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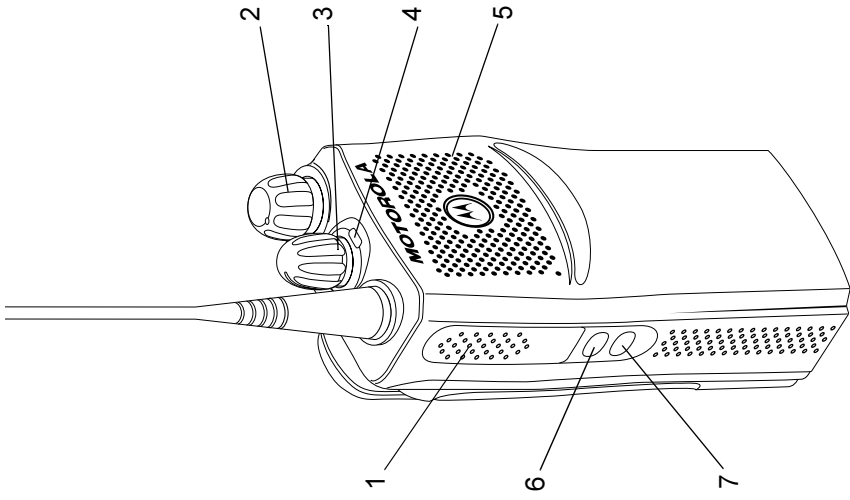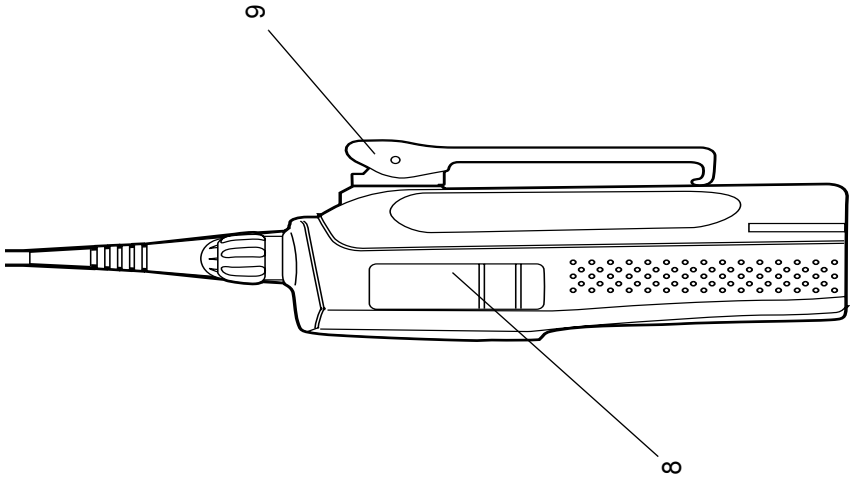
Commercial Series

Radio CP140

User Guide

6866550D02-O

CONTENTS

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RADIO OVERVIEW

This user guide covers the operation of the CP140 Portable Radios.

ATTENTION!

This radio is restricted to occupational use only to satisfy ICNIRP RF energy exposure requirements. Before using this product, read the RF energy awareness information and operating instructions in the Product Safety and RF Exposure booklet (Motorola Publication part number 6864117B25_) to ensure compliance with RF energy exposure limits.

OPERATION AND CONTROL FUNCTIONS

Radio Controls

The numbers below refer to the illustrations on the inside front cover.

1. **Push-to-talk (PTT)**
   Press and hold down this button to talk; release it to listen.

2. **On-Off / Volume Knob**
   Used to turn the radio on or off, and to adjust the radio's volume.

3. **Channel Selector Knob**
   Used to switch the radio to different channels.

4. **LED Indicators**
   Indicate radio status:
   Green: Solid during power up routine; off after successful power up; flashing when scanning.
   Red: Solid - transmitting; Flashing when transmitting - low battery:
   Flashing - channel is busy receiving.
   Yellow: Solid when radio is in monitor mode,or is sending a selective call or call alert;
   Flashing - receiving a selective call or call alert.

5. **Microphone/Speaker**
   Hold the microphone 2.5 to 5 cm (1-2 inches) from your mouth, and speak clearly into it.

6. **Side Button 1**

7. **Side Button 2**

8. **Accessory Connector**
   Connects remote microphones, remote earphones and other accessories. Replace dust cap when not in use.

9. **Belt Clip**

Programmable Buttons

Your radio has two programmable buttons. Your dealer can program these buttons as shortcuts to various radio features.

Check with your dealer for a complete list of functions your radio supports.

Programmable buttons include:

- Side Buttons (S1 and S2)

Some buttons can access up to two features, depending on the type of button press:

- **short press**—quickly pressing and releasing the programmable buttons

- **long press**—pressing and holding the programmable buttons for a minimum of 2.5 seconds

- **hold down**—pressing and holding down the programmable buttons while checking status or making adjustments

The following table is a summary of programmable radio features and corresponding page references.

In the "Button" column, have your dealer record the name of the programmable button next to the feature that has been programmed to it.

Also, where appropriate, have your dealer indicate whether the button press requires a short press, a long press, or needs to be held down.

Feature	Indicator	Short Press	Long Press	Hold Down	Page	Button
Battery Indicator	LED	—	—	Checks the battery charge status.	8	
Volume Set	—	—	—	Sounds a tone for adjusting the radio's volume level.	14	
Monitor	—	A long press initiates Monitor. A short press cancels Monitor.		Monitors the selected channel for any activity.	16	
Voice Operated Transmission (VOX)	—	Toggle VOX on and off.†		—	16	
Repeater/ Talkaround	—	Toggles between using a repeater or transmitting directly to another radio.†		—	20	
Scan/Nuisance Channel Delete	—	Starts or Stops the Scan operation.	Deletes a nuisance channel while scanning.	—	21	
Escalert	—	Toggle escalert on and off.†		—	23	

† This function is activated by EITHER a short OR a long press, but not both.

Feature	Indicator	Short Press	Long Press	Hold Down	Page	Button
Squelch	—	Toggle squelch level between tight and normal squelch.†		—	23	
Power Level	—	Toggle transmit power level between High and Low power.†		—	23	
Option Board	—	Toggle the option board on and off.†		—	23	

† This function is activated by EITHER a short OR a long press, but not both.

Indicator Tones

High pitched tone □ Low pitched tone ■

□ □ ___	Self Test Pass Tone
■■ ___	Self Test Fail Tone
□ □ ___	Positive Indicator Tone
□ ___	Negative Indicator Tone
□ ___	Good Key Tone
■ ___	Bad Key Tone

Some programmable buttons use tones to indicate one of two modes:

Programmable Buttons	Positive Indicator Tone	Negative Indicator Tone
Scan	**Start**	**Stop**
Power Level	**High**	**Low**
Squelch	**Tight**	**Normal**
Repeater/ Talkaround	**Does not use** repeater	**Uses** repeater
VOX	**Enabled**	**Disabled**
Silent Monitor/ Open Squelch	—	**Enabled**
Option Board	**Enabled**	**Disabled**
Escalert	**Enabled**	**Disabled**

Battery Charge Status

You can check battery charge status if your dealer has preprogrammed one of the programmable buttons. Hold down the preprogrammed **Battery Indicator** button. The charge status is shown by the colour of the LED indicator.

Battery Level	LED Indicator
Good	Green
Sufficient	Yellow
Low	Flashing Red
Very Low	None

LED Indicator

The LED shows radio status as follows:

LED	State	Indication
Radio Call		
Red	Solid	Radio transmitting.
Red	Flashing	Receiving.
Red	Flashing	Channel busy.
Scan		
Green	Flashing	Radio is scanning.
Call Alert		
Yellow	Flashing	Receiving a Call Alert
Selective Call		
Yellow	Flashing	Receiving a Selective Call
Monitor/Open Squelch		
Yellow	Solid	Radio in monitor mode.
Low Battery Level		
Red	Flashing	Flashing when transmitting.

GETTING STARTED

BATTERY INFORMATION

Charging Your Battery

This radio is powered by a either a nickel-metal hydride (NiMH), or a lithium-ion (Li-lon) rechargeable battery. Charge the battery before use to ensure optimum capacity and performance. The battery was designed specifically to be used with a Motorola charger. Charging in non-Motorola equipment may lead to battery damage and void the battery warranty.

Note: When charging a battery attached to a radio, turn the radio off to ensure a full charge.

The battery should be at about 25°C (77°F) (room temperature), whenever possible. Charging a cold battery (below 10°C [50°F]) may result in leakage of electrolyte and ultimately in failure of the battery. Charging a hot battery (above 35°C [95°F]) results in reduced discharge capacity, affecting the performance of the radio. Motorola rapid-rate battery chargers contain a temperature-sensing circuit to ensure that batteries are charged within the temperature limits stated above.

If a battery is new, or its charge level is very low, you will need to charge it before you can use it. When the battery level is low and the radio is in transmit mode you will see the LED indicator flash red. Upon release of the PTT button, you will hear an alert tone.

Note: Batteries are shipped uncharged from the factory. Always charge a new battery 14 to 16 hours before initial use, regardless of the status indicated by the charger.

Desktop Rapid Charger

To Charge the Battery

| 1 | Turn the radio off. |

| 2 | Place the battery, with or without the radio, in the charger pocket. |
| | • The charger LED indicates the charging progress. |

LED color	Status
No LED Indication	Battery inserted incorrectly or battery not detected.
Single Green Flash	Successful charger power-up.
Flashing Red [a]	Battery unchargeable or not making proper contact.
Red	Battery is charging.
Flashing Yellow	Battery in charger but waiting to be charged. The battery temperature may be too hot or too cold. The voltage may be lower than the predetermined threshold level for charging.
Flashing Green [b]	Battery 90% (or more) charged.
Green	Battery fully charged.

a Remove the battery from the charger and use a pencil eraser to clean the three metal contacts on the back of the battery. Replace the battery in the charger. If the LED indicator continues to flash red, consult your dealer.

b A standard battery may require 90 minutes to charge to 90% capacity.

ACCESSORY INFORMATION

Attaching the Battery
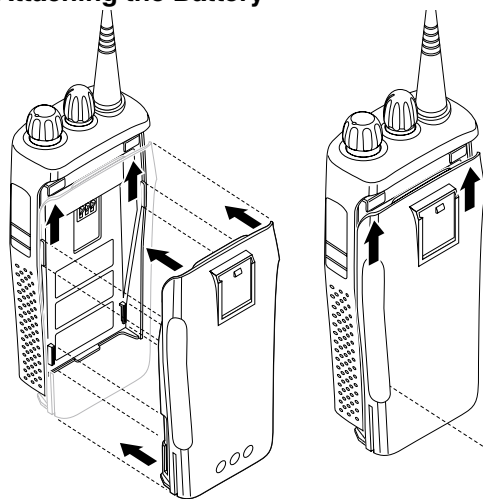
1 Align the battery to the battery rails on the back of the radio (approximately 1 cm from the top of the radio.)

2 Press the battery firmly to the radio and slide the battery upward until the latch snaps into place.

3 Slide the battery latch, located on radio bottom, into the lock position.

Removing the Battery

Battery Latch

Locked   Un-locked
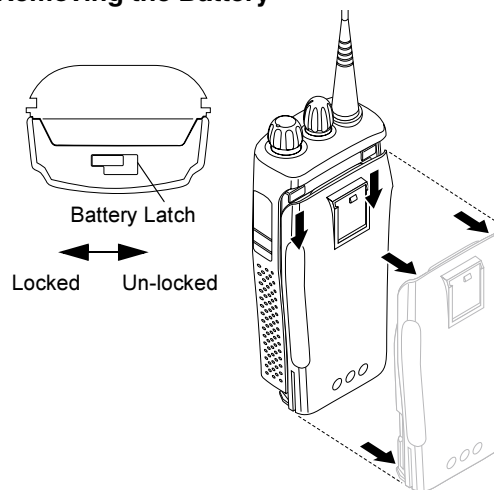
1 Turn off the radio if it is turned on.

2 Slide the battery latch into the unlock position. Disengage by pushing downward and holding the latch towards the front of the radio.

3 With the battery latch disengaged, slide the battery down from the top of the radio approximately 1 cm. Once the battery is free from the battery rails, lift it directly away from the radio.

Attaching the Antenna

Removing the Antenna
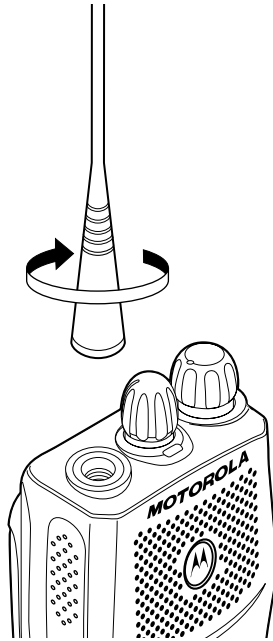
Turn the antenna clockwise to attach it.
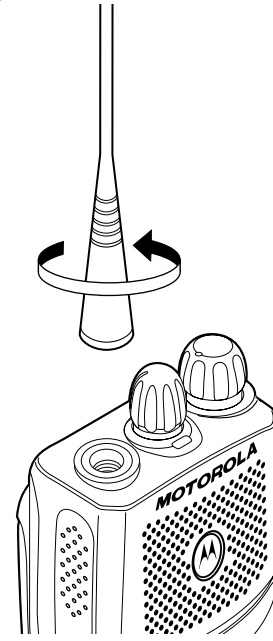
Turn the antenna counter-clockwise to remove it.

Attaching the Belt Clip

Removing the Belt Clip
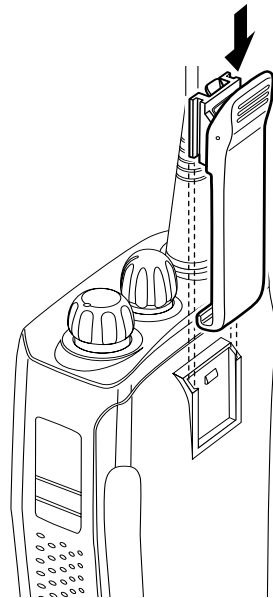
Belt Clip Tab

1 Align the grooves of the belt clip with those of the battery.

2 Press the belt clip downward until you hear a click.
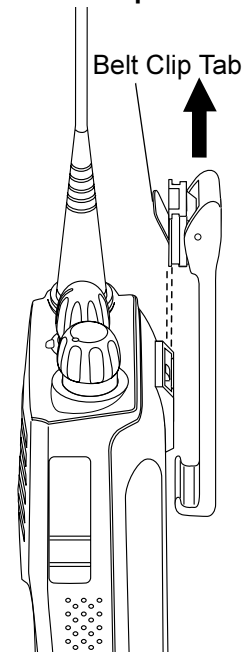
1 Use a key to press the belt clip tab away from the battery to unlock the belt clip.

2 Slide the belt clip upward to remove it.

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TURNING THE RADIO ON OR OFF

ON   **OFF**

Turn the **On/Off/Volume Control** knob clockwise. If power-up is successful, you will hear the Self-Test Pass Tone (☐☐____) and see the LED flash green.

If the radio fails to power up, you will hear the Self Test Fail Tone (████___).
The radio will need to be returned for re-programming.

Turn the **On/Off/Volume Control** knob counter-clockwise until you hear a click and the LED indicator turns off.
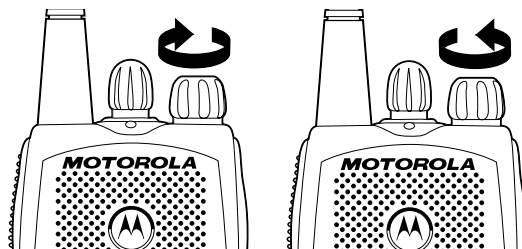
ADJUSTING THE VOLUME

Turn the **On/Off/Volume Control** knob clockwise to increase the volume, or counterclockwise to decrease the volume.

—*or*— use the pre-programmed **Volume Set** button

1	Hold down the **Volume Set** button; you will hear a continuous tone.
2	Turn the **On/Off/Volume Control** knob to the desired volume level.
3	Release the **Volume Set** button.

SELECTING A RADIO CHANNEL

Your radio offers 16 channels.

Note: Due to government regulations, some channels may not be programmed. Ask your dealer for more information.

To select a channel, turn the **Channel Selector** knob clockwise or counterclockwise until you reach the desired channel.

RECEIVING A CALL

1   Turn your radio on.

2   Adjust the radio's volume.

3   Select the desired channel.

4   Listen for voice activity. The LED indicator flashes red while your radio is receiving.

5   To respond, hold the radio vertically 2.5 to 5 cm (1 to 2 inches) from your mouth. Press the **PTT** to talk; release it to listen

Note: The system may have a limited call time and the call may be terminated automatically if this call time is exceeded.

SENDING A CALL

1   Turn your radio on.

2   Select the desired channel.

3   Monitor for traffic (using the pre-programmed **Monitor** button) before transmitting to ensure that you do not 'talk over' someone who is already transmitting.

3   Hold the radio vertically 2.5 to 5 cm (1 to 2 inches) from your mouth. Press the **PTT** to talk; release it to listen.

Note: Your radio may be configured for 'Transmit Inhibit' under certain conditions (e.g. when the channel is in use by others) in which case, the channel busy tone will sound when you press the PTT or call button to indicate that transmission is inhibited.

MONITORING

It is important to monitor traffic before transmitting to ensure that you do not "talk over" someone who is already transmitting.

1	Press and hold the preprogrammed **Monitor** button to access channel traffic.

2	Once channel traffic has cleared, proceed with your call by pressing the **PTT** button.

3	A long press of the preprogrammed **Monitor** button places the radio in Permanent Monitor mode.
	• You hear a high-pitched tone.

4	A short press of the **Monitor** button cancels Permanent Monitor mode and returns the radio to normal operation.

VOX OPERATION

When hands-free operation is desired, your radio can be activated by voice alone using the VOX feature when you speak through an accessory that is connected to your radio.

Connecting a VOX Headset

1	Turn off your radio.

2	Connect the VOX accessory to your radio and turn the radio on.

3	To enable or disable VOX operation, press the preprogrammed **VOX** button.
	Note: Pressing **PTT** disables VOX.

–or–

	Select a channel that has been programmed for VOX by your dealer to enable VOX.
	Note: You do not need to press a preprogrammed **VOX** button.
	Note: Pressing the **PTT** button disables VOX.

4	Select a channel that has **not** been preprogrammed for VOX by your dealer to disable VOX.

ENABLE/DISABLE HEADSET SIDETONE

Your dealer can program your radio to hear your voice through the headset during transmit.

VOX Headset

1	Turn off your radio.
2	Connect the VOX accessory to your radio.
3	Turn the radio on. During transmit, the sidetone will be enabled, if programmed in the radio.
4	To disable the headset sidetone, turn off your radio and turn the radio on again.

Non-VOX Headset with In-Line PTT

1	Turn off your radio.
2	Connect the non-VOX accessory to your radio.
3	Press and hold the In-line PTT on your headset.
4	Turn the radio on and release the PTT once the radio has completed start-up.
5	To disable the headset sidetone, turn off your radio and turn the radio on again.

Notes:

RADIO CALLS

RECEIVING A SELECTIVE CALL

When you receive a selective call:

- The LED indicator flashes yellow, if programmed by your dealer/programmer.

- You hear two high-pitched tones.

1   To acknowledge the call, press and release the **PTT** button.

2   Press and hold the **PTT** button to talk; release to listen.

RECEIVING A CALL ALERT PAGE

When you receive a Call Alert page:

- The LED indicator flashes yellow, if programmed by your dealer/programmer.

- You hear four high-pitched tones.

To acknowledge the page, press and release the **PTT** button; to cancel the page, press any other key.

REPEATER OR TALKAROUND MODE

Talkaround Mode enables you to communicate with another radio when either:

- the repeater is not operating
  —or—
- your radio is out of the repeater's range but within communicating distance of another radio.

To Select either Repeater Mode or Talkaround Mode

Press the preprogrammed **Repeater/Talkaround** button to toggle between Repeater Mode and Talkaround Mode.

SCAN

Your radio is equipped with the Scan feature, which allows you to monitor multiple channels for voice activity. The radio will stop on a channel when it detects activity on it.

Scan lists are assigned per channel, by your dealer/programmer. Your radio automatically switches to a channel, within that scan list, when it detects activity.

• The LED indicator blinks green during scan mode; it stops blinking when the radio switches to an active channel.

There are two types of Scan available in your radio:

• System Scan
• Auto Scan

START SYSTEM SCAN

Press the preprogrammed **Scan** button to start scan.

STOP SYSTEM SCAN

Press the preprogrammed **Scan** button to stop System Scan.

Note: Your dealer/programmer can preprogram your radio when exiting System Scan to automatically revert to the last scan channel that had activity on it or to automatically revert to the channel where scan was initiated.

START AUTO SCAN

Auto Scan automatically starts scanning once a channel with Auto Scan enabled is selected. Select a channel that **has been** preprogrammed for Auto Scan by your dealer/programmer.

STOP AUTO SCAN

Select a channel that has **not** been preprogrammed for Auto Scan by your dealer/programmer.

TALKBACK

The Talkback feature allows you to respond to a transmission while scanning. If transmission is detected on a channel while scanning, the radio will stop on that channel for a default period of time after activity has ceased. This is referred to as "hangtime". During this hangtime you may respond by pressing the **PTT** button.

Note: The LED scan indicator stops blinking while the radio is in hangtime. If the **PTT** button is not pressed after the preprogrammed hangtime, the radio returns to scanning channels.

DELETE A NUISANCE CHANNEL

Note: Your dealer/programmer must preprogram a button to access this feature.

If a channel continually generates unwanted calls or noise (a "nuisance" channel), you can temporarily remove it from the scan list:

1 While the radio is on the Nuisance Channel, press the preprogrammed **Nuisance Channel Delete** button until you hear a tone.

2 Release the **Nuisance Channel Delete** button. The nuisance channel is deleted.

> **Note:** You cannot temporarily delete the channel that has been pre-prgrammed by your dealer/programmer as your designated scan channel, a priority channel, or the last remaining channel in the scan list.

Restore Channels to the Scan List

1 Power off the radio. Once the radio is powered on again, the deleted nuisance channels are restored to the scan list.

– or –

1 Press the preprogrammed **Scan** button to stop the scan.

2 Press the preprogrammed **Scan** button again to start scanning again. The Deleted Nuisance Channels are restored to the scan list.

– or –

1 Select a channel that has **not** been preprogrammed for scan by your dealer / programmer to stop Scan. Once you return to the original channel, the deleted nuisance channels are restored to the scan list.

USER SETTINGS

You can enable/disable some of your radio features using the programmable buttons pre-programmed by your dealer.

ESCALERT

Your radio can be programmed to increase the volume of the alarm tones when a radio call is not answered.
Press the preprogrammed **Escalert** button to toggle between On and Off.

SET SQUELCH LEVEL

Use this feature to filter out (unwanted) calls and/or background noise. However, tightening squelch could cause calls from remote locations to be filtered out as well. In this case, normal squelch may be more desirable.
Press the preprogrammed **Squelch** button to toggle between tight and normal squelch.

SET POWER LEVEL

Each channel in your radio has a predefined transmit power level that can be changed.

- *High power* allows you to reach a radio that is farther away.

- Low power to conserve the battery.

To set the power level, press the preprogrammed **Power Level** button to toggle between low and high power.

OPTION BOARD ON/OFF

Use this feature to enable or disable an option board.
Press the preprogrammed **Option Board** button to toggle the option board on or off.