

# Spirit HP User Guide

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We have organized this manual to help you locate important information. The following icons signal specific types of information:



Warnings, cautions, or other important information.



Information about sounds the radio makes.



Information about the radio's signalling lights (LEDs).

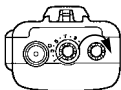
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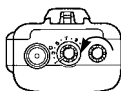
# Spirit HP Quick Reference

## Turn On



Turn radio on.

## Turn Off

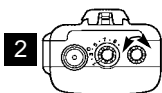


Turn radio off.

## Adjust Volume

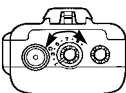


Press and hold MON button until you hear a rushing noise.



Continue to hold MON button and rotate on/off knob to desired volume level.

## Select Channel



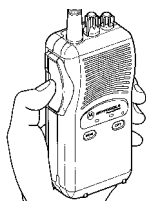
Rotate channel selector.

## Monitor Channel



Press and release MON button.

## Transmit



**1** Press PTT.

**2** Hold radio upright while speaking clearly into mic.


## Receive




Release PTT to hear voice activity.

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# Spirit HP Quick Reference

 <b>Sound</b>	<b>Meaning</b>
short, high-pitched beep	<ul style="list-style-type: none"><li>• radio being turned on</li><li>• MON button being pressed</li></ul>
series of low-pitched beeps	pressing PTT while other user is transmitting
high-pitched tone*	<ul style="list-style-type: none"><li>• entering channel scan mode</li><li>• entering high power mode</li><li>• entering tight squelch mode</li></ul>
low-pitched tone*	<ul style="list-style-type: none"><li>• exiting channel scan mode</li><li>• entering low power mode</li><li>• entering loose squelch mode</li></ul>
continuous, low-pitched tone	reaching time limit of time-out timer
three low-pitched beeps	low battery alert
two short medium-pitched tones*	successfully deleting unwanted channel (using Nuisance Channel Delete in channel scan mode).

 <b>LED Signal</b>	<b>Meaning</b>
Tx LED flashes red	<ul style="list-style-type: none"><li>• channel is busy</li><li>• pressing PTT if battery is low</li></ul>
Tx LED glows solid red	transmitting
Tx LED glows solid yellow for 4 seconds	successfully entering monitor mode
Opt LED flickers green*	radio in channel scan mode
Opt LED flashes green every 5 seconds*	<ul style="list-style-type: none"><li>• radio in low power mode</li><li>• radio in tight squelch mode</li></ul>
LED on Wall Charger glows red	charging
LED on Standard Desktop Charger glows red	charging
LED on Rapid Desktop Charger glows yellow	radio/battery inserted but not yet charged, in trickle-charge mode
LED on Rapid Desktop Charger glows red	radio/battery charging in rapid-charge mode
LED on Rapid Desktop Charger glows green	rapid-charge mode finished, in trickle-charge mode

\* Function available depending upon programming of the OPT (Option) button on the keypad of your radio. Please contact your Motorola retailer for programmable feature options.

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\* Programming option available through your Motorola radio retailer.

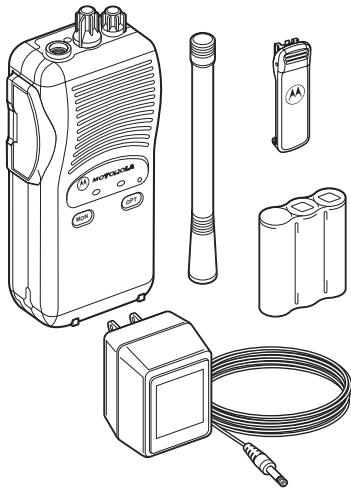
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# Packing Information

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## Contents of packaging:

- Spirit HP Radio
- Antenna
- 550 mAh NiCd Battery
- Wall Charger
- 3" Spring Action Belt Clip
- User Training Guide

## Standard Features Chart

The following chart contains the standard features for all Spirit HP radio models (X=standard feature; Opt.=optional). Please note that all Spirit HP models may not be available in all markets. Contact your dealer for more information.

To ensure optimum performance of this radio, you should thoroughly read and understand this user training guide.

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	Radio	Spring Action Belt Clip	Antenna	550 mAh NiCd Battery	User Training Guide	10-Hour Desktop Charger	10-Hour Wall Charger	Monitor/Volume Set	Channel Scan *	High/Low Power Switch	Tight/Loose Squelch Switch*
10-Channel Radio	X	X	X	X	X	Opt.	X	X	X	X	X

\* Programming option available through your Motorola radio retailer.

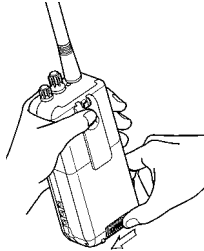
# Installing and Removing the Battery

Before installing or removing the battery, read the Safety Information on pp. 20-22.

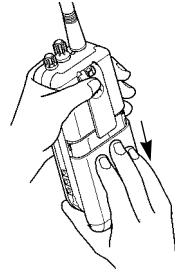


## CAUTION:

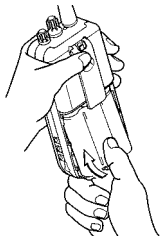
Removing plastic wrap from battery will destroy it and void battery warranty. Do not remove plastic wrap from battery.



- 1 Slide latch from right to left to unlock battery compartment.



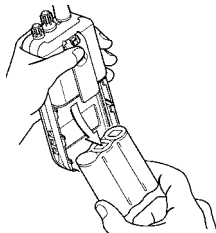
- 2 Slide battery cover down and away from radio to remove.



### **3A** Installing

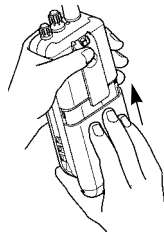
Insert battery into compartment.

Apply slight pressure until battery fits securely into compartment. Ensure that battery label faces up, and arrows on battery label point toward top of radio.



### **3B** Removing

Lift battery from bottom end, and remove it from radio housing.



**4** Slide cover on back of radio until it is securely in place.

**5** Slide “open” latch from left to right to lock battery cover in place.

# Charging the Battery

Before using your radio, you must charge the battery.



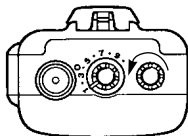
## WARNING:

Alkaline batteries can leak or explode, causing severe skin burns or eye injuries. Do not plug the Wall Charger into a radio containing an alkaline battery.

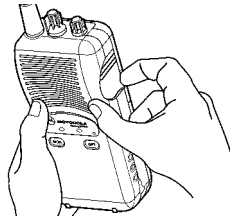
## IMPORTANT:

Transmitting while radio is charging in the Wall Charger can cause the radio transmitter or the charger to operate improperly. Do not transmit while radio is charging.

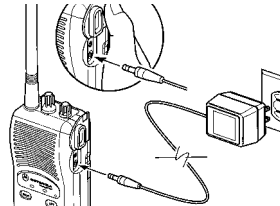
## Wall Charger



**1** Turn radio off.




**2** Lift protective covering with fingernail.



**3** Expose audio accessory connector.

**4** Insert charging adapter into lower hole of accessory connector.

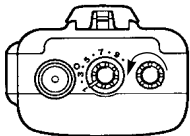
**5** Plug charging adapter into electrical outlet.

 The LED on the charging adapter glows red continuously while charger is plugged into wall and radio.

**6** Unplug charger from wall and radio after 10 hours.

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## Standard Desktop Charger

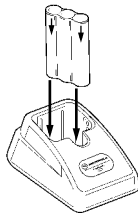


- 1 Turn radio off.

### **IMPORTANT:**

Transmitting while radio is charging in the Desktop Charger can cause the radio transmitter or the charger to operate improperly.

Do not transmit while radio is charging.



### **Battery Alone**

- 2 Insert battery into charging pocket with arrows pointing down.
- 3 Remove battery after 10 hours.



### **Battery Inside Radio**

- 2 Insert radio into charging pocket.
- 3 Remove radio after 10 hours (standard charger).



The LED on the charger glows red continuously while charger is plugged in and battery/radio is inserted.

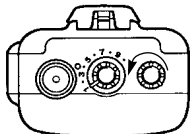
## Charging the Battery (cont'd)



### CAUTION:

The rapid charger runs on a 3-hour timer which begins counting each time you press the "Quick Charge" button. Removing battery or radio from charger before battery is fully charged, or removing and replacing battery or radio repeatedly during charging, and then pressing "Quick Charge" button again can overcharge or damage battery. Press "Quick Charge" button only when battery needs to be fully charged.

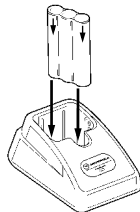
### Rapid Desktop Charger



- 1 Turn radio off.

### IMPORTANT:

Transmitting while radio is charging in the Desktop Charger can cause the radio transmitter or the charger to operate improperly. Do not transmit while radio is charging.



### Battery Alone

- 2 Insert battery into charging pocket with arrows pointing down.
- 3 Press "Quick Charge" button, and remove battery after 3 hours.



### Battery Inside Radio

- 2 Insert radio into charging pocket.
- 3 Press "Quick Charge" button, and remove radio after 3 hours.

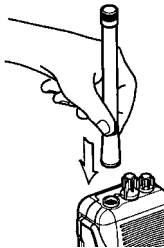


The LED on the charger glows:

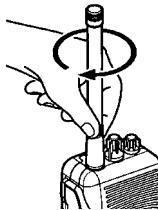
- yellow before charging, in trickle-charge mode
- red while in rapid-charge mode
- green when charging is complete

## Attaching the Antenna

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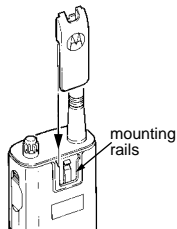
- 1** Place threaded end of antenna into threaded opening on top of radio.



- 2** Rotate antenna clockwise until it is securely attached to radio.

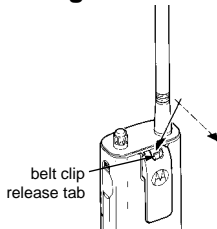
# Attaching and Removing the Belt Clip

## Attaching

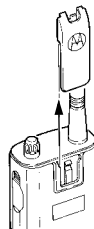


- 1 Find mounting rails on back of radio.
- 2 With Motorola logo facing up, position belt clip so that end with logo is nearest the mounting rails, and other end is toward bottom of radio.
- 3 Align mounting rails with grooves in belt clip. Slide belt clip down mounting rails until it clicks into place.

## Removing



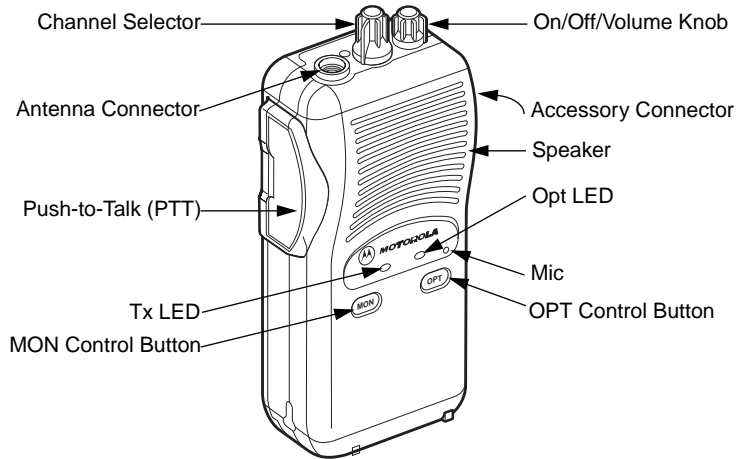
- 1 Find belt clip release tab on underside of belt clip (Motorola logo end).
- 2 Insert the end of a key between release tab and back surface of radio, and lift release tab.
- 3 Hold key firmly under release tab, and push upward slightly until belt clip begins to slide toward top of radio.



- 4 When belt clip is released (release tab is pressed against inside surface of belt clip), remove key and continue to slide belt clip upward and off the mounting rails.

# Controls, Buttons, and Indicators

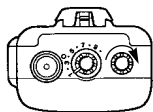
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# Basic Operation

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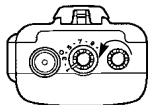
## Turn On



- 1 Turn radio on.

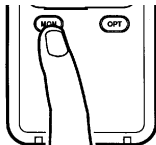
 A high-pitched beep sounds.

## Turn Off



- 1 Turn radio off.

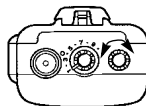
## Check Volume



- 1 Press and hold MON button until you hear a rushing noise.

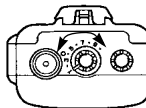
 A short, high-pitched beep sounds when you press MON button.

## Adjust Volume



- 1 Press and hold MON button until you hear a rushing noise.
- 2 Continue to hold MON button and rotate on/off knob to desired volume level.

## Select Channel

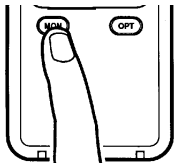


- 1 Rotate channel selector.  
The channel selector clicks into place for each channel.

## Monitor Channel

The MON button allows you to enter/exit monitor mode. When the radio is in monitor mode, you can hear all conversations on a particular channel, including those outside your talk group.

To enter/exit monitor mode:



- 1 Press and release MON.

### IMPORTANT:

FCC regulations require you to monitor channels before transmitting.

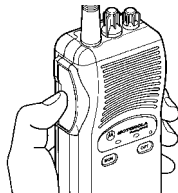



A high-pitched tone sounds when you enter or exit monitor mode.



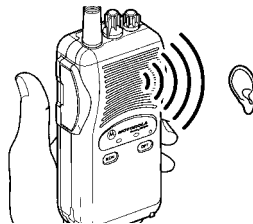
The Tx LED glows solid yellow for 4 seconds when you successfully enter monitor mode.

## Transmit



- 1 Press PTT.
  - 2 Hold radio upright while speaking clearly into mic.
-  The Tx LED glows solid red.

## Receive



- 1 Release PTT to hear voice activity.

### NOTE:

The radio performs best if the microphone is two to three inches away from the lips, and the radio and antenna are in a vertical position.

### Time-Out Timer

The time-out timer limits the amount of time you have to transmit your message.



When you reach the time limit, a short, low-pitched beep sounds, and your transmission is cut off.

### Busy Channel Lockout

Several talk groups may share one channel. Busy channel lockout blocks out conversations outside your own group. At the same time, this feature monitors the channel and prevents you from interrupting conversations outside of your own group.



If you try to transmit over another user group, a series of low-pitched beeps sounds until you release the PTT.



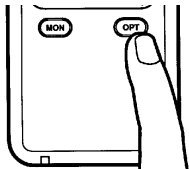
The Tx LED flashes red when receiving.

# Control Button

\* Programming option available through your Motorola radio retailer.

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## Option Button (OPT)



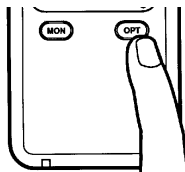
Your Motorola radio retailer can program the OPT button to perform one of the following functions:

- Channel Scan\*
- Tight/Loose Squelch\*

## Channel Scan

Channel Scan mode allows you to monitor voice activity on all programmed channels. When the radio detects voice activity, it stops scanning and allows you to listen.

To enter/exit channel scan mode:



**1** Press and release OPT button.



A high-pitched tone sounds when you enter channel scan mode.

A medium-pitched tone sounds when you exit channel scan mode.



The Opt LED flickers green while radio is in channel scan mode.

---

**NOTE:**

If you change the channel while the radio is in channel scan mode, it will automatically exit channel scan mode.

**NOTE:**

If the radio is in monitor mode when you enter channel scan mode, it will scan for all voice activity, including those conversations outside your talk group.

**Nuisance Channel Delete**

Nuisance Channel Delete prevents the radio from scanning unwanted channels. You can delete channels only while the radio is in channel scan mode.

**To eliminate a channel:**

- 1 Press and hold OPT button for 2 seconds while radio is stopped on unwanted channel.



Two short, medium-pitched tones sound when you have successfully deleted an unwanted channel. A short, low-pitched beep sounds if a channel cannot be deleted.

**NOTE\*:**

If you exit scan mode or turn off the radio and reenter scan mode, the radio scans all channels, including the ones you previously deleted.

**NOTE\*:**

For transmitting while the radio is in channel scan mode, your dealer has programmed one of the following channel scan features:

**Talkback Scan**-When you press the PTT after receiving voice activity on **any** channel, you can transmit immediately on that channel, even if the channel selection knob is set to a different channel.

**Home Revert Scan**-When you press the PTT, your radio always transmits on the channel indicated by the channel selector knob.

## Control Button (cont'd)

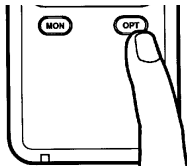
\* Programming option available through your Motorola radio retailer.

### High/Low Power Switch (standard)

**High/Low Power Switch** allows you to select from two power levels which have been preprogrammed at the factory. When you turn on the radio, it is in high power mode.

High power mode can improve the clarity of voice activity in areas where signals are weak. Low power mode extends battery life.

**To switch between high and low power modes:**



**1** Press and release OPT button.



A medium-pitched tone sounds when entering low power mode. A high-pitched tone sounds when entering high power mode.

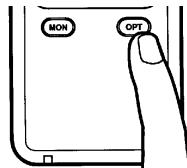


The Opt LED flashes **green** (every 4 seconds) while radio is in low power mode.

### Tight/Loose Squelch Switch\*

**Tight/Loose Squelch Switch** allows you to select from two squelch settings, which have been preprogrammed by your dealer. When you turn on the radio, it is in loose squelch mode. Loose squelch is the standard mode. Tight squelch provides additional protection from interference, but you may not be able to hear weak transmissions.

**To switch between tight and loose squelch modes:**



**1** Press and release OPT button.



A high-pitched tone sounds when entering tight squelch mode. A medium-pitched tone sounds when entering loose squelch mode.



The Opt LED flashes **green** (every 4 seconds) while radio is in tight squelch mode.

# Pre-Programmed Radio Frequencies

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## Spirit HP UHF Model

Channel	Frequency (MHz)	Code Freq. (Hz)	Motorola SU42/SV52 Code
1	464.5	67.0	001
2	464.5	77.0	003
3	464.5	88.5	005
4	464.5	179.9	023
5	464.5	none	000
6	464.55	67.0	001
7	464.55	82.5	003
8	464.55	94.8	005
9	464.55	179.9	023
10	464.55	none	000

## Spirit HP VHF Model

Channel	Frequency (MHz)	Code Freq. (Hz)	Motorola SU42/SV52 Code
1	151.625	67.0	001
2	151.625	77.0	003
3	151.625	88.5	005
4	151.625	179.9	023
5	151.625	none	000
6	151.955	67.0	001
7	151.955	82.5	003
8	151.955	94.8	005
9	151.955	179.9	023
10	151.955	none	000

If there are any questions regarding these frequencies or operation of your radio, please contact Customer Service at **800-448-6686**.

# Accessories

Please note that all accessories may not be available in all markets. Contact your Motorola radio retailer for more information.

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## **Chargers & Accessories:**

- 120V - 3 Hour Desktop Battery Charger
- 120V - 10 Hour Desktop Battery Charger
- 120V - 10 Hour Wall Charging Adapter
- 120V - 3 Hour 6 Unit Charger

## **Batteries:**

- 550 mAh NiCd Battery

## **Antennas:**

- VHF Heliflex Antenna, 146-174 MHz (standard antenna)
- VHF Stubby Antenna, 146-162 MHz
- VHF Stubby Antenna, 162-174 MHz
- UHF Whip Antenna, 403-520 MHz (standard antenna)
- UHF Stubby Antenna, 438-470 MHz

## **Carrying Cases & Accessories:**

- Low Capacity Leather Case with Beltloop
- Low Capacity Nylon Carry Case with Beltloop
- Replacement Spring Action Belt Clip 3"
- Waterproof Bag
- Swivel Beltloop Adapter
- Spacer Kit

## **Audio Accessories:**

- Light Weight Headset with Swivel Boom Microphone (without VOX)
- Medium Weight Headset with Swivel Boom Microphone (without VOX)
- Earbud
- Earbud with Clip Microphone and PTT
- Remote Speaker Microphone
- VOX Adapter Kit

# Safety and General Information

IMPORTANT INFORMATION ON SAFE AND EFFICIENT OPERATION  
READ THIS INFORMATION BEFORE USING YOUR RADIO

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

## Radio Frequency RF Operational Characteristics

**To transmit (talk) you must push the Push-To-Talk button; to receive (listen) you must release the Push-To-Talk button.** When the radio is transmitting, it generates radio frequency (RF) energy; when it is receiving, or when it is off, it does not generate RF energy.

## Radio Operation and EME Exposure

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

- United States Federal Communications Commission, Code of Federal Regulations; 47 CFR part 2 sub-part J
- American National Standards Institute (ANSI) / Institute of Electrical and Electronic Engineers (IEEE) C95.1-1992
- Institute of Electrical and Electronic Engineers (IEEE) C95.1-1999 Edition
- National Council on Radiation Protection and Measurements (NCRP) of the United States, Report 86, 1986

- International Commission on Non-Ionizing Radiation Protection (ICNIRP) 1998
- Ministry of Health (Canada) Safety Code 6. Limits of Human Exposure to Radiofrequency Electromagnetic Fields in the Frequency Range from 3 kHz to 300 GHz, 1999
- Australian Communications Authority Radiocommunications (Electromagnetic Radiation - Human Exposure) Standard 1999 (applicable to wireless phones only)

**To assure optimal 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:**

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## Two-way Radio Operation

When using your radio, **hold the radio in a vertical position with the microphone one to two inches (2.5 to 5 centimeters) away from your mouth.**



## Body-worn Operation

To maintain compliance with FCC RF exposure guidelines, if you wear a radio on your body when transmitting, always place the radio in a **Motorola approved clip, holster, case, or body harness for this product.** Use of non-Motorola-approved accessories may exceed FCC RF exposure guidelines. **If you do not use a Motorola approved body-worn accessory and are not using the radio in the intended use positions along side of the head in the phone mode or**

**in front of the face in the two-way radio mode, then ensure the antenna and radio is kept the following minimum distances from the body when transmitting:**

- **Phone or Two-way radio mode: one inch (2.5 centimeters)**
- **Data operation using any data feature with or without an accessory cable: One inch (2.5 centimeters)**

## Antenna Care

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

**DO NOT hold the antenna when the radio is “IN USE.”** Holding the antenna affects call quality and may cause the

radio to operate at a higher power level than needed.

## Approved Accessories

For a list of approved Motorola accessories look in the appendix or accessory section of your radio's User Guide.

## Electromagnetic Interference/Compatibility

### NOTE:

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

## Facilities

To avoid electromagnetic interference and/or compatibility conflicts, turn off your radio in any facility where posted notices

## Safety and General Information (cont'd)

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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 on board an aircraft. Any use of a radio must be in accordance with applicable regulations per airline crew instructions.

### Medical Devices

#### • Pacemakers

The Health Industry Manufacturers Association recommends that a minimum separation of 6 inches (15 centimeters) be maintained between a handheld wireless radio and a pacemaker. These recommendations are consistent with those of the U.S. Food and Drug Administration.

Persons with pacemakers should:

- ALWAYS keep the radio more than 6 inches (15 centimeters) 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 you have any reason to suspect that interference is taking place.

#### • 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.

#### • Other Medical Devices

If you use any other personal medical device, consult the manufacturer of your device to determine if it is adequately shielded from RF energy. Your physi-

cian may be able to assist you in obtaining this information.

## Safety and General

### Use While Driving

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

When using 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.



## Operational Warnings

### WARNING

#### For Vehicles with an Air Bag

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, unless it is a radio type especially qualified for use in such areas as "Intrinsically Safe" (for example, Factory Mutual, CSA, UL, or CENELEC). 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 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 radio." Obey all signs and instructions.



## Operational Cautions

### Caution

#### 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 such as jewelry, keys, or beaded chains touch exposed terminals. The conductive material may complete an electrical circuit (short circuit) and become quite hot. Exercise care in handling any charged battery, particularly when placing it inside a pocket, purse, or other container with metal objects.

## Safety and General Information (cont'd)

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### Recycling/Disposal of Batteries

The U.S. Environmental Protection Agency (EPA) classifies used Ni-Cd batteries as hazardous waste, unless certain exemptions apply.

At the end of your battery's useful life, it can be recycled. However, recycling facilities may not be available in all areas.

Under various state or local laws, such batteries must be recycled or disposed of properly, and cannot be dumped in landfills or incinerators.

Motorola fully endorses and encourages the recycling of Ni-Cd batteries. In the United States, you can ship your Ni-Cd batteries to the following address post paid to be recycled:

INMETCO  
P.O. Box 720  
245 Porteville Road  
Ellwood City, PA 16117

Tel:(412) 758-5515  
Fax:(412) 758-9311

You should consider the methods of collecting, labeling, and shipping used Ni-Cd batteries. Consult your federal, state, or local EPA for specific legal requirements and for recycling options in your area.

Motorola, as a responsible corporate citizen, has always been concerned with the protection of the environment. Please feel free to call our toll-free number, 1-800-422-4210, for further battery information.

### Handling/Charging Batteries

To ensure peak performance, batteries should be fully charged before use and periodically thereafter. During standard use, the battery lasts approximately 8 hours (standard version) or 4 hours (compact version) when fully charged.

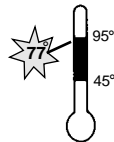
Standard use has a 5-5-90 duty cycle. This means that the radio transmits 5%, receives 5%, and remains in standby mode 90% of the time.

#### CAUTION:

Charging battery with non-Motorola equipment voids battery warranty and can damage battery.  
Use only Motorola battery chargers.

#### IMPORTANT:

Charging batteries in cold temperatures (below 45° F) can result in electrolyte leakage and may destroy the battery. Charging in hot temperatures (above 95° F) will not damage the battery, but will reduce charge capacity. Charge batteries at approximately 77° F.



# Troubleshooting

Symptom	Problem	Solution
1. Radio is dead.	<ul style="list-style-type: none"><li>1a. Battery may not be properly charged.</li><li>1b. Battery may not be positioned correctly in the radio.</li></ul>	<ul style="list-style-type: none"><li>1a. Press and hold push-to-talk (PTT) button while looking at the LED. If the LED does not light or turns off while you are still holding the PTT, you should charge the battery.</li><li>1b. Refer to page 4 for battery installation instructions.</li></ul>

Symptom	Problem	Solution
2. Battery does not charge or last long enough.	<ul style="list-style-type: none"><li>2a. Battery may be incorrectly charged.</li><li>2b. Battery may not be fully charged.</li><li>2c. Standard battery life (4 W radios at 4 hours and 2 W radios at 6 hours) is based on a duty cycle where the radio is transmitting 5%, receiving 5%, and in standby mode 90% of the time. Usage different than this duty cycle will result in a different battery life.</li><li>2d. Battery or charger contacts may be dirty.</li></ul>	<ul style="list-style-type: none"><li>2a. If you use a desktop charger, make sure the battery is positioned properly in the charger base. Refer to page 6 in this manual. If you are using a wall charger, make sure that the LED on the charger glows red, indicating correct charging status.</li><li>2b. Turn radio off while charging battery. Charging time will be doubled if the radio is on while charging.</li><li>2c. If you use your radio for a longer period of time than the standard duty cycle, you may need to recharge your battery again, or you may want to during the day.</li><li>2d. Clean battery and charger contacts often.</li></ul>

## Troubleshooting (cont'd)

Symptom	Problem	Solution
3. Radio will not talk to other radios in system.	3a. Radios may be on different frequencies, PL, or DPL codes.	3a. Check with your dealer to verify frequencies, PL, and DPL codes.
4. Hearing other conversations or noise on your radio.	4a. Users do not have exclusive use of frequencies. Frequencies must be shared using proper radio etiquette.	4a. Coded squelch screens out other users' conversations on your radio, but other users who share your frequency still hear your conversations. Coded squelch is also called: Private-Line, PL, Quiet Call, Channel Guard, CTCSS, etc.

Symptom	Problem	Solution
5. Limited talk range.	5a. Using your radio in basements, steel structures, concrete buildings, automobiles, or heavy foliage decreases its range. 5b. Operating the radio while it is close to your body (i.e. in a pocket or on a belt) and while you are using audio accessories decreases its range because of the shielding effect of your body.	5a. These are standard characteristics of transmitters. For best talk range, always use the longer antenna. Stubby antennas reduce talk range by 50%. External magnetic mount antennas are recommended for best range when communicating in an automobile. 5b. The higher the radio is held, the better the talk range. Use of audio accessories is only recommended in close range situations for best results.

Symptom	Problem	Solution
6. You hear constant static from speaker.	6a. The battery may be discharged. 6b. When using your radio around computers or electronic equipment, you may hear static or interference from these devices.	6a. Press and hold PTT while looking at the LED. If the LED does not light or turns off while still holding the PTT, the battery should be charged. 6b. Ask your dealer to enable coded squelch (PL). Coded squelch screens out this type of interference. Coded squelch may also be referred to as: Private-Line, PL, Quiet Call, Channel Guard, CTCSS, etc.
7. You hear a low-pitched beep when you turn on the radio.	7. The radio needs to be repaired.	7a. If your radio is still under warranty, send it in to the factory for repairs. 7b. If your warranty is expired, contact your dealer for further information.

Symptom	Problem	Solution
8. You have tried a solution for any of the above symptoms, without success.	8. The radio may need to be repaired.	8. If the unit is still under warranty, return it to the place of purchase for repairs, or contact your nearest Motorola dealer listed in your local yellow pages.

# FCC Licensing and Service Information

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## FCC Licensing

Your Motorola radio operates on FM radio communication frequencies and is subject to the **rules and Regulations of the Federal Communications Commission (FCC)**. The FCC requires that all operators using Private Land Mobile frequencies obtain a radio license before operating their equipment.

To have the license forms mailed to you, call the FCC forms hotline at:

**1-800-418-FORM**

(1-800-418-3676)

For questions concerning the license application, contact the FCC at:

**1-888-CALL-FCC**

(1-888-225-5322)

Or:

**<http://www.fcc.gov>**

Before filling out your application, you must decide which frequency(ies) you can operate on. See the pre-programmed frequency tables on page 17. For questions on determining your radio frequency, please call Motorola Product Services at:

**1-800-448-6686**

## Service

Because this unit contains a radio transmitter, most local governments prohibit anyone from making internal adjustments to the transmitter unless specifically licensed to do so by government regulations. If your radio fails to operate or any operational difficulties arise, contact your local Motorola retailer.

Proper repair and maintenance procedures assure efficient operation and long life for this radio.

# Limited Warranty & Liability

## Motorola Communication Products

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### I. WHAT THIS WARRANTY COVERS AND FOR HOW LONG:

MOTOROLA ELECTRONICS PTE LTD ("MOTOROLA") warrants the MOTOROLA manufactured TWO-WAY RADIO Products listed below ("Product") against defects in material and workmanship under normal use and service for a period of time from the date of purchase as scheduled below:

TWO-WAY RADIO Portable Units . . . . . One (1) Year  
Product Accessories (including battery, antenna,  
charger, belt clip etc.) . . . . . One (1) Year

Motorola, at its option, will at no charge either repair the Product (with new or reconditioned parts), replace it (with a new or reconditioned Product), or refund the purchase price of the Product during the warranty period provided it is returned in accordance with the terms of this warranty. Replaced parts or boards are warranted for the balance of the original applicable warranty period. All replaced parts of Product shall become the property of MOTOROLA.

This express limited warranty is extended by MOTOROLA to the original end user purchaser only and is not assignable or transferable to any other party. This is the complete warranty for the Product manufactured by MOTOROLA. MOTOROLA assumes no obligations or liability for additions

or modifications to this warranty unless made in writing and signed by an officer of MOTOROLA. Unless made in a separate agreement between MOTOROLA and the original end user purchaser, MOTOROLA does not warrant the installation, maintenance or service of the Product.

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.

### II. GENERAL PROVISIONS:

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 exclusive remedy. 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 LIMITED TO THE DURATION OF THIS LIMITED WARRANTY. IN NO EVENT SHALL MOTOROLA BE LIABLE FOR DAMAGES IN EXCESS OF THE PURCHASE PRICE OF THE

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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.

**III. WHAT THIS WARRANTY DOES NOT COVER:**

- 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, or neglect.
- C) Defects or damage from improper testing, operation, maintenance, installation, alteration, modification, or adjustment.
- D) Breakage or damage to antennas unless caused directly by defects in material workmanship.
- E) A Product subjected to unauthorized Product modifications, disassemblies or repairs (including, without limitation, the addition to the Product of non-Motorola supplied equipment) which adversely affect performance of the Product or interfere with Motorola's normal warranty inspection and testing of the Product to verify any warranty claim.
- F) Product which has had the serial number removed or made illegible.
- G) Rechargeable batteries if:

- 1) any of the seals on the battery enclosure of cells are broken or show evidence of tampering.
- 2) the damage or defect is caused by charging or using the battery in equipment or service other than the Product for which it is specified.
- H) Freight costs to the repair depot.
- I) 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.
- J) Scratches or other cosmetic damage to Product surfaces that does not effect the operation of the Product.
- K) Normal and customary wear and tear.

# Limited Warranty & Liability

## Motorola Communication Products (Cont'd)

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### **IV. PATENT AND SOFTWARE PROVISIONS:**

MOTOROLA will defend, at its own expense, any suit brought against the end user purchaser to the extent that it is based on a claim that Product or parts infringe a United States patent, and MOTOROLA will pay those costs and damages finally awarded against the end user purchaser in any such suit which are attributable to any such claim, but such defense and payments are conditioned on the following: a) that MOTOROLA will be notified promptly in writing by such purchaser of any notice of such claim; b) that MOTOROLA will have sole control of the defense of such suit and all negotiations for its settlement or compromise; and c) should the Product or parts become, or in MOTOROLA's opinion be likely to become, the subject of a claim of infringement of a United States patent, that such purchaser will permit MOTOROLA, at its option and expense, either to procure for such purchaser the right to continue using the Product or parts or to replace or modify the same so that it becomes non-infringing or to grant such purchaser a credit for the Product or parts as depreciated and accept its return. The depreciation will be an equal amount per year over the lifetime of the Product or parts as established by MOTOROLA.

MOTOROLA will have no liability 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 for the use of ancillary equipment or software not furnished by MOTOROLA which is attached to

or used in connection with the Product. The foregoing states the entire liability of MOTOROLA with respect to infringement of patents by the Product or any parts thereof.

### **V. HOW TO GET WARRANTY SERVICE:**

Spirit HP Radios: One (1) year.

Spirit HP Accessories: One (1) year.

Rechargeable Batteries will be replaced during the applicable warranty period if:

- a) the battery capacity falls below 80% of rated battery capacity or,
- b) the battery develops leakage.

# Computer Software Copyrights

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The Motorola equipment described in this manual may include copyrighted Motorola computer programs stored in semiconductor memories or other media. Laws in the United States and other countries preserve for Motorola certain exclusive rights for copyrighted Motorola software, including the exclusive right to copy or reproduce in any form the copyrighted software. Accordingly, any copyrighted Motorola software contained in the Motorola equipment described in this manual may not be copied or reproduced in any manner without the express permission of Motorola, Inc. Furthermore, the purchase of Motorola equipment shall not be deemed to grant either directly or by implication, estoppel, or otherwise any license under the copyrights, patents or patent applications of Motorola, except for the normal nonexclusive, royalty free license to use arising by operation of law in the sale of this product.


# Patent Notice

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This product is covered by one or more of the following United States Patents:

5896277	5699006	D399821
5894592	5734975	D383745
5894292	5742484	D387758
5893027	5861850	D389827
5864752	D408396	D389158
5789098	D395882	D389139

Other Patents Pending.

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