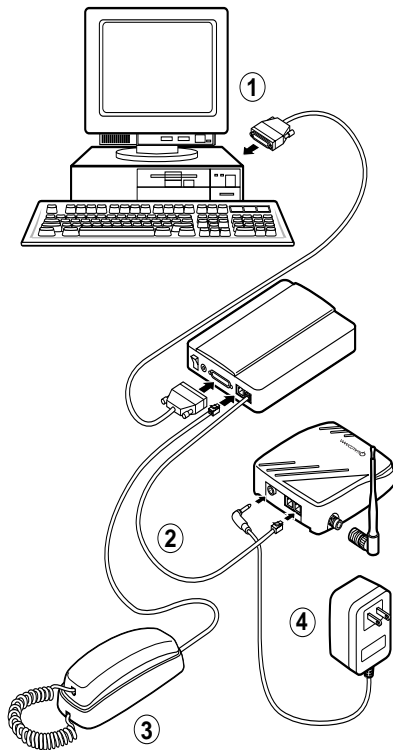
Connecting data equipment

To use the data features, you must have the following equipment:

- Computer, with internal or external data modem (V. series or Bell protocol)
- Communication software or terminal program
- RJ-11 telephone cable

Connect the equipment as follows:

- ① Follow your modem instructions for correct installation of modem hardware and software.
- ② Connect one end of the telephone cable to the telephone jack labeled “line” on your modem. Connect the other end to a telephone jack on the back of your NIU.
- ③ (Optional) Connect the touchtone telephone to the modem.
- ④ Connect the AC adaptor to the NIU and plug it into the wall outlet.



Making a data call

When making a data call, you must precede each data phone number with #3282 (#data) in order to cause the network to treat the call as a data transmission.

Once your modem is connected to the NIU and the communication software is configured on your computer, you are ready to make a data call.

- Open your communication software.
- On your computer, type:

     <data phone number>

- Start the software application, e-mail package, or web browser you want to use.

NOTE

If you are not able to make a data call, read the Troubleshooting section, page 29.

EXAMPLE





To call the local data phone number 555-1212, dial #3282 555 1212

Making a fax call

When making a fax call, you must precede your data phone number with #329 (#fax) in order to cause the network to treat the call as a fax transmission.

Once the telephone connector on your fax machine is connected to one of the telephone jacks on the NIU, you are ready to make a fax call.

- On your fax machine, dial:

    <fax phone number>

- Send your document.

EXAMPLE

To call the local fax phone number 555-1212 dial #329 555 1212

Receiving a data call or fax call

In order to receive an incoming data or fax call, you must first have the capability established on the NIU by your service provider. There are various options for classifying incoming calls as data, fax, or voice. These options include multiple stage dialing, alternate phone number dialing, prearrangement, and others. Your service provider may offer one of these.

Setting NIU prearrangement for incoming data or fax calls

This section is applicable only if your service provider supports prearrangement. Prearrangement establishes the desired classification of service with the network service provider for either one call within the next ten minutes or all incoming calls until deactivated. To set the phone for prearrangement:

- Use either your computer's communication software or your touchtone telephone to dial:

    <setting> 

There are five settings: 0, 1, 2, 3, and 4.

- 0 Receive only voice calls (This is the default setting.)
- 1 Receive one incoming fax call within 10 minutes
- 2 Receive only fax calls
- 3 Receive one incoming data call within 10 minutes
- 4 Receive only data calls

NOTE

*If the NIU is set to receive fax or data calls, you must reset it to **#823 0#** to receive voice calls. Otherwise, any voice callers will hear a modem sound. If settings 1 or 3 above are selected, the NIU will revert to receiving only voice calls after receiving one fax or data call, or after 10 minutes have elapsed.*

EXAMPLE

*To set the phone for prearrangement to receive a fax within the next 10 minutes, dial **#823 1 #***

USING ADVANCED FEATURES







Customizing features

The following features enable you to change certain parameters that affect the standard settings of your touchtone telephone or NIU. After entering a setting correctly, you should hear a two-beep confirmation tone.

Adjusting earpiece volume

To adjust the volume level of the earpiece in the attached touchtone telephone devices:

- Lift the handset. Dial on your touchtone telephone:

     <level> 

<level> = 1 (low) through 4 (high) (2 is the default)

NOTE

Level 2 is preferred for compatibility with devices connected to the NIU.

Adjusting send time

The NIU is programmed to initiate calls to “standard” telephone numbers immediately. The standard for your region’s dialing scenario will be preset by your service provider. If certain types of calls, such as international calls, take longer than desired to connect, you can either press # at the end of your dialing string for immediate call initiation or you can adjust the NIU’s send time for nonstandard calls. Changing the send time in this way should not affect calls within your region’s dialing scenario.

- Lift the handset. Dial on your touchtone telephone:

     <seconds> 

<seconds> = 4 through 9 (10 seconds is the default—set by dialing 0)

Adjusting key beep length

You can change key beep tone length (how long a beep is played from a single key press). The long setting may be necessary for accurately communicating with older answering machines or automated systems. To adjust the key beep length:

- Lift the handset. Dial on your touchtone telephone:

9 1 9 6 <lengths>

<lengths> = 0 for normal; 1 for long. Zero is the default.

NOTE

This change affects the beep length received by the device you are contacting. When changing the setting you will not perceive a different beep length on your telephone.

Checking signal strength

To check the network signal strength in the location of the NIU antenna:

- Ensure the antenna is positioned vertically. Lift the handset. Dial on your touchtone telephone:

9 1 9 5 1

When you check the signal strength, a beeping indicates service. Faster beeping indicates greater signal strength. The phone will not beep if the signal strength is below a usable level.

Replace the handset to end the signal strength check.

Resetting defaults

To cancel the settings for the customizing features and return them all to their default settings:

- Lift the handset. Dial on your touchtone telephone:

9 1 9 0 0 0 0 0

Call Restriction

Call restriction is an advanced feature that allows you to restrict your phone from making certain types of calls. Trying to make a restricted call will result in a rejection tone, followed by a dial tone.

On the NIU, you may choose a predefined call restriction level, or you may customize the call restriction level. Nine different levels are available.

Call restriction levels

Call restriction levels 0–6 are subject to change and are currently defined as follows for the U.S. market. If outside the U.S., check with your service provider for call restriction levels.





- 0 - All calls allowed (default setting)
- 1 - No 1(900)XXX-XXXX or 976-XXXX calls
- 2 - Level 1 plus no international long distance calls (011-XXX...)
- 3 - Level 2 plus no domestic long distance calls (1(XXX)XXX-XXXX and 0(XXX)XXX-XXXX)
- 4 - Level 3 plus no special services (X11, except 911)
- 5 - Level 4 plus no special features (*XX...)
- 6 - No calls except emergency calls (911)

Call restriction levels 7, 8, and 9 can be customized to serve your needs. These enable you to add or remove different types of restrictions, one at a time.

Setting the call restriction password

To control access to the call restriction feature, you must enter a password. The factory default setting is 0000. To replace this setting, choose any four-digit sequence that you will be able to remember. Enter it twice for confirmation. This password allows you to change call restrictions or override call-restricted numbers.

► Lift the handset. Dial on your touchtone telephone:

   <0000> <four-digit password> <repeat password> 

<four-digit password> = any sequence of digits, 0 through 9,
with no # or *

EXAMPLE





To change the password from the factory default setting to **1234**, dial
#23 0000 1234 1234#

NOTE

When creating or changing this password, you must enter the new four-digit password twice to avoid errors. If an error is made, the touchtone telephone will respond with an error tone, and no password will be saved until the password is set again.

Changing the call restriction password

- Lift the handset. Dial on your touchtone telephone:

   <old password> <new password> <new password> 

EXAMPLE

To replace the above password with 4321, dial #23 1234 4321 4321#

Setting the call restriction level

Setting a predefined call restriction level

To set a predefined call restriction level, just select the level you need.

- Lift the handset. Dial on your touchtone telephone:

   <four-digit password> <level> 

level = A call restriction level from 0 through 6

EXAMPLE

To set call restriction level 1 (no 900/976 calls) using password 4321, dial #24 4321 1#

Setting a customized call restriction level (7–9)

The following custom restriction types can be set in the U.S.

- 1 - No local calls
- 2 - No domestic long distance calls (1-XXX-...)
- 3 - No international calls (011-XXX...)
- 4 - No special features
- 5 - No special services
- 6 - No 900/976 calls
- 7 - No speed dials
- 8 - No 800/888 calls

NOTE

Since long distance calls can be made using the operator or alternate carriers (for example, 10288...dialing), long distance restrictions will also block 0, 00, and 10XXX...calls.

To set a custom call restriction level, first select a level and then assign a call restriction type to it.

- Lift the handset. Dial on your touchtone telephone:

<four-digit password> <level>

level = A call restriction level from 7 through 9

- Dial on your touchtone telephone:

<level> <password> <type>

<level> = the call restriction level entered above

<type> = restriction type from 1 through 8

EXAMPLE

To set call restriction level 7 to type 3 (no international calls) using password 4321, dial #24 4321 7# then dial #919 7 4321 3#

Canceling a customizable call restriction level (7–9)

To cancel a custom call restriction level that has been set on your NIU, first select the level you want to change and then assign call restriction type 0 to it.

- Lift the handset. Dial on your touchtone telephone:

<four-digit password> <level>

level = Call restriction level from 7 through 9 that you want to cancel

- Dial on your touchtone telephone:

<level> <password>

<level> = the call restriction level entered above

EXAMPLE

To cancel call restriction level 7 using password 4321, dial #24 4321 7# then dial #919 7 4321 3 0#

Storing a restriction override number

If you want to call one specific phone number that is blocked by the call restriction level you have set, you can store that phone number as a restriction override number. Once a restriction override number is stored, anyone with a password can speed dial that number, regardless of the level of call restriction in effect.

You can store up to five restriction override numbers in memory locations 21 through 25 on your NIU.

- Lift the handset. Dial on your touchtone telephone:

<speed dial location> <four-digit password>
<phone number>
<speed dial location> = 21 through 25

Blocked numbers

If you want to block calls to one specific phone number, you can store it as a blocked number. Once you have stored a blocked number, the NIU will not dial it, regardless of the level of call restriction in effect. A blocked number can be canceled only by a person who knows the password.

Storing a blocked number

You can store up to five blocked numbers in memory locations 26 through 30 on your NIU.

- Lift the handset. Dial on your touchtone telephone:

<speed dial location> <password> <phone number>
<speed dial location> = 26 through 30

Canceling a blocked number

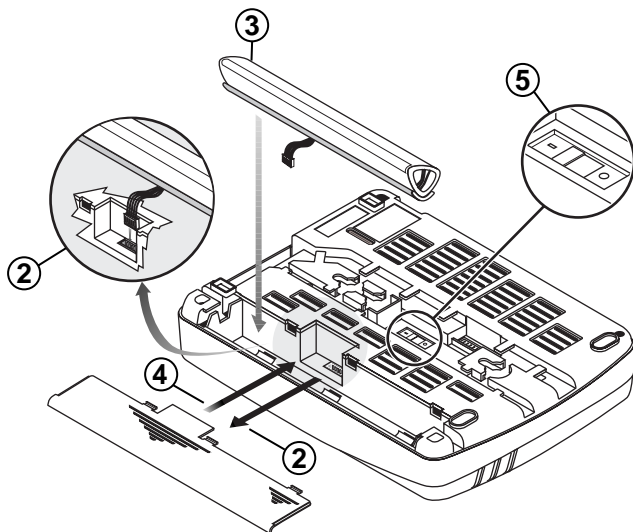
To cancel a blocked number that has been set on your NIU, repeat the above dialing sequence but omit the phone number.

- Lift the handset. Dial on your touchtone telephone:

<speed dial location> <password>
<speed dial location> = 26 through 30

CONNECTING ACCESSORIES

Connecting the internal battery to the NIU



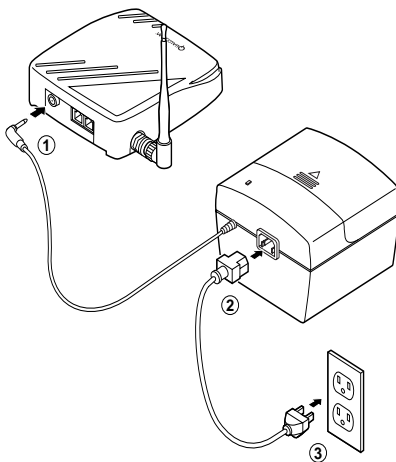
1. Remove the battery compartment cover by pressing down on both arrows and sliding the cover away from the NIU.
2. Line up the connector on the battery with the connector pins in the battery compartment. With your index finger, press the battery connector into place.
3. Place the battery into the compartment, foam side first, making sure that it fits securely.
4. Replace the battery compartment cover. If the cover jams, reorient and try again.
5. Set the on/off switch to the on (I) position to activate automatic internal battery backup.

Connecting the external BBPS to the NIU

NOTE

To assemble the BBPS, refer to the directions in the BBPS package.

1. Attach the BBPS connector to the NIU.
2. Attach the power cord to the BBPS.
3. Plug the power cord into the wall outlet.
4. If desired, replace the connector cover.



Connecting the panel antenna to the NIU

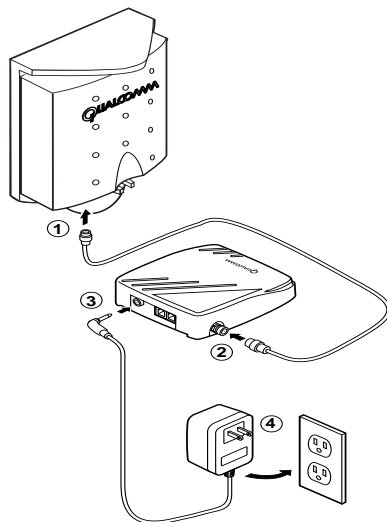
1. Attach one end of the coaxial cable to the panel antenna.
2. Attach the other end of the coaxial cable to the NIU.
3. Connect AC adaptor to the NIU.
4. Plug AC adaptor into wall outlet.

NOTE

QUALCOMM recommends use of high-quality coaxial cable to avoid degrading signal strength. Check local regulations to determine if a minimum cable loss is required. For operation within the U.S., the minimum cable loss shall be 3 dB.

Locate the NIU such that its antenna remains at least 20 cm (8 inches) from user.

To test for signal strength, see page 19.



SPECIFICATIONS

QCT-7000

Air Interface Standard	IS-95-A
Frequency Range	824.01 to 848.97 MHz Transmitter; 869.01 to 893.97 MHz Receiver

QCT-7200

Air Interface Standard	J-STD-008
Frequency Range	1850 to 1910 MHz Transmitter; 1930 to 1990 MHz Receiver

QCT-7000/QCT-7200

Channel	CDMA receiver 1.25 MHz
CDMA Transmit Power	500 mW ERP 800 mW EIRP with optional panel antenna
Vocoders	8k QCELP, 8k EVRC, and 13 kbps (PureVoice™)
Data Transmission Rate	Up to 14.4 kbps
Power Requirements	90 to 264 VAC 47 to 63 Hz
Talk Time	Up to 1 hour with optional internal battery pack Up to 6 hours with optional external battery backup
Standby Time	Up to 8 hours with optional internal battery pack Up to 48 hours with optional external battery backup
Size	L 188 mm x W 145 mm x H 40 mm (7.4 in. x 5.7 in. x 1.6 in.)
Weight	0.45 kg or 1 lb (0.59 kg or 1.3 lb with internal battery)
Operating Temperature	-30 to +50 °C (-22 to 122° F)
Humidity	0 to 95% non-condensing

Tested modems

The QCT-7000/QCT-7200 is designed to operate with standard V. series modems, so it is set to support V. series modems by default. However, it can be set to operate with Bell protocol analog modems. To do so, follow the procedure in the Troubleshooting section. The popular data modems listed below have successfully passed QUALCOMM's interoperability testing.

- USR Sportster 28.8k, 33.6k and 56k models
- ZyXEL U-1496E (14.4k)
- Microcom DeskPorte 28.8P
- Diamond SupraExpress 336e
- Cardinal Connecta 33.6
- Global Village Teleport 56k
- Multitech Multimodem ZDX (33.6k)
- Motorola ModemSURFR 56k
- Zoom V.34X
- Maxtech NetPacer 33.6k
- Hayes Accura 33.6

TROUBLESHOOTING

PROBLEM	SOLUTION
No dial tone	<ul style="list-style-type: none">• Verify that the telephone is plugged into the NIU.• Verify that the antenna is connected and not cross-threaded.• Verify that the power cables are properly connected.• Verify that the NIU is receiving a sufficiently strong signal from the service provider. Dial #91951#, listen for a two-beep confirmation tone, and adjust the position of the antenna or NIU to maximize the beep rate. If this is unsuccessful, see the solution for “no tone generated.”• If none of these solutions solve the problem, contact your service provider.
No tone generated when checking signal strength	<ul style="list-style-type: none">• Dial #91951# and listen for a two-beep confirmation tone, which indicates that the telephone has entered signal verification mode.• Try repositioning the NIU. Locations near an external window, upstairs, and away from large metal barriers (such as a cabinet or refrigerator) are best.
Dialed telephone number does not connect	<ul style="list-style-type: none">• Check the dialed number again for misdialed or incorrect digits.• If there is a rejection tone, the call type is restricted.• If there is a busy tone, the network system may be busy. Wait a few minutes and dial again.• If the above solutions do not work, try connecting a different model tone-dial telephone to your NIU.

Key presses are not received by some automated systems

- Adjust key beep length (see page 18).

Data call or fax transmission is not successful

- Verify services are available from your provider.
- Recheck your hardware connections and software configuration.
 - Is the correct modem port selected?
 - Is the baud rate set to 19200 or lower?
- Was the phone number you dialed a data number?
- Did you add #3282 (#DATA) to the data phone number?
 - Try to call a known data number.
- Did you add #329 (#FAX) to the fax phone number?
- Try dialing the number from a touchtone telephone without the #3282 prefix. Did you hear a busy signal, voice, or modem tones?
 - If you heard a busy signal, call the number at a later time.
 - If you heard a voice, verify that the number you dialed is correct, or request that a data device (for example, a computer and modem) be turned on at the location you called.
 - If you heard modem tones, verify that your computer's communication software was properly installed and configured.
- Verify that the timeout of your modem hardware is greater than 90 seconds.
 - If the modem hardware timeout is less than 90 seconds, consult your modem user guide and adjust the modem timeout with AT commands.

Data call or fax transmission is not successful (continued)	<ul style="list-style-type: none"> • Verify that your modem operates with V. series protocol. If it operates with Bell protocol instead of V. series protocol, see "To change to Bell modem protocol" below.
Transferred data is corrupted	<ul style="list-style-type: none"> • Make sure the application software and modem are set to hardware flow control (RTS/CTS).
To change to Bell modem protocol	<ul style="list-style-type: none"> • Pick up the handset of the attached phone, dial #62355 (#MBELL), and return the handset to the cradle. All data calls will use Bell mode.
To return to V. series mode	<ul style="list-style-type: none"> • Pick up the handset of the attached phone, dial #68737 (#MVSER), and return the handset to the cradle.
Call takes a long time to connect	<ul style="list-style-type: none"> • Press # at the end of the dialed number. If this reduces the time required for connecting, adjust the send time (see page 18).
Unit will not turn off when unplugged	<ul style="list-style-type: none"> • Set internal battery backup switch to off (O) (see page 24).
Constant static background noise that is reduced while user is in conversation	<ul style="list-style-type: none"> • Ensure that the telephone is at least 1.2 m (4 ft) from the NIU and that the telephone cabling is kept as far as possible from the antenna. The cabling must not be wrapped around the antenna.

GUIDELINES FOR SAFE AND EFFICIENT USE

Important

Read this information before using your Network Interface Unit (NIU).

Local laws and regulations

Wireless telephones can interfere with their environment, so safety rules and regulations have been created. You should inquire about local regulations, particularly those concerning vehicles and aircraft, when you acquire a wireless telephone. If you wish to use your phone while traveling, you should find out what regulations apply in the state or country you are visiting.

Background

Your telephone is a radio transmitter and receiver. When it is on, it receives and sends out radio frequency (RF) energy. When you use your phone, the system handling your call controls the power level at which your phone transmits.

Exposure to radio frequency energy

In August 1996, the United States Federal Communications Commission (FCC) adopted RF exposure guidelines with safety levels for wireless devices. Those guidelines are consistent with the safety standards previously set by both U.S. and international standards bodies:

- ANSI C95.1 (1992) American National Standards Institute
- NCRP Report 86 (1986) National Council on Radiation Protection and Measurements
- ICNIRP (1996) International Commission on Non-Ionizing Radiation Protection

The design of your NIU complies with the FCC requirements and those standards, provided you maintain a distance of at least 20 cm (8 inches) from the unit and its antenna, as specified on page vi of this user guide.

For best performance

To properly operate the phone and maintain safe and satisfactory service, follow these rules.

- Do not hold the NIU antenna at any time, as contact with the antenna affects call quality.
- Do not use the NIU if the antenna is damaged.
- Do not expose the NIU and accessories to rain or liquid spills. If the phone becomes wet, immediately unplug the AC adaptor. If the phone is inoperable after drying, return it to the dealer for service.
- Only authorized personnel should service the NIU and its accessories. Faulty installation or service may be hazardous and may invalidate the warranty.

Antenna care

Use only the antenna supplied or an approved replacement antenna. Unauthorized antennas, modifications, or attachments could damage the NIU and may violate local and government regulations.

Cleaning

Before cleaning your NIU, unplug the AC adaptor. Use a damp cloth for cleaning. Do not use liquid or aerosol cleaners.

Electronic devices

Most modern electronic equipment is shielded against RF energy. However, certain electronic equipment may not be shielded against the RF signals from your NIU. If there is interference, move the electronic equipment away from your NIU.

Pacemakers

The Health Industry Manufacturers Association recommends that a minimum separation of 15 cm (6 inches) be maintained between a wireless device and a pacemaker to avoid potential interference with the pacemaker. These recommendations are consistent with the independent research by and recommendations of Wireless Technology Research.

- Always keep the NIU more than 15 cm (6 inches) from your pacemaker when it is turned on.
- If you have any reason to suspect that interference is taking place, unplug the AC adaptor immediately and set the on/off switch to the off (0) position.

Hearing aids

Digital wireless devices and antennas may interfere with some hearing aids. In the event of such interference, you may want to consult your service provider or call the customer service line to discuss alternatives.

Other medical devices

If you use any other personal medical device, consult the manufacturer of your device to determine if it is adequately shielded from external RF energy. Your physician may be able to help you obtain this information.

Vehicles

RF signals may affect improperly installed or inadequately shielded electronic systems in motor vehicles. Check with the manufacturer or its representative regarding your vehicle. You should also consult the manufacturer of any equipment that has been added to your vehicle.

Posted facilities

Unplug the AC adaptor and set the on/off switch to the off (0) position in any facility where posted notices so require.

Children

Your NIU is not a toy. Children should not play with it. They could hurt themselves or others or damage the NIU.

Blasting areas

Unplug the AC adaptor and set the on/off switch to the off (O) position when you are in a blasting area or in any area posted “turn off two-way radio.” Construction crews often use remote-control RF devices to set off explosives.

Potentially explosive areas

Unplug the AC adaptor, set the on/off switch to the off (O) position, and obey all signs and instructions when you are in an area with a potentially explosive atmosphere. Sparks in such areas could cause an explosion or fire resulting in bodily injury or even death.

These areas are often, but not always, clearly marked. They include the following.

- Fueling areas such as gas stations
- Below deck on boats
- Fuel or chemical transfer or storage facilities
- Vehicles using liquefied petroleum gas (such as propane or butane)
- Areas where the air contains chemicals or particles, such as grain, dust, or metal powders
- Any other area where you would normally be advised to turn off your vehicle engine

Standards

Be certain of the number of devices you may connect to your line, based on their REN B ratings. The REN B is useful in determining the quantity of devices that you may connect to your telephone line and still have all of those devices ring when your telephone number is called. In most but not all areas, the sum of the REN B ratings of all devices connected to one line should not exceed five (5.0).

Customer Service

Your service provider's Customer Support representative should be able to answer all of your questions. They can be reached by dialing *611 or the phone number on your monthly bill. If the service provider cannot assist you, please call the QUALCOMM Product Support hotline at 619-651-4028 (outside USA) or 1-888-236-2746 (in USA and Canada) with any questions. Our mailing address is:

QUALCOMM Technical Support, Consumer Products
QUALCOMM Incorporated
6455 Lusk Blvd., San Diego, CA 92121-2779 USA

You may also reach us via the Internet at the following address.
<http://www.qualcomm.com>

Index

A

- AC adaptor 2
- accessories vi
- adjusting earpiece volume 18
- adjusting key beep length 18
- alarms
 - occasional 10
 - standing 11
- antenna iii, 2, 4, 5, 25, 28, 32

B

- battery v, 5, 24
- battery backed power supply (BBPS) 5, 25
- blasting areas 34
- blocked numbers 23

C

- call forwarding 13
- call restriction 19, 28
- call waiting 13
- caller ID 14
- connecting accessories 24
- connecting equipment 6
- custom calling options 1, 13
- customer service 35

D

- data calls 15, 29
- default settings 19

F

- fax calls 16, 29

H

- hearing aids 33
- hotline feature 9

K

- key beep length 18

M

- making a call 8
- modems 27, 30
- motor vehicles 33

O

- on/off switch 4, 24, 33, 34
- optional equipment 5

P

- pacemakers 33
- password 20
- potentially explosive areas 34
- power light 3
- power source iii

R

- regulations 31
- REN rating 6, 34
- resetting defaults 19
- restriction override number 22
- RF energy 32
- RF exposure 31

S

- safety precautions v, 31
- send time 18, 30
- signal strength 19, 28
- specifications 26
- speed dialing 8
- switch 4, 24, 30

T

three-way calling 13
troubleshooting 28

V

voice mail 14
volume level 18

W

wall mounting 4