

INSTRUCTION MANUAL

A revised preliminary draft copy of the Users Manual follows. This version contains updated rf safety information which is applicable to all Motorola products.



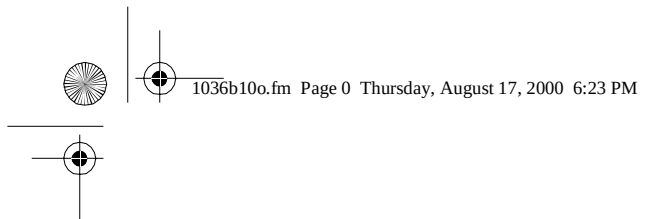
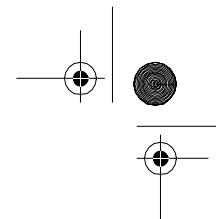
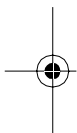
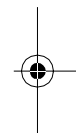
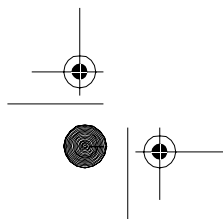
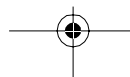
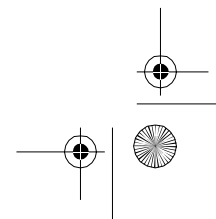
User's Guide

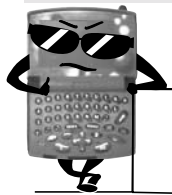


Personal Communicator

Model V.100
GSM900/1800 MHz

000622-O





Introduction PRELIMINARY

Congratulations! You are now the proud owner of a Motorola® V.100 Personal Communicator. Your new communicator combines advanced calling and messaging capabilities in a small compact unit that is stylish, easy to use, and will look great on you when you wear it with the holster. Your new communicator provides cool and exciting ways to keep in contact with your family, special friends, and your pals. Just review this user guide carefully and you will be ready to start using your new communicator.

A detachable Quick Reference Card is included with this guide.

Personalized Control

You can setup your Personal Communicator to access important messages, phone numbers, and features quickly. You can even answer calls with just one push of a button, even when your communicator is closed. When you are performing routine tasks, your communicator provides prompts and messages that assist you with the next task or confirms your selection.

- You can add nine of your most used features in your Quick Access menu so you can get to them with just a couple presses of a button.
- With Voice Notes, you can record notes to yourself or parts of a call. This is quite convenient for taking directions or messages, especially if you don't have paper and a pen.
- Voice Tags lets you add voice activated commands to call your phone book entries. You can also add voice commands to select Quick Access options.
- The  button lets you display your book entries quickly. Just one press and you're there!

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- When your communicator is closed or in the holster, press , located on the outside of your communicator, to quickly and easily answer a call.
- With VibraCall™, your communicator alerts you of new messages and calls with a vibration if you don't want to disturb others, or you are in a noisy environment.
- You can personalize the menus by choosing the features you want readily available and store the ones you use less frequently out of sight. See "Extended Menu" on page 60 for more details.

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SAFETY

PRELIMINARY

IMPORTANT INFORMATION ON SAFE AND EFFICIENT OPERATION

READ THIS INFORMATION BEFORE USING YOUR PERSONAL COMMUNICATOR

The information provided in this document supersedes the general safety information contained in user guides published prior to July 2000. For information regarding radio use in a hazardous atmosphere please refer to the Factory Mutual (FM) Approval Manual Supplement or Instruction Card, which is included with radio models that offer this capability.

RF Operational Characteristics

Your Personal Communicator contains a transmitter and a receiver. When it is ON, it receives and transmits radio frequency(RF) energy. The Personal Communicator operates in the frequency range of 1850 MHz to 1990 MHz and employs digital modulation techniques.

When you communicate with your Personal Communicator, the system handling your call controls the power level at which your personal communicator transmits. The output power level typically may vary over a range from 0.063 watts to 1.58 watts.

Exposure To Radio Frequency Energy

Your Motorola V100 Personal Communicator is designed to comply with the following national and international standards and guidelines regarding exposure of human beings to radio frequency electromagnetic energy:

- United States Federal Communications Commission, Code of Federal Regulations; 47 CFR part 2 sub-part J
- American National Standards Institute (ANSI) / Institute of Electrical and Electronic

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Engineers (IEEE) C95. 1-1992

- Institute of Electrical and Electronic Engineers (IEEE) C95.1-1999 Edition
- National Council on Radiation Protection and Measurements (NCRP) of the United States, Report 86, 1986
- International Commission on Non-Ionizing Radiation Protection (ICNIRP) 1998
- National Radiological Protection Board of the United Kingdom 1995
- Ministry of Health (Canada) Safety Code 6. Limits of Human Exposure to Radiofrequency Electromagnetic Fields in the Frequency Range from 3 kHz to 300 GHz, 1999
- Australian Communications Authority Radiocommunications (Electromagnetic Radiation - Human Exposure) Standard 1999 (applicable to wireless phones only)

To assure optimal Personal Communicator performance and make sure human exposure to radio frequency electromagnetic energy is within the guidelines set forth in the above standards, always adhere to the following procedures:

PORTABLE {RADIO/RADIO PRODUCT/PHONE} OPERATION AND EME EXPOSURE

Antenna Care

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

DO NOT hold the antenna when the Personal Communicator is "IN USE". Holding the antenna affects call quality and may cause the Personal Communicator to operate at a higher power level than needed.

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Phone Operation

The communicator is designed to be used with a headset for talking and listening. When placing or receiving a phone call, you must use the headset and speak directly into the microphone.

Body-worn operation

To maintain compliance with FCC RF exposure guidelines, if you wear a Personal Communicator on your body when transmitting, always place the Personal Communicator in a Motorola supplied or approved clip, holder, holster, case, or body harness. Use of non-Motorola-approved accessories may exceed FCC RF exposure guidelines. If you do not use a body-worn accessory, ensure the antenna is at least one inch (2.5 cm) from your body when transmitting.

Data operation

When using any data feature of the Personal Communicator, with or without an accessory cable, position the antenna of the Personal Communicator at least one inch (2.5 cm) from the body.

Approved Accessories

For a list of approved Motorola accessories call 1-800-???? / visit our website at www.motorola.com.

ELECTROMAGNETIC INTERFERENCE/COMPATIBILITY

NOTE: Nearly every electronic device is susceptible to electromagnetic interference (EMI) if inadequately shielded, designed or otherwise configured for electromagnetic compatibility.

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FACILITIES

To avoid electromagnetic interference and/or compatibility conflicts, turn off your Personal Communicator in any facility where posted notices instruct you to do so. Hospitals or health care facilities may be using equipment that is sensitive to external RF energy.

AIRCRAFT

When instructed to do so, turn off your Personal Communicator when on board an aircraft. Any use of a Personal Communicator must be in accordance with applicable regulations per airline crew instructions.

MEDICAL DEVICES

- Pacemakers

The Health Industry Manufacturers Association recommends that a minimum separation of 6 inches (15 centimeters) be maintained between a handheld wireless Personal Communicator and a pacemaker. These recommendations are consistent with the independent research by, and recommendations of, Wireless Technology Research.

Persons with pacemakers should:

- ALWAYS keep the Personal Communicator more than six inches (15 centimeters) from their pacemaker when the Personal Communicator is turned ON.
- not carry the Personal Communicator in the breast pocket.
- use the ear opposite the pacemaker to minimize the potential for interference.
- turn the Personal Communicator OFF immediately if you have any reason to suspect that interference is taking place.

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- **Hearing Aids**

Some digital wireless Personal Communicators may interfere with some hearing aids. In the event of such interference, you may want to consult your hearing aid manufacturer 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 RF energy. Your physician may be able to assist you in obtaining this information.

SAFETY AND GENERAL

Use While Driving

Check the laws and regulations on the use of Personal Communicators in the area where you drive. Always obey them.

When using your Personal Communicator while driving, please:

- Give full attention to driving and to the road.
- Use hands-free operation, if available.
- Pull off the road and park before making or answering a call if driving conditions so require.

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OPERATIONAL WARNINGS

FOR VEHICLES WITH AN AIR BAG

Do not place a portable Personal Communicator in the area over an air bag or in the air bag deployment area. Air bags inflate with great force. If a portable communicator is placed in the air bag deployment area and the air bag inflates, the Personal Communicator may be propelled with great force and cause serious injury to occupants of the vehicle.

POTENTIALLY EXPLOSIVE ATMOSPHERES

Turn off your Personal Communicator prior to entering any area with a potentially explosive atmosphere, unless it is a Personal Communicator type especially qualified for use in such areas as "Intrinsically Safe" (for example, Factory Mutual, CSA, or UL Approved). Do not remove, install, or charge batteries in such areas. Sparks in a potentially explosive atmosphere can cause an explosion or fire resulting in bodily injury or even death.

NOTE: The areas with potentially explosive atmospheres referred to above include fueling areas such as below decks on boats, fuel or chemical transfer or storage facilities, areas where the air contains chemicals or particles, such as grain, dust or metal powders, and any other area where you would normally be advised to turn off your vehicle engine. Areas with potentially explosive atmospheres are often but not always posted.

BLASTING CAPS AND AREAS

To avoid possible interference with blasting operations, turn off your Personal Communicator when you are near electrical blasting caps, in a blasting area, or in areas posted: "Turn off two-way radio". Obey all signs and instructions.

OPERATIONAL CAUTIONS PRELIMINARY

ANTENNAS

Do not use any portable Personal Communicator that has a damaged antenna. If a damaged antenna comes into contact with your skin, a minor burn can result.

BATTERIES

All batteries can cause property damage and/or bodily injury such as burns if a conductive material such as jewelry, keys, or beaded chains touch exposed terminals. The conductive material may complete an electrical circuit (short circuit) and become quite hot. Exercise care in handling any charged battery, particularly when placing it inside a pocket, purse, or other container with metal objects.

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Getting Started

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Getting Started **PRELIMINARY** Installing the SIM Card and Battery

Before you can send or receive messages or calls, you need to install your SIM (Subscriber Identity Module) card and the battery. The SIM card that was supplied by your service provider contains your Personal Communicator's number, service details, and memory for storing numbers and messages.

Note: Some networks let you make emergency calls without a SIM card.

Note: Your SIM card can be used in someone else's communicator and you will be charged for the call, so keep it in a safe place. Do not bend or scratch it and do not expose it to static electricity or water.

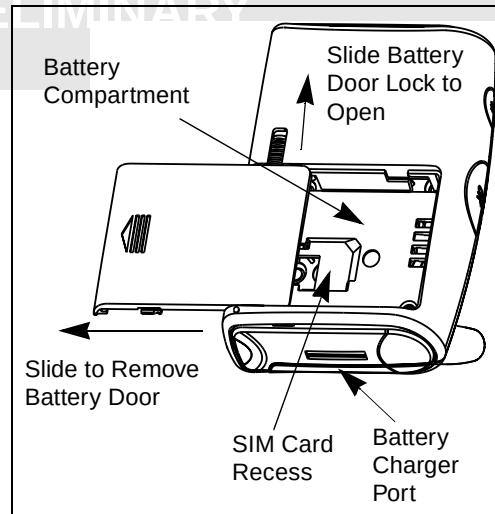
SIM Card and Battery Installation

1. Remove the battery cover.
2. Slide the SIM card into the recess so that the notch in the card lines up with the notch in the recess.
3. Align the contacts on the battery with the contacts in the battery compartment and press downwards toward the contacts until the battery clicks into place.
4. Replace the battery cover.

Note: If the SIM card is inserted incorrectly, "Check Card" is displayed. Remove the SIM card and re-insert it. If the card does not work, contact your service provider.

Charging your battery:

- Charge the battery by inserting the adapter plug into the port on your communicator and plugging the adapter into a wall outlet.
- Charge your battery at room temperature and never leave it in really hot, cold, or wet places.
- Charge only Motorola batteries in your communicator.



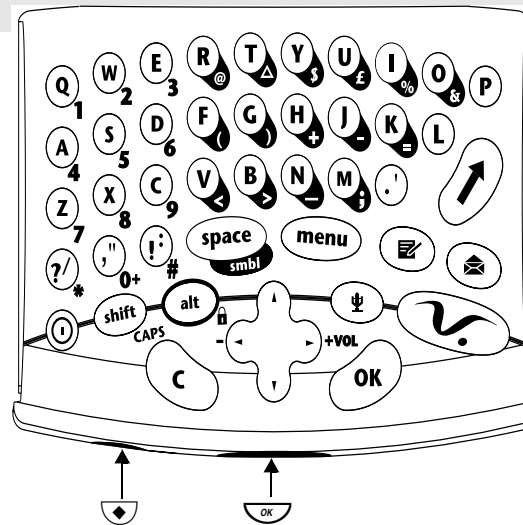


Control Buttons

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Getting Started

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-  Press and hold to turn on or off.
-  Press to accept and end a call, setting, or option.
-  Used to reject or cancel a call, setting, option, and to return to the previous screen. When in text mode, press to delete the previous character.
-  Press to enter the Quick Access menu.
-  Press to access the Main Menu.
-  Use to scroll through menus and text, and increase and decrease volume.
-  Press to read a message.
-  Press to write a message.
-  (0 - 9) Press for ALT and 0 - 9 numbers.
-   Press for symbols and additional characters.
-  Smart Button. Use to answer, make, and end calls, access your Phone Book, and recall a number using Voice Tags.
-  Press once to capitalize a letter. Press twice for continuous capitalization, press twice to stop capitalization.
-  When the communicator is closed, or in the holster, press to answer and end a call.
-  Press to start and stop recording Voice Notes.



The Display

PRELIMINARY

ABC123

Displays text and numbers.



Signal Strength. The more segments, the stronger the signal strength.



A call is in progress or hanging up.



Displayed when on a system other than your home system.



Home Zone. Availability depends on your service provider.



Displayed when a Short Message Service (SMS) message is received. Flashes when you have an unread SMS message, or your message storage area is full.



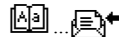
Displayed when you have voicemail. Availability depends on your service provider.



Call Ringer is On.



Battery Charge Indicator. The more segments, the stronger the charge.



Displayed when the Quick Access menu is open.



Menu item is currently selected.

12:00

Real Time Clock. Displays the time in either AM/PM or 24 hours.

Backlight

Your communicator's backlight turns on anytime a button is pressed, and remains on during keyboard activity.

Turning On Your V.100 Personal Communicator

Press and hold  until your communicator vibrates or makes a sound.

Note: If the SIM card is not installed, your communicator displays a message to install one.

Entering your SIM Card Personal Identification Number (PIN)

1. When prompted, enter your PIN and press .
- If you make a mistake, press and release  to remove the last character, or hold down  to remove the multiple characters.
- If you enter the wrong PIN, your communicator lets you know with a displayed message.

Note: If the correct PIN is not entered within three attempts, your communicator locks up. See "Change Unlock Code" on page 58.

Entering your Unlock Code

When prompted, enter your unlock code, then .



Note: If you forget your unlock code, press  , enter your security code, enter a new unlock code, then press .

When a network name is displayed, it means your communicator is ready for use.

Turning Off Your Personal Communicator

Press and hold .



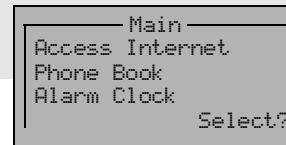


Tips on Using this Guide

PRELIMINARY

The Main Menu

Your communicator's features are accessible through the Main Menu. Press **menu** to display the Main Menu. To scroll through the Main Menu, use **+**. Press **OK** to enter a submenu.



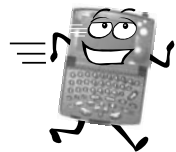
Main Menu Example

Menu Navigation

Many of your communicator's features are accessed by using menus and submenus for selection, change, or cancellation. Please read this section carefully. When you understand the menu navigation, you will be able to access and change settings with ease.

Entering the Menus

- **menu** - press to enter the Main Menu when your communicator is in the Standby mode.
- **Q** - press to enter the Quick Access menu.



Getting Around in the Menus

- **+** - to scroll through menu selections.
- **OK** - to enter the selected menu and to accept and confirm settings.
- **C** - to go to the previous screen without making changes. (When in text mode, use to backspace and delete characters.)
- **✓** - indicates the current setting of a feature (usually on or off).

Exiting the Menus

-  - press and hold for 2 seconds to exit any menu or screen and return to the Standby screen.

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Short and Extended Menus

As you become accustomed to your communicator's menus and features you use the most, you can select which menus you want readily accessible, and which one you want to store out of view.

With extended menu, all features are always displayed. When you add a feature to the short menu, it is not displayed until you choose to display it.

1. To move a feature from the extended menu to the short menu, highlight the feature then press and hold  until a menu prompting a decision is displayed.
2. Select either to move or keep it on the short menu, or to move or keep it in the extended menu.

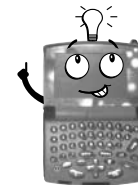
Note: If a feature can not be moved to the short menu, your communicator will let you know with a message.

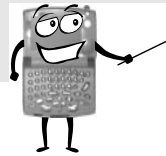
Note: To turn extended menus on or off, refer to "Extended Menus" on page 60.

How to Use the Control Buttons

The control buttons are represented as graphics which look like the buttons on your communicator. A sequence of button presses might be shown as:   .

This means that you would press , then  and then  in sequence, not at the same time.





PROMPTLY Prompts and Messages

Your communicator responds to button presses by displaying easy to understand prompts to guide you to the next action, or simple messages confirming that your action is complete.

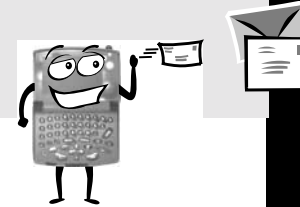
Testing your V.100 Personal Communicator

It's a good idea to test your service by sending a Short Message Services (SMS) message or by calling a friend or family member, from your communicator. Start by using the phone number, web site, or email address (and a PIN, if required) your service provider gave you, then try making a call. When you reach a friend or family member, ask them to send a message to you or call you back. Refer to the following sections for information about SMS messages and making and receiving calls. If your communicator does not send or receive messages or calls, contact your service provider. After you've tested your communicator, read the rest of this guide to learn about the many useful features of your new communicator.

SMS Messages

PRELIMINARY

Your communicator can send and receive Short Message Services (SMS) that are sent by your service provider. These messages are transmitted for a limited amount of time. If a memory location is not available before the message is removed from the network, it is not stored.



Sending an SMS Message

1. Press .
2. Type your message.
3. Press .
4. From the message editor, select to send the message, then press .
5. Choose from the menu selections to enter the phone number, then follow the prompts given by your communicator.
6. When the phone number you want to send your message to is displayed, press .

Entering Text

- To type a single capital letter, press and release , then type the letter.
- To type multiple capital letters, press  . To switch back to lowercase letters, press   again.
- If you make a mistake while typing, press  to erase the previous character. To erase multiple characters, press and hold . You can also use  to move to another character or line to make a correction.
- To enter non-Roman characters, refer to "Non-Roman Characters" on page 71.



Entering Numbers in Text Mode

- To type a single number, press **alt** then type the number.
- To type a series of numbers, press **alt alt**. To stop entering numbers, press **alt** again.

Storing an SMS Message

1. Press **Ⓜ** and type your message.
2. Press **OK**.
3. Select the store option, then press **OK**. Your message is automatically stored in the Outgoing Message folder.



Receiving and Reading an SMS Message

Cool...I got a message! Before long you'll be getting a lot of messages.

When an SMS message is received, your communicator alerts, displays  and stores the message. If there is not enough memory to store the message,  flashes. One or more messages must be deleted before the message can be stored.

1. Press **Ⓜ** to read the message.
2. Select your view options for the message and press **OK**.
3. You can reply to the message, store it, or delete it.

Sending Email Messages using SMS

Contact your service provider to find out if this option is supported and to get the email server number.

Here's an example of what you type to send a "Hello" message to email address "abc123@isp.com": **abc123:isp.com#Hello.**

Making a Call



Note: Don't forget to use your headset so you can hear your call. Use **+** to decrease or increase the volume level.

Note: You can press **☑** to quickly go to your Phone Book, select the number you want to call, then press **OK**.

Enter the phone number then press **OK**.

Note: If you make a mistake, press and release **C** to remove the last character, or hold down **C** to remove multiple characters.

International Phone Calls

1. Press and hold **0** (zero) until **+** is displayed.
2. Enter the country code, then the phone number. The country code follows the conventional format, 49 for Germany, 44 for the UK, 46 for Sweden, etc.

Just like a conventional international call, remove the leading "0" of the area code when you dial.



GSM Emergency Calls PRELIMINARY

The world-wide GSM standard provides a single number, 112, to dial in cases of emergency. The emergency call is directed to a central operator. The call can be made without any security codes and, depending on the network, without a SIM card inserted. To dial the GSM emergency number, press **112** .

Ending a Call

Press  or .

Redialing the Last Number Called from Standby Mode

Press   .

Receiving a Call



Note: Don't forget to use your headset so you can hear your call. Use  to decrease or increase the volume level.

Press  to answer the call.

Note: When your communicator is closed or in the holster, you can press , located on the outside of your communicator, to answer a call right away.

In-Call Menu

PRELIMINARY

There's lots of things you can do during a call. To access the in-call menu, press  during a call, to exit the menu, press .

Note: Menu selections depend on the state of the call, the type and setting of your SIM card, and your subscription to these services. The following paragraphs explain all possible options.

Hold Call

You can place a current call on hold and accept an incoming call, or start a second call.

To put an Active Call On Hold

1. Press  .
2. To reconnect, press .



Make a New Call

Select this option to put an active call on hold and make a call to someone else.

1. Press .
2. Select the make a new call option, enter the number, then press .
3. To end the new call and go back to your first call, press   .

Turn Mute On or Off

Turns the microphone off during a call. Select again to turn the microphone back on.

Restrict My Number

You can keep your communicator's number a secret while you make a call.



End Active Call

PRELIMINARY

When a call comes in while you are already on a call, you can end the active call.

1. Press **OK** to put the active call on hold.
2. Press **menu**, select the end active call option, then press **OK**.

Note: If you have a call on hold, it becomes your active call.

Reconnect

Use to go back to a call that's on hold.

Reconnect Held Call

This is similar to Reconnect. If you have a call on hold, and a call waiting, select this option to connect with your held call.

End Held Call

Time to say bye to the person you put on hold.

1. Press **menu**.
2. Select End Held Call, then press **OK**.



End Current and Held Call

Select this to say bye to everyone.

Conference Calls

PRELIMINARY

Let's have a phone party! If you have both Conference Call and Call Waiting, you can talk to up to 5 people at the same time.

Starting a Conference Call

1. Call one of the people you want to conference with.
2. Place the active call on hold, dial another phone number, then press .
3. Press  then select Conference Call.

Note: There may be times when your request is not successfully completed. Wait a little while, then try your call again.

To Add a Person to your Conference Call

1. Place the Conference Call on hold.
2. Add a new call by:
 - Entering the phone number.
 - Making a new call.
 - Recalling a Phone Book Entry.
 - Answering a Call Waiting.
3. Select In-Call then Conference Call to bring in the new call.



In-Call Menu



Transfer Calls

If you have both Conference Call and Call Waiting, you can transfer a call to another phone.

Initiating Transfer Call Before the Third Party is Connected

1. Press **menu** and select the transfer call option.
2. Enter the number to where you want the call transferred, then press **OK**. When the call is transferred, you are disconnected automatically.

Note: There may be times when a call transfer is not completed successfully. Please try again.

Initiating Transfer Call After the Third Party is Connected

Press **menu** and select the transfer call option. After the call is transferred, you are disconnected automatically.

Split Call

Want to share a secret or a private joke with someone? Split call allows you to separate a conference call member and have a private conversation with them.

Note: You can not have any calls on hold to have a split call.

1. Press **menu** then select Split Call.
2. Press **+** until the phone number of the person you want to separate from the conference call is displayed, then press **OK**. You can now talk privately to the person.
3. To re-join both of you to the Conference Call, re-select Conference Call from the In-Call menu

Reject Waiting Call

When you're too busy to talk, you can reject an incoming call by pressing and holding .

PRELIMINARY



Voice Notes

With VoiceNotes, you can record up to three minutes of voice messages for yourself or record part of a call. You can record when your communicator is idle, when you are on a single call, or when you are on an active call with a waiting call.



Recording a VoiceNote

1. To start recording, press .
2. To stop recording, press  again.

Notes:

- When recording a call, both parties are recorded and the other party hears a tone every 10 seconds.
- Recording stops automatically if you accept or make a call.
- While recording, your communicator alerts you at ten seconds, and again at one second before recording capacity is reached. If you do not stop recording, recording automatically stops.

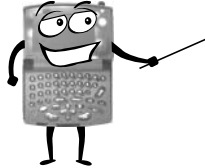
To listen to your VoiceNote, select VoiceNotes from the Messages menu.



Voice Activation PRELIMINARY

With Voice Activation you can dial a phone number or access a feature with a single spoken command called a Voice Tag.

You can assign Voice Tags to Phone Book numbers and to Quick Access features.



Important Notes:

- You cannot assign Voice Tags to numbers in your SIM card memory.
- When recording a Voice Tag, you cannot make or receive calls.
- For best results, make sure there is no background noise and speak in a clear, natural voice when recording.
- Your communicator can record two seconds for each Voice Tag.
- You cannot record Voice Tags if you have selected to prevent access to phone memory, see "Prevent Access" on page 41.

Adding Voice Tags for Phone Book Entries

You can have up to 25 Phone Book Voice Tags, and add a new Voice Tag when you set up a Phone Book entry.

PRELIMINARY

Add Voice Tag

When you add an entry to your Personal Numbers list, your communicator asks you if you want to add a Voice Tag. If you don't want to add a Voice Tag, press .

To add a voice tag:

1. Press .

Note: If there are already 25 Phone Book Voice Tags in your communicator, you need to delete one before you can add another.

2. When prompted by the communicator, press  and record after the tone.
3. When recording is successful, your communicator returns to the Add To Phone Memory menu.

Note: If the recording is not successful, the communicator prompts you to record again.

Add or Edit Voice Tag

If an entry already has a Voice Tag,  is shown before the location number.

1. Find the entry either by name or location.
2. Press , then select to add or edit the Voice Tag.
3. To add or edit the Voice Tag, follow the steps in "Add Voice Tag" above.

Delete Voice Tag

1. Find the entry either by name or location, see "Personal Numbers" on page 40.
2. Press , select the delete option, then press  again.



Voice Activation



Voice Activation

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Using Voice Activation with Phone Book Entries

You can easily access phone book entries that have Voice Tags assigned to them.

Voice Activation from the Standby Mode

1. Press . When prompted, say the Voice Tag name. The communicator highlights the matching entry in your phone book list. If there is no matching entry, the communicator highlights an alternate entry in the list.
2. Press  to make the call,  to select a different entry, or  to cancel.

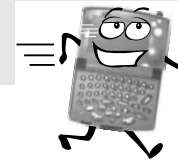
Voice Activation from the Phone Book Menu

1. Select Voice Dialing from the Phone Book menu.
2. When prompted, press .
3. When prompted, say the Voice Tag name. If a matching entry is found, the communicator highlights it or highlights an alternate entry in the list.
4. Press  to make the call,  to select a different entry, or  to cancel.

Access Internet

PRELIMINARY

When you're on the go, you can still keep up with the latest news, sports scores, entertainment stories, check flight status, and much more. Access Internet is a network and subscription-dependent feature that offers mobile internet access of Information Services and certain web sites using the Wireless Application Protocol (WAP). Contact your service provider for details about these services.



Mobile Internet Home Menu

Note: Your service provider determines the layout and information shown on your communicator.

After connection is made, your ISP's Home menu is displayed. A typical Home menu page might contain the name of your ISP and a list of options to select from.

1. Highlight the option menu you want, then press .
2. To return to the previous screen, press .

If the text in a menu is too wide for the screen, the communicator uses two screens and repeats each half of the menu until you make a selection.



Internet Browser Menu

To display the browser menu:

1. Press and hold  for at least 2 seconds.

Note: If you release  too quickly, you might enter the menu for the currently highlighted option.

2. Scroll to the menu selection you want, then press .

A typical browser menu might include:

- Help - provides help for the previously highlighted option.
- Home - return your to your ISP's home page.
- Mark site - lets you add a site to your Bookmarks folder.
- Setup - contains the options to set up your ISP access.

Using the Soft Keys

During a mobile internet session, the functions of the  and  buttons change to accommodate the current display. In the example display, to go back to the previous screen, you need to press , to quit and exit, you need to press .

When you want to go to a previous screen, press .

```
Menu
1>Option 1
2>Option 2

 Exit Back
```

Soft Keys Example

Mobile Internet Messages PRELIMINARY

Messages displayed in the bottom left portion of the screen indicate when activity such as receiving or sending data, connecting to the internet, and internet activities are being performed. A  indicates you are in a non-secure internet location.

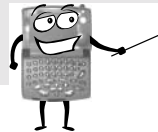
Note: Your ISP determines the icons and messages displayed on your communicator.

Entering or Editing Text Within a Mobile Internet Session

You can enter or edit text the same way you do for all other text functions. However, you can't access the non-Roman characters.

- For a single capital letter, press and release .
- For multiple capital letters, press  . To switch back, press   again.
- Press  to erase the previous character, press and hold for multiple characters.
- For ~, press   t.
- For a single number, press  then type the number.
- For a series of numbers, press  . To stop entering numbers, press   again.





Setting Up for Mobile Internet Access

Your service provider may set up your mobile internet access for you. If not, you will need the following user information to set it up:

- **Primary Data Gateway:** the IP address to access the mobile internet.
- **Phone Number:** the number your communicator calls to access the internet. This is provided by your ISP.
- **User Name:** provided by your ISP.
- **User Password:** provided by your ISP.
- **Baud Rate:** this is likely to be 9600, the standard data rate for GSM phones.
- **Idle Time Out:** the amount of time the communicator waits before hanging up if it detects no internet activity.
- **Line Type or Port:** modem or ISDN.
- **Connection Type:** non-transparent or transparent.

To set up your mobile internet access:

1. From the browser menu, select Setup, then press .
2. Enter your user information by first selecting an item and choosing the softkey to edit it as necessary.
3. When you have entered all information, exit to the Standby Screen, turn your communicator off and then on again to register all information or changes.

Setting a Bookmark

PRELIMINARY

You can set up bookmarks so you can quickly access your favorite internet sites.

1. From your browser menu, select Mark Site.
2. Press any key from 1 to 9 when prompted. The communicator provides a confirmation message that the bookmark has been stored.
3. To go back to the bookmark, press and hold the appropriate location number key (1 through 9).

Internet Service Alerts

You do not need to be using the mobile internet to receive an internet service alert. When you receive an alert, your communicator displays a screen with the details. Press  to view the contents or  to reject it.



Making and Receiving Calls During a Mobile Internet Session

You must first end the mobile internet session, then make your call in the normal way. If you receive a call, press  to accept it  to reject it.

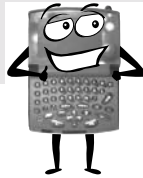
If you answer a call, press  to resume your mobile internet session or  to return to the Standby mode.

Ending a Mobile Internet Session

Press and hold  until your ISP's Home page is displayed, then press  again.

Note: To quickly exit a mobile internet session, press .





Phone Book

You can store important numbers in your Phone Book so you can quickly and easily retrieve them.

Your Personal Communicator can store 100 entries and the SIM card can store up to 155 entries in your Personal Numbers list. The number of SIM card entries vary depending on the type of SIM card issued by your service provider.

You can store up to 40 entries in a Fixed Dialing list, if you have this feature. Fixed Dialing allows limited use of your communicator to particular numbers, or, if you wish, to country codes, area codes, or other prefixes of your choosing.

Each Phone Book entry contains:

- A telephone number. Up to 32 digits can be stored, but this is reduced to 20 digits for SIM card locations.
- A name. Up to 16 characters for phone locations. Up to 50 characters for SIM card locations.
- A location label - from 1 to 255 in your Personal Numbers list, or 1 to 40 in your Fixed Dial list.

Inserting Pauses Into Phone Numbers

Pauses can be inserted into a string of numbers to allow the called number time to react to certain activities such as going into voice mail or entering a password.

To insert a three-second pause in a phone number, press and hold (*) until □ is displayed.

For example, you have voicemail on 555-6911, with mailbox number 1066 and password 2001. Then you can dial: 5556911□1066□2001 then press .

The first part of the number calls the voicemail system. When the call is answered, there is a pause before the tones for 1066 are sent. Then there is a second pause before the tones for your password of 2001 are sent.

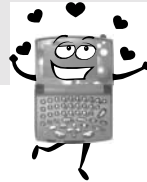


Voice Dialing

You can quickly access a phone number that has a Voice Tag assigned to it.

1. When selected, your communicator prompts you to press the Smart button .
2. Next, you are prompted to say the name (Voice Tag) after the tone.
3. Press  to make the call, or highlight a different selection then press .





Personal Numbers

Use to create and manage your list of personal numbers.

Find Entry By Name

Use to find a number from your list of Phone Book names by typing up to three of the first characters of the name, then press **OK**.

Find Entry By Location

Use to select a number from your list of Phone Book locations.

1. At the prompt, enter a location number, then press **OK**. If the number is not valid, the Phone Book list is displayed and the number closest to your entry is highlighted.
2. Use **+** to navigate through the entries.
3. Press **OK** to make your selection. From the submenu select:
 - Switch View - to display the information for the selected entry.
 - Call Number - to call the selected number.
 - Modify Name or Details - to modify the information for the selected entry.
 - Erase Name and Number - to delete the phone book entry.
 - Add or Edit Voice Tag - to add or edit a Voice Tag.

PRELIMINARY

Add Entry

Allows you to add a phone number and name to the communicator's (phone) memory or to SIM card memory.

1. When prompted, enter the phone number, name and a location number. If you do not specify a location number, the entry is stored in the next available location.
2. The communicator then asks if you want to enter a Voice Tag. For information about Voice Tags, please see "Add Voice Tag" on page 31.
3. If you don't want to add a Voice Tag, press .

Check Capacity

Use to check the number of free Phone Book or SIM card memory areas. From the submenu you can:

- Check Phone Capacity and Check SIM Capacity - displays the phone and SIM capacity.

Prevent Access

Select to prevent access to your Personal Numbers list.

Note: You will not be able to record Voice Tags if you choose to prevent access to phone memory.

- To SIM Card Memory, To Phone Memory, To Phone & SIM Memory, No Memory Restrictions - You can prevent access to your SIM card memory, the communicator's memory, both, or cancel all access restrictions. To change restrictions, follow the instructions given by the communicator.





Last Ten Calls

When selected, allows you to review time and date information of your last 10 missed or answered calls, or to calls you made. Depending on your selection, you can redial a phone number, store a phone number, or erase all of the phone numbers.

Note: This list is erased when a new SIM is inserted in the communicator.

My Phone Numbers

When selected, displays your list of phone, fax and data numbers. From the submenu, you can:

- Modify Name or Details - to make changes to the selection.
- Switch View - to display information for the selected entry.

Note: The list is stored on your SIM card. Depending on your service provider, one or more of these entries is already defined and you may not be able to change them.

Fixed Dialing

Limits the use (typically third-party) of your communicator to a predefined list of telephone numbers, country codes, area codes, or other prefixes. When set, the communicator does not allow dialing of any number other than an emergency number. This option may be affected by the call barring setting.

PRELIMINARY

View Fixed Dial List

Use  to scroll through the numbers in the list. Press  to make a call.

Setup Fixed Dialing

Use to turn Fixed Dialing on or off, and to enter or change entries in the list. After you enter your PIN2 code, you can:

- Edit Entry - scroll to the entry you want to change, press  to edit the entry or  to erase it.
- Add Entry - to add a phone number and name, and a location number. If you do not specify a location number, the entry is stored in the next available location.
- Erase Entry - scroll to the entry you want to delete then press .

Note: Fixed Dialing does not allow you to make fax or data calls.

To make a call when Fixed Dialing is on, dial the number manually, or select it from the Fixed Dial list.

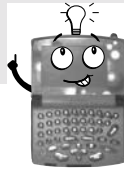


One-Touch Dial Setting

You can specify which phone book list is one-touch dialed. The selections are:

- To Phone Memory - changes One-Touch Dialing to your Personal Numbers list (locations 1 to 9).
- To SIM Card Memory - changes One-Touch Dialing to your Personal Numbers list stored on your SIM card (locations 101 to 109).
- To Fixed Dial list - changes One-Touch Dialing to your Fixed Dial list (locations 1 to 9).





One-Touch Dialing from Phone Book Numbers

To quickly retrieve and dial a number stored in one of the first nine locations of your Phone Book, press and hold the appropriate number key. For example, press and hold **2** to call the phone number stored in location 2 of your phone book.

Dialing Phone Book Numbers with Smart Button

- Press  and say the Voice Tag name after the tone.
- Press  then scroll to the number, or press the appropriate number to skip to a particular letter.

Alarm Clock

You can set up to 5 alarms on your communicator, and attach a 40-character memo to each alarm.

Set Alarm

Each alarm can be set to alert on a specific day and time, daily, weekly, every Monday through Friday, or every Monday through Saturday.

1. To set an alarm, select the day(s) for the alarm to occur.
2. When prompted, enter the alarm time using the numbers on the keypad, then press .
3. When prompted, enter your reminder memo then press .

Note: Depending on your alarm selection, you may be required to enter the date for the alarm.

Show Alarm Status

PRELIMINARY

When selected, displays the alarms that are set. Use  to select an alarm. From the submenu, you can:

- Switch View - see the details for alarm. Select Switch View again to return to the previous screen.
- Edit Alarm - change the time, date, and attached memo.
- Disabled Alarm - suspends (but does not delete) the alarm.

Call Related Features

Show Battery Meter

Displays the remaining battery charge. The more segments displayed, the more battery charge is left.

Restrict My Phone Number

This is a network dependant feature. Please check with your service provider for more information.

Show ID on Next Call

Sends your communicator's number with the next call.

Restrict ID on Next Call

Prevents your communicator's number from being sent with the next call. You need to reselect this option each time you want to restrict your ID.



Call Diverting

You can have incoming calls sent to other phone numbers.

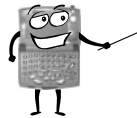
Note: You can not set call divert when you are out of your network coverage area.

Divert Voice Calls

You can have all voice, fax, and data calls sent to other phone numbers. From the submenu you can:

- Divert When Unavailable - diverts all incoming Voice calls to a single number whenever your communicator is unavailable. To divert, select On, then enter a diversion phone number.
Note: When set to On, has the same effect as setting all "Detailed Diverting" options to On and takes priority over Detailed Diversion settings.
- Divert All Voice Calls - divert all incoming Voice calls to a single number. To divert, select On, then enter a diversion phone number.
Note: When set to On, this option takes priority over all other Voice call diversion settings.
- Detailed Diverting - diverts Voice calls to different numbers, depending on the current status of your communicator. The selections are:
 - If Busy - diverts incoming calls when your communicator is busy.
 - If Not Reachable - diverts incoming calls when your communicator cannot be contacted by the network.
 - If No Answer - diverts incoming calls when you do not answer.

- Divert Fax Calls - diverts Fax calls to a single number. When set to On, you need to enter a diversion phone number.
- Divert Data Calls - diverts Data calls to a single number. When set to On, you need to enter a diversion phone number.
- Cancel All Diverting - cancels diversion of incoming calls, resets all diversion settings to Off, and removes all diversion numbers.



Call Waiting

When set to On, you are notified of a waiting call by an audible alert and by a call waiting message. Press  to answer the call or  to reject it.

If you have Caller Line Identification, the caller's number or name is displayed instead of the Call Waiting message. Availability of this feature depends on your service provider.

Call Barring

Call barring is a network feature which can be used to bar outgoing and incoming calls. If you change the setting, you may be asked to enter your barring password. There is a short delay while the communicator notifies the network of the new setting. When the change is made, the communicator displays a confirmation message.

Note: The *initial* password is supplied to you by your service provider. This option may be affected by the Fixed Dialing setting.



Bar Outgoing Calls

PRELIMINARY

- Int't Calls - bars all outgoing international calls.
- Int'l Calls Except Home - bars all outgoing international calls except those to your home country.
- All Calls - bars all outgoing non-emergency calls.
- Off - removes call barring for all calls.

Bar Incoming Calls

- When Roaming - bars incoming calls when you are roaming.
- All Calls - bars all incoming calls.
- Off - removes call barring for all calls.

Cancel All Barring

Cancels this option for all calls.

Change Bar Password

When prompted, enter the current password, then enter and confirm a new 4-digit password.

Messages Menu

PRELIMINARY

Call Voicemail

Select to make a call to your voicemail number.

Received Messages



Note: For quick access, press .

Displays the number of new and old SMS messages, then displays the message list.

1. Use  to scroll through your message list.
2. Most times, only a portion of your message is displayed. To view the entire message, press  to see your options.

Switch View

Displays the entire message. Press  return to the view options screen.

Delete Message

Deletes the message.

Note: Before you delete a message, make sure the message you want deleted was selected in your received message screen.

Retrieve Numbers

You can retrieve all numbers embedded inside a SMS message. You can call the number, store it into your communicator, or store it into SIM card memory. Press  while viewing the numbers.





Note: Only 20 characters (32 characters, if GSM1900) of a number can be retrieved. If the number is longer than allowed, the remaining characters are not retrieved. Space and - (dash) characters are not counted as part of the character length.

Reply to Message

Type your message then press  to send it.

Return Call

When there is a phone number attached to a message, you can call the person who sent the message to you.

Edit Message

You can use the message editor to edit the message. Then you can either send the edited message or store it in your Outgoing Message list.

Go to Next Message

Displays the next message in the list.

Delete All Messages

Deletes all messages, read and unread.

Note: Once deleted, messages are not retrievable. It's a good idea to make sure you have read all your messages before deleting them.



Outgoing Messages

PRELIMINARY

Note: You can not send outgoing messages until the Message Service Center number has been set.

You can view and manage your outgoing messages that are stored on your SIM card. When selected, the number of messages is displayed followed by the first message in the list.

To send a Stored SMS Message

Select the message from your message list, press  to view your options, then send it.



Switch View

Displays the entire message. Press  return to the view options screen.

Send Message

Add the destination phone number then send a message. From the submenu select to either enter the number, find it by name, or find it by location.

When you have set up a destination phone number, select  to send the message, press  again to confirm.

Edit Message

Use to edit a message, then send or store it in your Outgoing Messages list.





Delete Message

Use to delete the current message.

Note: Before you delete a message, make sure the message you want deleted was selected in your received message screen.

Go to Next Message

Use to display the next outgoing message.

Message Editor



Compose an SMS message and send it to a friend, or store it to send it later.

- For a single capital letter, press and release **shift**, then type the letter.
- For multiple capital letters, press **shift shift**. To switch back to lowercase letters, press **shift shift** again.
- Press **C** to erase the previous character, press and hold to erase multiple characters.
- To enter non-Roman characters, see "Non-Roman Characters" on page 71.
- For a single number, press **alt** then type the number.
- For a series of numbers, press **alt alt**. To stop entering numbers, press **alt alt** again.



Note: You don't always have to come to this menu to get to your message editor, you can press **Ⓜ** from any screen for immediate access.

VoiceNotes

Play, erase, or show remaining time available for your recorded VoiceNotes. See "Voice Notes" on page 29 for more information.

PRELIMINARY

Play VoiceNote

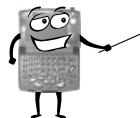
1. Scroll to the VoiceNote you want to play, then press .
2. Press  to stop playback.
3. To erase, set an alarm for a VoiceNote, or go to the next VoiceNote, press  to display the options menu.
 - Erase VoiceNote - erases the selected VoiceNote
 - Set Alarm (Alarmed VoiceNotes) - You can set an alarm to up to 5 VoiceNotes. For more information, see "Set Alarm" on page 44.
 - Go to Next VoiceNote - selects and plays the next VoiceNote in the list.
4. Press  to return to the previous menu.

Show Time Available

Displays the remaining recordable time.

Erase All VoiceNotes

Erases all recorded VoiceNotes



Cell Broadcast

These are general messages that your service provider broadcasts in numbered channels to all Personal Communicators in a geographic area. Please contact your service provider for a list of available channels and the information they provide.

Note: Your communicator can receive these messages only when it is in Standby mode. While a broadcast message is scrolling across the screen, you can:





- To stop and start the message, press **+**.
- To remove the message, press **C**.

Note: The **+** functions change while you are receiving a cell broadcast message. You need to remove the message before **+** functions return to normal.

When the message is complete, the beginning of the message remains displayed until you remove it, a new message arrives, or you leave the geographic area.

From the Cell Broadcast submenu, you can select On to receive these messages, or Off to stop receiving them.

Note: Selecting Off causes deletion of all stored cell broadcast messages.

Channel List

- Channel Index - displays a list of available channels that you can edit. When you edit a channel, you also remove any message associated with it. Select the channel index you want to modify then press **OK**. Type in the channel number and press **OK**. The channel details are stored and your communicator returns to the channel index list.
- Delete All Channels - to delete all channel.

Language List

Use to select a different language for Cell Broadcast messages. Availability depends on the type and settings of the SIM card, and/or your subscription to this feature.

Message Settings

Voicemail Number

You can enter, modify, or delete your voicemail number.

Note: Remember to add the + symbol and the appropriate country code prefix to the phone number.

Service Centre

You can modify or delete it as desired. Remember to add the + symbol and the appropriate country code prefix to the phone number.

Note: Before you can send messages, you need to enter your Message Service Centre number provided by your service provider.

Expiry Period

Use to specify the maximum time, in hours, that your unforwarded messages remain with the Message Service Centre before being deleted. The default is 24 hours. The maximum value you can enter is 10584, although the real limit depends on your Message Service Centre.

Outgoing Message Type

This option is network dependent and can be used to specify the format of your outgoing messages. You can select Text (default), Fax, X400, Paging, E-Mail, ERMES or Voice. You do not need to select Voice to send messages to Voicemail boxes.

Phone Setup

You can set custom alerts, the time and date, security codes, the contrast of your display, and other features.

Select Phone Line

Allows you to switch between Line 1 and Line 2 of your communicator.



Note: Availability depends on the type and settings of the SIM card, and/or your subscription to this feature.



Adjust Ring Volume

Use to increase or decrease the ringer volume of your communicator.

Ring or Vibrate

From the submenu, you can set your communicator to ring, vibrate, a combination of both, or to no ring or vibrate (no alert) during incoming SMS and Internet service messages. However, if Vibrate then Ring is selected, your communicator just vibrates.

Set Ringer Tone

Use to select a musical alert or a standard ringing tone for incoming calls.

Set Ringer Tone 2

Use to select a tone alert for incoming calls on Line 2. This option does not available if you do not subscribe to Line 2.

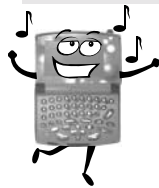
Set Alarm Ringer Tone

Use to turn the alarm alert ringer tone on or off.

Set Message Alert Tone

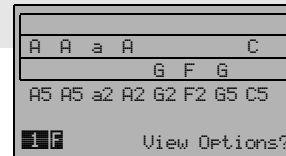
Use to set a musical alert or standard tone for incoming SMS messages.

Edit Music Tone



Compose a musical alert and then send it via SMS to another compatible Motorola phone. The alert can have up to 35 notes and 3 octaves.

- **A** through **G** on the keyboard are musical notes A through G.
- **R** (rest) adds a pause. Press and hold **R** to extend the length of the pause.



Edit Tone Example

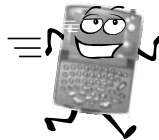
- Add a **P** between a note and the duration to change the pitch to either **Flat** or **Sharp**. Add a **P** anywhere else to change the pitch for all notes.
- Change the duration of a note or rest by placing the cursor between the note and the duration indicator, then enter the duration length: 1 is the shortest, 6 is the longest and equals one second.
- Change the octave of the note by placing the cursor on the note and use **+** to increase or decrease it.
- You can also change the tempo of your tune to 1 (slowest), 4 (fastest), or 2 and 3 for somewhere in between.

Now you are ready to listen (play) to your new tune. If you like it, you can save it, or you can go back and edit it or erase it and compose a new one.



Send as SMS

Impress your friends with your musical ability by sending your composed music tone via an SMS message to another Motorola phone. If you receive a music tone, you can play, save, or delete it.



Quick Access Setup

You can customize your Quick Access menu so you can quickly get to the features you use the most. Refer to "Quick Access Menu" on page 69 for usage and set up information.

Phone Lock

You can lock your communicator to prevent others from using it.

Automatic Lock

When set to On, your communicator is locked automatically when it is turned on. To use it, enter the unlock code.

Lock Now

Immediately locks your communicator from further use. To use it again, enter the unlock code.

Change Unlock Code

Use to change your unlock code. Follow the prompts given by the communicator, and enter a new code. The code set by the manufacturer is **1234**. If this code does not work, check with your service provider.

PRELIMINARY

Adjust Contrast

Lets you lighten or darken your display.

Require SIM Card PIN

When set to On, you need to enter your SIM card PIN each time it is inserted or your communicator is turned on.

Note: This is not available if the SIM card does not support PIN code disabling.

How do I change my SIM card pin? No problem, your communicator gives you all the instructions.



Note: Be careful, if you enter your PIN incorrectly three times in a row, your communicator locks up. See "Entering your Unlock Code" on page 17 if this happens.

PRELIMINARY



Change SIM PIN2 Code

You can change your SIM PIN2 code just like you do your standard SIM code.

Note: Be careful, your communicator locks up if the code is entered incorrectly three times in a row.



Caution: If the PIN2 unblocking operation is performed incorrectly 10 times in a row, your PIN2 code becomes permanently blocked, please see your service provider.

New Security Code

Enter the current security code, then a new six-digit code. Enter the new code again to confirm. The security code is set by the manufacturer to **000000**. If this code does not work, see your service provider.

Extended Menus

Turn extended menus on or off. When Off, you are not be able to access any of the extended features.

Show Time and Date

When selected, the time and date is displayed until you press another button.

Set Time and Date

Setting the time and date is easy. Just follow the instructions given by your communicator. But remember, use the international date format (day/month/year).

PRELIMINARY

Set Time Format

You can change to either 12-hour or 24-hour format.

Language Selection

All your prompts and help messages will be displayed in the language you select.

Battery Saving Mode

Set this to On to help your battery lasts longer. All status indicators and the backlight for incoming Cell Broadcast messages are turned off.

Select Keypad Tones

You can set this so you hear tones when you press the buttons on your communicator, or you can also turn off the tones.

Phone Status

Status Review

When selected, your communicator displays a list of menu items which have been changed from the default setting.

Master Reset

Please use this feature with caution because it restores certain options to their default settings. This feature does the following:

- Cancels automatic answer, audible call timers, in-call display meter, battery saver, auxiliary alert, automatic handsfree, automatic lock, and cell broadcast.



- Restores language selection, band selection, and extended menus to their default settings.
- Restores keypad tones to normal, ringer tones to standard, SMS alert tones to standard, volume level to medium, and network search frequency to medium.

Master Clear



Note: All phone book entries are deleted with this option! Please use it with caution.

The master clear option performs the same operations as the Master Reset, but it also does the following:

- Clears phone book entries from memory (but not from SIM memory).
- Clears your list of all last calls made and received.
- Clears the message editor.
- Resets call timers.
- Erases all recorded VoiceNotes and Voice Tags.

Master Clear does **not** clear your:

- Fixed Dial list
- My Number list
- Charge meters
- Received and outgoing messages list
- Voicemail number
- SMS Service Centre number
- Lifetime timer

Network Selection

PRELIMINARY

To make and receive calls, your communicator must be registered with one of the available networks. These can be either GSM900, GSM1800 or combined GSM900/1800 network types.

Your communicator automatically searches for the last network used. If this network is not available, your communicator attempts to register with a different network.

When your communicator attempts to register with a different network, it generates a sorted list of networks. The network list is sorted in the following order:

- The Home network.
- Networks from a preferred list.
- A random list of other networks found above a certain signal strength.
- All remaining networks in descending order of signal strength.

Change Band

This feature lets you select another band. If your communicator can not connect to a network after changing the band, use the Available Networks option.



Available Networks

Use this to see which networks are operating in your area. When scanning is complete, press **menu** to display the list. When you find a network you want to register with or store in your preferred list, press **OK**. Follow the instructions given by your communicator to register and store your selection.





Network Search

Determines how often your communicator attempts to register with a network and how the attempt is made.

Registration Preferences

Set this to an automatic search (performed by your communicator) or to manual search (performed by you).

- Automatic Search - Your communicator automatically generates a list of networks and then tries to register with the first network in the list. If registration fails, it tries to register with the next listed network. If registration totally fails, it starts searching all over again.
- Manual Search - Your communicator gives you a list of networks to choose from. If registration is successful, the network name is displayed. If registration fails, the list is displayed again.

Frequency of Search

You can set the amount of time your communicator waits before trying to re-register: slow, medium, fast, or continuous search.

Note: Fast and continuous search may use up a lot of battery power.

PRELIMINARY

Preferred Networks

Add Network to List

You can add networks to your preferred list.

- If you choose from the available list, your communicator scans for the networks in your area, then displays the list. To store one in your preferred list, follow the instructions given by your communicator.
- You can select one from a list of known networks, then store it in your preferred list.
- To add a new network code, follow the instructions given by your communicator to enter the service provider number before storing it into your preferred list.



Show List of Networks

You can have your communicator show you a list of networks. From the list, you can select one, then move it, delete it, or have your communicator display the information for the selected network.

Find New Network

When selected, your communicator attempts to register with a network other than your current network. If the attempt fails, your communicator tries to register with the previous network.



Call Meters Menu

You can have your communicator keep track of your calling time and charges. You can also have audible alert tones to let you know how long you have been on a call. Your communicator can accept values up to 21 digits long, although during calls it can only display the last 12 digits. In addition, you can set a maximum charge limit so that your communicator monitors either the number of units used or the call charges, and not allow the limit to be exceeded.

Note: Call cost information is only available if you receive the Advice of Charge service. If you do not receive this service, then only time meters are available.

Show Call Charges

You can find out the charges for last call cost, the total for all your calls, and how much credit you have left.

Note: If you do not have the "Advice of Charge" service, your communicator only keeps track of the length of the call.

Show Call Timers

Find out how long you talked during your last call, or the total time for all your calls. You can also reset all your timers to zero.

Note: If you do not receive the Advice of Charge, either all calls or only outgoing calls are timed.

Set Audible Call Timers

PRELIMINARY

You can set single or repetitive audible alerts at preset times to help you keep track of your time and charges.

Set In-Call Display

Set this option to display the time or charge meters displayed during a call.

Note: If you have a total charge limit set, your remaining credit is always displayed.

Show Time Per Call

Displays the time meter during your calls.

Note: If you have the Advice of Charge service, your chargeable calls are always displayed.

Show Charge Per Call and Show Total Call Charges

These two options display the call charges meter during and after chargeable calls. The meter shows phone units or currency depending on your charge type (unit or currency) setting.



Note: If you do not receive the Advice of Charge, either all calls or only outgoing calls are timed, depending on the model.

No In-Call Display

Use this to turn off all display of time and charges.

Call Charge Settings

If you receive the Advice of Charge service, you can customize your settings.





Reset Call Charges

PRELIMINARY

Use this to reset all your meters to zero.

Set Total Charge Limit

You can set a maximum limit for call charges. When your limit is reached, the network does not allow you to receive anymore chargeable calls.

- When set to On, you need to enter a new limit as either units or currency, depending on the setting of your Set Charge Type option.

Note: Units are entered as whole numbers and currency is entered by name. For example, GBP for UK, DEM for Germany, or FFR for France.

Note: You can not make fax or data calls when you have this option set to On.

Reset or turn off your Total Charge Limit option to make to make more chargeable calls.

Lifetime Timer

Displays the total time of all calls that have been made on your communicator.

Note: This meter can not be reset.

Quick Access Menu

PRELIMINARY

While the features in your communicator are available through easy-to-use menus, some of the most commonly used features are also available in the Quick Access menu. Each feature in the menu is assigned a location number from 1 to 9.

Press  to display the Quick Access menu. The menu shown in the example represents some of the features you can set up in your Quick Access menu.

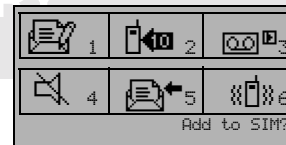
With appropriate setup, you can use a Quick Access feature by:

- Pressing  and say the Voice Tag name.
- Pressing  then enter the location number.
- Pressing  then use  to highlight a menu option then press  to select it.

Each Quick Access feature is represented by an icon. A selected icon has a dark background. You can change the features and the positions of the features in the Quick Access menu.

Adding Location Numbers to Features in Your Quick Access Menu

1. From the Phone Setup menu, select the Quick Access Setup menu. Your communicator displays a list of features to choose from.
2. Use  to scroll to the feature you want to add then press .
3. Select "Assign Key to Feature" and press .
4. When prompted, press any number from 1 to 9 to store the feature in that location.



Quick Access Menu Example

Quick Access Menu

Note: If a feature is already stored in the location number you choose, the new feature takes that location and the older feature is automatically removed.

Adding or Editing Voice Tags to Features in Your Quick Access Menu

You can assign a Voice Tag to each of the 9 Quick Access Menu features.

1. From your quick access configuration menu, highlight the feature then press **OK**.
2. Select the "Add or Edit Voice Tag" option and press **OK**.
3. When prompted, say a Tag name. If there is a matching Voice Tag, the communicator repeats the name and displays the entry.
4. When recording is successful, your communicator displays a message that the tag has been stored and returns to the Quick Access Setup menu. If recording is not successful, your communicator prompts you to record the Tag again.

Important Notes:

- If any one of the 9 Quick Access features has a Voice Tag assigned to it, and you attempt to display the Quick Access menu while wearing your headset, you need to say a tag name or your communicator returns to the Standby screen.
- If you are not wearing your headset, your communicator prompts for a tag name, then displays the Quick Access menu after a few seconds.

Delete Voice Tag

Note: This option is not displayed if there are no Voice Tags to delete.

Highlight the Quick Access that has the Voice Tag you want to delete then press **OK**.

Non-Roman Characters PRELIMINARY

To enter non-Roman characters, press   and the letter key from the following table. Multiple presses of the key may be required to access the character. For example, to type è, press  , then press E twice.

Keyboard Character	  1 time	  2 times	  3 times	  4 times	  5 times	  6 times	  7 times
E	é	è	É				
T	θ						
Y	ψ	¥					
U	ü	û	Ü				
I	ì						
O	ö	ø	ò	Ω	Ö	Ø	
P	Π						
A	ä	å	à	æ	Ä	Å	Æ
S	Σ	§					
F	Φ						

Non-Roman Characters

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Keyboard Character	  1 time	  2 times	  3 times	  4 times	  5 times	  6 times	  7 times
G	Γ						
L	Λ						
Z	Ξ						
C	Ç						
B	β						
N	ñ	Ñ					
?/	¿						
!:	¡						

Accessories

PRELIMINARY

The following accessories are designed to work with your Personal Communicator. Additional accessories may be available separately. Please refer to your local service provider or retail outlet for more information.

Headset

The headset provides hands free use of your communicator and is required for phone operation.

Power Adapter

The Power Adapter (charger) connects directly to your communicator. When connected, it charges the battery and provides normal operation of your communicator.

UK Adapter Plug

The UK Adapter Plug connects the Power Adapter to a UK-style main power outlet.

European Adapter Plug

The European Adapter Plug connects the Power Adapter to a Continental European-style main power outlet.

Holster

Place your communicator inside this stylish holster, then clip the holster onto your belt, pocket, or handbag, or other apparel.

Troubleshooting

PRELIMINARY

What to do if...

Personal Communicator does not turn on

- *Check the battery.* Is it charged, properly fitted and are the contacts clean and dry?

You can't make calls

- *Check the signal strength meter.* If the signal is weak, move to an open space or, if in a building, move close to a window.
- *Check your network settings.* Try to select another network.
- *Check your coverage map.* Are restrictions set?
- *Check your Call Barring and Fixed Dialing settings.*
- *Have you reached your call charge limit?* Reset your limit or contact your service provider.
- *Have you inserted a new SIM card?* Make sure no new restrictions have been imposed.

You can't receive calls

- *Check the signal strength meter.* If the signal is weak, move to an open space or, if in a building, move closer to a window.
- *Check Call Diversion and Call Barring settings.* Check Ringer and VibraCall™ settings. If both are off, there is no audible alert.

Personal Communicator won't unlock

- *Have you inserted a new SIM card?* Enter the new PIN code.
- *Do you have a replacement communicator?* Enter the default unlock code of 1234.
- *Did you forget your unlock code?* Press  to change it (you will need your security code).

Your PIN is blocked

- Enter the PIN unblocking code supplied with your SIM card.

PRELIMINARY

Your PIN2 is blocked

- Enter the PIN2 unblocking code supplied with your SIM card.

Your SIM card won't work

- *Is the card inserted correctly?*
- *Is it chipped, scratched, or visibly damaged?* Return it to your service provider.
- *Check the SIM contacts.* If dirty, clean them with an antistatic cloth.

The battery won't charge

- *Check the charger.* Is it properly connected? Are its contacts clean and dry?
- *Check the battery contacts.* Are they clean and dry?
- *Check the battery temperature.* If it is warm, let it cool before recharging.
- *Is it an old battery?* Replace the battery.
- *Are you using a Motorola original battery?* Your charging system may not be able to communicate with your battery.

The battery icon and meters are missing

- *Are you using a Motorola original battery?* Your charging system may not be able to communicate with your battery.

Troubleshooting

Troubleshooting

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The battery drains faster than normal

- *Are you in an area of variable coverage?* This uses extra battery power.
- *Is it a new battery?* A new battery needs two to three charge/discharge cycles to attain normal performance.
- *Is it an old battery?* Battery performance declines after several years of use.
- *Is it a battery that hasn't been completely discharged?* Allow the battery to fully discharge (until the communicator turns itself off) and then charge the battery overnight.
- *Check that the Frequency Of Search feature in the Network Selection menu has not been set to Fast or Continuous.*
- *Check that the Battery Saving Mode feature has not been set to Off.*
- *Are you using your phone in extreme temperatures?* At extreme hot or cold temperatures, battery performance is significantly reduced.

You can't cancel Call Diverting or Call Barring

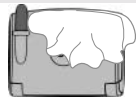
The ☒ symbol is flashing

I can't make international calls

- Wait until you are in an area with good network coverage and try again.
- *There is not enough memory available to store another SMS message.* Use the Messages menu to delete one or more existing messages.
- *Some service providers block the ability to make international calls.* Contact your Service Provider.
- *Have you included the correct codes?* Press and hold **0** (zero) to display the international dialing prefix (+) and then enter the country code followed by the phone number.

Use and Care

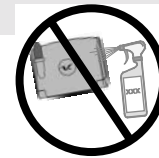
PRELIMINARY



Clean with a soft cloth dampened with soap and water.



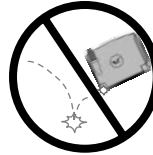
Do not immerse in water.



Do not use alcohol or other cleaning solutions.



Do not expose to excessive heat ...



... or extreme shock ...



... or moisture.

Use and Care

Total Customer Satisfaction

At Motorola, Total Customer Satisfaction is a top priority. If you have a question, a suggestion or a concern about your Motorola Personal Communicator, Motorola wants to hear from you.

Please contact the Motorola Response Centre by fax on: +44 (0) 131 458 6732, or use one of the local phone numbers in the following countries:

• Australia	1800-667788	• Netherlands	0800 022 27 43
• Austria	0800 297246	• Norway	22 55 10 04
• Belgium	0800 72 370	• Oman	790925
• Canada	1 800 461 4575	• People's Republic of China	86 10 68466060
• Czech Republic	00420 2 21 85 21 01	• Portugal	01 318 0051
• Denmark	4348 8005	• Qatar	418999
• Egypt	02 3411800	• Saudi Arabia	01 2303294
• Eire	01 402 6887	• Singapore	65 4855 333
• Finland	0800 117 036	• South Africa	0800 11 48 49
• France	0 803 303 302	• Spain	902 100 077
• Germany	0180 35050	• Sweden	08 445 1210
• Greece	00800 441 28150	• Switzerland	0800 553 109
• Hong Kong	852 25063888	• Taiwan	886 2 87731746
• Italy	02 696 333 16	• Turkey	0212 425 9090
• Jordan	06 863750	• UK	0500 55 55 55
• Kuwait	484 2000 Ext 1177	• United Arab Emirates	04 32 11 66
• Lebanon	01 744156	• United States of America	1 800 331 6456
• Luxembourg	0800 21 99		

For email queries contact: service1@mot.com

For internet queries contact: <http://www.mot.com>

WARRANTY INFORMATION PRELIMINARY

Motorola warrants to you, the original purchaser, the Personal Communicator and accessories which you have purchased from an authorised Motorola dealer (the "Products"), to be in conformance with the applicable Motorola specifications current at the time of manufacture for a term of [1] year from date of purchase of the Product(s) (Warranty Term).

You must inform Motorola of the lack of conformity to the applicable specifications of any of the Products within a period of two (2) months from the date on which you detect a defect in material, workmanship or lack of conformity and in any event within a term not to exceed the Warranty Term, by submitting the Product for service to Motorola. Motorola shall not be bound by Product related statements not directly made by Motorola.

A list of the Motorola Call Centre numbers is enclosed with this Product.

During the Warranty term, Motorola will, at its discretion and without extra charge, as your exclusive remedy, repair or replace your Product which does not comply with this warranty; or failing this, to reimburse the price of the Product but reduced to take into account the use you have had of the Product since it was delivered. This warranty will expire at the end of the Warranty Term.

This is the complete and exclusive warranty for a Motorola Personal Communicator and accessories and in lieu of all other warranties, terms and conditions, whether express or implied.

Where you purchase the product other than as a consumer, Motorola disclaims all other warranties, terms and conditions express or implied, such as fitness for purpose and satisfactory quality.

In no event shall Motorola be liable for damages in excess of the purchase price nor for any incidental special or consequential damages* arising out of the use or inability to use the Product, to the full extent such may be disclaimed by law.

This Warranty does not affect any statutory rights that you may have if you are a consumer, such as a warranty of satisfactory quality and fit for the purpose for which products of the same type are normally used under normal use and service, nor any rights against the seller of the Products arising from your purchase and sales contract.

WARRANTY INFORMATION

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(*) including without limitation loss of use, loss of time, inconvenience, commercial loss, lost profits or savings.

HOW TO GET WARRANTY SERVICE?

In most cases the authorised Motorola dealer which sold and/or installed your Motorola Personal Communicator and original accessories will honor a warranty claim and/or provide warranty service. Alternatively, for further information on how to get warranty service please contact either the customer service department of service provider or Motorola's call centre at the telephone numbers below for your country.

In order to claim the warranty service you must return the communicator and/or accessories in question to Motorola please avoid leaving any supplementary items like SIM cards. The Product should also be accompanied by a label with your name, address, and telephone number; name of Carrier and a description of the problem. In the case of vehicular installation, the vehicle in which the communicator is installed should be driven to the Authorised Repair Centre, as analysis of any problem may require inspection of the entire vehicular installation.

In order to be eligible to receive warranty service, you must present your receipt of purchase or a comparable substitute proof of purchase bearing the date of purchase. The communicator should also clearly display the original compatible electronic serial number (IMEI) and mechanic serial number [MSN]. Such information is contained with the Product.

CONDITIONS

This warranty will not apply if the type or serial numbers on the Product has been altered, deleted, removed, or made illegible. Motorola reserves the right to refuse free-of-charge warranty service if the requested documentation can not be presented or if the information is incomplete, illegible or incompatible with the factory records.

Repair, at Motorola's option, may include the replacement of parts or boards with functionally equivalent, reconditioned or new parts or boards. Replaced parts, accessories, batteries, or boards are warranted for the balance of the original warranty time period. The Warranty Term will not be extended. All original

accessories, batteries, parts, and communicator equipment that have been replaced shall become the property of Motorola. Motorola does not warrant the installation, maintenance or service of the products, accessories, batteries or parts. Motorola will not be responsible in any way for problems or damage caused by any ancillary equipment not furnished by Motorola which is attached to or used in connection with the Products, or for operation of Motorola equipment with any ancillary equipment and all such equipment is expressly excluded from this warranty.

When the Product is used in conjunction with ancillary or peripheral equipment not supplied by Motorola, Motorola does not warrant the operation of the Product/peripheral combination and Motorola will not honor any warranty claim where the Product is used in such a combination and it is determined by Motorola that there is no fault with the Product. Motorola specifically disclaims any responsibility for any damage, whether or not to Motorola equipment, caused in any way by the use of the communicator, accessories and peripherals (specific examples include, but are not limited to: batteries, chargers,

adapters, and power supplies) when such accessories and peripherals are not manufactured and supplied by Motorola.

WHAT IS NOT COVERED BY THE WARRANTY

This warranty is not valid if the defects are due to damage, misuse, tampering, neglect or lack of care and in case of alterations or repair carried out by unauthorised persons.

1. Defects or damage resulting from use of the Product in other than its normal and customary manner.
1. Defects or damage from misuse, accident or neglect.
1. Defects of damage from improper testing, operation, maintenance, installation, adjustment, or any alteration or modification of any kind.
1. Breakage or damage to antennas unless caused directly by defects in material or workmanship.
1. Products disassembled or repaired in

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such a manner as to adversely affect performance or prevent adequate inspection and testing to verify any warranty claim.

1. Defects or damage due to range, coverage, availability, grade of service, or operation of the system by the operator.
1. Defects or damage due to moist, liquid or spills of food.
1. Control unit coil cords in the Product that are stretched or have the modular tab broken.
1. All plastic surfaces and all other externally exposed parts that are scratched or damaged due to customer normal use.
1. Leather cases (which are covered under separate manufacturer's warranties).

1. Products rented on a temporary basis.

1. Periodic maintenance and repair or replacement of parts due to normal wear and tear;

Note: The talk-time, stand-by time and total life cycle of a Motorola rechargeable battery for your communicator will depend on usage conditions and network configurations. As a consumable product, the specifications indicate that you should be able to obtain optimum performance for your Motorola Personal Communicator within the first six months from date of purchase and up-to (200) charges.

The warranty for Motorola rechargeable batteries becomes void if (i) the batteries are charged other than by Motorola approved battery chargers specified for the charging of the battery, (i) any of the seals on the battery are broken or show evidence of tampering, (iii) the battery is used in equipment or service other than the equipment for which it is specified.

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FDA Information

PRELIMINARY

The U.S. Food and Drug Administration's Center for Devices and Radiological Health
Consumer Update on Mobile Phones

FDA has been receiving inquiries about the safety of mobile phones, including cellular phones and PCS phones. The following summarizes what is known--and what remains unknown--about whether these products can pose a hazard to health, and what can be done to minimize any potential risk. This information may be used to respond to questions.

Why the concern?

Mobile phones emit low levels of radiofrequency energy (i.e., radiofrequency radiation) in the microwave range while being used. They also emit very low levels of radiofrequency energy (RF), considered non-significant, when in the stand-by mode. It is well known that high levels of RF can produce biological damage through heating effects (this is how your microwave oven is able to cook food). However, it is not known whether, to what extent, or through what mechanism, lower levels of RF might cause adverse health effects as well. Although some research has been done to address these questions, no clear picture of the biological effects of this type of radiation has emerged to date. Thus, the available science does not allow us to conclude that mobile phones are absolutely safe, or that they are unsafe. However, the available scientific evidence does not demonstrate any adverse health effects associated with the use of mobile phones.

What kinds of phones are in question?

Questions have been raised about hand-held mobile phones, the kind that have a built-in antenna that is positioned close to the user's head during normal telephone conversation. These types of mobile phones are of concern because of the short distance between the phone's antenna--the primary source of the RF--and the person's head. The exposure to RF from mobile phones in which the antenna is located at greater distances from the user (on the outside of a car, for example) is drastically lower than that from hand-held phones, because a person's RF exposure decreases rapidly with distance from the source. The safety of so-called "cordless phones," which have a base unit connected to the telephone wiring in a house and which operate at far lower power levels and frequencies, has not been questioned.

How much evidence is there that hand-held mobile phones might be harmful?

Briefly, there is not enough evidence to know for sure, either way; however, research efforts are on-going. The existing scientific evidence is conflicting and many of the studies that have been done to date have suffered from flaws in their research methods. Animal experiments investigating the effects of RF exposures characteristic of mobile phones have yielded conflicting results. A few animal studies, however, have suggested that low levels of RF could accelerate the development of cancer in laboratory animals. In one study, mice genetically altered to be predisposed to developing one type of cancer developed more than twice as many such cancers when they were exposed to RF energy compared to controls. There is much uncertainty among scientists about whether results obtained from animal studies apply to the use of mobile phones. First, it is uncertain how to apply the results obtained in rats and

mice to humans. Second, many of the studies that showed increased tumor development used animals that had already been treated with cancer-causing chemicals, and other studies exposed the animals to the RF virtually continuously--up to 22 hours per day.

For the past five years in the United States, the mobile phone industry has supported research into the safety of mobile phones. This research has resulted in two findings in particular that merit additional study:

1. In a hospital-based, case-control study, researchers looked for an association between mobile phone use and either glioma (a type of brain cancer) or acoustic neuroma (a benign tumor of the nerve sheath). No statistically significant association was found between mobile phone use and acoustic neuroma. There was also no association between mobile phone use and gliomas when all types of types of gliomas were considered together. It should be noted that the average length of mobile phone exposure in this study was less than three years.
When 20 types of glioma were considered separately, however, an association was found between mobile phone use and one rare type of glioma, neuroepitheliomatous tumors. It is possible with multiple comparisons of the same sample that this association occurred by chance. Moreover, the risk did not increase with how often the mobile phone was used, or the length of the calls. In fact, the risk actually decreased with cumulative hours of mobile phone use. Most cancer causing agents increase risk with increased exposure. An ongoing study of brain cancers by the National Cancer Institute is expected to bear on the accuracy and repeatability of these results.(1)
2. Researchers conducted a large battery of laboratory tests to assess the effects of exposure to mobile phone RF on genetic material. These included tests for several kinds

of abnormalities, including mutations, chromosomal aberrations, DNA strand breaks, and structural changes in the genetic material of blood cells called lymphocytes. None of the tests showed any effect of the RF except for the micronucleus assay, which detects structural effects on the genetic material. The cells in this assay showed changes after exposure to simulated cell phone radiation, but only after 24 hours of exposure. It is possible that exposing the test cells to radiation for this long resulted in heating. Since this assay is known to be sensitive to heating, heat alone could have caused the abnormalities to occur. The data already in the literature on the response of the micronucleus assay to RF are conflicting. Thus, follow-up research is necessary.(2)

FDA is currently working with government, industry, and academic groups to ensure the proper follow-up to these industry-funded research findings. Collaboration with the Cellular Telecommunications Industry Association (CTIA) in particular is expected to lead to FDA providing research recommendations and scientific oversight of new CTIA-funded research based on such recommendations.

Two other studies of interest have been reported recently in the literature:

1. Two groups of 18 people were exposed to simulated mobile phone signals under laboratory conditions while they performed cognitive function tests. There were no changes in the subjects' ability to recall words, numbers, or pictures, or in their spatial memory, but they were able to make choices more quickly in one visual test when they were exposed to simulated mobile phone signals. This was the only change noted among more than 20 variables compared.(3)
2. In a study of 209 brain tumor cases and 425 matched controls, there was no increased risk of brain tumors associated with mobile phone use. When tumors did exist in certain

locations, however, they were more likely to be on the side of the head where the mobile phone was used. Because this occurred in only a small number of cases, the increased likelihood was too small to be statistically significant.(4)

In summary, we do not have enough information at this point to assure the public that there are, or are not, any low incident health problems associated with use of mobile phones. FDA continues to work with all parties, including other federal agencies and industry, to assure that research is undertaken to provide the necessary answers to the outstanding questions about the safety of mobile phones.

What is known about cases of human cancer that have been reported in users of hand-held mobile phones?

Some people who have used mobile phones have been diagnosed with brain cancer. But it is important to understand that this type of cancer also occurs among people who have not used mobile phones. In fact, brain cancer occurs in the U.S. population at a rate of about 6 new cases per 100,000 people each year. At that rate, assuming 80 million users of mobile phones (a number increasing at a rate of about 1 million per month), about 4800 cases of brain cancer would be expected each year among those 80 million people, whether or not they used their phones. Thus it is not possible to tell whether any individual's cancer arose because of the phone, or whether it would have happened anyway. A key question is whether the risk of getting a particular form of cancer is greater among people who use mobile phones than among the rest of the population. One way to answer that question is to compare the usage of mobile phones among people with brain cancer with the use of mobile phones among appropriately matched people without brain cancer. This is called a case-control study.

The current case-control study of brain cancers by the National Cancer Institute, as well as the follow-up research to be sponsored by industry, will begin to generate this type of information.

What is FDA's role concerning the safety of mobile phones?

Under the law, FDA does not review the safety of radiation-emitting consumer products such as mobile phones before marketing, as it does with new drugs or medical devices. However, the agency has authority to take action if mobile phones are shown to emit radiation at a level that is hazardous to the user. In such a case, FDA could require the manufacturers of mobile phones to notify users of the health hazard and to repair, replace or recall the phones so that the hazard no longer exists.

Although the existing scientific data do not justify FDA regulatory actions at this time, FDA has urged the mobile phone industry to take a number of steps to assure public safety. The agency has recommended that the industry:

- support needed research into possible biological effects of RF of the type emitted by mobile phones;
- design mobile phones in a way that minimizes any RF exposure to the user that is not necessary for device function; and
- cooperate in providing mobile phone users with the best possible information on what is known about possible effects of mobile phone use on human health.

At the same time, FDA belongs to an interagency working group of the federal agencies that have responsibility for different aspects of mobile phone safety to ensure a coordinated effort at the federal level. These agencies are:

- National Institute for Occupational Safety and Health
- Environmental Protection Agency
- Federal Communications Commission
- Occupational Health and Safety Administration
- National Telecommunications and Information Administration
- The National Institutes of Health also participates in this group.

In the absence of conclusive information about any possible risk, what can concerned individuals do?

If there is a risk from these products--and at this point we do not know that there is--it is probably very small. But if people are concerned about avoiding even potential risks, there are simple steps they can take to do so. For example, time is a key factor in how much exposure a person receives. Those persons who spend long periods of time on their hand-held mobile phones could consider holding lengthy conversations on conventional phones and reserving the hand-held models for shorter conversations or for situations when other types of phones are not available.

People who must conduct extended conversations in their cars every day could switch to a type of mobile phone that places more distance between their bodies and the source of the RF, since the exposure level drops off dramatically with distance. For example, they could switch to:

- a mobile phone in which the antenna is located outside the vehicle,
- a hand-held phone with a built-in antenna connected to a different antenna mounted on the outside of the car or built into a separate package, or

- a headset with a remote antenna to a mobile phone carried at the waist.

Again, the scientific data *do not* demonstrate that mobile phones are harmful. But if people are concerned about the radiofrequency energy from these products, taking the simple precautions outlined above can reduce any possible risk.

Where can I find additional information?

For additional information, see the following websites:

Federal Communications Commission (FCC) RF Safety Program (select "Information on Human Exposure to RF Fields from Cellular and PCS Radio Transmitters"):

<http://www.fcc.gov/oet/rfsafety>

World Health Organization (WHO) International Commission on Non-Ionizing Radiation Protection (select Qs & As): <http://www.who.int/emf>

United Kingdom, National Radiological Protection Board: <http://www.nrpb.org.uk>

Cellular Telecommunications Industry Association (CTIA): <http://www.wow-com.com>

U.S. Food and Drug Administration (FDA) Center for Devices and Radiological Health: <http://www.fda.gov/cdrh/consumer/>

1. Muscat et al. Epidemiological Study of Cellular Telephone Use and Malignant Brain Tumors. In: State of the Science Symposium; 1999 June 20; Long Beach, California.
2. Tice et al. Tests of mobile phone signals for activity in genotoxicity and other laboratory assays. In: Annual Meeting of the Environmental Mutagen Society; March 29, 1999, Washington, D.C.; and personal communication, unpublished results.
3. Preece, AW, Iwi, G, Davies-Smith, A, Wesnes, K, Butler, S, Lim, E, and Varey, A. Effect of

a 915-MHz simulated mobile phone signal on cognitive function in man. Int. J. Radiat. Biol., April 8, 1999.

4. Hardell, L, Nasman, A, Pahlson, A, Hallquist, A and Mild, KH. Use of cellular telephones and the risk for brain tumors: a case-control study. Int. J. Oncol., 15: 113-116, 1999.

FDA020400

SAR Information

SAR Information

THIS MODEL PHONE MEETS THE GOVERNMENT'S REQUIREMENTS FOR EXPOSURE TO RADIO WAVES.

Your Personal Communicator is a radio transmitter and receiver. It is designed and manufactured not to exceed the emission limits for exposure to radiofrequency (RF) energy set by the Federal Communications Commission of the U.S. Government. These limits are part of comprehensive guidelines and establish permitted levels of RF energy for the general population. The guidelines are based on standards that were developed by independent scientific organizations through periodic and thorough evaluation of scientific studies. The standards include a substantial safety margin designed to assure the safety of all persons, regardless of age and health.

The exposure standard for wireless mobile phones (Personal Communicators) employs a unit of measurement known as the Specific Absorption Rate, or SAR. The SAR limit set by the FCC is 1.6W/kg.* Tests for SAR are conducted using standard operating positions specified by the FCC with the phone transmitting at its highest certified power level in all tested frequency bands. Although the SAR is determined at the highest certified power level, the actual SAR level of the phone while operating can be well below the maximum value. This is

because the phone is designed to operate at multiple power levels so as to use only the power required to reach the network. In general, the closer you are to a wireless base station antenna, the lower the power output.

Before a Personal Communicator model is available for sale to the public, it must be tested and certified to the FCC that it does not exceed the limit established by the government-adopted requirement for safe exposure. The tests are performed in positions and locations (e.g., at the ear and worn on the body) as required by the FCC for each model. The highest SAR value for this model Personal Communicator when tested for use while worn on the body, as described in this user guide, is 0.065. (Body-worn measurements differ among Personal Communicator models, depending upon available accessories and FCC requirements). While there may be differences between the SAR levels of various Personal Communicators and at various positions, they all meet the government requirement.

The FCC has granted an Equipment Authorization for this model Personal Communicator (Personal Communicator) with all reported SAR levels evaluated as in compliance with the FCC RF emission guidelines. SAR information on this model Personal Communicator is on file with the FCC and can be found under the Display Grant section of <http://www.fcc.gov/oet/fccid> after searching on FCC ID XXX XXXX.

* In the United States and Canada, the SAR limit for mobile phones and Personal Communicators used by the public is 1.6 watts/kg (W/kg) averaged over one gram of tissue. The standard incorporates a substantial margin of safety to give additional protection for the public and to account for any variations in measurements.

PRELIMINARY

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PRELIMINARY Personal Numbers

You can use this page to keep track of important numbers.

Service Provider

Number

Family and Friends

Number

Personal Numbers



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