



MOTOROLA

C E L L U L A R

MicroTAC



ENHANCED CELLULAR TELEPHONE

Owner's Manual

Welcome Thank you for selecting Motorola — *a world leader in communications technology.*

All Motorola cellular phones are designed and manufactured in the United States to meet Motorola's exacting specifications and world class quality standards. The *MicroTAC* cellular phone is no exception. This personal phone withstands our rigorous durability tests including temperature, humidity, shock, dust, vibration, and a drop test.

Product superiority is yours with the *MicroTAC* cellular phone.

Carrier's Name _____

Carrier's Phone Number _____

- You will need to have the following information when you inquire about your phone or service. This information is located on the back of your phone after you remove the battery.

ESN Number _____

MSN Number _____

Model Number _____

Cellular Phone Number _____

Unlock Code — The sequential code of **1, 2, 3** is the standard unlock code programmed into all phones by the factory. It is often changed to the last three digits of your cellular phone number by the Carrier. For easy access to this unlock code in the future, please list it here now: _____. (Please contact your place of purchase if your unlock code has been changed and you do not have this information.)

Warranty Expiration Date _____

Date of Purchase _____

Need  **a** large print version of this manual?

Call Motorola at 1-800-331-6465 (USA) or
1-800-461-4575 (Canada).

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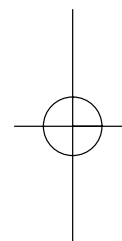
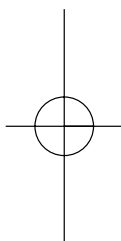
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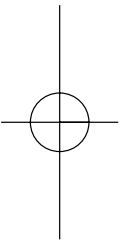
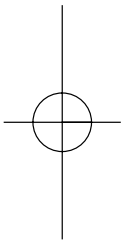
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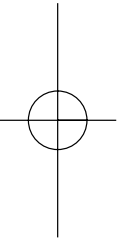
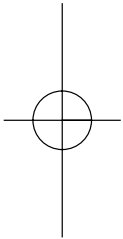
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Safety Information (US Version)

IMPORTANT:

Read this information before using your wireless handheld phone.

Exposure to Radio Frequency Signals

Your wireless handheld portable telephone is a low power radio transmitter and receiver. When it is ON, it receives and also sends out radio frequency (RF) signals.

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

- American National Standards Institute (ANSI) IEEE. C95. 1-1992
- National Council on Radiation Protection and Measurement (NCRP). Report 86
- International Commission on Non-Ionizing Radiation Protection (ICNIRP) 1996
- Ministry of Health (Canada), Safety Code 6

Those standards were based on comprehensive and periodic evaluations of the relevant scientific literature. For example, over 120 scientists, engineers, and physicians from universities, government health agencies, and industry reviewed the available body of research to develop the ANSI Standard (C95.1).

The design of your phone complies with the FCC guidelines (and those standards). For additional information concerning exposure to radio frequency signals, see the statement by the FDA at the end of this user guide. To maintain compliance with FCC RF exposure guidelines, if you wear a handset on your body, use the Motorola-supplied or approved carrying case, holster, or other body-worn accessory. If you do not use a body-worn accessory, ensure the antenna is at least one inch (2.5 centimeters) from your body when transmitting. Use of non-Motorola accessories may violate FCC RF exposure guidelines.

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.

Phone Operation

Normal Operation

Hold the phone as you would any other telephone, with the antenna pointed up and over your shoulder.

Tips on Efficient Operation

Observe the following guidelines to operate your phone most efficiently.

- Extend your antenna fully, if applicable.

- Do not touch the antenna unnecessarily when the phone is in use. Contact with the antenna affects call quality and may cause the phone to operate at a higher power level than otherwise needed.

Batteries

Caution: All batteries can cause property damage, injury, or burns if a conductive material, such as jewelry, keys or beaded chains, touches exposed terminals. The material may complete an electrical circuit and become quite hot. To protect against such unwanted current drain, exercise care in handling any charged battery, particularly when placing it inside your pocket, purse, or other container with metal objects. When the battery is detached from the phone, your batteries are packed with a protective battery cover; please use this cover for storing your batteries when not in use.

Driving

Check the laws and regulations on the use of wireless telephones in the areas where you drive. Always obey them. Observe the following guidelines when using your phone while driving.

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

Electronic Devices

Most modern electronic equipment is shielded from RF signals. However, certain equipment may not be shielded against the RF signals from your wireless phone.

Pacemakers

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

Persons with pacemakers:

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

Hearing Aids

Some digital wireless phones 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 external RF energy. Your physician may be able to assist you in obtaining this information. Turn your phone OFF in health care facilities when any regulations posted in these areas instruct you to do so. Hospitals or health care facilities may be using equipment that could be sensitive to external RF energy.

Vehicles

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

Posted Facilities

Turn your phone OFF in any facility where posted notices so require.

Aircraft

Switch OFF your phone before boarding an aircraft.

Airline regulations prohibit using your phone while in the air. Check and comply with the policy of your airline regarding the use of your phone while the aircraft is on the ground.

Blasting Areas

To avoid interfering with blasting operations, turn your phone OFF when in a "blasting area" or in areas posted: "Turn off two-way radio." Obey all signs and instructions.

Potentially Explosive Atmospheres

Turn your phone OFF, do not remove your battery when you are in any area with a potentially explosive atmosphere, and obey all signs and instructions. Sparks from your battery in such areas could cause an explosion or fire resulting in bodily injury or even death.

Areas with a potentially explosive atmosphere are often but not always clearly marked. They include: fueling areas such as gasoline stations; below deck on boats; fuel or chemical transfer or storage facilities; areas where fuel odors are present (for example, if a gas/propane leak occurs in a car or home); areas where the air contains chemicals or particles, such as grain, dust, or metal powders; and any other area where you normally would be advised to turn off your vehicle engine.

For Vehicles Equipped with an Air Bag

An air bag inflates with great force. Do NOT place objects, including both installed or portable wireless equipment, in the area over the air bag or in the air bag deployment area. If in-vehicle wireless equipment is improperly installed and the air bag inflates, serious injury could result.

US021600

Introduction

The *MicroTAC* cellular phone represents the state-of-the-art in personal cellular telephones today.

This *MicroTAC* phone features the  *Enhanced Feature Set*, which includes a large display, Extended Talk Time and Standby Time, and improved charging performance.

In addition, your *MicroTAC* phone also offers the following exceptional features.

- Calling Line ID Capable
- 9 Selectable Ringer Styles
- One Touch Dial Keys
- Priority Call
- Super Speed Dialing
- Call Timers
- Multilingual Prompts
- Two-System Operation
- Turbo Dial Operation
- Multiple Key Answer
- Auto Answer
- Memory Protect

Remember, these are just a few of the great features that your *MicroTAC* cellular phone provides to meet your business and personal needs. In addition, a number of optional accessories are available to help you tailor your phone to your individual preferences. These include a full range of Batteries, Chargers, Vehicle Adapters, and Data Products.

To help you become familiar with your telephone's features, we suggest that you experiment with them as you progress through this manual.

Please read *General Safety Information* before operating your phone.

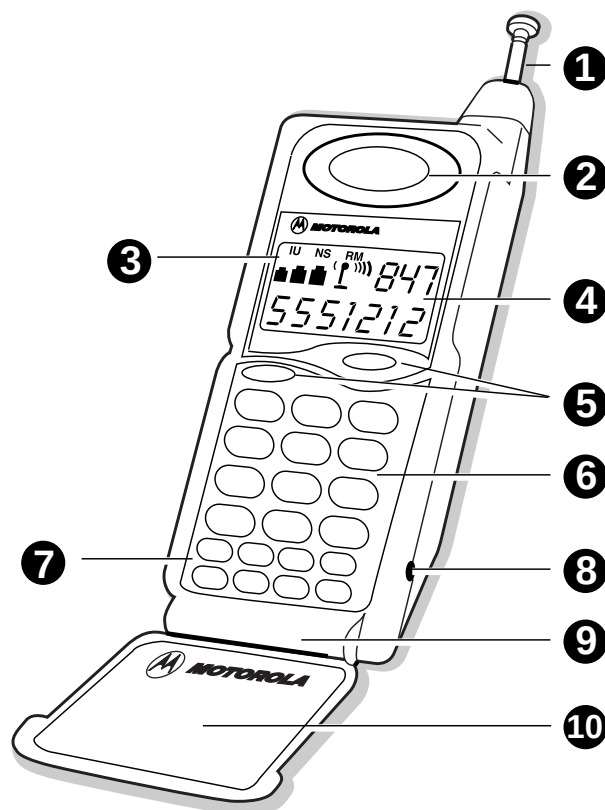
① Retractable Antenna

Extend for optimum performance.

② Earpiece

③ Status Indicators

Provide a visual indication of conditions associated with cellular telephone service.



IU (In Use) — Flashes slowly when call is in progress.

RM(Roam) — Flashes if your phone is accessing another cellular system other than your home registered system.

NS (No Service) — Flashes slowly when the phone is out of service range of a cellular system. Calls cannot be placed or received when this light is on.

Signal Strength Indicator — Flashes the relative strength of the signal received by the phone (see page 9).

Battery Strength Indicator — Lights steadily to indicate the estimated remaining capacity of the battery (see page 11).

④ Number Display

(Be sure to remove the protective label affixed to the display.) Displays phone number, memory location number, or message. Some information will require viewing sequentially displayed messages.

⑤ Dedicated One Touch Memory Buttons

Press and hold either of the one-touch buttons to dial the number stored for that button.

⑥ Numeric Keypad

1, **2**, **3**, etc., are used to enter call information.
scrolls forward. ***** scrolls backward.

⑦ Function Keys

RCL Recalls and displays telephone numbers stored in memory.

STO Stores numbers into any of the memory locations.

CLR Clears last digit when pressed and released. Press and hold to clear entire display in the event of an error (does not affect numbers stored in memory).

SND Initiates a call to the entered telephone number or answers a call. Sends a switchhook flash when a call is in progress.

PWR Turns phone on and off.

VOL Adjusts the earpiece and ringer volume.

FCN Used in combination with other buttons for specific user-programmed functions (e.g., **FCN**, **5** activates lock mode).

END Terminates a call in progress and exits special functions.

⑧ Headset Jack

Connect an optional accessory headset to this jack to provide simple hands-free conversations.

⑨ Mouthpiece

⑩ Keypad Cover

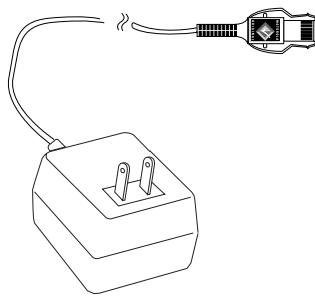


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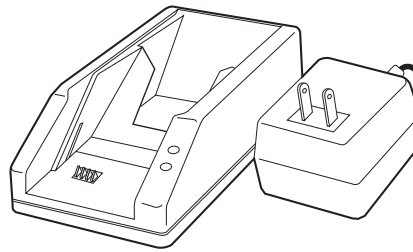


Prepare the Battery for Initial Use

The Nickel Metal Hydride or Nickel-Cadmium battery supplied with your phone must be fully charged before placing your phone into service. The batteries are shipped from the factory in a discharged state in order to extend the life of the battery. It is recommended that you charge new batteries for at least 4 hours using the AC Charger/Transformer, or overnight using the *IntelliCharge™* Desktop Charger. Do not charge the battery longer than 24 hours. (Refer to page 3 if you are using a plug-in charger.)



AC Charger/Transformer



IntelliCharge Desktop Charger

Motorola desktop chargers for the *MicroTAC* line of products are dual pocket chargers. The charger's front pocket can charge a battery while attached to the phone or by itself. The charger's rear pocket can charge any compatible battery (not attached to a phone).

WARNING *Battery may explode if exposed to fire.*

WARNING *To prevent injuries or burns, and to avoid damage to the battery, do not allow metal objects to contact or short circuit the battery terminals. Refer to "Batteries" on page vii for details.*

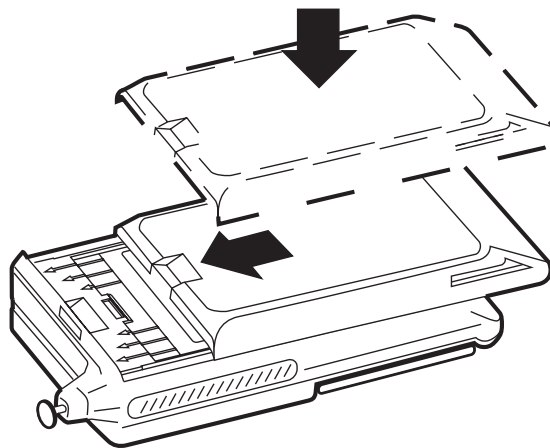
CAUTION *Charging your battery in anything other than a Motorola charger will void your warranty.*

CAUTION *To avoid damage to the battery, do not place it anywhere that might cause the battery terminals to short together.*



Attach the Battery

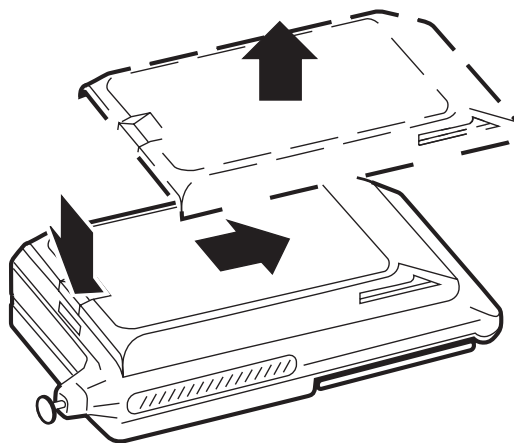
1. Place the battery on the phone so that its grooves align. Align the top of the battery with the line on the back of the phone right below the arrows.
2. Slide upward in the direction of the arrows on the back of the phone until it clicks into place.



Remove the Battery

Standard Method

1. Turn your phone off.
2. Depress the latch button on the rear of the battery and slide the battery downward until it stops.
3. Lift the battery off.



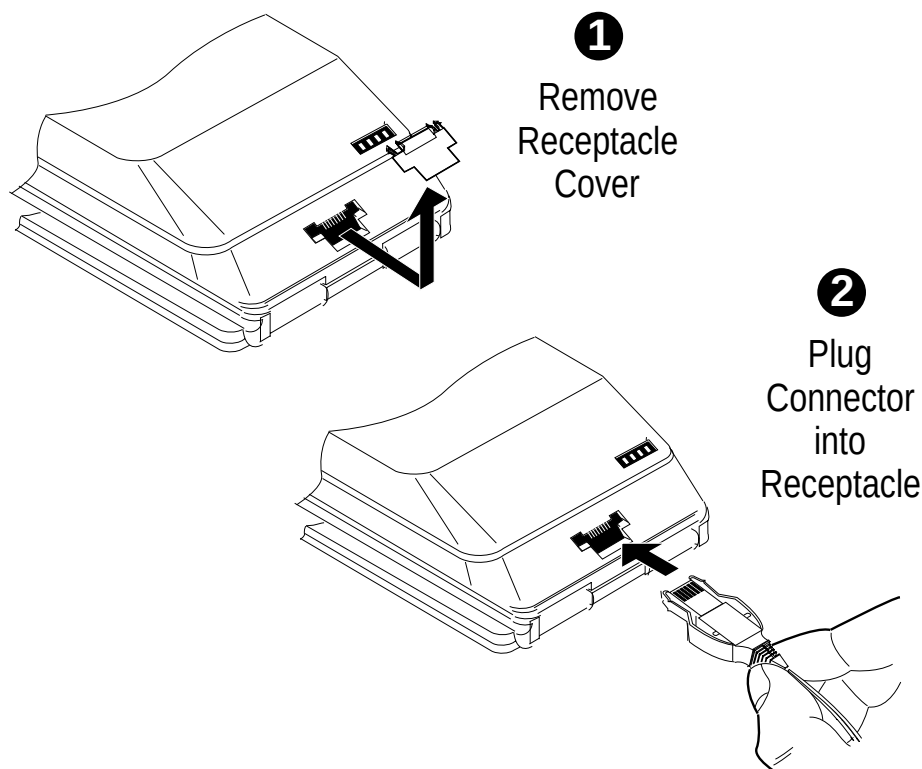
Quick-Change Battery Removal/Replacement

The quick-change method allows you to remove your battery at any time and replace it with a charged spare battery during a telephone call. This is especially useful if you receive the low battery message (*LOW BATT*) or audible tone during a call.

Simply remove the battery from the phone and put on the spare battery. The phone will not go through the normal power-up cycle described on page 4. You will only have four seconds to complete this action before your telephone call is terminated. It is a good idea to practice this procedure a few times before using it on an actual telephone call. Advise the party on the other end of the call before beginning this procedure.

Using Plug-In Chargers

If you are using a charger that plugs into the bottom of the phone, you must remove the small plastic cover to gain access to the receptacle, as shown below.



About the Antenna

There are two parts to the handset antenna, one internal and one retractable. This allows your phone to detect incoming calls without having the antenna extended. For optimum performance, fully extend the antenna when in a call or when placing a call.

Turning Phone On and Off

1. Press **PWR** to turn your phone on.
2. Press **PWR** again to turn your phone off.

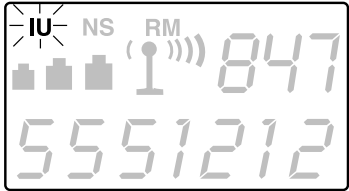
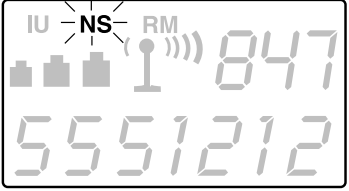
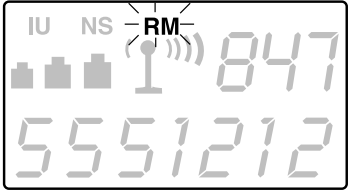
Start-up Self Tests

Each time the phone is turned on, it performs a series of self tests, sounds a tone, and lights all display positions and status indicators to check their operation. The Signal Strength and Battery Meters then display and the keypad lights momentarily, as it will any time a key is pressed or the keypad cover is opened.

Start-up Messages

Message	Explanation
<i>A 1</i>	• If your phone is programmed for two cellular systems, one of these messages will appear in the display upon power up. • These are reminders as to which system and phone number are currently in use.
<i>A 2</i>	
<i>b 1</i>	
<i>b 2</i>	
<i>Loc 'd</i>	• Indicates that the phone has been locked and cannot send or receive calls until unlocked.

Start-up Status Indicators

<i>Indicator</i>	<i>Explanation</i>
	IU (In Use) Indicator Flashes slowly while a call is in progress
	NS (No Service) Indicator - Flashes slowly if phone is beyond range of a cellular service area - Calls cannot be placed or received while <i>NS</i> is lit
	RM (Roam) Indicator If flashing, you are accessing a Cellular System other than your home system.

Illuminated Keypad

Your keypad lights whenever the phone is turned on, a call is received, or a key is pressed. To help conserve battery power and minimize distractions while driving at night, the display and keypad backlighting will turn off after 16 seconds if no key is pressed. You may reactivate the display by pressing any key or opening the keypad cover. The display and keypad backlighting remain lit during menu use.



Placing a Call

1. With power on, enter the number you wish to call.
2. Press **[SND]**. *ding* and the dialed number will alternate in the display until the called party answers.
3. Begin the conversation when the called party answers.

To Correct an Error

To correct an error, press and quickly release **[CLR]** to delete the last character. To clear the entire entry, press and hold **[CLR]** for about 1 second. Your entire entry will be deleted, and you may now re-enter the number you wish to call.

If Entering More Than 10 Digits

You can call a phone number with up to 16 digits, but only the last 10 digits will appear in the display.

To recall a stored phone number that is longer than 10 digits, press **[RCL]** and the memory location number. The display will flash the memory location number and the last 10 digits of the number. Press **[RCL]** again to view the entire number.



Unsuccessful Call Attempts

If you hear one of the following signals, you have not successfully completed your call.

<i>Tone / Message</i>	<i>Description</i>
fast busy (reorder signal) <i>Snd to rEd ,AL</i>	Cellular System Busy Press (SND) again before ending the unsuccessful call attempt to automatically redial the call (refer to Automatic Redialing below), or press (END) and dial the call again.
alternating high/low tone (intercept) <i>Snd to rEd ,AL</i>	Cellular System Could Not Complete the Call You may have tried to place a call before the green IU indicator was flashing to let you know your phone was fully operative. Either press (SND) again before ending the unsuccessful call attempt to automatically redial the call (refer to Automatic Redialing below), or press (END) and dial the call again.
busy signal	The Called Party's Line is Busy

Automatic Redialing

Your phone includes a convenient feature that eliminates the need for you to make repetitive call attempts when a cellular system is busy.

If you receive an alternating high/low signal (intercept) or the fast busy tone (reorder signal) when attempting to place a call and wish to retry the call, press **(SND)** before ending the unsuccessful call attempt. *rEd ,AL* is then displayed.

Your phone will make the call attempt continuously over the next four minutes. Once a connection is made, the phone will ring once to alert you so that you may lift the phone to your ear and begin the conversation. You do not have to press **[SND]** to answer the call.

If four minutes is insufficient time, press **[SND]** to begin another cycle. You may terminate Automatic Redial by turning off the phone, or by pressing **[END]**.

NOTE *Automatic Redial applies only if the cellular system is busy, and will not engage when the called party's line is busy.*

Ending a Call

Press **[END]** or close the keypad cover.

The green *IU* will extinguish.

Receiving a Call

When you hear the ring tone indicating an incoming call, open the mouthpiece to answer the call. If the keypad cover is already open, press **[SND]** to answer the call.

NOTE *Your phone is equipped with an Automatic Answer feature that allows you to answer calls without pressing **[SND]**. Refer to "Automatic Answer" on page 24 for details.*

NOTE *Opening the keypad cover and pressing **[SND]** may activate call transfer or other optional system features. Contact your Cellular System Provider for more information.*

NOTE *If you have subscribed to Calling Line ID, the calling party's phone number (if available) will appear in the display. Refer to "Calling Line ID" on page 27 for details on the Calling Line ID feature.*

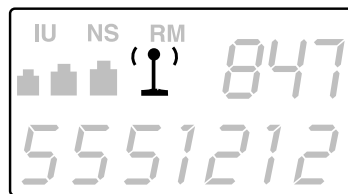
Call In Absence Indicator

If your phone is on and an incoming call is unanswered, **CALL** is displayed for 16 seconds. The display and keypad backlight will then extinguish to conserve the battery level. Pressing any key but **CLR** or **END** redisplay **CALL** to inform you of the call attempt. You must press **CLR** or **END** to cancel the message and clear the display.

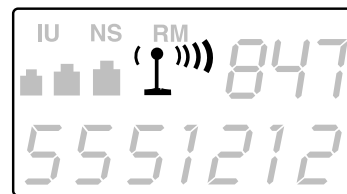
NOTE *Unless you have subscribed to Calling Line ID, the phone will not display or retrieve the phone number of the calling party.*

Signal Strength Meter

The Signal Strength Meter (SSM) indicates the relative strength of the signal received by your phone. The SSM is displayed as shown below. The **I** alone represents the lowest strength, with each additional **)** representing a stronger signal.



Weak Signal



Strong Signal

The SSM appears every time you turn your phone on. After the display blanks out (after about 16 seconds), the SSM will “strobe” to indicate that the phone is on. To redisplay the SSM press any key.

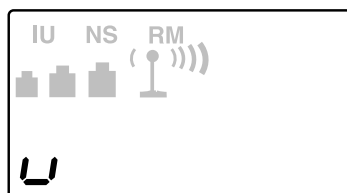
To best utilize the SSM, you should familiarize yourself with the relative signal strength levels and their associated call placement and call-in-progress qualities.

Any messages, such as **LOC 'd**, appearing in the display as a result of activation of a feature will take priority over SSM. You will not see the SSM displayed in these cases.

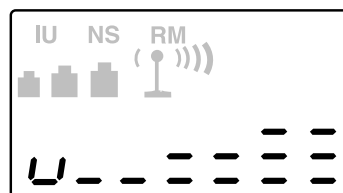


Volume Meter

The Volume Meter represents the current volume setting and is displayed whenever you adjust the earpiece or ringer volume. The volume level is displayed as a bar graph following the letter **U** at the left side of the display. The **U** alone represents the lowest volume setting, with each additional bar representing a higher volume setting.



Lowest Volume



Highest Volume

Adjusting Earpiece Volume

1. Open the keypad cover.
2. Press and hold **(VOL)** to raise the volume level. Release and press **(VOL)** again to lower the volume.

Adjusting Ringer Volume

1. Open the keypad cover.
2. Press **(FCN)**, then **(VOL)** to raise the volume level. Release and press **(VOL)** again to lower volume.

Low Battery Warning

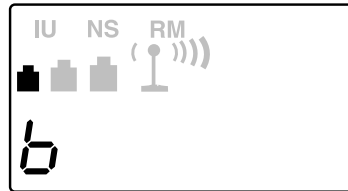
Low battery power is indicated by a short dual-tone alert repeated periodically, and the displayed message **LOW BATT**. As the battery approaches discharge, the unit will automatically turn itself off.



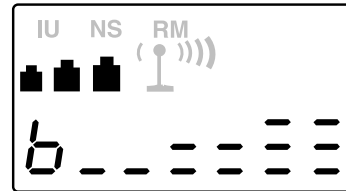
Battery Voltage Meter

Press **FCN**, **4**.

The Battery Voltage Meter (BVM) represents the current voltage level of the battery being used. You can use this to estimate the amount of battery capacity remaining. The BVM is displayed as a bar graph following the letter **b** at the left side of the display. Note that three battery symbols () are also provided to indicate the relative battery level whenever the display backlighting is on.



Low Battery



Charged Battery

NOTE *Variables such as temperature, battery age, and charging conditions may affect battery voltage.*

About Memory

Your phone provides a numeric memory in which to store frequently called phone numbers. The memory will accept entries designated by location numbers 01, 02, etc. Calls are placed from within memory by pressing **[SND]** when the number is displayed. Each memory location accepts up to 16 phone number digits.

The next two sections describe how to store numbers in memory and how to place calls from memory. Before setting up your memory, we suggest you read the rest of these sections to become familiar with the ways in which you will access and use it.

NOTE *Your phone is equipped with two One Touch Dialing Keys, each of which capable of storing a phone number. Refer to “One Touch Dialing Keys” on page 17 for instructions on storing phone numbers for these special keys.*

Storing a Phone Number

1. Enter the phone number you wish to store (up to 16 digits).
2. Press **[STO]**.
3. Enter a two-digit location number (e.g., **[0]** **[1]**, **[0]** **[2]**, etc.).
4. The location entered is displayed to confirm storage.

NOTE *If FULL displays, refer to “Memory Protect Feature” on page 13.*

Storing an Area Code and Prefix (Postscripting)

1. Enter the area code and prefix you wish to store.
2. Press **STO**.
3. Enter a two-digit location number (e.g., **0** **1**, **0** **2**, etc.).
4. The location entered is displayed to confirm storage.

NOTE If *FULL* displays, refer to “Memory Protect Feature” on page 13.

Storing an area code and prefix for a frequently called location (such as an office) offers a convenient means of “postscripting” the four-digit extension of the party you wish to call.

To place a call using postscripting, see “Recalling Area Code and Prefix (Postscripting)” on page 17.

Memory Protect Feature

The directory has an automatic memory protect feature which prevents the accidental overwriting and loss of previously stored numbers in memory. If you attempt to store an entry to a currently occupied memory location, the location number and *FULL* will display. The display will then alternate between the previously stored number and *CHANGE*.

If you wish to save to that location, thus overwriting and erasing the old information, press **STO**.

If you wish to store the entry in an alternate location, press **END**, **STO** and the alternate location number.

Deleting a Memory Entry

1. Press and hold **CLR**, then press **STO**, and enter the two-digit location number you wish to delete.
2. The phone will display *FULL*, flash the number in memory, followed by *CHANGE?*.
3. Press **STO** to delete, or press **END** to exit without deleting the entry.

Changing a Memory Entry

1. Press **RCL** and the two-digit location number so that the number to be changed is displayed.
2. Repeatedly press **CLR** to “back out” each of the digits displayed (all the digits, or just the ones you wish to change).
3. Enter the new digits.
4. Press **STO** and the same two-digit location number.
5. The location number and *FULL* will display. The display will then alternate between the currently stored number and *CHANGE?*.
6. Press **STO** to save the newly entered number in this memory location, overwriting the currently stored number.

About Recalling from Memory

Phone numbers stored in memory can be recalled in any of three ways:

- By entering a two-digit location number
- By scrolling using the Memory Location Numbers
- By pressing any of the One Touch Dialing Keys (described in “One Touch Dialing Keys” on page 17)

Using any of these methods, once a phone number is displayed, you may place a call to that number by pressing **[SND]**.

NOTE *You may also scroll through the memory locations while in a call (for instance, if you want to look up a phone number to pass along to the other party). When finished, press **[END]**. This will cancel scrolling, but will not end your current call.*

Placing Calls by Entering Two-Digit Number

1. Press **[RCL]**.
2. Enter the desired two-digit location number. The display shows the location number, then the last 10 digits of the stored phone number. Press **[RCL]** again to view the complete number.
3. Press **[SND]** to place a call to the number stored at the two-digit memory location.

Placing Calls by Scrolling

This method allows you to review your memory locations by memory number, beginning with the location of your choice. This is useful when searching for a specific number in memory when you are not certain of its location.

1. Press **RCL**, then the two-digit memory location number where you wish to begin your review. (For example, to scroll from the beginning, press **RCL**, **0**, **1**.)
2. The location number and digits stored will appear in the display. An apostrophe (') following the location number confirms that you have enabled memory scrolling.
3. Press **#** to scroll forward thru the memory locations. Press ***** to scroll backwards.
4. At any time while scrolling, you may press **SND** to place a call to the displayed number.

NOTE *Memory Scrolling may also be performed during a call. Pressing **END** while scrolling during a call extinguishes the apostrophe (') and cancels scrolling, but does not terminate the call.*

Last Number Redial

Press **[SND]** to place a call to the last number entered.

This feature automatically remembers the last phone number entered from the keypad or recalled from memory, but not actually placed (by pressing **[SND]**).

Recalling Last Number Called

1. Press **[RCL]**, **[0]**, **[0]**. The display will show the last number called.
2. Press **[SND]** to place a call to this number.

Recalling Area Code and Prefix (Postscripting)

1. Recall two-digit location number where an area code and prefix is stored.
2. Add additional digits as needed.
3. Press **[SND]**.

You can append additional digits to recalled numbers by entering them before pressing **[SND]**. This is particularly useful if you often place calls to the same area code and prefix.

One Touch Dialing Keys

Your phone has special dialing keys which allow for easy one touch access to numbers stored in these locations. These keys function like Turbo Dial keys. When you press and hold one of these keys, a call is placed to the number stored in that location.

Placing a Call

Press and hold the desired One Touch Dialing Key

[1] or **[2]** (**[CALL 1]** or **[CALL 2]**) to place a call to the number stored for that key.

NOTE The keypad cover must be open in order to use the One Touch Dialing Keys.

Storing a One Touch Dialing Number

1. Enter the phone number to be stored.
2. Press **[STO]**.
3. Press the specific One Touch Dialing Key.
4. The phone will confirm storage by displaying *StorEd*.

Displaying One Touch Dialing Numbers

Press **[RCL]** and the specific One Touch Dialing Key.

The display will show the number associated with the One Touch Dialing Key,

Deleting One Touch Dialing Numbers

1. Press and hold **[CLR]**, then press **[STO]** and the specific One Touch Dial Key.
2. Press **[STO]** again. The display will flash *FULL*, then alternate between the number stored there and *CHANGEP*.
3. Press **[STO]** to delete the number.

Turbo Dial Feature

Press and hold either of the Turbo Dial keys **[2]** through **[9]** for one second.

Once numbers have been stored in Memory Locations 02 through 09, calls can be placed from these numbers by pressing and holding the associated key for approximately one second. A call will be placed to the phone number stored in that memory location, but the number will not be displayed. There is no need to press **[SND]**.

NOTE *Memory Location 01 is reserved for Emergency Dialing (if the Emergency Dialing feature is enabled; refer to "Selecting and Deselecting Features" on page 32).*

Priority Call

Press  and hold to automatically place a call to the priority number stored in location 01.

When Priority Call is activated on your cellular phone you can use this feature to call an important number you have stored in memory location  even if the phone is locked.

At any time if you dial 911 or an emergency number previously stored by your cellular service provider, the display will read "dIAL IN G EMER GcY." If the unit is locked and you press and hold the  or enter an emergency number, the phone will still display "L ock E d" but will place the emergency call.

If you have stored an alternate non-emergency number in memory location 01, such as your home phone number, and press and hold  the phone will display "P r i o r i t y C A L L."

Please keep in mind:

- Your emergency or priority number must be stored in memory location 01 to be able to place a call when the unit is locked. Be careful not to overwrite the number stored in this location.
- Some cellular systems have their own emergency numbers and do not allow access to numbers such as 911. Check with your cellular service provider for details about emergency calling in your area.

Super Speed Dial Feature

1. Enter the memory location number.
2. Press **[SND]**. The number will not appear in the display.

All memory locations are equipped with the Super Speed Dial feature. Once information is stored in these locations, the Super Speed Dial feature allows you to place a call without pressing **[RCL]**.

NOTE The sequence **[0]**, **[SND]** will place a call to the local operator.

Scratch Pad Memory

The scratch pad permits entry of numbers from the keypad during conversation.

If your party gives you another number to call, simply enter this from the keypad. If you make an error, press **[CLR]** to erase the last digit entered, or hold **[CLR]** to erase the entire entry.

Advise your party that they will hear tones as you enter the number. To call the scratch pad number at the end of an ongoing conversation, press **[END]**, **[SND]**.

Two-Part Tone Dialing

Your phone provides the standard Dual Tone Multi-Frequency (DTMF) signals typically used to access alternate long distance services, signal pagers, answering machines, etc. Generally, these services use a two-part procedure: First, a call is placed from memory or by using the keypad to a central telephone number. Then, you either receive a secondary dial tone, or are prompted to enter additional digits, such as a pager number, calling card number, etc.

To tone dial from the keypad, make the initial call, either from memory or by using the keypad. When prompted, enter additional tone digits using the keypad. The tones are automatically sent as you press the keys. Do not press **[SND]**.

To tone dial from memory, make the initial call, either from memory or by using the keypad. When prompted, recall from memory (using **[RCL]**, location number) the number you wish to send as DTMF digits. Press **[RCL]**, **[SND]**. Repeat these steps as required to send additional groups of numbers.

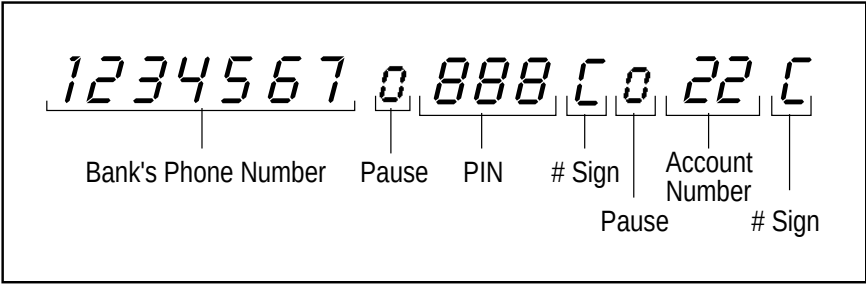
Memory Linking

The Memory Linking feature provides improved convenience when dialing constant number sequences, such as when accessing paging systems, retrieving voice mail, etc. It allows multiple number groups (e.g., main number, bank PIN code, and account number) to be stored in a single memory location, each group separated by a pause (␣). Pauses are created by pressing **[FCN]**, **[SND]**. You may then place a call using this memory location, and sequentially transmit each number group (by pressing **[RCL]**, **[SND]**) at the appropriate system prompt.

Example of Memory Linking

In the following example, a Memory Linked number is created to access information for a bank account. The number consists of the bank’s telephone number (123-4567), a bank PIN code (888) and # sign, and an account number (22) and # sign, as shown below.

NOTE A maximum of 16 digits can be stored in a memory location. A pause counts as one digit. If your Memory Linked number requires more than 16 digits, you can store part of the number in one memory location (e.g., the main access number) and the remainder in another memory location.



To construct the Memory Linked number, perform the following steps.

Instruction and Key Sequence	Display
1 Enter the bank’s telephone number — 1 , 2 , 3 , 4 , 5 , 6 , 7 or recall it from memory location xx — RCL , x, x	1234567
2 Create a pause — FCN , SND	234567 0
3 Enter the bank PIN code and # sign — 8 8 , 8 , #	670888C
4 Create another pause — FCN , SND	70888C 0

Instruction and Key Sequence	Display
5 Enter the account number and # sign— [2] , [2] , [#]	708 88C022c
6 To store the number, press [STO] and the two-digit location number.	

Now that the Memory Linked number has been created and stored in memory, you may place the call as follows.

- 1. Press [RCL], 2-digit location number, and [SND].** (Your phone will send the bank's phone number, and then wait at the first pause.)
- 2. When the system answers and prompts you for your bank PIN code, simply press [RCL], [SND] to transmit your bank PIN code and # sign.**
- 3. When the system prompts you for your account number, press [RCL], [SND] again to transmit your account number and # sign.**

NOTE If the security PIN code feature is activated (see "PIN Code Operation" on page 30), the security PIN code will automatically be sent after the first pause by pressing [SND]. Do not add your security PIN code to the linked sequence.

NOTE If you have divided your Memory Linked number into two memory locations (e.g., 03 and 04), place the initial call by pressing [RCL], [0], [3], [SND]. When the system answers and prompts you, press [RCL], [0], [4], [RCL], [SND] to send the first number group (up to the pause). Press [RCL], [SND] to send each remaining number group stored in location 04.

NOTE Some electronic systems require that DTMF tones be sent for several seconds by pressing and holding a key. These signals, known as Long Tone DTMF, cannot be transmitted using Memory Linking. If Long Tone DTMF signals are required, you must send them manually.



Display Own Phone Number

1. Press **RCL**, **#**.
2. Your phone number will be displayed.
3. When you have finished viewing, press **CLR**.

Microphone Muting

To mute microphone

While in a call, press **FCN**, **6**.

To disable mute

Press **FCN**, **6** again.

This feature allows you to confer privately with others in the car during a call. It will disable the microphone and display **MUTE**. The mute feature is canceled when you end your call.

Automatic Answer

This feature allows you to answer calls without pressing **SND**. When your phone receives a call, it will ring twice and then the **In Use** indicator will illuminate to let you know that the call has been automatically answered and is live. Simply lift the phone to your ear and begin the conversation. (The keypad cover must be open to receive a call in Automatic Answer mode.)

To enable/disable the Automatic Answer feature, refer to "Selecting and Deselecting Features" on page 32.

One Minute Beep

This feature allows your phone to emit an audible tone ("beep") ten seconds before the end of each minute during calls.

To enable/disable the One Minute Beep feature, refer to "Selecting and Deselecting Features" on page 32.



Multiple Key Answer

This feature allows the user to answer an incoming call by pressing **[SND]**, either volume button, or any other digit key after the first ring has been completed.

To enable/disable the Multiple Key Answer feature, refer to “Selecting and Deselecting Features” on page 32.

Hands Free Operation

When using a vehicular accessory you can carry on conversations in Hands Free mode. Hands Free mode allows your cellular phone to operate like an office speakerphone. A microphone picks up your voice, while the called party's voice is heard through an external speaker. Your entire conversation can be carried on without having to take your hands off the wheel. See the DHFA instructions (supplied with DHFA option) for details.

Distinctive Ringer

This feature allows you to select from any of 9 ringer styles to help you distinguish your phone's ringer from those of other phones. To select a ringer style:

1. Press **[FCN]**, **[1]**.
2. Scroll through the menu (using **[#]** or **[*]**) until **ringer and style 1-9** alternate in the display.
3. Press **[STO]**. A brief sample of the ringer style currently selected will be heard, and the display will show **SELECT**, then **1-9**.
4. Press **[1]** thru **[9]**, or use **[#]** or **[*]** to scroll through the ringer styles. A brief sample of the ringer style will be heard as you make each selection, and the display will show the number of the selected ringer style.
5. When you hear the ringer style you wish to select, press **[STO]**. The display will display **ringer and 1-9 SET**.
6. Press **[END]** to exit the Feature Menu.

Multiple Language Display

This feature allows you to select in which language (English, French, Spanish, and Portuguese) your phone will display messages and prompts. To select a language:

1. Press **FCN**, **1**.
2. Scroll through the menu (using **#** or *****) until **SELEct** and **LANGuAG** alternate in the display.
3. Press **STO**. The language currently selected will be displayed (for example, **ENGLish**).
4. Press **#** or ***** to scroll through the languages (**ENGLish**, **ESPAñOL**, **FrAnc**, **PortuG**).
5. With the language you wish to select displayed, press **STO**. **SELEct** and **LANGuAG** will alternate in the display in the language you have selected.
6. Press **END** to exit the Feature Menu.

Extended Talk Time

The Extended Talk Time feature is useful when operating your phone in strong signal areas (i.e., not in fringe areas of cellular coverage). When enabled, this feature minimizes the signaling communications between your phone and the cellular system, thus substantially extending your battery's charge and providing you with extra talk time. To enable/disable the Extended Talk Time feature, refer to "Selecting and Deselecting Features" on page 32.

About Special System Features



Some Cellular Service Providers offer enhanced features for your cellular phone. Contact your Cellular Service Provider to see if these features are available in your area, and to receive any necessary support in using them (such as assignment of a PIN code).

NOTE *If these features are not supported by your Cellular Service Provider, selecting them will have no effect.*

Calling Line ID

Your MicroTAC phone features Calling Line ID, which allows the phone number of the calling party to be displayed in the handset (when receiving a call).

The Calling Line ID numbers are stored in the message center (a special memory in your phone), which can store up to 20 phone numbers.

NOTE *You must subscribe with your Cellular Service Provider for the Calling Line ID service.*

Receiving Calls with Calling Line ID

When receiving a call that includes Calling Line ID information, the phone number of the calling party will appear in the display, letting you know who the calling party is before you answer the call. Open the keypad cover (or press **[SND]** if the keypad cover is already open) to answer the call. (Note that if you should miss the call, **[CALL]** will remain in the display.)

NOTE *Not all calls include the Calling Line ID information. If you receive a call that does not include this information, **Private** or **no id** will be displayed.*

Each time you receive a call that includes Calling Line ID information, the information is stored as a message(s) in the message center. Messages are stored with the most recent message in location #1 and the oldest message in the highest occupied location in the message center. When



a new message is received and the message center is full, the oldest message is deleted, the rest of the messages are shifted down one location, and the new message is stored in location #1.

Recalling/Viewing Calling Line ID Messages

1. Press **RCL** and release, then press **RCL** again and hold until one of the following messages appears in the display:

HH nELU (*HH* is the number of new messages)

00 nELU (when there are no new messages)

no nE555 (when there are no old or new messages)

2. Scroll through the messages in the message center by pressing **#** to move forward and ***** to move backward.

3. Press **END** to exit the message center.

As you scroll through the messages, each Calling Line ID message will be labeled with either *HH nELU* (new message) or *HH L id* (old message), where *HH* is the message center location number. As you view each message, the display will cycle through the Calling Line ID information (as shown in the following example) until you scroll to the next message or place a call to the displayed number.

Example *1847555 12 12*

Placing a Call to a Calling Line ID Number

After recalling the desired Calling Line ID number (the number appearing in the display), press **SND** to place a call to this number.



Storing a Calling Line ID Number in Memory

With a Calling Line ID message displayed, press **(STO)** and select a memory location (as described in “Storing a Phone Number” on page 12). The Calling Line ID number will be stored in the selected location.

Deleting an Individual Message

1. While in the message center, scroll through the messages using **(#)** and **(*)** until the message you wish to delete is displayed.
2. Press and hold **(CLR)** until *deleted* appears in the display.

After deleting a message, the message center will be automatically renumbered. For example, if message #5 is deleted, messages #6 through #20 will be moved up one to become #5 through #19.

Deleting All Messages

1. While in the message center, press and hold **(CLR)** until *ERASE* and *ALL?* alternate in the display. (The display will briefly show *deleted* before *ERASE* and *ALL?* appear.)
2. Release **(CLR)**, then press **(CLR)** again to confirm erasing all of the messages. *17595 ERASEd* will appear in the display.

Other Messaging Services

In addition to the Calling Line ID feature, some cellular systems allow other types of messages to be sent to your cellular phone. One such service is **Voice Mail Notification**. This service provides a notification message to the your cellular phone each time a new message is recorded in the Voice Mail system. Voice mail notification messages are stored in the same message center that stores your Calling Line ID numbers. Contact your Cellular Service Provider for more information and availability of these messaging services.



VOX Operation

Voice Operated Transmission (VOX) is a method of conserving battery power by activating the phone's transmitter only while talking. In this manner, your battery's charge can be extended.

To enable/disable the VOX feature, refer to "Selecting and Deselecting Features" on page 32.

Reminder Beeps

If your phone has Calling Line ID or Voice Mail Notification services, the Reminder Beeps feature is an audible notification to alert the user that they have received a message. It will beep every 2 minutes until the new messages have been read.

To enable/disable the Reminder Beeps feature, refer to "Selecting and Deselecting Features" on page 32.

PIN Code Operation

Overview

Your Cellular Service Provider may require a Personal Identification Number (PIN) when placing outbound calls. This PIN assures the cellular system that the person placing the call is an authorized user.

If PIN operation is required in your system, you must enable PIN Code operation as described in "Selecting and Deselecting Features" on page 32.

Placing a Call using PIN Operation

1. Enter the number you wish to call, or recall the number from memory.
2. Press **[SND]**.
3. Wait for the system prompt (usually a "Beep Beep").
4. Enter your PIN Code number (provided by your Cellular Service Provider).
5. Press **[SND]**.



NOTE Your phone is designed with a “shortcut” method for dialing the PIN Code number. Simply store your PIN Code number (supplied by your Cellular Service Provider) in **memory location 07** (as described in “Storing a Phone Number” on page 12). Then, you may simply press **[SND]** after hearing the system prompt (for example, some systems use a double tone) when placing calls; your phone will automatically send the PIN Code number stored in memory location **07**. Using this shortcut method, you will not have to enter your PIN Code number each time you place a call.

A maximum of 7 digits are allowed. (Remember – Do not store any other number in memory location **07** once you have stored your PIN number.)

About the Feature Menu

The Feature Menu allows you to review and select/deselect most of your phone's features through the keypad and display. The table below shows all features available through the menu and the pages where detailed information is found.

Note that telephones ship from the factory with default settings whereby most features are in the canceled (or OFF) position.

NOTE *There are additional features that may be available with your phone that are not accessed through the feature menu. These features are described throughout this manual.*

Selecting and Deselecting Features

1. Press **[FCN]**, **[1]** to enter the Feature Menu.
2. Scroll the menu by pressing **[*]** or **[#]** until the desired feature is displayed.
3. Press **[CLR]** to turn the feature off, press **[STO]** to turn the feature on.
4. Press **[END]** to exit the Feature Menu.

EXAMPLE *To activate Automatic Answer, press **[FCN]**, **[1]** and scroll using **[*]** or **[#]** until **Auto** and **ANS-OFF** alternate in the display.*

*Press **[STO]** to activate this feature. The display will then alternate between **Auto** and **ANS-On**.*

*Press **[END]** to exit the menu.*

<i>Alternate in Display (as shipped from factory)</i>	<i>Feature</i>	<i>Page</i>
<i>OnEP7 on and tP7rOFF</i>	One Minute Beep <i>Phone emits a tone ten seconds before the end of each minute during a call.</i>	24
<i>ind on and tP7rOFF</i>	Automatic Display Timer <i>Displays the accumulated time in minutes and seconds during and after a call.</i>	38
<i>r in9Er and StYLE 1-9</i>	Distinctive Ringer <i>Allows you to select from 9 ringer styles to distinguish your phone's ringer from other phones.</i>	25
<i>Auto and AnsOFF</i>	Automatic Answer <i>Automatic answer allows phone to answer calls automatically, without pressing SND.</i>	24
<i>P7 KEY and AnsOFF</i>	Multiple Key Answer <i>Allows you to answer an incoming call by pressing any key (keypad cover must be open).</i>	25
<i>Auto and LockOFF</i>	Auto Lock <i>Locks phone each time phone is turned off.</i>	40

Using the Feature Menu

<i>Alternate in Display (as shipped from factory)</i>	<i>Feature</i>	<i>Page</i>
<i>PRIority and CALL On</i>	Priority Call <i>When enabled, you may use 1 to place a one button call to a Priority number stored in Memory Location 01, even when the phone is locked.</i>	19
<i>VOH and OFF</i>	VOX mode <i>Conserves battery power by causing phone to transmit only while talking.</i>	30
<i>EXTEnd and TALK On</i>	Extended Talk Time	26
<i>REM ind and MSG On</i>	Reminder Beeps <i>When enabled, audible beeps alert user that one or more messages have been received (available in some models).</i>	30
<i>SELEct and LANGUAGE</i>	Language Select <i>Allows you to select English, French, Spanish or Portuguese text for prompts appearing in the display.</i>	26

<i>Alternate in Display (as shipped from factory)</i>	<i>Feature</i>	<i>Page</i>
<i>P in and inRct u</i>	PIN Code Operation <i>When used in a Cellular System supporting this feature, requires a Personal Identification Number to be dialed when placing outbound calls (to provide additional system security).</i>	30

Status Review

1. Press **FCN**, **0**, **9**, **RCL**.
2. Scroll thru the messages by pressing **✖** or **#** to view the features that you have changed from the factory default settings.
3. Press **END** to exit the feature status review.

Feature status review allows you to scroll thru the list of features that you have changed from the factory default settings (shown in previous table). If no features have been changed from the factory settings, *Set* will be displayed.

<i>Alternate in Display</i> <i>(if changed from factory defaults)</i>	<i>Description</i>
<i>P in and Act iue</i>	PIN Code operation is enabled
<i>rEPn ind and Pn59OFF</i>	Reminder Beeps is disabled
<i>OnEPn in and tPn On</i>	One Minute Beep is enabled
<i>Auto and Lock On</i>	Auto Lock is enabled
<i>Priority and CALLOFF</i>	Emergency Dialing is disabled
<i>uoh and On</i>	VOX mode is enabled
<i>EHtEnd and tALT On</i>	Extended Talk Time is enabled
<i>Auto and AnSr On</i>	Automatic Answer is enabled
<i>Pn tEY and AnSr On</i>	Multiple Key Answer enabled
<i>ind iu and tPn On</i>	Automatic Display Timer is enabled
<i>r in9Er and StYLE 1-9</i>	Distinctive Ringer is available

About Timers

Call timers provide a useful means of monitoring the air-time spent in conversation. Your phone is equipped with three timers, resettable, individual, and cumulative. These timers operate in the background and can be displayed at any time. Each timer begins counting as a cellular channel is assigned, or when the phone rings to signal an incoming call. If an incoming call is not answered, the timers revert to their previous values.

Individual Call Timer

To Display

Press **RCL**, **##**, **##**

This timer accumulates the air-time of a call in minutes and seconds. It automatically resets before a new call is placed and when the phone is turned off.

Resettable Call Timer

To Display

Press **RCL**, **##**, **##**, **##**. **RESETBL** alternates in display.

To Reset

Press **FCN**, **0**, **7**, **CLR**

This timer accumulates the air-time of all calls in minutes from the point at which it is reset. This resettable timer is generally used to track monthly air-time usage and is set in conjunction with the monthly billing cycle.

Cumulative Call Timer

To Display

Press **RCL**, **##**, **##**, **##**, **##**. **CUMTUL** alternates in display.

This non-resettable timer accumulates the phone's total air-time in minutes, starting with the initial factory setting.



Automatic Display Timer

This feature allows your phone to display (in minutes and seconds) the accumulated time during and after each call.

To enable/disable the Automatic Display Timer feature, refer to “Selecting and Deselecting Features” on page 32.



About Security Codes

Your phone offers several forms of security features against unauthorized use. Activating these features requires either your three-digit unlock code, or the six-digit security code. The factory programmed unlock code is **123** and the factory programmed security code is **000000**.

NOTE *It is common for the unlock code to be the last 3 digits of your phone number when it is programmed by your Service Provider.*

Electronic Lock

To Lock

1. Press **FCN**, and hold **5**.
2. **Loc'd** will display.
3. Press **STO** to lock your phone, or press **END** to exit without locking your phone.
4. **Loc'd** will display and the green indicator will light steadily.

NOTE *You must press and hold **5** until **Loc'd** appears in the display. This is a safety feature to prevent you from accidentally locking your phone.*

To Unlock

Enter your three-digit unlock code. If you make an error, press **CLR and start again.**

The electronic lock prevents use of the phone by disabling both incoming and outgoing calls.

If a call is received while your phone is locked, the phone will ring and you must enter the unlock code before the call can be answered.



Displaying the Unlock Code

1. Press **(FCN)**, **(0)**.
2. Enter your six-digit security code.
3. Press **(RCL)**. The phone will display *LocCode* and your three-digit unlock code.

Changing the Unlock Code

1. Press **(FCN)**, **(0)**.
2. Enter your six-digit security code.
3. Enter the new desired three-digit unlock code.
4. Press **(STO)**. *ChAnGEd to* and the new unlock code will display to confirm storage.

Automatic Lock

This feature automatically locks your phone each time you turn your phone off. When locked, your phone still rings while receiving an incoming call, but you cannot answer the call until you have entered the unlock code.

To enable/disable the Automatic Lock feature, refer to "Selecting and Deselecting Features" on page 32.

Setting Outgoing Call Restrictions

1. Press **(FCN)**, **(0)**.
2. Enter your six-digit security code.
3. Enter the number of the service level (1 or 4) you wish to use.
4. Press **(STO)**. The phone will display *SERV ICE LEVEL* and the number selected.

Your phone can be set to restrict call placement (as when lending the phone to another person). Using the six-digit security code, you may select one of the following two levels of restriction.



<i>Description</i>	<i>Display</i>
No restrictions. (Standard setting)	LEVEL 4
Phone will place calls only from memory locations 1 thru 10 (RCL, 0 1 - 1 0, SND). If locations 1-10 are cleared, no outgoing calls can be made. No keypad dialing. No directory storage. No Turbo Dial or Super Speed Dial features.	LEVEL 1

To change the phone to unrestricted operation, use the procedure above and enter service level 4.



Cellular System Overview

There are generally two types of cellular systems serving any metropolitan area. One of these will most likely be operated by the telephone company that provides telephone service to your community, generally referred to as a wireline carrier. The other cellular service provider is a radio common carrier, referred to as a non-wireline carrier. Your Cellular Service Operator will provide information concerning specific features, procedures, and coverage in your particular area.

Service Area

The area within which the phone operates is defined by your cellular service provider. Since this is a radio system, no exact boundaries (as on a map) can be drawn. The red **NS** (No Service) flashes if you are beyond range of a service area. There may be locations within your area, such as tunnels and underground parking facilities, where the unit may act as if it were beyond range.

Weak Signal Alert

If you are called in a location the system determines is inadequate for high quality service, you may hear series of beeps to inform you of the call attempt. The caller will receive the recorded "Not In Service" message. **[ALL]** will appear in the display, and the green on indicator will flash quickly. If this occurs, you must press **[CLR]** before the phone will operate. Most systems do not impose air-time charges for such call attempts.

NOTE *This indicator is controlled through the initial programming of your phone. Refer to the Programming Guide for more details.*



Switchhook and Advanced System Services



Press **SND**.

During a call, pressing **SND** performs a switchhook function used to access enhanced Cellular System features such as call waiting and conference calls. For the functioning of these features with **SND**, consult your Cellular Service Provider.

Roaming

The term “Roaming” applies to the use of cellular telephones within systems other than those designated as their “Home” systems. **RM** (Roam) lights whenever the phone comes within range of a visited system. As your phone begins to roam, it seeks service according to the conditions you have selected (see “Reviewing / Changing Scanning Mode” on page 45).

Contact your system operator, or that of the visited system, for information on dialing and billing procedures.

To use alternate long distance services when roaming, be certain to dial the appropriate area code and local number to access the alternate carrier in the visited area. Then use the tone dialing sequence described on page 21. If you selected Two-System Operation (see “Two-System Operation” on page 44), enter **RCL**, **#** to verify the currently active number. This is especially important if your two home systems have different area codes, or if **RM** is flashing within your home service area.

Note that when you roam, the visited system may require that you enter your security PIN code. Refer to “PIN Code Operation” on page 30 for details on using PIN operation. If you have a problem, contact the local system operator or your home system operator for further information.



Two-System Operation

Your cellular telephone is equipped with a feature that allows you to maintain two telephone numbers from two different system operators. Both are designated as your 'home system' but are accessed separately. At the time your phone was programmed, you elected whether to enable this feature and which two systems would be treated as your home systems.

While you may switch from one system to the other, only one of the two can be active at any given time. Calls are placed and received through the active system only.

To switch from one system to the other:

1. Press **RCL**, **#**, **STO**.
2. The display will blank to confirm the switch and the newly activated number will appear.
3. When you have finished viewing, press **CLR**.

If you have two phone numbers programmed into your phone, each time the phone is turned on, it displays a message indicating which home system type and phone number is currently active. Possible messages are as follows:

<i>System Type and Phone Number</i>	<i>Display</i>
Non-wireline (A type) with phone number 1	<i>A 1</i>
Non-wireline (A type) with phone number 2	<i>A 2</i>
Wireline (B type) with phone number 1	<i>b 1</i>
Wireline (B type) with phone number 2	<i>b 2</i>

If a call is placed to the inactive phone number, the caller will receive the "Not in Service" message.



Overview

The characteristics that determine the way your phone operates in the Cellular System are determined by the Scanning Mode programmed for your phone.

Reviewing / Changing Scanning Mode

Typically, the scanning mode for your phone is programmed by your Service Provider. However, you may review the current scanning mode and (if desired) change it by following these procedures.

To Review Scanning Mode

1. Press **RCL**, **✕**. The display will show the current active system choice.
2. Press **END** to exit without changing selections.

To Change Scanning Modes

1. Press **RCL**, **✕**. The display will show the current active system choice.
2. Repeatedly press **✕** or **#** to cycle through the scanning modes.
3. When the desired scan setting appears in the display, press **STO**.
4. Press **END** to exit to normal operation.

NOTE Constant flashing of **RM**, or a steadily lit **NS** while within your home service area may indicate an unintentional choice has been made. If this occurs, review the System Type to see if the unit is operating in Standard Mode, or if an alternate selection has been made.

5

Scanning Mode	Display
Preferred SID Mode Phone will scan for home or programmed preferred SIDs first. This choice requires entry of up to 60 System ID numbers for those systems in which you wish to operate. Contact your Cellular Service Provider for SID information.	<i>P SCAN</i>

If you have selected two system operation, the phone seeks cellular service according to the system type mode selected for each phone number.

NOTE In order to program Preferred SIDs to be used in *P SCAN* mode, press **7**, **9**, **7**, **4**, **3** (spells SYSID), then press **FCN**, **FCN** and enter the appropriate 5-digit SID number (from your Cellular Service Provider), then press **STO**. Now press ***** or **#** to cycle through the system type choices (HOME, RATT, or INTL). With the desired system type displayed, press **STO** to select that choice. To program another Preferred SID, press **#** and repeat the above process, or press **END** to exit Preferred SIDs programming.



Before Calling For Service

Is the phone locked?

See Electronic Lock, page 39.

Is NS (No Service) lit?

See “Start-up Status Indicators” on page 5.

Have you charged the battery?

Refer to “Prepare the Battery for Initial Use” on page 1 for charging instructions.

Have you programmed a unique operating mode?

Constant flashing of RM while in your home service area may indicate that an incompatible System Type has been selected. Refer to “Reviewing / Changing Scanning Mode” on page 45.

Is the phone operating with non-standard settings?

You may have inadvertently selected improper operating characteristics. See Feature Menu, page 32.

Have you selected the wrong home system?

If your phone is programmed for Two-System Operation (see page 44), press **RCL**, **#** to display the active telephone number.

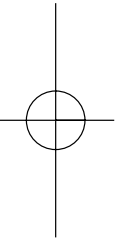
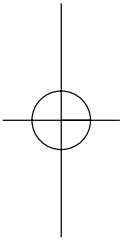
Are new MicroTAC accessories not working with older MicroTAC phones?

Because of increased charging capabilities designed into your new MicroTAC  phone, some accessories that plug into the data connector will not fit older versions of MicroTAC phones.

NOTE Older versions of MicroTAC charging accessories that plug into the data connector may not charge new MicroTAC  phones.



Notes...



Regulations and Precautions



The U.S. Federal Communications Commission and the Canadian Department of Communications regulate cellular radiotelephone service in their respective countries. It is important for you, the *MicroTAC* phone user, to observe the applicable regulations when operating your phone in either country. In addition to these U. S. and Canadian federal regulations, you may also be bound by certain state, provincial, territorial, and local rules and regulations, as well as by your cellular carrier's tariff (the rates, terms, and conditions of its service). If you wish to use your phone in both the U.S. and Canada, please consult with your system operator.

Furthermore, you should remember that your *MicroTAC* phone is a radiotelephone system (i.e., it combines both wireline technology, as used in your home or office telephone system, and radio technology), and that the scope of regulations and precautions is therefore broader than the scope of regulations and precautions relating to wireline-only telephone usage.

Some of the major points of consideration are set out below. Please note, however, that this "Rules, Regulations, and Precautions" section does not constitute legal advice, and is intended merely for general information purposes. If you have any specific questions, please contact your Cellular Carrier (System Operator).

License - If your home system is in the U.S., you do not require a separate license to operate your *MicroTAC* phone; obtaining a cellular telephone access number is sufficient to register you as a user. If your home system is in Canada, a separate license is required. Your carrier will assist you in the licensing process. If you wish to use your *MicroTAC* phone in both the U.S. and Canada, please contact your Cellular Carrier (System Operator). Your base should operate in only one location.

Denial of Service - A cellular carrier may deny service temporarily or terminate service for violation of any governmental regulations or of its tariff.

Driving - Your *MicroTAC* phone is considered a cellular telephone. Some jurisdictions prohibit your using a cellular telephone while driving a vehicle. Even if your jurisdiction does not have such a law, we strongly suggest that, for safety reasons, the driver use extreme caution when operating the *MicroTAC* phone while the vehicle is in motion (see “**Driving**” on page vii).

Consumer Responsibilities - Remember that the wireline and radio regulations with respect to harassing calls, false distress calls, obscene language, etc., apply to cellular phone usage.

Privacy - As a telephone user, you have come to assume a certain standard of privacy when you place or receive a telephone call via traditional wireline systems. However, because *MicroTAC* phones utilize radio transmissions to effect calls, the same standard cannot always be assured. While it is unlawful for any unauthorized person to divulge or use any information obtained from intercepting or ‘listening in on’ conversations intended for others, you should not assume that your conversation is completely secure. Commercially available scanning equipment can permit a third party to monitor the radio channels used for *MicroTAC* phone calls.

Interference - No person shall interfere with or cause interference to any radio communication or signal.

Equipment Modifications - The U.S. Federal Communications Commission has type-approved the model of *MicroTAC* phone which you have purchased, and both have allocated a specific frequency range for cellular service. No changes or adjustments are to be made to your *MicroTAC* phone.

Message Glossary

<i>A1</i>	System "A" phone number 1
<i>A2</i>	System "A" phone number 2
<i>Auto Answer OFF</i>	Automatic Answer feature disabled
<i>Auto Answer On</i>	Automatic Answer feature enabled
<i>Auto Lock OFF</i>	Automatic Lock feature disabled
<i>Auto Lock On</i>	Automatic Lock feature enabled
<i>b1</i>	System "B" phone number 1
<i>b2</i>	System "B" phone number 2
<i>b---==≡</i>	Battery Meter
<i>CUMUL</i>	Precedes Cumulative Timer display (also used to display )
<i>CHANGE P</i>	Memory Protect is activated to prevent accidental overwriting of a memory location
<i>CLID</i>	Calling Line ID number answered (p/o Messaging Services)
<i>DELETED</i>	Message in message stack deleted (p/o Messaging Services)
<i>EMRG C</i>	Emergency Dialing in Progress
<i>ENGL SH</i>	English message prompts selected
<i>ERASE ALL</i>	All messages in message stack deleted (p/o Messaging Services)
<i>ESPAÑOL</i>	Spanish message prompts selected
<i>FRANC</i>	French message prompts selected

FULL	All memory locations are full or requested block is unavailable
HOMME	System Type Selection — Home Mode
invalid Location	Memory location chosen for storage of phone number is invalid
LEVEL 1	Call Restriction selected
LEVEL 4	No Restrictions (standard setting)
Low Bat	Low Battery
Lock Code	3-digit Unlock Code is displayed
Locked	Unit is locked
Multiple Key Answer OFF	Multiple Key Answer is disabled
Multiple Key Answer On	Multiple Key Answer is enabled
MSGSRV ERASE	All messages in Message Center erased
MUTE	Microphone muted
NEW	New message(s) received (p/o Messaging Services)
Pin Active	PIN Code feature enabled
Pin Inactive	PIN Code feature disabled
PRIORITY CALL On	Priority Call enabled
Portug	Portuguese message prompts selected
PSCAN	System Type Selection — Preferred SID Mode
RESETBL	Precedes Resettable Call Timer Display
Redial	Automatic Redial

Reference

REMOFF	Reminder Beeps feature disabled
REON	Reminder Beeps feature enabled
ringELE	Select from 9 ringer styles
SCAN A	System Type Selection (scan non-wireline "A" only)
SCAN Ab	System Type Selection (scan "A" type first, then "B")
SCAN b	System Type Selection (scan wireline "B" only)
SCAN bA	System Type Selection (System Type Selection (scan "B" type first, then "A"))
SELECT	Ringer style chosen
SELECT LANGUAGE	Select language chosen
SEt	Ringer style choice confirmed
Send to redIAL	Indicates Cellular System is busy and unable to place call
Std	Standard setting
Std Ab	System Type Selection (non-wireline standard mode)
Std bA	System Type Selection (wireline standard mode)
toAL	Number of messages in message stack (p/o Messaging Services)
U _ _ _ _ _	Volume Meter
VOH OFF	VOX Mode feature disabled
VOH ON	VOX Mode feature enabled

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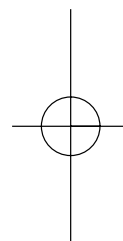
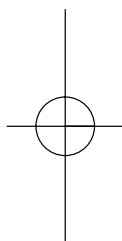
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The U.S. Food and Drug Administration's Center for Devices and Radiological Health Consumer Update on Mobile Phones

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.

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.

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.
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.

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>

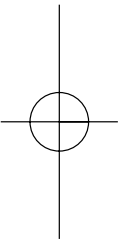
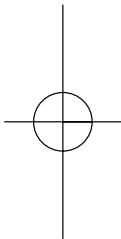
U.S. Food and Drug Administration (FDA) Center for Devices and Radiological Health: <http://www.fda.gov/cdrh/consumer/>

Patent Information

This phone may be manufactured under one or more of the following U.S. Patents.

4291475	5649309	4870686	5764730	5057762	5862460	5877633	5205751
4302845	5656914	4872196	5764743	5058136	5862493	5878075	5210793
4312074	5656917	4873683	5766794	5059885	5087004	5878209	5211581
4365221	5657418	4876552	5771182	5060264	5093632	5878336	5212815
4369516	5659601	4876656	5771471	5063340	5095503	5878353	5212826
4369520	5660945	4876740	5777521	5065408	5107487	5880637	5214675
4369522	5661433	4879533	5777856	5067139	5109400	5880646	5214774
4374370	5664973	4885553	5784368	5070310	5111162	5881377	5216389
4378603	5666429	4887050	5784419	5077757	5113400	5889737	5220290
4390963	5668871	4890199	5784585	5077790	5113436	5889768	5220936
4398265	5670912	4896124	5787128	5081674	5117073	5889859	5222078
4400584	5673001	4896361	5787577	5083304	5117441	5892410	5222104
4400585	5673003	4897873	5793315	5805992	5117449	5893036	5222251
4434461	5673287	4903326	5793866	5807012	5117450	5894597	5230007
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4711361	5710862	5732350	5017856	5835535	5152007	5930299	5946395
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5361400	5401927	D340710	5539360	5559806	D377792	D395431	
5363071	5402447	D340711	5542016	5561436	D377934	D395642	



Quick Reference Card

Turn On and Off

Turn On / Turn Off (PWR)

Placing / Receiving Calls

Place Call Enter number, (SND)

Clear Entry Hold (CLR) to clear all digits. Press and release (CLR) to clear one digit.

Automatic Redial At system busy signal, (SND) before ending call attempt.

Receive Call (SND), or open keypad cover.

End Call (END), or close keypad cover.

Locking / Unlocking

Lock Telephone (FCN), (5) (hold (5) until *Loc²* appears, then press (STO))

Unlock Telephone Enter three-digit unlock code.
If you make an error, (END) and enter again.

Memory Dialing

Store Number Phone number, (STO), two digit location number.

Recall Number Press (RCL), then two digit location number.

Emergency Dialing Store emergency number in location 01. Hold (1) to dial, even on locked unit.

Recall Last Number Called (RCL), (0), (0)

Call Timers

Individual Call Timer (RCL), (#), (#)

Resettable Call Timer (RCL), (#), (#), (#)
To reset (FCN), (0), (7), (CLR)

Cumulative Call Timer (RCL), (#), (#), (#), (#)

Volume Adjustments

Adjust Volume *Earpiece* — press (VOL) to raise. Release and press (VOL) again to lower.
Ringer — (FCN) and use (VOL) as described above.

Additional Features

Battery Voltage Meter (FCN), (4)

Display Own Phone Number (RCL), (#)

Mute While in a call, (FCN), (6). To unmute, (FCN), (6).

Access Feature Menu (FCN), (1)



**THIS PACKAGE MAY CONTAIN A NICKEL CADMIUM BATTERY
WHICH MUST BE RECYCLED OR DISPOSED OF PROPERLY.**

- Refer to the battery label for battery type.
- Recycling facilities may not be available in all areas.
- For additional information regarding disposal or recycling, call 1-800-331-6456 (in U.S.A.).



MOTOROLA

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1-800-461-4575 (in Canada)

Please visit us at:
www.mot.com

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