



## Two-Way Radio User's Guide



KEM-PK7143-06

Model T5403 series

### For More Information

For further information, you may call at (65) 6841 2628

### Safety and General Information

#### Important Information on Safe and Efficient Operation *Read This Information Before Using Your Radio.*

The information provided in this document supersedes the general safety information in user guides published prior to December 1, 2002.

#### Transmit and Receive Procedure

Your two-way radio contains a transmitter and a receiver. To control your exposure and ensure compliance with the general population/uncontrolled environment exposure limits, always adhere to the following procedure:

- Transmit no more than 50% of the time.
- To receive calls, release the PTT button.
- To transmit (talk), press the Push to Talk (PTT) button.

Transmitting 50% of the time, or less, is important because the radio generates measurable RF energy exposure only when transmitting (in terms of measuring standards compliance).

#### Exposure to Radio Frequency Energy

Your Motorola two-way radio complies with the following RF energy exposure standards and guidelines:

- United States Federal Communications Commission, Code of Federal Regulations; 47CFR part 2 sub-part J.
- American National Standards Institute (ANSI)/Institute of Electrical and Electronic Engineers (IEEE) C95. 1-1992.
- Institute of Electrical and Electronics Engineers (IEEE) C95.1-1999 Edition.
- International Commission on Non-Ionizing Radiation Protection (ICNIRP) 1998.
- Ministry of Health (Canada) Safety Code 6. Limits of Human Exposure to Radio frequency Electromagnetic Fields in the Frequency Range from 3 KHz to 300 GHz, 1999.
- Australian communications Authority Radio communications (Electromagnetic Radiation—Human Exposure) Standard, 2003.
- ANATAL ANNEX to Resolution No. 303 of July 2, 2002 "Regulation of limitation of exposure to electrical, magnetic and electromagnetic fields in the radio frequency range between 9 KHz and 300GHz" and "Attachment to resolution #303 from July 2, 2002".

To assure optimal radio 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 Operation and EME Exposure

##### Antenna Care

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

Do NOT hold the antenna when the radio is "IN USE." Holding the antenna affects the effective range.

##### Body-Worn Operation

To maintain compliances with RF exposure guidelines, if you wear a radio on your body when transmitting, always place the radio in a Motorola-supplied or approved clip holder, holster, case or body harness for this product. Use of Non-Motorola-approved accessories may exceed RF exposure guidelines.

If you do not use one of the Motorola-supplied or approved body-worn accessories and are not using the radio held in the normal use position, **ensure the radio and its antenna are at least 1 inch (2.5 cm) from your body when transmitting.**

##### Data Operation

If applicable, when using any data feature of the radio with or without an accessory cable, **position the radio and its antenna at least one inch (2.5 cm) from the body.**

##### Approved Accessories

For a list of approved Motorola accessories, visit our Web site at [www.motorola.com](http://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. Operation is subject to the following two conditions:

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

##### Facilities

To avoid electromagnetic interference and/or compatibility conflicts, turn off your radio 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 radio when onboard an aircraft. Any use of a radio must be in accordance with applicable regulations per airline crew instructions.

##### Medical Devices – Pacemakers

The Advanced Medical Technology Association recommends that a minimum separation of 6 inches (15 cm) be maintained between a handheld wireless radio and a pacemaker. These recommendations are consistent with the independent research by and recommendations of the U.S. Food and Drug Administration.

People with pacemakers should:

- ALWAYS keep the radio more than 6 inches (15 cm) from their pacemaker when the radio is turned ON.
- Not carry the radio in the breast pocket.
- Use the ear opposite the pacemaker to minimize the potential for interference.
- Turn the radio OFF immediately if there is any reason to suspect that interference is taking place.

##### Medical Devices – Hearing Aids

Some digital wireless radios may interfere with some hearing aids. In the event of such interference, you may want to consult your hearing aid manufacturer to discuss alternatives.

##### Medical Devices-other

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 regarding the use of radios in the area where you drive, and always obey them. If you do use your radio 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.

The use of a two-way radio while engaged in activities requiring concentration may cause distraction or otherwise impair your ability to safely participate in such activities. Always use technology safely.

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

##### Potentially Explosive Atmospheres

Turn off your radio prior to entering any area with a potentially explosive atmosphere. Only radio types that are especially qualified should be used in such areas as "Intrinsically Safe." 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 radio when you are near electrical blasting caps, in a blasting area, or in areas posted "Turn off two-way radios." Obey all signs and instructions.

#### Operational Cautions

##### Antennas

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

##### Batteries

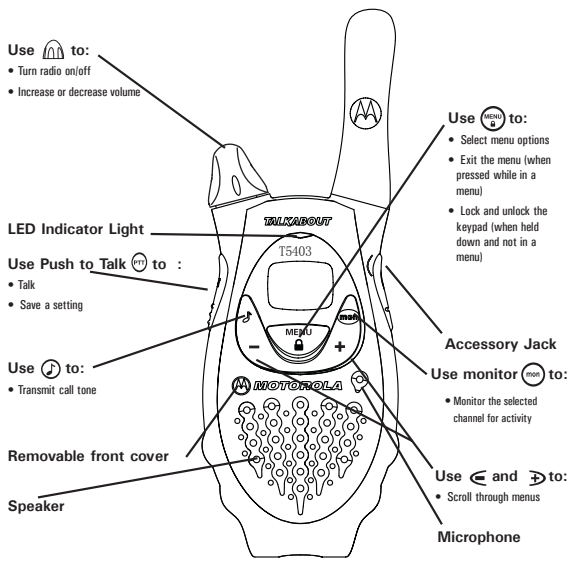
All batteries can cause property damage and/or bodily injury such as burns if a conductive material—like jewelry, keys or beaded chains—touch exposed terminals. The conductive material may complete an electrical circuit (short circuit) and become quite hot. Exercise care in handling any charged battery, particularly when placing it inside a pocket, purse or other container with metal objects. Exercise care when removing NiMH or AA batteries. Do not use sharp or conductive tools to remove either of these batteries.

##### Battery Charger Safety Instructions:

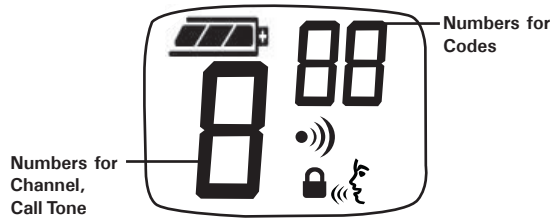
#### Save these Instructions

1. Do not expose the charger to rain or snow.
2. Do not operate or disassemble the charger if it has received a sharp blow, or has been dropped or damaged in any way.
3. Never alter the AC cord or plug provided with the unit. If the plug will not fit the outlet, have the proper outlet installed by a qualified electrician. An improper condition can result in a risk of electric shock.
4. To reduce the risk of damage to the cord or plug, pull the plug rather than the cord when disconnecting the charger from the AC receptacle.
5. To reduce the risk of electric shock, unplug the charger from the outlet before attempting any maintenance or cleaning.
6. Use of an attachment not recommended or sold by Motorola may result in a risk of fire, electric shock or personal injury.
7. Make sure the cord is located so it will not be stepped on, tripped over or subjected to damage or stress.
8. An extension cord should not be used unless absolutely necessary. Use of an improper extension cord could result in a risk of a fire and/or electric shock. If an extension cord must be used, make sure that:
  - The pins on the plug of the extension cord are the same number, size and shape as those on the plug of the charger.
  - The extension cord is properly wired and in good electrical condition.
  - The cord size is 18 AWG for lengths up to 100 feet, and 16 AWG for lengths up to 150 feet.
9. The supply cord of this charger cannot be replaced. If the cord is damaged, please refer to Warranty section.

### Control Buttons



### Display Screen Guide



– Battery Meter

– Lock

– Talk Confirmation Tone (Roger Beep)

– Hands-Free Use With Accessories

### Getting Started

#### Installing the Batteries

Each radio uses 1 NiMH rechargeable battery pack or 3 AA alkaline batteries and beeps when the batteries are low.

#### Installing the NiMH Rechargeable Battery Pack

1. Turn the radio off.
2. With the back of the radio facing you, lift the battery cover latch up and remove the cover.
3. Remove the battery pack from the clear plastic bag (Do not disassemble or unwrap the battery pack).
4. Insert the NiMH battery pack with the diagram facing you.
5. Reposition the battery cover and press down to secure.

#### Installing the Three AA Alkaline Batteries

1. Turn the radio off.
2. With the back of the radio facing you, lift the battery cover latch up and remove the cover.
3. Insert the three AA alkaline batteries with + and - polarity as shown inside.
4. Reposition the battery cover and press down to secure.

#### Radio Battery Meter

The radio battery icon shows the battery charge level, from full to empty . When the radio has one segment left, the radio chirps periodically or after releasing (Low Battery Alert).

#### Removing the NiMH Battery Pack

1. Turn the radio off.
2. With the back of the radio facing you, lift the battery latch up to release the battery cover and remove the cover.
3. Gently remove the NiMH battery.
4. Reposition the battery cover and press down to secure.

#### Removing the Three AA Batteries

1. Turn the radio off.
2. With the back of the radio facing you, lift the battery latch up to release the battery cover and remove the cover.
3. Gently remove each battery by easing each battery out individually.
4. Reposition the battery cover and press down to secure.

#### Notes

- Exercise care when removing NiMH or AA batteries. Do not use sharp or conductive tools to remove either of these batteries.
- Remove the batteries before storing your radio for extend periods of time. Batteries corrode over time and may cause permanent damage to your radio.

#### Using the Battery Charger

The battery charger provides drop-in charging convenience for NiMH batteries and can be placed on any flat surface, such as a desk or workbench. Charge the NiMH battery overnight (at least 16 hours) before using it for the first time. After the initial charge, an empty battery is fully charged within 14 hours.

1. Follow the steps above to install a NiMH Battery Pack.
2. Plug the AC power supply cord into the jack on the desk stand.
3. Plug the AC power supply into a standard wall outlet.
4. With a radio facing forward, slide it into one of the charging pockets.

#### Notes

- The red light will glow continuously to indicate the radio is correctly connected and charging. The light will remain red after the battery pack is fully charged.
- When moving between hot and cold temperatures, do not charge the battery until the battery temperature acclimates (usually about 20 minutes).
- For optimal battery life, remove the radio from the charger within 16 hours. Do not store the radio in the charger.
- Turn radio off while in charging tray.

#### Attaching and Removing the Belt Clip

1. Attach belt clip to pocket or belt strap.
2. Align the belt clip post with the hole in the back of the radio.
3. Gently push until the clip clicks in place.

#### To Remove

1. Push down on the release tab at the top of the belt clip to release the catch.
2. Pull the belt clip away from the back of the radio.

#### Turning Your Radio On and Off

Turn clockwise to turn the radio on and counterclockwise to turn the radio off.

1. In the ON position, the radio chirps and briefly shows all feature icons available on the radio.
2. The display screen then shows the current channel, code and all features that are enabled.

#### Setting the Volume

1. Rotate while holding down until you reach a comfortable listening level.
2. Rotate clockwise to increase the volume or counterclockwise to decrease the volume.

Do not hold the radio close to your ear. If the volume is set to an uncomfortable level, it could hurt your ear.

### Talking and Listening

To communicate, all radios in your group must be set to the same channel and Interference Eliminator Code.

1. To talk, press and hold .
  2. When you are finished talking, release .
- For maximum clarity, hold the radio two to three inches away from your mouth and speak directly into the microphone. Do not cover the microphone while talking.

#### Channel Busy Indicator

When a channel is busy, the LED flashes twice per second.

#### Talk Range

Your radio is designed to maximize performance and improve transmission range. Do not use the radios closer than 5 feet apart.

#### Monitor Button

Pressing and holding for three seconds allows you to listen to the volume level of the radio when you are not receiving. This allows you to adjust the volume, if necessary. You can also press to check for activity on the current channel before you talk.

#### Push to Talk Timeout Timer

To prevent accidental transmissions and save battery life, the radio emits a continuous warning tone and stops transmitting if you press for 60 continuous seconds.

### Menu Options

#### Selecting the Channel

Your radio has 8 channels. Channels 1-8 are 0.5 watt.

1. With the radio on, press . The current channel flashes.
2. Press or to set the channel.
3. Press to confirm your selection or to continue set up.

#### Channels and Frequencies

Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	446.00625	5	446.05625
2	446.01875	6	446.06875
3	446.03125	7	446.08125
4	446.04375	8	446.09375

#### Selecting The Interference Eliminator Code

Interference Eliminator Codes help minimize interference by blocking transmissions from unknown sources. Your radio has 38 Interference Eliminator Codes.

To set the code for a channel:

1. Press until the code starts to flash.
  2. Press or to select the code.
  3. Press to save the code setting or to continue set up.
- You can set a different code for each channel using this procedure. An extended press of or allows you to scroll through the Interference Code rapidly so you can quickly reach the code you want.

**Note:** You must set the Interference Eliminator Code to on a radio that uses Interference Eliminator Codes to communicate with radios that do not have Interference Eliminator Codes. Select 0 for " no tone, no code".

#### Setting and Transmitting Call Tones

Your radio can transmit different call tones to other radios in your group so you can alert them that you want to talk. You have 5 call tones from which to choose.

#### To set a call tone:

1. With the radio on, press three times. The current call tone setting flashes and displays.
2. Press or to change and hear the call tone.
3. Press to set the new call tone or to continue set up. To transmit your call tone to other radios set to the same channel and Interference Eliminator Code as your radio, press .

#### Notes

- Setting the call tone to disables the call tone feature.

#### Using Audio Accessories

Many accessories (sold separately) are available for your radio. For more information, visit our web site at [www.motorola.com](http://www.motorola.com).

#### Hands-free Use with Accessories (VOX)

You can transmit hands-free more reliably with the use of optional headset accessories. Once VOX is turned on, the radio defects your voice and transmits when you speak.

1. Turn the radio off.
2. Insert the plug of the audio accessory firmly into the accessory jack.
3. Turn the radio on. displays.
4. Adjust the volume appropriately by rotating . Lower the radio volume before placing the accessory on your head or in your ear.
5. To transmit, speak into accessory microphone.
6. To receive, stop talking.

To turn VOX off, press or remove the audio accessory.

**Note:** There is a short delay between the time you start talking and when the radio transmits. There is a short delay before the transmission is completed.

#### Setting the Sensitivity Level

Adjusting the radio's sensitivity level helps minimize the possibility of unintended noises triggering a transmission and helps the radio pick up soft voices.

1. Press until displays.
2. Press or to select the sensitivity level.
3. Press to set.

	– High Sensitivity for quiet environments
	– Medium Sensitivity for most environments
	– Low Sensitivity for noisy environments

**Note:** When you connect a headset, the radio is automatically set to the last chosen sensitivity level.

#### Transmitting a Talk Confirmation Tone



You can set your radio to transmit an unique tone when you finish transmitting. It's like saying "roger" or "over" to let others know you are finished talking.

- To turn talk confirmation tone on, press and hold while you turn the radio on. appears in the display.
- To turn talk confirmation tone off, turn your radio off and then back on while pressing and holding .

## Special Features

### Keypad Lock

To avoid accidentally changing your radio settings:

1. press and hold  until  displays.
2. When in lock mode, you can turn the radio on and off, adjust the volume, receive, transmit, send a call tone, and monitor channels. All other functions are locked.

To unlock the radio, press and hold  until  is no longer displayed.

## Warranty

### Consumer Two-Way Radio Products and Accessories purchased in Singapore

#### What Does this Warranty Cover?

This Limited Warranty is a consumer's exclusive remedy, and applies as follows to new Motorola branded products, accessories and software manufactured, distributed and sold by Giant International Ltd. Alcom is the local distributor in Singapore, and warrants Motorola Two-Way Radio Products and Accessories (collectively "Equipment") purchased in Singapore against defects in material and workmanship under normal use and service, for the following periods of time:

Products Covered	Warranty Period	Exclusions
Equipment as defined above, unless otherwise provided for below.	<b>One (1) year</b> from the date of purchase by the original consumer purchaser of the Equipment unless otherwise provided for below.	<b>Normal Wear and Tear</b> : Periodic maintenance, and repair and replacement of parts due to normal wear and tear, are not covered by this Limited Warranty. <b>Batteries</b> : Motorola supplied batteries will be replaced free of charge within the first six (6) months of the date of purchase of the Equipment if the capacity of the batteries falls below 80% of their rated capacity, or if the batteries develop a leak. <b>Abuse &amp; Misuse</b> : Defects or damage that result from: (a) improper operation, storage, misuse or abuse, accident or neglect, such as physical damage (cracks, scratches, etc.) to the surface of the Equipment resulting from misuse; (b) contact with liquid, water, rain, extreme humidity or heavy perspiration, sand, dirt or the like, extreme heat, or food; (c) use of the Equipment for commercial purposes or subjecting the Equipment to abnormal usage or conditions; or (d) other acts which are not the fault of Motorola, Giant International Ltd. Or Alcom Electronics, are not covered by this Limited Warranty. <b>Use of Non-Motorola branded Products and Accessories</b> : Defects or damage that result from the use of Non-Motorola branded or certified products, accessories, software or other peripheral equipment are not covered by this Limited Warranty. <b>Unauthorized Service or Modification</b> : Defects or damages resulting from service, testing, adjustment, installation, maintenance, alteration, or modification in any way by someone other than Motorola, Giant International Ltd., Alcom Electronics or their authorized service centres, are not covered by this Limited Warranty. <b>Altered Equipment</b> : Equipment with (a) serial numbers or date tags that have been removed, altered or obliterated; (b) broken seals or seals that show evidence of tampering; (c) mismatched board serial numbers; or (d) nonconforming or non-Motorola branded housings, or parts, are not covered by this Limited Warranty. <b>Communication Services</b> : Defects, damage, or failure of the Equipment due to any communication service or signal you may subscribe to or use with the Equipment are not covered by this Limited Warranty. <b>Equipment Purchased Outside of Singapore</b> : This Limited Warranty does not extend to any Equipment which was purchased outside of Singapore.
<b>1. Decorative Accessories and Cases.</b> Decorative covers, bezels, PhoneWrap covers and cases.	<b>1. Limited lifetime warranty</b> for the lifetime of ownership by the original consumer purchaser of the decorative accessory or case.	
<b>2. Consumer Two-Way Radio Accessories.</b>	<b>2. Thirty (30) days</b> from the date of purchase by the original consumer purchaser of the consumer two-way radio accessory.	
<b>3. Products and Accessories that are Repaired or Replaced.</b>	<b>3. The balance of the original warranty or for thirty (30) days</b> from the date the products or accessories are returned to the consumer, whichever period is longer.	

**Proof of Purchase:** You are required to provide proof of purchase as a condition of receiving warranty services. You are entitled to a replacement or repair according to the terms and conditions of this Limited Warranty if your product is found to be faulty within the Warranty Period. This Limited Warranty extends to the original purchaser only and is not transferable.

#### Who is covered?

This Limited Warranty applies only to the original consumer purchaser of the Equipment, and is not transferable.

#### What will Alcom Electronics do?

Alcom Electronics, at its option, will at no charge either repair, or replace any defective Equipment during the applicable Warranty Period. Alcom Electronics may use functionally equivalent, reconditioned, refurbished, pre-owned or new Equipment or parts at its discretion. No data, software or applications added to Equipment, including but not limited to personal contacts, games and ringer tones, will be reinstalled. To avoid losing such data, software and applications, customers are advised to create a back up prior to requesting service.

#### How do we obtain Warranty Service or Other Information?

To obtain warranty service or information, please call:

## Singapore

**Hotline: (65) 6841 2668**

You will receive instructions on how to ship the Equipment, at your expense, to an authorized repair centre. To obtain warranty service, you must provide Alcom Electronics with: (a) a copy of your purchase receipt, bill of sale or other comparable proof of purchase for the Equipment; (b) a written description of the problem; (c) the name and location of the installation facility (if applicable) and (e) your postal address and contact telephone number. Alcom Electronics will be the sole determinant as to whether the Equipment is defective.

## Patent and Copyright Information

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