

GP328

Professional Two-Way Radio



MOTOROLA

2-YEAR LIMITED WARRANTY FOR RADIOS

We thank you for purchasing our Motorola radios. These radios are manufactured according to the highest quality standards set and are backed by Motorola's two (2) year warranty. The rechargeable Motorola supplied batteries have a one (1) year warranty. Kindly approach your dealer for more information.

Motorola warrants its radios and batteries against defects in material and workmanship under normal use and service for the period stated above.

Motorola recommends that you use Motorola supplied accessories and batteries in connection with the radio. We would also advise you against attempting any modifications or repairs or any other form of unauthorised service to your radio.

Should you have any queries, please contact:

Singapore - Telephone/Fax: (65) 3810408&9/2871068
Beijing - Telephone/Fax: (86-10) 68437222/68438195

Please see next page for more information.

Fill in the details of your radio below for your own reference:

Model Name/No.:

Serial Number:

Date of Purchase:

Dealer Name:

Address:

Telephone:

LIMITED WARRANTY MOTOROLA RADIO PRODUCTS

This express limited warranty covers the Product manufactured by MOTOROLA Radio Products Group and applies to any warranty already mentioned. MOTOROLA assumes no obligations or liability for additions or modifications to this warranty unless specifically made in writing and signed by an authorised officer of MOTOROLA.

MOTOROLA cannot be responsible in any way for any ancillary equipment not furnished by MOTOROLA which is attached to or used in connection with the Product, or for operation of the Product with any ancillary equipment, and all such equipment is expressly excluded from this warranty. Because each system which may use the Product is unique, MOTOROLA disclaims liability for range, coverage, or operation of the system as a whole under this warranty.

This warranty sets forth the full extent of MOTOROLA'S responsibilities regarding the Product. Repair, replacement or refund of the purchase price, at MOTOROLA'S option, is the sole and exclusive remedy of purchaser/user of the Product. THIS WARRANTY IS GIVEN IN LIEU OF ALL OTHER EXPRESS WARRANTIES. IMPLIED WARRANTIES, INCLUDING WITHOUT LIMITATION, IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE **HEREBY EXCLUDED**. IN NO EVENT SHALL MOTOROLA BE LIABLE FOR DAMAGES IN EXCESS OF THE PURCHASE PRICE OF THE PRODUCT, FOR ANY LOSS OF USE, LOSS OF TIME, INCONVENIENCE, COMMERCIAL LOSS, LOST PROFITS OR SAVINGS OR OTHER INCIDENTAL, SPECIAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE USE OR INABILITY TO USE SUCH PRODUCT, TO THE FULL EXTENT SUCH MAY BE DISCLAIMED BY LAW.

Notwithstanding anything contained herein, MOTOROLA shall not be liable for any of the following situations:

- A) Defects or damage resulting from use of the Product in other than its normal and customary manner.
- B) Defects or damage from misuse, accident, water, liquid or neglect.
- C) Defects or damage from improper or unauthorised testing, operation, maintenance, service, repair, installation, alteration, modification, or adjustment.
- D) Product which has had the serial number removed or made illegible.
- E) A Product which, due to illegal or unauthorized alteration of the software/firmware in the Product, does not function in accordance with Motorola's published specifications or the FCC type acceptance labeling in effect for the Product at the time the Product was initially distributed from Motorola.
- F) Scratches or other cosmetic damage to Product surfaces that does not affect the operation of the Product.

MOTOROLA shall have no liability whatsoever with respect to any claim of patent infringement which is based upon the combination of the Product or parts furnished hereunder with software, apparatus or devices not furnished by MOTOROLA, nor will MOTOROLA have any liability **whatsoever** for the use of ancillary equipment or software not furnished by MOTOROLA which is attached to or used in connection with the Product.

HOW TO GET WARRANTY SERVICE: Provide proof of purchase and deliver or send the Product item, transportation and insurance prepaid to an authorized warranty service location. Warranty service will be provided by Motorola through one of its authorized warranty service locations. If you contact the company that sold you the Product, it can facilitate your obtaining warranty service. You can also call Motorola for assistance:

65-3810408/9 (Singapore) or 86-10-68437222 (Beijing).

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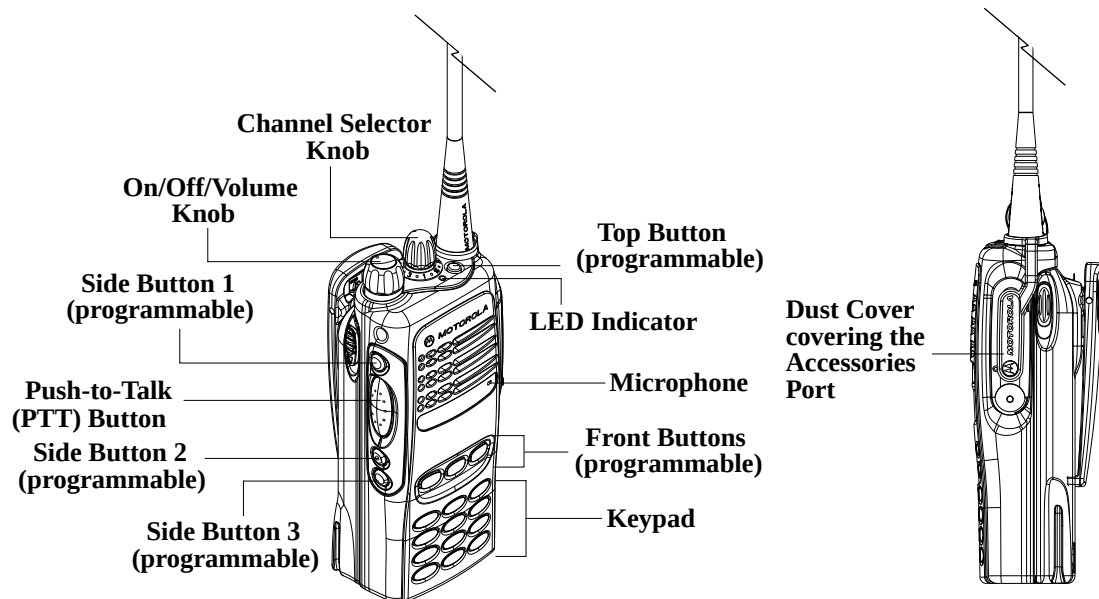
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RADIO OVERVIEW

PARTS OF THE RADIO



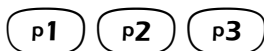
On/Off/Volume Knob

Used to turn the radio on or off, and to increase the radio's volume.

Channel Selector Knob

Used to switch the radio to different channels.

Programmable Buttons



The three Front Buttons (not available for radios without the keypad), as shown, the top button and the three side buttons can be programmed as short-cut buttons for many of the radio's features.

The following table shows the functions available by pressing the programmable buttons (short press) and by pressing and holding the programmable buttons for a period of time (long press).

Check with your dealer for a complete list of the functions your radio's programmable buttons support.

Key	Short Press	Long Press	Press and Hold
Monitor/ Permanent Monitor	To monitor the selected channel for any activity.	To continually monitor the selected channel.	-
Volume Set	-	-	You can use to adjust your radio's volume level.
Battery Gauge	-	-	To check the battery's status.

Key	Short Press	Long Press	Press and Hold
Scan/Nuisance Channel Delete	To toggle between the start/stop of the Scan operation.	To delete a nuisance channel while scanning.	-
Tx Power	To toggle your radio's transmit power level between High and Low power. [†]	To toggle your radio's transmit power level between High and Low power. [†]	-
Keypad Lock	-	To toggle between locking/unlocking your radio's keypad.	-
Repeater/Talkaround	To choose to make/not to make a radio call through the repeater. [†]	To choose to make/not to make a radio call through the repeater. [†]	-
Squelch	To toggle your radio's squelch level between tight/normal squelch. [†]	To toggle your radio's squelch level between tight/normal squelch. [†]	-
Option Board	To toggle the activation/deactivation of your radio's option board (if one is installed). [†]	To toggle the activation/deactivation of your radio's option board (if one is installed). [†]	-

Key	Short Press	Long Press	Press and Hold
Phone	To make a Phone Call. [†]	To make a Phone Call. [†]	-
Speed Dial	To easily access the phone numbers in your phone list. [†]	To easily access the phone numbers in your phone list. [†]	-
Light	To activate your radio's backlight. [†]	To activate your radio's backlight. [†]	-

[†] Depending on how your radio has been programmed by your dealer, these functions are activated **EITHER** through short press **OR** long press, but not both.

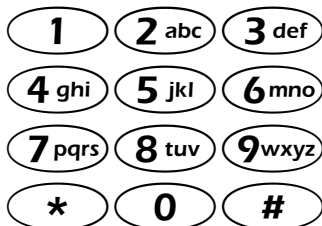
Push-to-Talk (PTT) Button

Press and hold down this button to talk, release to listen.

Microphone

Speak clearly into it when sending a message.

Keypad Keys (for keypad radios only)



These keys are used when dialing a phone number.

INDICATOR TONES

High pitched tone ☐ Medium pitched tone ☒



Positive Indicator
Tone



Negative Indicator
Tone

Programmable Buttons Audio Indicators

Some programmable keys function as toggles. These keys use audio indicators to indicate the change.

Programmable Buttons	Positive Indicator Tone	Negative Indicator Tone
Scan	Start Scan operation	Stop Scan operation
Tx Power	Radio transmits at high power	Radio transmits at low power
Squelch	Radio operates in tight squelch	Radio operates in normal squelch
Option Board	Activates radio's option board	Deactivates radio's option board

Programmable Buttons	Positive Indicator Tone	Negative Indicator Tone
Keypad Lock	Radio's keypad is locked	Radio's keypad is unlocked
Repeater/Talkaround	Radio DOES NOT use the repeater	Radio uses the repeater

GETTING STARTED

BATTERY INFORMATION

Battery Status

You can check your radio's battery status by pressing the programmed Battery Gauge button (battery status is shown by the LED indicator).

Battery Level	LED Indicator
High	Green
Satisfactory	Yellow
Low	Flashing Red
Very Low	None

Charging your Battery

When the battery level is very low, you need to recharge the battery before you can continue to use your radio.

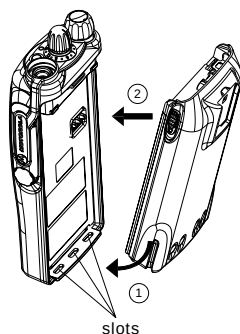
1. Place the radio with the battery attached or the battery alone in the charger.
2. The charger's LED would indicate the charging progress.

LED color	Status
Flashing Red*	Battery is unchargeable.
Flashing Yellow	Charger is getting ready to charge.
Red	Battery is charging.
Flashing Green	Battery is 90% charged.
Green	Battery is fully charged.

* Battery is damaged. Please contact your dealer.

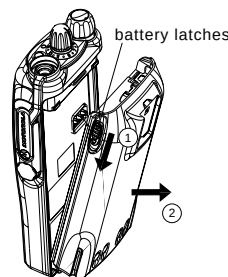
ACCESSORY INFORMATION

Attaching the Battery



1. Fit the extensions at the bottom of the battery into the slots at the bottom of the radio's body.
2. Press the top part of the battery towards the radio until a click is heard.

Removing the Battery



1. Turn off the radio, if it is turned on.
2. Slide the battery latches, on both sides of the battery, downwards.
3. Pull the top part of the battery away from the radio's body, and lift the battery from the radio's body.

Attaching the Antenna

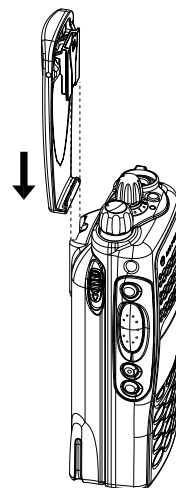


1. Align the threaded end of the antenna with the radio's antenna connector.
2. Turn the antenna clockwise to fasten it.

Removing the Antenna

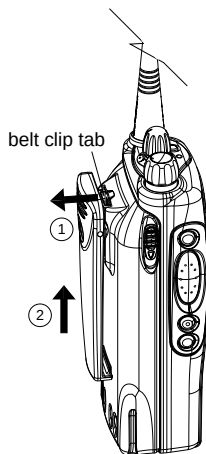
Turn the antenna counter-clockwise until you can remove it.

Attaching the Belt Clip



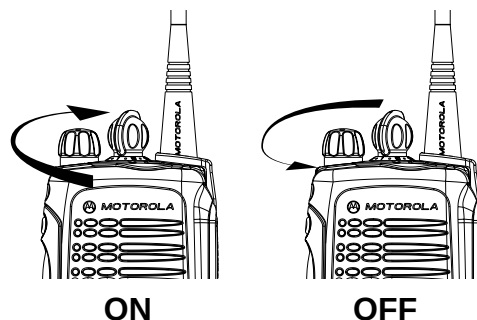
1. Align the grooves of the belt clip with those of the battery.
2. Press the belt clip downwards until a click is heard.

Removing the Belt Clip



1. Use a key to press the belt clip tab away from the battery.
2. Slide the belt clip upwards to remove it.

TURNING THE RADIO ON OR OFF



- Turn the **On-Off/Volume Control** knob clockwise to turn on the radio.
- Turn the **On-Off/Volume Control** knob counter-clockwise, until a click is heard, to turn off the radio.

ADJUSTING THE RADIO'S VOLUME

1. Press and hold the **Volume Set** key; you will hear a continuous tone.
2. Turn the **On-Off/Volume Control** knob and adjust the volume level.
3. Release the **Volume Set** key.

SELECTING A RADIO CHANNEL

Your radio offers sixteen (16) channels for easy access to required conventional channels. Some channels on your radio may not be programmed. Check with your dealer for more information.

Turn the **Channel Selector** knob clockwise or counter-clockwise until you reach the desired channel.

SENDING A CALL

1. Use the **Channel Selector** knob to change to the required channel.
2. Press the **PTT**, and speak clearly with your mouth about 2.5 to 5 cm (one to two inches) away from the microphone.
3. Release the **PTT** when you finish speaking.

RECEIVING A CALL

1. Turn your radio on.
2. Adjust its volume level.
3. Switch to the desired channel.
4. If at any time a call comes through, you will hear the call at the volume level set.

RADIO CALL INFORMATION

TALKAROUND

In your communications network, you may be using a repeater to cover a larger area than what is possible with your radio. However, you can communicate with another radio within your radio's range without going through the repeater by using the *Talkaround* feature. This is especially useful when the repeater is down.

Press the programmed **Repeater/Talkaround** button to toggle between the options of making or not making a call through the repeater. A positive indicator tone indicates that the radio is in repeater mode, while a negative indicator tone indicates that the radio is in talkaround mode.

SQUELCH

If a particular channel receives many unwanted calls coming from radios that do not belong to your communications group and some distance away, or the "background noise" is excessive, you can try to filter these transmissions out by

tightening the channel's squelch. However, tightening squelch could cause calls from members of your communications group that are farther away to be filtered out as well.

Press the programmed **Squelch** button to toggle between the options of having normal squelch or tightening the squelch of your radio. A positive indicator tone indicates that the radio is operating in tight squelch, while a negative indicator tone indicates that the radio is operating in normal squelch.

POWER LEVEL

You can transmit your calls at different transmit power levels. A higher level means you can reach a radio that is farther away. Lower power level conserves battery power. You are advised to transmit as frequently as possible on low power, and use high power only when needed.

Press the programmed **Tx Power** button to toggle between the options for High or Low power transmit level. A positive indicator tone indicates that the radio is operating in high power mode, while a negative indicator tone

indicates that the radio is operating in low power mode.

SCAN

You can monitor several channels in order to receive any call that is transmitted on any of these channels. Sixteen different channels can be programmed into a scan list. Each channel can share the same scan list or have different scan lists assigned to them.

Once the radio's scan operation is activated and the radio detects a call coming through a channel in its scan list, it switches to that channel for you to receive the call.

STARTING OR STOPPING A SCAN OPERATION

The LED Indicator will blink (yellow) during a scan operation. It will stop blinking when the radio switches to a channel.

1. Press the **Scan** key to start a scan operation.
2. Press the **Scan** key again to stop the scan operation.

TALKBACK

If the programmable Talkback option is set, you can respond to any calls received during the scan operation by pressing the PTT before the programmed hang-time ends. Check with your dealer for details.

DELETING A NUISANCE CHANNEL

If a channel continually generates unwanted calls/noise, you can temporarily remove it from the scan list by performing a *Nuisance Channel Delete* operation.

1. While the radio is on the Nuisance Channel, press and hold the **Scan** key until you hear a tone.
2. Release the **Scan** key.

Note: You cannot perform a *Nuisance Channel Delete* on a priority channel or if there is only one remaining channel in the scan list.

ADDING A DELETED NUISANCE CHANNEL BACK TO THE SCAN LIST

1. Press the **Scan** key to stop the scan operation.
2. Press the **Scan** key again to re-start the scan operation.

SCAN CHANNEL DISCOVERY ALERT

Sometimes you need to know which channel the radio has switched to during a scan operation. The Scan Channel Discovery Alert gives you this information.

This feature gives you audio feedback, after you have stopped a scan operation, when you change to the last channel that was switched to by the scan operation.

1. Stop the scan operation.
2. Turn the **Channel Selector** to change the channels.
3. When you reach the last channel the scan operation switched to, the radio will give an alert tone.

SCAN LIST MEMBER PRIORITY

A channel in your scan list may be prioritized (check with your dealer for details). In such a case, the radio will check that prioritized channel more frequently than the other non-prioritized channels.

Note: Even though your radio has switched to a non-priority channel, your radio will still check for activity on the priority channel. If some activity is detected there, the radio will switch to that priority channel.

PHONE

You can use your radio to connect to a phone line to make a phone call. You need a radio with a keypad to do this.

To do this, your radio must send an access code to a station that connects it to a phone line. After you have finished your call, the radio has to send a deaccess code to shutdown the connection to the phone line.

MAKING A PHONE CALL

A complete phone session consists of

- entering the phone mode
- sending the access code
- sending the phone number
- having the phone conversation
- ending the phone call.

Entering the Phone Mode

Before you can make a phone call, you must enter the radio's phone mode.

1. Press the Phone button.

Sending the Access Code

Your radio can be programmed to send the access code in any of the following three ways:

- manual (for radios with keypad only)
- automatic delay
- automatic immediate.

Check with your dealer for more details.

Method Used	Steps to Take
Manual	Dial the access code from the keypad.
Automatic Delay	Press and release the PTT; the radio automatically sends the preprogrammed access code.

Method Used	Steps to Take
Automatic Immediate	You do not have to do anything; the radio immediately sends the access code when it enters phone mode.

Sending the Phone Number

After the access code is sent, you should wait for a dialing tone before sending your phone number.

You can send

- a phone number that is stored in the radio, or
- a new number (for radios with keypad only).

Additionally, depending on how your radio is programmed, if you use the keypad to send a number, the radio can send the numbers in one of the following ways:

- live dial
- buffered dial.

Check with your dealer for details.

Sending a Stored Phone Number

You can access the stored phone numbers by

- recalling the last number dialed,
- using the speed dial feature.

Method Used	Steps to Take
Last Number Redial*	Press and release the PTT again; the radio sends the last number dialed.

Method Used	Steps to Take
Speed Dial	1. Press and release the programmed Speed Dial button. 2. Press the numbered keys (1-9) corresponding to the first nine phone numbers in the phone list. Press "0" if you want the last number dialed. 3. If your radio uses buffered dial, press and release the PTT. 4. The radio sends out the relevant phone number.

* The method described is not applicable for radios which manually send the access code; these radios can access this number from the speed dial.

Sending a New Number (for radios with keypad only)

You enter the phone number by pressing the relevant keys on the keypad.

Method Used	Steps to Take
Live Dial	Enter the phone number by using the keypad; the radio sends out the numbers as the keys are pressed.
Buffered Dial	1. Enter the phone number by using the keypad; the radio saves the numbers selected in a buffer. 2. Press and release the PTT; the radio sends out the numbers in its buffer.

The Phone Conversation

Once the radio has connected to the intended party, you can begin the conversation. Even though, this is a phone call, your conversation mimics a radio call (i.e. both parties speak in turn).

1. Press and hold the PTT, while talking into the microphone.
2. Release the PTT when you finish what you want to say, and wait for the response.
3. Continue in like manner until the conversation ends.

Note: The radio starts a programmable Time-Out-Timer the moment both parties stop transmitting (talking). If the Time-Out-Timer expires, the radio will end the phone call.

Ending the Phone Call

Just as the radio needs to send the access code when starting a phone call, the radio needs to send the deaccess code to end the phone call.

The radio can send the deaccess code in any of the following ways:

- manual (for radios with keypad only)
- automatic.

Check with your dealer for details.

1. If your radio sends the deaccess code manually, dial the deaccess code from the keypad.
2. Press the Phone button to exit phone mode (radios using the automatic method will send the code automatically).

SAFETY INFORMATION

SAFE AND EFFICIENT OPERATION OF MOTOROLA TWO-WAY RADIOS

This document provides information and instructions for the safe and efficient operation of Motorola Portable and Mobile Two-Way Radios.

The information provided in this document supersedes the general safety information contained in user guides published prior to 1st. January 1998.

For information regarding radio use in hazardous areas, please refer to the Factory Mutual (FM) approval manual supplement or Instruction Card which is included with radio models that offer this capability.

Exposure To Radio Frequency Energy

Your Motorola Two-Way Radio, which generates and radiates radio frequency (RF) electromagnetic energy (EME) is designed to comply with the following National and

International Standards and Guidelines regarding exposure of human beings to radio frequency electromagnetic energy:

- Federal Communications Commission Report and Order No. FCC 96-326 (August 1996)
- American National Standards Institute (C95.1 - 1992)
- National Council on Radiation Protection and Measurements (NCRP-1986)
- International Commission on Non-Ionizing Radiation Protection (ICNRP- 1986)
- European Committee for Electrotechnical Standardisation (CENELEC):

- | | |
|------------------------|--|
| •ENV 50166-1
1995 E | <i>Human exposure to electromagnetic fields Low frequency (0 Hz to 10 kHz)</i> |
| •ENV 50166-2
1995 E | <i>Human exposure to electromagnetic fields High frequency (10 kHz to 300 GHz)</i> |

- *Proceedings of SC211/B 1996* “Safety Considerations for Human Exposure to EMFs from Mobile Telecommunication Equipment (MTE) in the Frequency Range 30MHz - 6 GHz.”(EMF - Electro-Magnetic Fields)

To assure optimal radio performance and to ensure that your exposure to radio frequency electromagnetic energy is within the guidelines in the above standards, always adhere to the following procedures:

Portable Radio Operation And EME Exposure



- When transmitting with a portable radio, hold radio in a vertical position with the microphone 2.5 to 5 centimeters (one or two inches) away from the mouth. Keep antenna at least 2.5 centimeters (one inch) from your head or body when transmitting.

- If you wear a portable Two-Way radio on your body, ensure that the antenna is at least 2.5 centimeters (one inch) from the body when transmitting.

Electromagnetic Interference/Compatibility

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

- To avoid electromagnetic interference and/or compatibility conflicts, turn off your radio in any facility where posted notices instruct you to do so. Hospital or health facilities may be using equipment that is sensitive to external RF energy.
- When instructed to do so, turn off your radio when on board an aircraft. Any use of a radio must be in accordance with airline regulations or crew instructions.

Operational Warnings



WARNING

Vehicles with an air bag

- Do not place a portable radio in the area over an airbag 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 vehicle.

Potentially explosive atmospheres

- Turn off your Two-Way radio when you are in any area with a potentially explosive atmosphere, unless it is a radio type especially qualified for use in such areas (e.g. FM or Cenelec approved). Sparks in a potentially explosive atmosphere can cause an explosion or fire resulting in bodily injury or even death.

Batteries

- Do not replace or recharge batteries in a potentially explosive atmosphere. Contact sparking may occur while installing

or removing batteries and cause an explosion.

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 radio”*, obey all signs and instructions.

Note: The areas with potentially explosive atmospheres referred to above include fuelling 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.

Operational Cautions



Caution

Damaged antennas

- Do not use any portable two-way 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 such as jewellery, keys or beaded chains touch exposed terminals. The conductive material may complete an electrical circuit (short circuit) and become quite hot. Exercise care in handling any charged battery, particularly when placing it inside a pocket, purse or other container with metal objects.

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Bayan Lepas Free Industrial Zone
Phase III
11900 Penang
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May, 1998