User's Guide

MOTOROLA

CLS SERIES TWO-WAY RADIO

6864110W15-O

Models CLS1110 and CLS1410

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Introduction

Thank you for purchasing a Motorola CLS Series Radio. Your radio is a product of Motorola's 70 plus years of experience as a world leader in designing and manufacturing communications equipment. The CLS Series radios provide cost-effective communications for businesses such as retail stores, restaurants, hotels, and schools. Motorola professional two-way radios are the perfect communications solution for all of today's fast-paced industries.

Please read this guide carefully so you know how to properly operate the radio before use.

Package Contents

- CLS Series Radio
- Swivel Belt Holster
- Lithium Ion Battery
- Drop-In Charger with Transformer
- User's Guide
- Accessory Brochure
- Warranty Card

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For product-related questions, please call:

1-800-448-6686 in the USA

1-888-390-6456 TTY (Text Telephone)

On the Web:

www.motorola.com/radios/professional

ATTENTION

Before using this product, read the RF energy awareness information and operating instructions in the Safety and General Information section of this guide to ensure compliance with RF energy exposure limits.

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FCC Licensing Information

CLS Series professional two-way radios operate on radio frequencies that are regulated by the Federal Communications Commission (FCC). In order to transmit on these frequencies, you are required to have a license issued by the FCC.

Application is made available on FCC Forms 601, schedules D and H, and remittance form 159. If ordering the forms by mail, phone, or from the FCC website, please request document number ***000601***, which includes all forms and instructions. If using the FCC Fax-on-Demand system, use the 7-digit order numbers listed below.

To obtain the required forms, please use the following contact information:

Faxed contact the Fax-On-Demand system at:	Mailed call the FCC forms hotline at:	By Phone or Web or for questions regarding FCC license contact the FCC at:
1-202-418-0177	**1-800-418-FORM** **1-800-418-3676**	**1-888-CALL-FCC** **1-888-225-5322** **or: http://www.fcc.gov**
Request forms 3060001, 3060003, and 3060006	Request document 000601	Request document 000601

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Before filling out your application, you must decide which frequency(ies) you can operate on. See Frequencies and Bandwidths on page 39. For questions on determining your radio frequency, please call Motorola Product Services at 1-800-448-6686.

Changes or modifications not expressly approved by Motorola may void the user's authority granted by the FCC to operate this radio and should not be made. To comply with FCC requirements, transmitter adjustments should

be made only by or under the supervision of a person certified as technically qualified to perform transmitter maintenance and repairs in the private land mobile and fixed services as certified by an organization representative of the user of those services. Replacement of any transmitter component (crystal, semiconductor, etc.) not authorized by the FCC equipment authorization for this radio could violate FCC rules.

Note: Use of this radio outside the country where it was intended to be distributed is subject to government regulations and may be prohibited.

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Safety and General Information

Important Information on Safe and Efficient Operation.

Read This Information Before Using Your Radio.

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

Transmit and Receive Procedure

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

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

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

Exposure to Radio Frequency Energy

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

- 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

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- Institute of Electrical and Electronic Engineers (IEEE) C95.1-1999 Edition
- International Commission on Non-Ionizing Radiation Protection (ICNIRP) 1998
- Ministry of Health (Canada) Safety Code 6. Limits of Human Exposure to Radio Frequency Electromagnetic Fields in the Frequency Range from 3 kHz to 300 GHz, 1999
- Australian Communications Authority Radiocommunications (Electromagnetic Radiation - Human Exposure) Standard 2001 (applicable to wireless phones only)
- ANATEL, Brazil Regulatory Authority, Resolution 256 (April 11, 2002) “additional requirements for SMR, cellular, and PCS product certification.”

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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Portable Radio Operation and EME Exposure

Antenna Care

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

DO NOT hold the antenna when the radio is “IN USE.” Holding the antenna affects the effective range.

Two-Way Radio Operation

When using your radio as a traditional two-way radio, **hold the radio in a vertical position with the microphone 1 to 2 inches (2.5 to 5 cm) away from the lips**.

Body-Worn Operation

To maintain compliance with FCC/Health Canada RF exposure guidelines, if you wear a radio on your body when transmitting, always place the radio in a Motorola-supplied or approved clip, holder, holster, case, or body harness for this product. Use of non-Motorola-approved accessories may exceed FCC/Health Canada RF exposure guidelines. If you do not use one of the Motorola-supplied or approved body-worn accessories, and are not using the radio held in the normal use position, **ensure the radio and its antenna are at least 1 inch (2.5 cm) from your body when transmitting**.

Data Operation

If applicable, when using any data feature of the radio with or without an accessory cable, **position the radio and its antenna at least 1 inch (2.5 cm) from the body**.

Approved Accessories

For a list of approved Motorola accessories visit our website at `www.motorola.com`.

Electromagnetic Interference/Compatibility

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

Facilities

To avoid electromagnetic interference and/or compatibility conflicts, turn off your radio in any facility where posted notices instruct you to do so. Hospitals or health care facilities may be using equipment that is sensitive to external RF energy.

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

Persons with pacemakers should:

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

Medical Devices - Hearing Aids

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

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

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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

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.” Do not remove, install, or charge batteries in such areas. Sparks in a potentially explosive atmosphere can cause an explosion or fire resulting in bodily injury or even death.

Note: The areas with potentially explosive atmospheres referred to above include fueling areas such as below decks on boats, fuel or chemical transfer or storage facilities, areas where the air contains chemicals or particles, such as grain, dust or metal powders, and any other area where you would normally be advised to turn off your vehicle engine. Areas with potentially explosive atmospheres are often but not always posted.

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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

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.

Battery Charger Safety Instructions

Save these Instructions

1. Do not expose the charger to rain or snow.
2. Do not operate or disassemble the charger if it has received a sharp blow, or has been dropped or damaged in any way.
3. Never alter the AC cord or plug provided with the unit. If the plug will not fit the outlet, have the proper outlet installed by a qualified electrician. An improper condition can result in a risk of electric shock.

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4. To reduce the risk of damage to the cord or plug, pull the plug rather than the cord when disconnecting the charger from the AC receptacle.
5. To reduce the risk of electric shock, unplug the charger from the outlet before attempting any maintenance or cleaning.
6. Use of an attachment not recommended or sold by Motorola may result in a risk of fire, electric shock, or personal injury.
7. Make sure the cord is located so it will not be stepped on, tripped over, or subjected to damage or stress.
8. An extension cord should not be used unless absolutely necessary. Use of an improper extension cord could result in a risk of fire and/or electric shock. If an extension cord must be used, make sure that:
   - The pins on the plug of the extension cord are the same number, size, and shape as those on the plug of the charger.
   - The extension cord is properly wired and in good electrical condition.
   - The cord size is 18 AWG for lengths up to 100 feet, and 16 AWG for lengths up to 150 feet.

- The supply cord of this charger cannot be replaced. If the cord is damaged, call Motorola Product Services at 1-800-448-6686 in the USA or 1-888-390-6456 TTY (Text Telephone).

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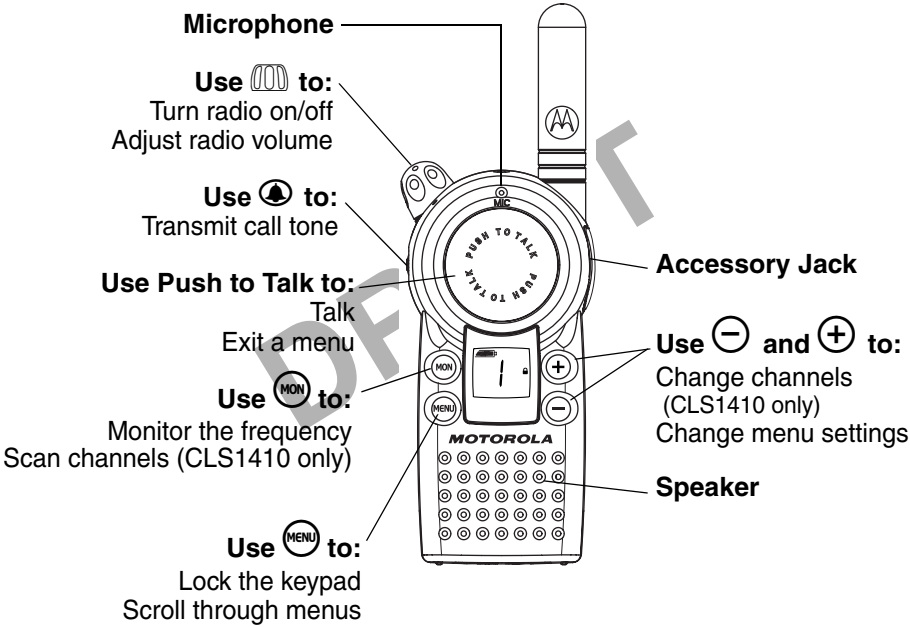
Radio Controls



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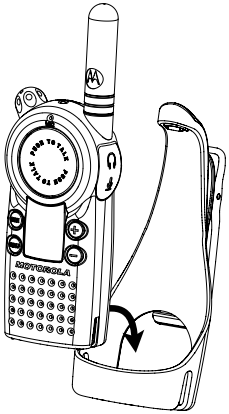
Getting Started

Installing the Swivel Belt Holster

1. Slide the bottom of radio into the holster until it snaps into place.
2. To remove, push the tab on the holster and pull the radio away from the holster.

Note: In case of loss, please contact your point-of-sale or call 1-800-448-6686 to request replacement part number HCLN4013.



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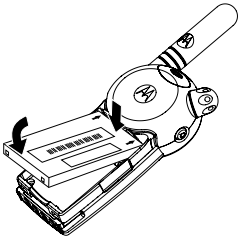
Installing the Batteries

Your radio uses a rechargeable Lithium Ion (Li Ion) battery or 3 AAA Alkaline batteries with the 1564200W18 Alkaline Battery Tray (not included with all models).

Li Ion Battery



1. If the battery door is already in place on the radio, push down on the recess on the door and slide it off the radio.
2. Insert the battery, printed arrows first, into the battery compartment and press down to secure firmly in place.
3. Slide and snap the battery door into place.

AAA Alkaline Batteries

1. If the battery door is already in place on the radio, push down on the recess on the door and slide it off the radio.
2. Insert 3 AAA batteries into the battery tray as shown by the markings inside the tray.
3. Insert the battery tray into the battery compartment and press down to secure firmly in place.
4. Slide and snap the battery door into place.
5. Press MENU until A or n flashes (this menu does not appear if using a Motorola Li Ion battery).
6. Press ⊖ or ⊕ to select A for Alkaline batteries, or n for rechargeable AAA cells.

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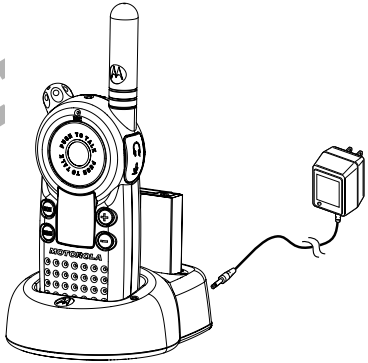
Charging the Battery

Use only the charger supplied with the radio, or other CLS Series power accessories. For optimum battery life, do not charge the battery for prolonged periods after it is fully charged. Charging the battery over the weekend is acceptable.

Using the Drop-in Charger

1. Place the charger on a flat surface.
2. Insert the plug of the power cord into the jack on the charger.
3. Plug the cord into an AC outlet.
4. Turn the radio off. If the radio is on while charging, it will take longer to fully charge.
5. Insert the radio (with battery installed) into the front charging pocket.

   Note: The radio will fit in the charger with the holster on.



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The drop-in charger will also sequentially charge a spare 56557 Li Ion battery. The spare battery will not begin to charge until the radio battery is fully charged. Both batteries will charge in approximately 2–6 hours.

Using the 56531 Multi-Unit Charger

The Multi-Unit Charger (MUC) allows drop-in charging of 6 radios or batteries (56556 Li Ion rechargeable battery, SNN5571 only). Batteries can be charged inside the radios or removed and placed in the MUC separately. Each of the 6 charging pockets can hold a radio or battery, but not both.

1. Place the charger on a flat surface.
2. Insert the power cord plug into the jack on the MUC.
3. Plug the cord into an AC outlet.
4. Turn the radio off.
5. Insert the radio or battery into the charging pocket.

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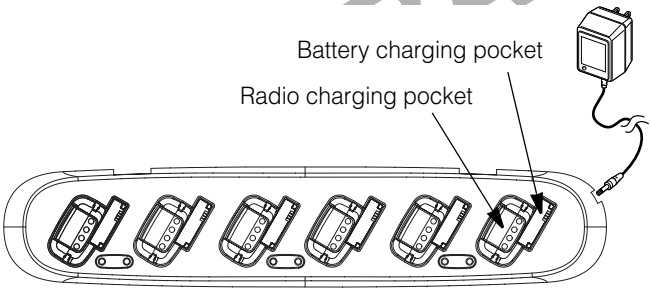

Charging Status LEDs

On the drop-in (single radio) charger, the radio and battery charging pockets have their own LEDs.

On the MUC, each of the 6 charging pockets has an LED. The LEDs are grouped into pairs to show which charging pockets are paired (for cloning, see page 32).

The LED is solid red when the battery is charging, and solid green when charging is complete.

Battery Meter

The battery meter in the upper left corner of the display (see page 20) shows how much battery power is remaining.

Battery Type	3 Bars	2 Bars	1 Bar	Flashing
Li Ion	100%–85%	85%–25%	25%–10%	Final 10%
AAA Alkaline	100%–75%	75%–40%	40%–10%	Final 10%

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Battery Life

Based on 5% transmit, 5% receive, 90% standby (standard duty cycle):

Li Ion – 12 Hours AAA Alkaline – 10 Hours

Turning Your Radio On and Off

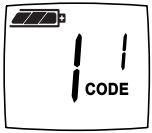
See page 13 for a basic radio diagram.

Turn clockwise to turn the radio on, and counterclockwise to turn the radio off. When the radio is on, the transmit light on the top of the radio flashes every 3 seconds.

When you turn the radio on, the radio chirps and the display briefly shows all features and display segments.

The radio then displays the current channel (larger number in the center) and the frequency assigned to that channel (on the right indicated by **FREQ**).

The Interference Eliminator Code displays briefly (indicated by **CODE**), then the current channel remains displayed.



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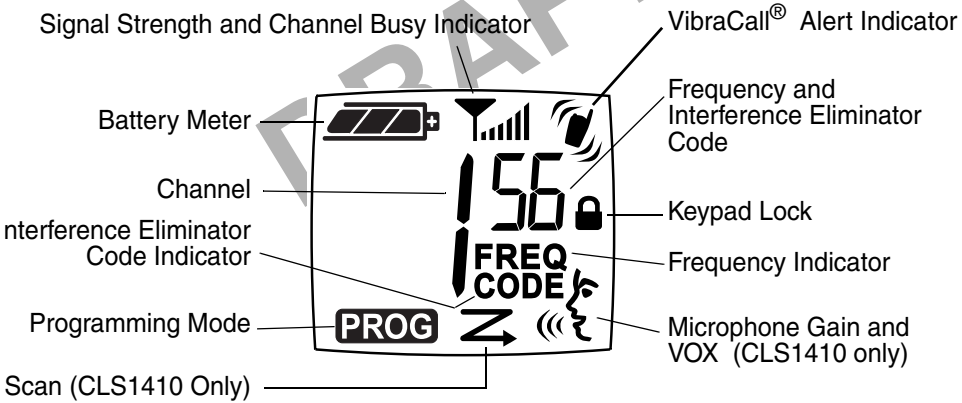
Adjusting the Volume

Turn clockwise to increase the volume, and counterclockwise to decrease the volume.

Note: Do not hold the radio too close to your ear when adjusting the volume.

Reading the Display



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Talking and Receiving

Basic Radio Operation

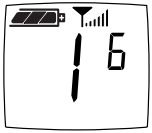
1. Press and hold (MON) to check for channel activity. If you hear static, the channel is clear to use. Do not transmit if someone is speaking on the channel. Press (MON) again to stop monitoring.
2. To talk, press and hold **Push to Talk** and speak into the microphone. Hold the radio 2 to 3 inches away from your mouth.
3. To listen, release **Push to Talk**.

The transmit light on the top of the radio is red when transmitting.

Signal Strength and Channel Busy Indicators

When there is activity on a frequency, the radio displays and the transmit light flashes at a faster rate of once per second.

When there is activity on the same frequency and code as your radio (your radio is receiving), the radio displays and a signal strength from 1 (weakest) to 6 (strongest). This can help determine when a radio is moving out of range.



Note: Obstacles that block the signal path may affect the strength of the incoming signal.

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Talk Range

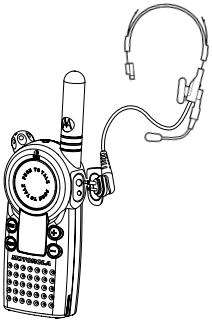
Industrial	Multi-Level	Outdoor
Inside steel/concrete industrial buildings	Inside multi-level buildings	Flat ground with no obstructions
Up to 200,000 sq. ft.	Up to 15 floors	Up to 5 miles

Handsfree Use (CLS1410 only)

The CLS1410 model radio can operate handsfree when used with or without compatible voice activation (VOX) accessories. A short delay occurs between the time when you start talking and when the radio transmits.

With Compatible VOX Accessories

1. Turn the radio off.
2. Open the accessory cover.
3. Plug the audio accessory firmly into the accessory jack.
4. Turn the radio on. The radio displays . **If is flashing and you are setting up the VOX accessory for the first time, set the VOX sensitivity level (see page 23)**.
5. Lower the radio volume BEFORE placing the accessory in or near your ear.



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6. To transmit, speak into accessory microphone. To receive, stop talking.

To disable VOX operation, press **Push to Talk** or remove the audio accessory.

Note: To order accessories, visit `www.motorola.com/radios/professional`, call 1-800-448-6686, or contact your point of purchase.

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Setting the VOX Sensitivity

You can adjust the sensitivity of your radio's accessory or microphone during VOX operation to suit different operating environments. These menus appear only if the VOX feature is in use, which is indicated by «.

1. Press MENU until « displays. The radio displays E if you are setting the external VOX (with audio accessory) or I if you are setting the internal VOX (without accessory).
2. Press ⊖ or ⊕ to select the sensitivity level:

   0 = Off 1 = Low 2 = Medium 3 = High

External VOX

Locking the Keypad

You can lock the keypad to avoid accidentally changing your radio settings.

1. Press and hold MENU for 3 seconds.
2. To unlock, press and hold MENU for 3 seconds.

Monitoring a Channel

Monitoring allows you to check for activity on a channel.

1. Press and hold MON. If the channel is clear to use, you will hear static and and 0 will display.
2. Press MON again to stop monitoring.

Scanning (CLS1410 Only)

You can scan up to 4 channels and frequencies. When the radio detects activity, it stops scanning and locks in on the active channel. This allows you to talk and listen to the person transmitting without changing channels.

To scan channels regardless of the code in use on the channels, change the code for your channel to 0 before you start to scan.

To start scanning, briefly press MON.

The scan icon displays and the radio begins to scan through the channels. When the radio detects activity, it stops on that channel and displays and the channel number.

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To talk to the person transmitting without switching channels, press **Push to Talk** within 5 seconds. If no transmission occurs within 5 seconds, scanning resumes.

If you press **Push to Talk** while the radio is scanning, the radio transmits on the channel you were on before you started scanning.

To stop scanning, briefly press (MON).

Skipping and Removing Channels While Scanning

Scan has several temporary features to make it easier to use.

- Scan advance
  If the radio stops scanning on a channel you do not want to listen to, press ⊕ to resume scanning for the next active channel.
- Nuisance delete
  Press and hold ⊖ to temporarily remove a channel from the scan list. The channel return the next time you use the scan feature.

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Programming Features

Programming mode allows you to change the following settings on your radio:

- Channel
- Frequency
- Interference eliminator code
- Call tones
- Microphone gain
- Scan list (CLS1410 only)
- Available channels (CLS1410 only)

Notes:

- To talk with someone on your two-way radio, the channel, frequency, and interference eliminator code must be the same on both radios.
- You cannot enter programming mode while a VOX accessory is plugged into the radio.

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Factory Default Settings

Your radio is programmed at the factory to the following settings:

Channel	Frequency	
	CLS1110	CLS1410
1	2	2
2	Not available	8
3		5
4		6
Code	1	
Call Tone/ VibraCall®	Off (0)	
VOX	Not available	Off (0)
Microphone Gain	2 (medium sensitivity)	

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To restore the factory settings, turn the radio on while holding **Push to Talk** and MENU for 3 seconds.

Entering Programming Mode

Press and hold **Push to Talk** and MON for 3 seconds while turning the radio on. The radio beeps and displays **PROG**, the channel number flashes, and the frequency (indicated by **FREQ**) and code (indicated by **CODE**) display alternately.

Selecting a Channel (CLS1410 Only)

1. In programming mode, press MENU until the channel number flashes and the frequency and code display alternately (this is the first setting after you enter programming mode).
2. Press ⊖ or ⊕ to select the channel.
3. Press and hold **Push to Talk** to exit programming mode, or press MENU to continue programming.

Programming the Frequency

1. In programming mode, press MENU until **FREQ** displays and the frequency number flashes.
2. Press ⊖ or ⊕ to select the frequency.
3. Press and hold **Push to Talk** to exit programming mode, or press MENU to continue programming.

Note: See page 39 for information on frequencies for communicating with other business radios. If you are matching your CLS Series radio to an existing Spirit GT radio, see page 45.

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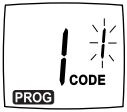
Programming the Interference Eliminator Code

The interference eliminator code helps minimize interference by providing you with code combinations that filter out static, noise, and unwanted messages.

1. In programming mode, press MENU until CODE displays and the code number flashes.
2. Press ⊖ or ⊕ to select the code (see page 42).
3. Press and hold **Push to Talk** to exit programming mode, or press MENU to continue programming.



Programming the Available Channels (CLS1410 only)

For applications requiring fewer channels, you can reduce the number of available channels.

1. In programming mode, press MENU until CH displays and the channel number flashes.
2. Press ⊖ or ⊕ to select the number of channels you want available.
3. Press and hold **Push to Talk** to exit programming mode, or press MENU to continue programming.

Note: Settings for channels made unavailable are retained by the radio.

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Programming Call Tones and VibraCall® (CLS1410 only)

Your radio can transmit call tones to other radios in your group so you can alert them that you are about to talk. Your radio comes with call tones turned off (set to 0), but you can change this setting to choose a distinctive call tone.

The VibraCall® feature is an additional call tone option that makes the CLS1410 radio vibrate briefly when it receives and when you have not transmitted or received in the last 30 seconds. Select call tone 4 to turn VibraCall® on. displays on the radio when VibraCall® is on.

1. In programming mode, press MENU until CA displays.
2. Press − or + to hear and select the call tone. Select call tone 4 for VibraCall® (CLS1410 only).
3. Press and hold **Push to Talk** to exit programming mode, or press MENU to continue programming.

To transmit your call tone before transmitting, press on the side of the radio.

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Programming Microphone Gain

You can adjust the microphone sensitivity to suit different users or operating environments.

1. In programming mode, press (MENU) until and G display.
2. Press ⊖ or ⊕ to select the sensitivity level:
   3 = High sensitivity, for quiet environments
   2 = Medium sensitivity (default)
   1 = Low sensitivity, for loud environments
3. Press and hold **Push to Talk** to exit programming mode, or press (MENU) to continue programming.

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Editing the Scan List (CLS1410 Only)

For faster scanning and to avoid hearing unwanted transmissions, you can edit the scan list to skip channels.

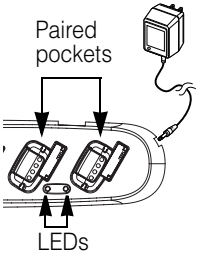
1. In programming mode, press (MENU) until Z displays and the channel number and Y or n flash.
2. Press ⊖ or ⊕ to select the channel you want to remove from the scan list.
3. Press (MON) to display either Y to include the channel or n to exclude the channel.
4. Press and hold **Push to Talk** to exit programming mode, or press (MENU) to continue programming.

Cloning Radio Settings

You can duplicate CLS Series radio settings from one radio (the source) to a second radio using the 5653 Multi-Unit Charger (MUC) optional accessory. See the *MUC User's Guide* for more information.

You can clone only one radio at a time. A multi-channel radio can clone to a single-channel radio, but only the first channel is cloned. The MUC does not need to be plugged in for cloning.

1. On the source radio, press and hold **Push to Talk** and MON for 3 seconds while turning the radio on. The radio beeps and displays PROG.
2. Place the source radio in one of the charging pockets.
3. Turn the target radio on and place it in the charging pocket that is paired with the pocket containing the source radio. There are 3 paired charging pockets as indicated by the 3 pairs of charging status LEDs.



4. Press and hold MON on the source radio. The source radio tranmits its settings to the target radio. If cloing was successful, P or Pass displays on the source radio and the target radio displays all feature icons. If cloning was not successful, F or Fail displays on the source radio.
5. Turn the target radio off and back on again to use.
6. To clone additional radios, repeat steps 3 - 4.
7. To exit programming mode on the source radio, press and hold **Push to Talk** until PROG no longer appears.

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Advanced Features

You can set the following features by pressing and holding additional buttons **while you turn the radio on.**

To Do This	Press This Button While Turning the Radio On	Default Setting
Turn Keypad Tones On/Off Turns keypad beeps off for silent menu operation.	⊖	On
Turn End-of-Transmission Tone On/Off If enabled, your two-way radio transmits a tone when you finish transmitting (like saying *Roger* or *Over*). If keypad tones are off and end-of-transmission tone is on, you will not hear the end-of-transmission tone, but it is transmitted.	⊕	Off

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To Do This	Press This Button While Turning the Radio On	Default Setting
Turn Battery Save Mode On/Off Decreases attack time, which is the brief period of time between when the radio receives a transmission on its frequency and broadcasts audio. Turning battery save mode off decreases battery life by approximately 20%.	**Push to Talk** MON ⊖	On
Restore Factory Defaults Returns radio to its original factory settings.	**Push to Talk** MENU	---

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Troubleshooting

Symptom	Try This:
No Power	Recharge or replace Li Ion battery. Reposition or replace Alkaline batteries.
Message not transmitted	Make sure **Push to Talk** is completely pressed while transmitting. Recharge, replace, and/or reposition batteries. Verify the transmit light is illuminated while speaking.
Hearing other noises or conversation on a channel	Frequency or interference eliminator code may be in use. Change on all radios if possible (see page 28 and 29).
Poor audio quality	Bandwidth does not match. For optimal audio quality when communicating with CLS Series radios, the bandwidth of other radios should be set to 12.5 kHz.

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Symptom	Try This:
Limited talk range	Steel and/or concrete structures, heavy foliage, buildings, or vehicles decrease range (see page 22). Check for clear line of sight to improve transmission. Wearing radio close to body such as in a pocket or on a belt decreases range. Change location of radio.
Message not received	Confirm radios have the same channel, frequency, and interferene eliminator code settings (see page 26). Recharge, replace, and/or reposition batteries. Move to another location. Obstructions and operating indoors or in vehicles may decrease range. Verify radio is not in scan mode (CLS1410 only, see page 24).
Heavy static or interference	Radios are too close. They must be at least 5 feet apart. Radios are too far apart or obstacles are interfering with transmission.
Keypad locked	Unlock by holding MENU for 3 seconds.

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Symptom	Try This:
Low batteries	Recharge or replace batteries. Extreme operating temperatures affect battery life.
Charger light does not come on	Reinsert radio and/or battery. Clean battery and/or charger contacts. Verify that the charging pin on the transformer is inserted correctly into the drop-in charger. AAA cells installed in radio. Remove and replace with Li Ion battery.
Low battery meter reading although new batteries are installed	Verify radio is set to the correct battery type (see page 15).
Cannot activate VOX	Feature not set and on (see page 22). Sensitivity set to 0 (see page 23).
Cannot enter PROG mode	Unplug audio accessories and retry.

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Use and Care

Use a soft damp cloth to clean the exterior.

Do not immerse in water.

Do not use alcohol or cleaning solutions.

If the radio is submerged in water...

Turn radio off and remove batteries.

Dry with soft cloth.

Do not use radio until completely dry.

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Frequencies and Bandwidths

These charts provide frequency information and are useful when using Motorola CLS Series radios with other business radios. Frequency Display Number is identical to Spirit M, GT, and S-Series frequency position (where applicable).

UHF Frequencies

Display Number	Frequency (MHz)	Bandwidth
1	464.5000	12.5
2	464.5500	12.5
3	467.7625	12.5
4	467.8125	12.5
5	467.8500	12.5
6	467.8750	12.5
7	467.9000	12.5
8	467.9250	12.5
9	461.0375	12.5
10	461.0625	12.5

Display Number	Frequency (MHz)	Bandwidth
15	461.1875	12.5
16	461.2125	12.5
17	461.2375	12.5
18	461.2625	12.5
19	461.2875	12.5
20	461.3125	12.5
21	461.3375	12.5
22	461.3625	12.5
23	462.7625	12.5
24	462.7875	12.5

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UHF Frequencies (Continued)

Display Number	Frequency (MHz)	Bandwidth
11	461.0875	12.5
12	461.1125	12.5
13	461.1375	12.5
14	461.1625	12.5
29	462.9125	12.5
30	464.4875	12.5
31	464.5125	12.5
32	464.5375	12.5
33	464.5625	12.5
34	466.0375	12.5
35	466.0625	12.5
36	466.0875	12.5
37	466.1125	12.5

Display Number	Frequency (MHz)	Bandwidth
25	462.8125	12.5
26	462.8375	12.5
27	462.8625	12.5
28	462.8875	12.5
43	466.2625	12.5
44	466.2875	12.5
45	466.3125	12.5
46	466.3375	12.5
47	466.3625	12.5
48	467.7875	12.5
49	467.8375	12.5
50	467.8625	12.5
51	467.8875	12.5

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UHF Frequencies (Continued)

Display Number	Frequency (MHz)	Bandwidth
38	466.1375	12.5
39	466.1625	12.5
40	466.1875	12.5
41	466.2125	12.5
42	466.2375	12.5

Display Number	Frequency (MHz)	Bandwidth
52	467.9125	12.5
53	469.4875	12.5
54	469.5125	12.5
55	469.5375	12.5
56	469.5625	12.5

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Interference Eliminator Codes

Display Number	Code (Hz)
1	67.0
2	71.9
3	74.4
4	77.0
5	79.7
6	82.5
7	85.4
8	88.5
9	91.5
10	94.8
11	97.4
12	100.0
13	103.5

Display Number	Code (Hz)
14	107.2
15	110.9
16	114.8
17	118.8
18	123.0
19	127.3
20	131.8
21	136.5
22	141.3
23	146.2
24	151.4
25	156.7
26	162.2

Display Number	Code (Hz)
27	167.9
28	173.8
29	179.9
30	186.2
31	192.8
32	203.5
33	210.7
34	218.1
35	225.7
36	233.6
37	241.8
38	250.3

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Carrier Squelch (0) disables interference eliminator codes.

Digital Interference Eliminator Codes

Display Number	Digital Code
39	023
40	025
41	026
42	031
43	032
44	043
45	047
46	051
47	054
48	065
49	071
50	072
51	073
52	074
53	114

Display Number	Digital Code
54	115
55	116
56	125
57	131
58	132
59	134
60	143
61	152
62	155
63	156
64	162
65	165
66	172
67	174
68	205

Display Number	Digital Code
69	223
70	226
71	243
72	244
73	245
74	251
75	261
76	263
77	265
78	271
79	306
80	311
81	315
82	331
83	343

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Digital Interference Eliminator Codes (Continued)

Display Number	Digital Code
84	346
85	351
86	364
87	365
88	371
89	411
90	412
91	413
92	423
93	431
94	432
95	445
96	464

Display Number	Digital Code
97	465
98	466
99	503
100	506
101	516
102	532
103	546
104	565
105	606
106	612
107	624
108	627
109	631

Display Number	Digital Code
110	632
111	654
112	662
113	664
114	703
115	712
116	723
117	731
118	732
119	734
120	743
121	754

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Spirit GT Series Programming

The CLS Series radio replaces the Spirit GT Series radio. The factory default settings for both radios are identical. However, existing radios may have been programmed to different settings. To program your CLS Series radio to talk with a Spirit GT Series radio, verify or change your Spirit GT settings as follows.

To verify the frequency and code:

1. Press the Menu button 3 times. The channel number and frequency display.
2. Press Menu again. The interference eliminator code displays.

To change the frequency:

1. Enter programming mode by pressing and holding **Push to Talk** for approximately 5 seconds while turning the radio on, then release **Push to Talk**.
2. Use the Scroll button to select one the eight frequencies.

To change the interference eliminator code:

1. Enter programming mode by pressing and holding **Push to Talk** for approximately 5 seconds while turning the radio on, then release **Push to Talk**.
2. Press the Menu button. The code number flashes.
3. Use the Scroll button to select the code.

To exit programming mode on a Spirit GT Series radio, press **Push to Talk**.

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Motorola Limited Warranty for the United States and Canada

What Does this Warranty Cover?

Subject to the exclusions contained below, Motorola, Inc. warrants its telephones, pagers, messaging devices, and consumer and professional two-way radios (excluding commercial, government or industrial radios) that operate via Family Radio Service or General Mobile Radio Service, Motorola-branded or certified accessories sold for use with these Products ("Accessories") and Motorola software contained on CD-ROMs or other tangible media and sold for use with these Products ("Software") to be free from defects in materials and workmanship under normal consumer usage for the period(s) outlined below. This limited warranty is a consumer's exclusive remedy, and applies as follows to new Motorola Products, Accessories and Software purchased by consumers in the United States or Canada, which are accompanied by this written warranty:

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Products and Accessories

Products Covered	Length of Coverage
Products and Accessories as defined above, unless otherwise provided for below.	**One (1) year** from the date of purchase by the first consumer purchaser of the product unless otherwise provided for below.
Decorative Accessories and Cases. Decorative covers, bezels, PhoneWrap™ covers and cases.	**Limited lifetime warranty** for the lifetime of ownership by the first consumer purchaser of the product.
Monaural Headsets. Ear buds and boom headsets that transmit mono sound through a wired connection.	**Limited lifetime warranty** for the lifetime of ownership by the first consumer purchaser of the product.

Products Covered	Length of Coverage
Consumer and Professional Two-Way Radio Accessories.	**Ninety (90) days** from the date of purchase by the first consumer purchaser of the product.
Products and Accessories that are Repaired or Replaced.	**The balance of the original warranty or for ninety (90) days** from the date returned to the consumer, whichever is longer.

Exclusions

Normal Wear and Tear. Periodic maintenance, repair and replacement of parts due to normal wear and tear are excluded from coverage.

Batteries. Only batteries whose fully charged capacity falls below 80% of their rated capacity and batteries that leak are covered by this limited warranty.

Abuse & Misuse. Defects or damage that result from: (a) improper operation, storage, misuse or abuse, accident or neglect, such as physical damage (cracks, scratches, etc.) to the surface of the product resulting from misuse; (b) contact with liquid, water, rain, extreme humidity or heavy perspiration, sand, dirt or the like, extreme heat, or food; (c) use of the Products or Accessories for commercial purposes or subjecting the Product or Accessory to abnormal usage or conditions; or (d) other acts which are not the fault of Motorola, are excluded from coverage.

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Software

Products Covered	Length of Coverage
Software. Applies only to physical defects in the media that embodies the copy of the software (e.g. CD-ROM, or floppy disk).	**Ninety (90) days** from the date of purchase.

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Exclusions

Software Embodied in Physical Media. No warranty is made that the software will meet your requirements or will work in combination with any hardware or software applications provided by third parties, that the operation of the software products will be uninterrupted or error free, or that all defects in the software products will be corrected.

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Motorola, at its option, will at no charge repair, replace or refund the purchase price of any Products, Accessories or Software that does not conform to this warranty. We may use functionally equivalent reconditioned/refurbished/pre-owned or new Products, Accessories or parts. No data, software or applications added to your Product, Accessory or Software, including but not limited to personal contacts, games and ringer tones, will be reinstalled. To avoid losing such data, software and applications please create a back up prior to requesting service.

How to Obtain Warranty Service or Other Information

USA	**Phones** 1-800-331-6456 **Pagers** 1-800-548-9954 **Two-Way Radios** 1-800-448-6686
Canada	**All Products** 1-800-461-4575
TTY	**TTY** 1-888-390-6456
For **Accessories** and **Software**, please call the telephone number designated above for the product with which they are used.	

You will receive instructions on how to ship the Products, Accessories or Software, at your expense, to a Motorola Authorized Repair Center. To obtain service, you must include: (a) a copy of your receipt, bill of sale or other comparable proof of purchase; (b) a written description of the problem; (c) the name of your service provider, if applicable; (d) the name and location of the installation facility (if applicable) and, most importantly; (e) your address and telephone number.

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CLS Series Programming Quick Reference

To enter programming mode, press and hold **Push to Talk** and (mon) for 3 seconds while turning the radio on. The radio beeps and displays **PROG**, the channel number flashes, and the frequency (indicated by **FREQ**) and code (indicated by **CODE**) display alternately.

Set the Channel*

Press ⊖ or ⊕.

Set the Frequency

Press (MENU) until **FREQ** displays. Press ⊖ or ⊕ to change the frequency.

Set the Interference Eliminator Code

Press (MENU) until **CODE** displays.Press ⊖ or ⊕ to change the code.

Set Available Channels*

Press (MENU) until CH displays. Press ⊖ or ⊕ to select number of available channels.

*** CLS1410 Only**

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CLS Series *Programming Quick Reference*

Set a Call Tone

Press MENU until CA display.s
Press − or + to select 1, 2, or 3 for audible call tones, 4 for VibraCall, or 0 for off (default).

Set the Microphone Gain

Press MENU until and G display.
Press − or + to select:
1 Low sensitivity
2 Medium sensitivity
3 High sensitivity

Edit the Scan List*

Press MENU until displays and the channel number and Y or n flash.
Press − or + to select the channel, then press MON to select Y (include channel) or n (exclude channel).

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