MOTOROLA

CLS SERIES TWO-WAY RADIO

User's Guide



6864110W15-D

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 85 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

For product-related questions, please call:

1-800-448-6686 in the USA

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

On the Web:

www.motorolasolutions.com/CLS

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

Interference Information

This device complies with Part 15 of the FCC Rules. Operation is subject to the condition that this device does not cause harmful interference.

CLS Series™ Business two-way radios operate on radio frequencies that are regulated by the Federal Communications Commission (FCC). To transmit on these frequencies, you are required to have a license issued by the FCC. Application is made available on FCC Form 601 and Schedules D, H, and Remittance Form 159.

To obtain these FCC forms, request document 000601 which includes all forms and instructions. If you wish to have the document faxed, mailed or have questions, use the following contact information.

Faxed contact the Fax-On- Demand system at:	Mailed call the FCC forms hotline at:	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

Before filling out your application, you must decide which frequency(ies) you can operate on. See “Frequencies and Code Charts”. For questions on determining the radio frequency, 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.

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

RF Energy Exposure Awareness and Control Information and Operational Instructions for Occupational Use

NOTICE: This radio is intended for use in occupational/controlled conditions where users have full knowledge of their exposure and can exercise control over their exposure to meet the occupational limits in FCC and International standards. This radio device is NOT authorized for general population consumer use.

This two-way radio uses electromagnetic energy in the radio frequency (RF) spectrum to provide communications between two or more users over a distance. It uses radio frequency (RF) energy or radio waves to send and receive calls. RF energy is one form of electromagnetic energy. Other forms include, but are not limited to, sunlight and x-rays. RF energy, however, should not be confused with these other forms of electromagnetic energy, which when used improperly, can cause biological damage. Very high levels of x-rays, for example, can damage tissues and genetic material.

Experts in science, engineering, medicine, health, and industry work with organizations to develop standards for safe exposure to RF energy. These standards provide recommended levels of RF exposure for both workers and the general public. These recommended RF exposure levels include substantial margins of protection.

All Motorola two-way radios are designed, manufactured, and tested to ensure they meet government-established RF exposure levels. In addition, manufacturers also recommend specific operating instructions to users of two-way radios. These instructions are important because they inform users about RF energy exposure and provide simple procedures on how to control it.

Please refer to the following websites for more information on what RF energy exposure is and how to control your exposure to assure compliance with established RF exposure limits:

http://www.fcc.gov/oet/rfsafety/rf-faqs.html
www.who.int/en/
www.motorolasolutions.com/rfhealth

Federal Communication Commission (FCC) Regulations

When two-way radios are used as a consequence of employment, the FCC requires users to be fully aware of and able to control their exposure to meet occupational requirements. Exposure awareness can be facilitated by the use of a product label directing users to specific user awareness information. Your Motorola two-way radio has a RF Exposure Product Label. Also, your Motorola user manual, or separate safety booklet includes information and operating instructions required to control your RF exposure and to satisfy compliance requirements.

Compliance with RF Exposure Standards

Your Motorola two-way radio is designed and tested to comply with a number of national and International standards and guidelines (listed below) for human exposure to radio frequency electromagnetic energy. **This radio complies with the IEEE (FCC) and ICNIRP exposure limits for occupational/controlled RF exposure environments at operating duty factors of up to 50% talk-50% listen and is approved for occupational use only.** In terms of measuring RF energy for compliance with these exposure guidelines, **your radio generates measurable RF energy only while it is transmitting (during talking), not when it is receiving (listening) or in standby mode.**

NOTE: The approved batteries, supplied with this radio, are rated for a 5-5-90 duty factor (5% talk-5% listen-90% standby) even though this radio complies with FCC occupational exposure limits and may operate at duty factors of up to 50% talk.

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

- United States Federal Communications Commission (FCC), Code of Federal Regulations; 47 CFR et seq. & FCC, OET Bulletin 65
- Institute of Electrical and Electronic Engineers (IEEE) C95.1
- International Commission on Non-Ionizing Radiation Protection (ICNIRP)
- Ministry of Health (Canada) Safety Code 6 & Industry Canada RSS-102
- Australian Communications Authority Radiocommunications Standard et seq.
- ANATEL ANNEX to Resolution No. 303 et seq.

RF Exposure Compliance and Control Guidelines and Operating Instructions for Two-Way Radio Operations

To control your exposure and ensure compliance with the occupational/controlled environment exposure limits, always adhere to the following procedures.

- DO NOT remove the RF Exposure Label from the device.
- User awareness instructions should accompany device when transferred to other users.

Two-Way Radio Operation

- Transmit no more than the rated duty factor of 50% of the time. To transmit (talk), push the Push-To-Talk (PTT) button. To receive calls, release the PTT button. The PTT button may reside on the radio itself or may be hosted on approved wired or wireless (for example, a Bluetooth enabled remote Push-to-Talk button) accessories. Transmitting 50% of the time, or less, is important because this radio generates measurable RF energy exposure only when transmitting (in terms of measuring for standards compliance).

- In front of the face. Hold the radio in a vertical position with the microphone (and other parts of the radio including the antenna) at least one inch (2.5 centimeters) away from the nose or lips. Keeping the radio at a proper distance is important to ensure compliance.



NOTE: RF exposures decrease with increasing distance from the antenna.

- Body Worn Operation. When worn on the body, always place the radio in a Motorola-approved clip, holder, holster, case, or body harness for this product. Using approved body-worn accessories is important because the use of non-Motorola-approved accessories may result in exposure levels, which exceed the occupational/controlled environment RF exposure limits.
- Use only Motorola-approved supplied or replacement antennas, batteries, and audio accessories. Use of non-Motorola-approved antennas, batteries, and wired or wireless accessories may exceed the applicable RF exposure guidelines (iEEE, ICNIRP or FCC).
- For a list of Motorola-approved accessories for your radio model, visit the following website: http://www.motorolasolutions.com/governmentandenterprise

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.

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, Defibrillators or other Implanted Medical Devices

Persons with pacemakers, Implantable cardioverter-defibrillators (ICDs) or other active implantable medical devices (AIMD) should:

- Consult with their physicians regarding the potential risk of interference from radio frequency transmitters, such as portable radios (poorly shielded medical devices may be more susceptible to interference).
- Turn the radio OFF immediately if they have any reason to suspect that interference is taking place.
- Do not carry the radio in a chest pocket or near the implantation site, and carry or use the radio on the opposite side of their body from the implantable device to minimize the potential for interference.

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.

Use of Communication Devices While Driving

Always check the laws and regulations on the use of radios in the areas where you drive.

- 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 or regulations so require.

Acoustic Safety

Exposure to loud noises from any source for extended periods of time may temporarily or permanently affect your hearing. The louder the radio's volume, the less time is required before your hearing could be affected. Hearing damage from loud noise is sometimes undetectable at first and can have a cumulative effect.

To protect your hearing:

- Use the lowest volume necessary to do your job.
- Turn up the volume only if you are in noisy surroundings.
- Turn down the volume before adding headset or earpiece.
- Limit the amount of time you use headsets or earpieces at high volume.
- When using the radio without a headset or earpiece, do not place the radio's speaker directly against your ear.

Operational Warnings



For Vehicle With Air Bags:

Refer to vehicle manufacturer's manual prior to installation of electronic equipment to avoid interference with air bag wiring.

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.

Operational Warnings (Continued)



Potentially Explosive Atmospheres

(Explosive atmospheres refers to hazard classified locations that may contain hazardous gas, vapors, or dusts.)

Turn off your radio prior to entering any area with a potentially explosive atmosphere unless it is a portable 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.

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, and areas where the air contains chemicals or particles such as grain, dust or metal powders. Areas with potentially explosive atmospheres are often, but not always, posted.

Blasting Caps and Blasting 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 touches 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.

Hazard Locations (Intrinsically) Safe Radio Information

The Intrinsically safe approval unit refers to a product that has been approved as intrinsically safe by an approval agency (for example FM Approvals, CSA, UL, or Cenelec) and certifies that a particular product meets the Agency's applicable intrinsic safety standards for specific types of hazardous classified locations. A portable radio that has been approved for intrinsic safety will have Approval label attached to the radio to identify the unit as being Approved for specified hazardous atmospheres. This label specifies the hazardous Class/Division/Group along with the part number of the battery that must be used. The Intrinsically Safe Approval Label will be located on the portable radio unit.

Operational Cautions for Intrinsic Safe Equipment



Caution

- DO NOT operate radio communications equipment in a hazardous atmosphere unless it is a type especially qualified (for example, FM, UL, CSA, or CENELEC approved). An explosion or fire may result.
- DO NOT operate a radio unit that has been approved as intrinsically safe product in a hazardous atmosphere if it has been physically damaged (for example, cracked housing). An explosion or fire may result.
- DO NOT replace or charge batteries in a hazardous atmosphere. Contact sparking may occur while installing or removing batteries and cause an explosion or fire.

Warnings for Radios Approved as Intrinsically Safe

Radios must ship from the Motorola manufacturing facility with the hazardous atmosphere capability and the intrinsic safety approval labelling (FM, UL, CSA, CENELEC). Radios will not be upgraded to this capability and labeled once they have been shipped to the field.

A modification changes the unit's hardware from its original design configuration. Modifications can only be made by the original product manufacturer.



- **DO NOT replace or change accessories in a hazardous atmosphere. Contact sparking may occur while installing or removing accessories and cause an explosion or fire.**
- **Turn the radio off before removing or installing a battery or accessory.**
- **DO NOT disassemble an intrinsically safe product in any way that exposes the internal circuits of the unit.**
- **Failure to use an intrinsically safe approved battery or Approved accessories specifically approved for the radio unit may result in the dangerously unsafe condition of an unapproved radio combination being used in a hazardous location.**
- **Unauthorized or incorrect modification of the intrinsically safe approved Product will negate the approval rating of the product.**
- **Incorrect repair or relabeling of any intrinsically safe Agency-approved radio could adversely affect the Approval rating of the unit.**
- **Use of a radio that is not intrinsically safe in a hazardous atmosphere could result in serious injury or death.**

Repair



REPAIRS FOR MOTOROLA PRODUCTS WITH INTRINSICALLY SAFE APPROVAL ARE THE RESPONSIBILITY OF THE USER.

Repairs to a Motorola FM approved radio product should only be done at a location that has been FM audited under the FM 3605 repairs and service standard.

Contact Motorola for assistance regarding repairs and service of Motorola intrinsically safe equipment.

A repair constitutes something done internally to the unit that would bring it back to its original condition.

Items not considered as repairs are those in which an action is performed on a unit which does not require the outer casing of the unit to be opened in a manner that exposes the internal electrical circuits of the unit.

Do Not Substitute Options or Accessories

The Motorola communications equipment certified as intrinsically safe by the approving agency, (FM, UL, CSA, CENELEC) is tested as a complete system which consists of the listed agency Approved portable, Approved battery, and Approved accessories or options, or both. This Approved portable and battery combination must be strictly observed. There must be no substitution of items, even if the substitute has been previously Approved with a different Motorola communications equipment unit. Approved configurations are listed by the Approving Agency (FM, UL, CSA, CENELEC).

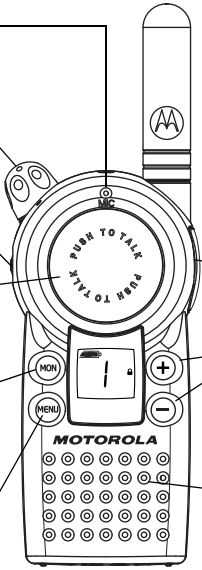
The Intrinsically Safe Approval Label affixed to radio refers to the intrinsically safe classification of that radio product, and the approved batteries that can be used with that system.

The manual PN referenced on the Intrinsically Safe Approval Label identifies the approved Accessories and or options that can be used with that portable radio unit.

Using a non-Motorola-intrinsically-safe battery and or accessory with the Motorola approved radio unit will void the intrinsically safe approval of that radio unit.

Notes

Radio Controls



Microphone

Use ⏻ to:
Turn radio on/off
Adjust radio volume

Use 🔔 to:
Transmit call tone

Use Push to Talk to:
Talk
Exit a menu

Use MON to:
Monitor the frequency
Scan channels (CLS1410 only)

Use MENU to:
Lock the keypad
Scroll through menus

Accessory Jack

Use ⊖ and ⊕ to:
Change channels
(CLS1410 only)
Change menu settings

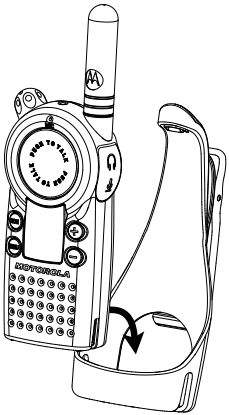
Speaker

Getting Started

Installing the Swivel Belt Holster

1. Slide the bottom of the 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.



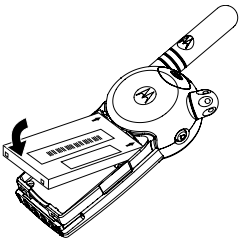
HCLN4013 Swivel Belt Holster

Installing the Batteries

Your radio uses a rechargeable Lithium Ion (Li Ion) battery.

Li Ion Battery

1. If the battery door is already in place, 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.



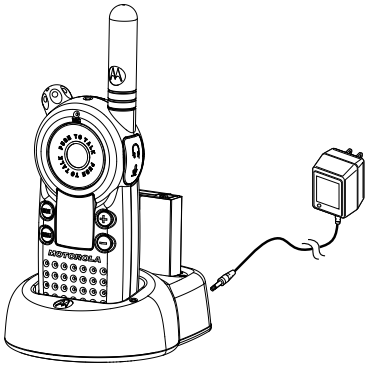
Charging the Battery

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.

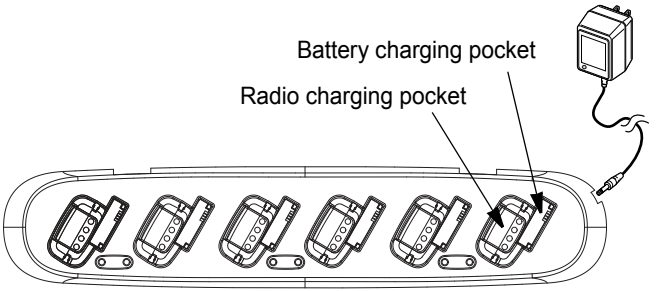


The drop-in charger will also sequentially charge a spare SNN5571 Li Ion battery. The spare battery will not begin to charge until the radio battery is fully charged. Both batteries will charge in approximately 2 to 6 hours.

Using the 56531 Multi-Unit Charger

The Multi-Unit Charger (MUC) allows drop-in charging of up to 6 radios or batteries. 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.



Charging Status LEDs

On the drop-in 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 37).

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 25) shows how much battery power is remaining.

Battery Type	3 Bars	2 Bars	1 Bar	Blinking
				
Li Ion	100% – 85%	85% – 25%	25% – 10%	Final 10%

Battery Life

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

Li Ion – 14 Hours

Turning Your Radio On and Off

See page 18 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 blinks every 3 seconds.

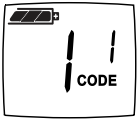
When you turn the radio on, the radio chirps and the display briefly shows all features and display segments.

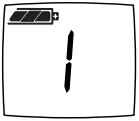


The radio then displays the current channel (larger number in the center) and the frequency assigned to that channel (on the right indicated by **FREQ**).



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



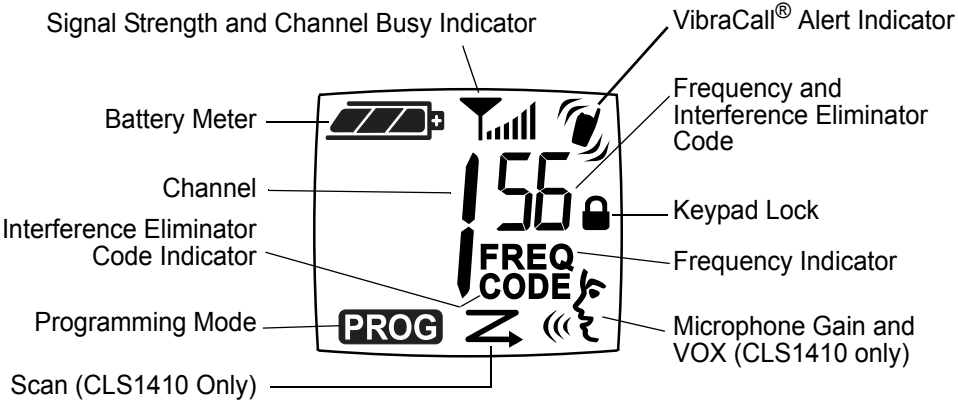


Adjusting the Volume

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



Talking and Receiving

Basic Radio Operation

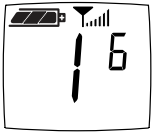
1. Press and hold MON to check for channel activity. If you hear static, the channel is clear to use. Do not transmit if someone is speaking on the channel. Press MON again to stop monitoring.
2. To talk, press and hold **Push to Talk** and speak into the microphone. Hold the radio 2 to 3 inches away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

The transmit LED 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 blinks 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.

Talk Range

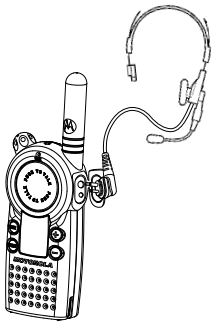
Industrial	Multi-Level
Inside steel/concrete industrial buildings	Inside multi-level buildings
Up to 200,000 sq. ft.	Up to 15 floors

Handsfree Use (VOX) (CLS1410 only)

The CLS1410 model radio can operate handsfree when used with 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 «ξ . **If «ξ is blinking and you are setting up the VOX accessory for the first time, set the VOX sensitivity level (see page 28)**.
5. Lower the radio volume BEFORE placing the accessory in or near your ear.



6. To transmit, speak into the 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.motorolasolutions.com/CLS, call 1-800-448-6686, or contact your point of purchase.

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 when the VOX feature is in use, which is indicated by «.

1. Press MENU until « displays. The radio displays E when you are setting the external VOX (with audio 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.

1. To start scanning, briefly press MON.

   The scan icon ⇄ displays and the radio begins to scan the channels. When the radio detects activity, it stops on that channel and displays ▼ and the channel number.
2. 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.
3. To stop scanning, briefly press MON.

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

Skipping and Removing Channels While Scanning

Scan has two 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.

Programming Mode

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

- Channel
- Configure the operating frequency from a pre-programmed frequency list
- Interference eliminator code
- Call tones
- Microphone gain
- Scan list (CLS1410 only)
- Available channels (CLS1410 only)

Note:

- To talk with someone on your two-way radio, the channel (CLS1410 only), 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.

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)	

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 blinks, and the frequency (indicated by **FREQ**) and code (indicated by **CODE**) display alternately.

Note: If you press and release the **Push to Talk** button when programming CSL1410 models, you will return to the front of the Programming Mode.

Selecting a Channel (CLS1410 Only)

1. In programming mode, press MENU until the channel number blinks 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.



Configuring the Operating Frequency from a Pre-programmed Frequency List

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

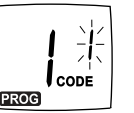


Note: See page 44 for information on frequencies for communicating with other business radios. If you are matching your CLS Series radio to an existing Spirit GT radio, see page 50.

Programming the Interference Eliminator Code

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

1. In programming mode, press MENU until **CODE** displays and the code number blinks.
2. Press ⊖ or ⊕ to select the code (see page 47).
3. Press and hold **Push to Talk** to exit programming mode, or press MENU to continue programming.



Programming the Available Channels (CLS1410 only)

If you need fewer channels, you can reduce the number of available channels.

1. In programming mode, press MENU until CH displays and the channel number blinks.
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: The radio retains settings for channels made unavailable.

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 is programmed at the factory 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 if 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, press the PTT button on the side of the radio.

Programming Microphone Gain

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

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



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

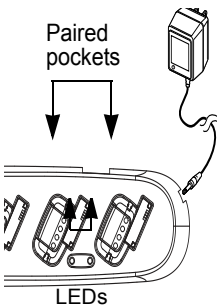


Cloning Radio Settings

You can copy CLS Series radio settings from one radio (the source) to a second radio using the 56531 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 have to be plugged in for cloning, but both radios require charged batteries.

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 transmits its settings to the target radio. If cloning was successful, P or Pass or "F" for Fail 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 another radio, repeat steps 3 and 4.
7. To exit programming mode on the source radio, press and hold **Push to Talk** until PROG no longer appears.



Advanced Features

You can set the following features by pressing and holding additional buttons **while turning 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 keypad 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

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	---

Troubleshooting

Symptom	Try This:
No Power	Recharge or replace Li Ion battery.
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. Verify Channel, Frequency, and Code settings are correct.
Hearing other noises or conversation on a channel	Frequency may be in use. Change on all radios if possible (see page 33 and 34).
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, if possible.
Limited talk range	Steel and/or concrete structures, heavy foliage, buildings, or vehicles decrease range (see page 27). Check for clear line of sight to improve range. Wearing radio close to body such as in a pocket or on a belt decreases range. Change location of radio.

Symptom	Try This:
Message not received	Confirm radios have the same channel, frequency, and interference eliminator code settings (see page 31). 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 29).
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.
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.

Symptom	Try This:
Low battery meter reading although new batteries are installed	Verify radio is set to the correct battery type (see page 20).
Cannot activate VOX (CLS1410 only)	Feature not set and on (see page 27). Sensitivity set to ▯ (see page 28). Verify that accessory allows VOX operation.
Cannot enter PROG mode	Unplug audio accessories and retry.

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.

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), but bandwidth may be different.

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

Display Number	Frequency (MHz)	Bandwidth
8	467.9250	12.5
9	461.0375	12.5
10	461.0625	12.5
11	461.0875	12.5
12	461.1125	12.5
13	461.1375	12.5
14	461.1625	12.5

UHF Frequencies (Continued)

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
25	462.8125	12.5

Display Number	Frequency (MHz)	Bandwidth
26	462.8375	12.5
27	462.8625	12.5
28	462.8875	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

UHF Frequencies (Continued)

Display Number	Frequency (MHz)	Bandwidth
37	466.1125	12.5
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
43	466.2625	12.5
44	466.2875	12.5
45	466.3125	12.5
46	466.3375	12.5

Display Number	Frequency (MHz)	Bandwidth
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
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

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

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

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

Spirit GT Series Programming

The CLS Series platform is designed to replace the Spirit GT Series radio. The first eight frequencies and 38 interference eliminator codes of CLS Series are compatible with Spirit GT Series. To program your CLS Series radio to talk with a Spirit GT Series, 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 blinks.
3. Use the Scroll button to select the code.

To exit programming mode on a Spirit GT Series radio, press **Push to Talk** or the radio will exit programming mode after five seconds.

Warranty

Limited Warranty for Motorola Personal Communications Products Purchased in the United States and Canada

I. What This Warranty Covers

- **Products.** Defects in materials and workmanship in wireless cellular telephones, pagers, and/or two-way radios, and certain accessories that are sold with them, such as the battery, battery charger, and holster manufactured and/or sold by Motorola (Products).
- **Batteries.** Defects in materials and workmanship in batteries that are manufactured by Motorola and/or sold with Products are covered by this warranty only if the fully-charged capacity falls below 80% of rated capacity or they leak.
- **Software.** Physical defects in the media that tangibly embodies each copy of any software supplied with the Products.

II. What the Period of Coverage Is

From the date the Products are purchased by the first end-user:

- **Products.** The warranty is for one year. Exception: The warranty for Spirit GT Series and Talkabout Series two-way radio accessories (including the Spirit GT Series batteries) is for 90 days.
- **Software.** The warranty is for 90 days.

- **Repairs/Replacements.** The warranty is for the balance of the original warranty or for 90 days from the date you receive it, whichever is longer.

III. Who is Covered

This warranty extends to the first end-user purchaser only.

IV. What We Will Do to Correct Warranty Problems

At no charge to you, we have the option to repair or replace the Products or software that do not conform to the warranty, or to refund the Products; purchase price. We may use functionally equivalent reconditioned/refurbished/pre-owned or new Products or parts. No software updates are provided.

V. How to Obtain Warranty Service or Other Information

USA	1-800-448-6686
Canada	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 to Motorola. You must ship the Products to us with freight, duties and insurance prepaid. Along with the Products 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 this Product requires subscription service); (d) the name and location of the installation facility (if applicable) and, most importantly; (e) your address and telephone number. If requested, you must also return all detachable parts such as antennas, batteries and chargers. RETAIN YOUR ORIGINAL PROOF OF PURCHASE.

We will ship repaired or replacement Products at our expense for the freight and insurance, but at your expense for any duties. If additional information is needed, please contact us at the telephone number listed above.

VI. What This Warranty Does Not Cover

- Products that are operated in combination with ancillary or peripheral equipment or software not furnished by Motorola for use with the Products ("ancillary equipment"), or any damage to the Products or ancillary equipment as a result of such use. Among other things, "ancillary equipment" includes batteries, chargers, adaptors, and power supplies not manufactured or supplied by Motorola. Any of these voids the warranty.
- Someone other than Motorola (or its authorized service centers) tests, adjusts, installs, maintains, alters, modifies, or services the Products in any way. Any of these voids the warranty.

- Rechargeable batteries that: (a) are charged by other than the Motorola-approved battery charger specified for charging such batteries; (b) have any broken seals or show evidence of tampering; (c) are used in equipment other than the Product for which they are specified; or (d) are charged and stored at temperatures greater than 60 degrees centigrade. Any of these voids the warranty.
- Products that have: (a) serial numbers or date tags that have been removed, altered, or obliterated; (b) board serial numbers that do not match each other, or board serial numbers that do not match the housing; or (c) nonconforming or non-Motorola housings or parts. Any of these voids the warranty.
- Defects or damage that result from: (a) use of the Products in a manner that is not normal or customary; (b) improper operation or misuse; (c) accident or neglect such as dropping the Products onto hard surfaces; (d) contact with water, rain, extreme humidity, or heavy perspiration; (e) contact with sand, dirt or the like; or (f) contact with extreme heat, or spills of food or liquid.
- Physical damage to the surface of the Products, including scratches, cracks, or other damage to a display screen, lens, or other externally exposed parts.
- Failure of Products that is due primarily to any communication service or signal you may subscribe to or use with the Products.
- Coil cords that are stretched or that have any broken modular tabs.
- Products that are leased.

Flat-rate repair rates may apply to Products not covered by this warranty. To obtain information about Products needing repairs that are not covered by this warranty, please call the telephone number previously listed. We will provide information on repair availability, rates, methods of payment, where to send the Products, etc.

VII. Some Other Limitations

This is Motorola's complete warranty for the Products, and states your exclusive remedies. This warranty is given in lieu of all other express warranties. Implied warranties, including without limitation, the implied warranties of merchantability and fitness for a particular purpose, are given only if specifically required by applicable law. Otherwise, they are specifically excluded.

No warranty is made as to coverage, availability, or grade of service provided by the Products, whether through a service provider or otherwise.

No warranty is made that the software will meet your requirements or will work in combination with any hardware or applications software products 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.

In no event shall Motorola be liable, whether in contract or tort (including negligence) for damages in excess of the purchase price of the Product, or for any indirect, incidental, special or consequential damages of any kind, or loss of revenue or profits, loss of business, loss of information or data, or other financial loss arising out of or in connection with the ability or inability to use the Products, to the full extent these damages may be disclaimed by law.

VIII. Patent and Software Provisions

At Motorola's expense, we will defend you, and pay costs and damages that may be finally awarded against you, to the extent that a lawsuit is based on a claim that the Products directly infringe a United States patent. Our obligation is conditioned on: (a) you notifying us promptly in writing when you receive notice of the claim; (b) you giving us sole control of the defense of the suit and all negotiations for its settlement or compromise; and (c) should the Products become, or in Motorola's opinion be likely to become, the subject of a claim of infringement of a United States patent, you permit us, at our option and expense, either to: procure for you the right to continue using the Products; replace or modify them so that they become non-infringing; or grant you a credit for such Products, as depreciated, and accept their return. The depreciation will be an equal amount per year over the lifetime of the Products, as established by Motorola.

Motorola will have no liability to you with respect to any claim of patent infringement that is based upon the combination of the Products or parts furnished under this limited warranty with ancillary equipment, as defined in VI., above.

This is Motorola's entire liability with respect to infringement of patents by the Products.

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Some states and other jurisdictions do not allow the exclusion or limitation of incidental or consequential damages, or limitation on the length of an implied warranty, so the above limitations or exclusions may not apply to you. This warranty gives you specific legal rights, and you may also have other rights, which vary from jurisdiction to jurisdiction.

CLS Series Programming Quick Reference

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

Set the Channel*



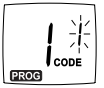
Press ⊖ or ⊕.

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**

CLS Series *Programming Quick Reference*

Set a Call Tone



Press MENU until CA displays. 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 blink. Press ⊖ or ⊕ to select the channel, then press MON to select Y (include channel) or n (exclude channel).

Notes

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