Two-Way Radios

User Guide

DLR1020, DLR1060 models

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PRODUCT SAFETY

PRODUCT SAFETY AND RF EXPOSURE COMPLIANCE

Caution

Before using this product, read the operating instructions and RF energy awareness information contained in the Product Safety and RF Exposure booklet enclosed with your radio.

ATTENTION!

This radio is restricted to occupational use only to satisfy FCC RF energy exposure requirements.

For a list of Motorola-approved batteries and other accessories, visit the following website which lists approved accessories:

www.motorolasolutions.com/DLR

INTRODUCTION

Thank you for purchasing the Motorola® DLR Series Radio. This radio is a product of Motorola's 80 plus years of experience as a world leader in the designing and manufacturing of communications equipment. The DLR Series radios provide cost-effective communications for businesses such as retail stores, restaurants, schools, construction sites, manufacturing, property and hotel management and more. Motorola professional two-way radios are the perfect communications solution for all of today's fast-paced industries.

Note: Read this user guide carefully to ensure you know how to properly operate the radio before use

Business Radios,
Mailstop 1C15, Motorola
8000 West Sunrise Boulevard
Plantation, Florida 33322

PACKAGE CONTENTS

- Radio
- Holster
- Lithium-Ion Battery
- Power Supply
- Quick Reference Guide
- Drop-in Tray Charger with Power Adapter
- Product Safety & RF Exposure Booklet

For a copy of a large-print version of this user guide or for product-related questions, contact

1-800-448-6686 in the USA
1-800-461-4575 in Canada
1-888-390-6456 on TTY (Text Telephone)

For product related information, visit us at:

www.motorolasolutions.com/DLR

FCC LICENSING INFORMATION

DLR Series business two-way radios operate in the license-free 900 MHz ISM Band (902 – 928 MHz) and are subject to the Rules and Regulations of the Federal Communications Commission (FCC).

This device complies with part 15 of the FCC Rules and RSS210 of the Industry Canada. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications not expressly approved by Motorola may void the user's authority granted by the FCC/IC to operate this radio and should not be made. To comply with FCC/IC 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. Replacement of any transmitter component (crystal, semiconductor, etc.) not authorized by the FCC/IC equipment authorization for this radio could violate FCC/IC 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.

Cet appareil est conforme à la partie 15 des règles de la FCC / IC . Son fonctionnement est soumis aux deux conditions suivantes : (1) Ce dispositif ne doit pas causer d'interférences nuisibles , et (2) cet appareil doit accepter toute interférence reçue, y compris les interférences qui peuvent causer une opération indésirable.

Les changements ou modifications non expressément approuvés par Motorola peuvent annuler l'autorisation de l'utilisateur accordée par la FCC / IC pour opérer cette radio et ne devraient pas être faits . Pour se conformer aux exigences de la FCC / IC, les ajustements de l'émetteur doivent être effectués seulement par ou sous la supervision d'une personne certifiée en valeur technique .

BATTERIES AND CHARGERS SAFETY INFORMATION

This document contains important safety and operating instructions. Read these instructions carefully and save them for future reference.

Before using the battery charger, read all the instructions and cautionary markings on

- the charger,
- the battery, and
- the radio using the battery

1. To reduce risk of injury, charge only the rechargeable Motorola-authorized batteries. Other batteries may explode, causing personal injury and damage.

2. Use of accessories not recommended by Motorola may result in risk of fire, electric shock, or injury.

3. To reduce risk of damage to the electric plug and cord, pull by the plug rather than the cord when disconnecting the charger.

4. An extension cord should not be used unless absolutely necessary. Use of an improper extension cord could result in risk of fire and electric shock. If an extension cord must be used, make sure that the cord size is 18AWG for lengths up to 100 feet (30.48 m), and 16AWG for lengths up to 150 feet (45.72 m).

5. To reduce risk of fire, electric shock, or injury, do not operate the charger if it has been broken or damaged in any way. Take it to a qualified Motorola service representative.

6. Do not disassemble the charger; it is not repairable and replacement parts are not available. Disassembly of the charger may result in risk of electrical shock or fire.

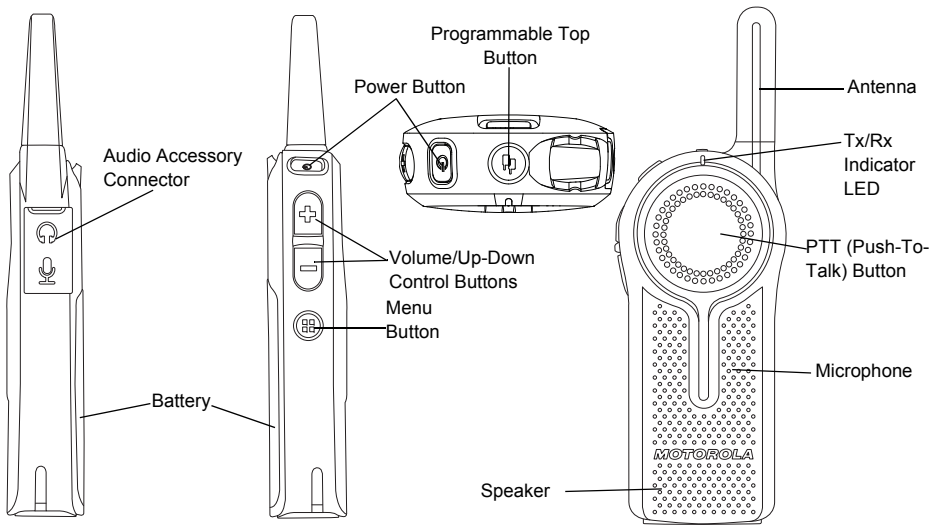
7. To reduce risk of electric shock, unplug the charger from the AC outlet before attempting any maintenance or cleaning

OPERATIONAL SAFETY GUIDELINES

- Turn the radio OFF when charging battery.
- The charger is not suitable for outdoor use. Use only in dry locations/conditions.
- Connect charger only to an appropriately fused and wired supply of the correct voltage (as specified on the product).
- Disconnect charger from line voltage by removing main plug.
- The outlet to which this equipment is connected should be nearby and easily accessible.
- In equipment using fuses, replacements must comply with the type and rating specified in the equipment instructions.
- Maximum ambient temperature around the power supply equipment must not exceed 40°C (104°F).
- Power output from the power supply unit must not exceed the ratings stated on the product label located at the bottom of the charger.
- Make sure that the cord is located where it will not be stepped on, tripped over, or subjected to water, damage, or stress.

RADIO OVERVIEW

PARTS OF THE RADIO



Power Button

Used to turn the radio ON or OFF.

Programmable Top Button

This Programmable Top button can be configured by the Programming Mode to initiate private call, private direct call, call all available or disable.

Note: The Programmable Top button must be set to be configurable in the user menu via CPS in order to appear in the device user menu.

Volume Control (+/-) Button

Used to increase (+), decrease (-) or mute the volume.

Audio Accessory Connector

Used to connect compatible audio accessories.

Microphone

Speak clearly into the microphone when sending a message.

Antenna

For models **DLR1020** and **DLR1060** the antennas are non-removable.

Tx/Rx Indicator LED

Used to indicate whether the radio is on standby, receiving or transmitting.

Push-to-Talk (PTT) Button

To respond, press the PTT (Push to Talk) and **WAIT** to hear the Talk Permit Tone (a quick double beep) **BEFORE** you start speaking. Hold the radio vertically 1 to 2 inches (2.5cm to 5cm) from mouth when talking. Release the PTT to listen.

Menu Button

Gives access to set up features and allows navigation through all features while in Programming Mode.

The Lithium-Ion (Li-Ion) Battery

DLR Series comes with a Standard Capacity Li-Ion battery. Other batteries may be available. For more information, see “Battery Features” on page 12.

This User Guide covers multiple DLR Series models, and may detail some features your radio does not have. The radio's model is shown on the back of the radio and provides the following information:

Table 1: DLR Series Radio Specifications

Model	Frequency Band	Transmit Power (Watts)	Number of Channels	Antenna
DLR1020	ISM 900 MHz	1	2	Non-removable
DLR1060	ISM 900 MHz	1	6	Non-removable

BATTERY FEATURES

DLR Series radios provide the standard Lithium-Ion

Note: Batteries that come in different capacities that defines the battery life may be available in future.

About the Li-Ion Battery

The DLR Series radio comes equipped with a rechargeable Li-Ion battery. This battery should be fully charged before initial use to ensure optimum capacity and performance.

Battery life is determined by several factors. Among the more critical are the regular overcharge of batteries and the average depth of discharge with each cycle. Typically, the greater the overcharge and the deeper the average discharge, the fewer cycles a battery will last. For example, a battery which is overcharged and discharged 100% several times a day, lasts fewer cycles than a battery that receives less of an overcharge and is discharged to 50% per day. Further, a battery which receives minimal overcharging and averages only 25% discharge, lasts even longer.

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

Battery Recycling and Disposal

Li-Ion rechargeable batteries can be recycled. However, recycling facilities may not be available in all areas. Under various U.S. state laws and the laws of several other countries, batteries must be recycled and cannot be disposed of in landfills or incinerators. Contact your local waste management agency for specific requirements and information in your area. Motorola fully endorses and encourages the recycling of Li-Ion batteries. In the U.S. and Canada, Motorola participates in the nationwide Rechargeable Battery Recycling Corporation (RBRC) program for Li-Ion battery collection and recycling.

Many retailers and dealers participate in this program. For the location of the drop-off facility closest to you, access RBRC's Internet web site at:

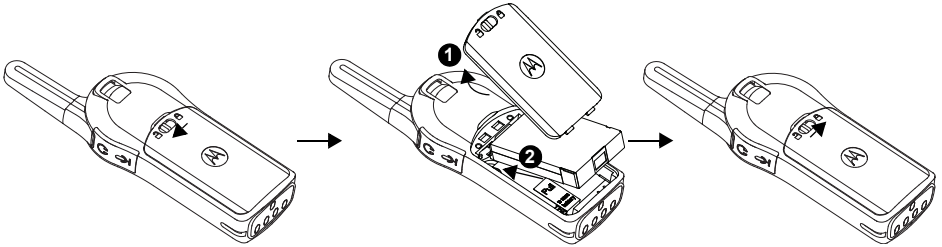
www.rbrc.com

or call:

1-800-8-BATTERY

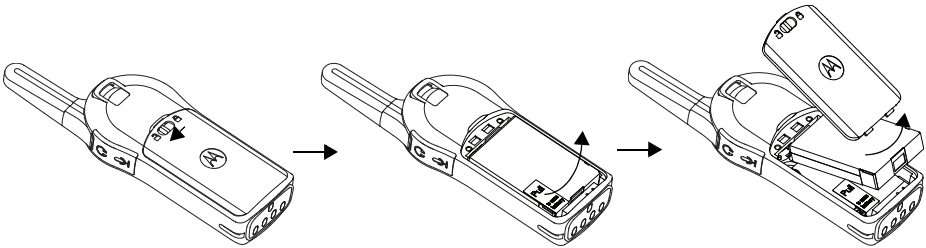
This internet site and telephone number also provides other useful information concerning recycling options for consumers, businesses and governmental agencies.

Installing the Lithium-Ion (Li-Ion) Battery



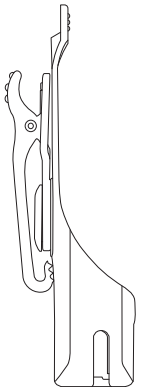
1. Slide the latch at the top of the battery door to the unlock position and lift up the battery door at the center recess.
2. Align the battery contacts with the tabs in the battery compartment. Insert the contact side of the battery first, then press the battery down to secure in place.
3. Put the battery door back on the radio. Slide the latch to the lock position .

Removing the Lithium-Ion (Li-Ion) Battery



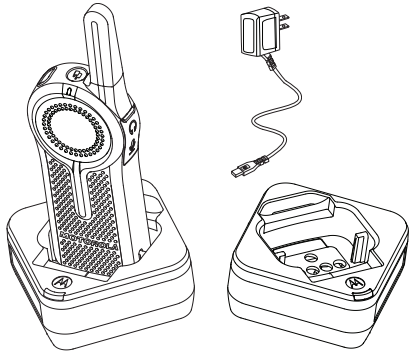
1. Turn OFF the radio.
2. Slide the latch at the top of battery door to the unlock position and lift up the battery door at the center recess.
3. Pull on the battery removal tab until battery is disengaged from battery compartment.
4. Pull the battery away from radio.

Holster



1. Insert the radio into the base of the holster at an angle. Press the radio against the back of the holster until the hooks on the holster are inserted in the top recesses of the battery.
2. To remove, using the top tab on the holster, detach the hooks of the holster from the top recesses of the battery. Slide the radio at an angle and remove from the holster.

Power Supply, Adaptor and Drop-in Tray Charger



The radio is equipped with one Drop-in Tray Charger and one Power Supply with Adaptor. For more information, refer to “Chargers” on page 57.

Battery Life Information

When the Battery Save feature is set to ON (enabled by default), the battery life lasts longer. The following table summarizes battery life estimations:

Table 2: Li-Ion Battery Life with Tx Power 1 Watt for DLR1020 and DLR1060

Battery Type	Battery Save OFF	Battery Save ON
Standard	10.0 - 12.0 Hours	TBA

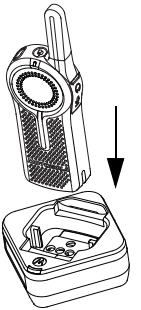
Note: Battery life is estimated based on 5% transmit / 5% receive / 90% standby standard duty cycle.

Charging the Battery

The DLR Series radio comes with a Standard Power Supply.

To charge the battery (with the radio attached), place it in a Motorola-approved Drop-in Tray Single Unit Charger or Drop-in Tray Multi Unit Charger.

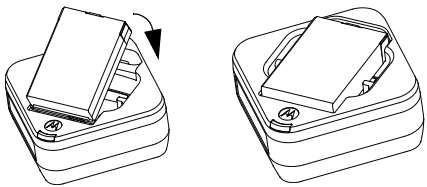
Charging with the Drop-in Tray Single Unit Charger (SUC)



1. Place the Drop-in Tray Charger on a flat surface.
2. Insert the connector of the Power Supply into the charger port on the back of the Drop-in Tray Charger.
3. Plug the AC Adaptor into a power outlet.
4. Insert the radio into the Drop-in Tray Single Unit Charger with the radio facing the Motorola logo on the charger as shown in the figure above.

Note: When charging a battery attached to the radio, turn the radio OFF to ensure a full charge. See “Operational Safety Guidelines” on page 8 for more information.

Charging A Stand-Alone Battery



To charge only the battery - at step 4 on page 18, insert the battery into the tray, with the inside surface of the battery facing the front of the Drop-in Tray Single Unit Charger as shown above. Align the slots in the battery with the alignment ribs in the Drop-in Tray Single Unit Charger.

Table 3: Motorola Authorized Batteries

Part Number	Description
HKNN4013_	Li-Ion Battery 1800mAh

Drop-in Tray Charger Charge Status Indicators

Table 4: Charge Status LED Indicator

LED Indication	Charger State
Single Flash Green	Charger Ready for Use
Slow Flash Amber	Waiting to Charge(*)
Fast Flash Red	Battery Fault(**)
Steady Red	Charging
Steady Green	Charged(***)
LED Off	No Battery in Pocket

(*) Battery temperature is too warm or too cold or wrong power voltage is being used.
(**) Normally, re-positioning the battery pack will correct this issue.
(***) Battery is charged to at least 95% threshold of the battery.

Drop-in Tray Charger Battery State of Charge Indications

Table 5: Battery State of Charge

LED Indication	Battery State of Charge
Flash Red 1 Time	Battery Low
Flash Amber 2 Times	Battery Medium
Flash Green 3 Times	Battery High

If there is NO LED indication:

1. Check if the radio with battery, or the battery alone, is inserted correctly. (refer to step 4 of "Charging with the Drop-in Tray Single Unit Charger (SUC)" on page 18)
2. Ensure that the power supply cable is securely plugged into the charger socket using an appropriate AC outlet and there is power to the outlet.
3. Confirm that the battery being used with the radio is listed in Table 3 on page 19.

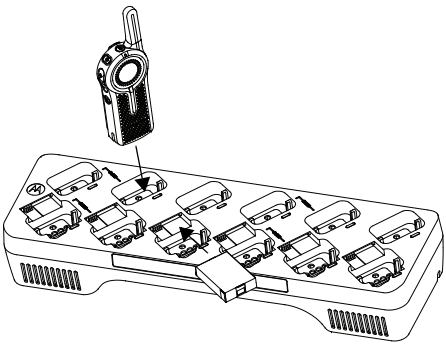
Estimated Charging Time

The following table provides the estimated charging time of the battery. For more information, see “Battery” on page 57.

Table 6: Battery Estimated Charging Time

Charging Solutions	Estimated Charging Time
	Standard Battery
Standard	≤ 3.50 Hours

Charging a Radio and Battery using a Multi Unit-Charger - MUC (Optional Accessory)



The Multi-Unit Charger (MUC) allows drop-in charging of up to 12 radios or up to 6 radios and 6 stand-alone batteries. Batteries can be charged with the radios or removed and placed in the MUC separately. Each of the 12 charging pockets can hold a radio (with or without the Holster) or battery, but not both.

1. Place the Multi-Unit Charger on a flat surface.
2. Insert the power cord plug into the MUC's dual pin connector at the bottom of the MUC.
3. Plug the power cord into an AC outlet.
4. Turn the radio OFF.
5. Insert the radio or battery into the charging pocket with the radio or battery facing away from the contacts.

Note:

- This Multi-Unit Charger clones up to 2 radios (2 Source radios and 2 Target radios). Refer to "Cloning with a Multi-Unit Charger (MUC)" on page 42 for more information.
- More information on the Multi-Unit Charger's operation is available in the Instruction Sheets provided with the MUC. For more information on the parts and their part numbers, refer to Chapter "Accessories" on page 57.

Multi-Unit Charger Charge Status Indicators

Table 7: Charge Status LED Indicator

LED Indication	Charger State
Single Flash Green	Charger Ready for Use
Slow Flash Amber	Waiting to Charge(*)
Fast Flash Red	Battery Fault(**)
Steady Red	Charging
Steady Green	Charged(***)
LED Off	No Battery in Pocket

(*) Battery temperature is too warm or too cold or wrong power voltage is being used.
(**) Normally, re-positioning the battery pack will correct this issue.
(***) Battery is charged to at least 95% threshold of the battery.

Multi-Unit Charger Battery State of Charge Indications

Table 8: Battery State of Charge

LED Indication	Battery State of Charge
Flash Red 1 Time	Battery Low
Flash Amber 2 Times	Battery Medium
Flash Green 3 Times	Battery High

If there is NO LED indication:

1. Check if the radio with battery or the battery alone, is inserted correctly (refer to step 5 of "Charging a Radio and Battery using a Multi Unit-Charger - MUC (Optional Accessory)" on page 23).
2. Make sure the power cord is securely plugged into the MUC and the appropriate AC outlet. Make sure there is power to the AC outlet.
3. Confirm that the battery being used with the radio is listed in Table 3 on page 19.

Notes

GETTING STARTED

For the following explanations, refer to “Parts Of The Radio” on page 9.

TURNING RADIO ON/OFF

To turn ON the radio, press and hold the Power button until the radio plays the power up tone and the standby light begins to blink.

To turn the radio OFF, press and hold the Power button (~3 seconds) until the radio Tx/Rx Indicator LED turns OFF and power down tone is heard.

ADJUSTING VOLUME

Press the (+) button to increase the volume, or the (-) button to decrease the volume.

To mute, press and hold the (-) button (~2 seconds) until you hear the voice announcement “Mute”.

To maximize volume, press and hold the (+) button (~2 seconds). The volume will fast scroll up to maximum volume. You will hear the volume beeps increment as the volume increases.

Note: Do not hold the radio too close to the ear when the volume is high or when adjusting the volume
There are 16 increments of volume.
As the (+) / (-) buttons are pressed, you will hear a beep at the current volume level. If device is receiving during volume interaction, received audio will be heard at the new volume instead of beeps.

CHECKING BATTERY STATUS

To check the battery status:

- Press Menu button until the voice announcement “*Battery Level <Level>*” is heard, OR

Note: The four levels available for battery status are : High, Medium, Low and Critical.

To exit battery status checking, press the PTT button or wait for menu timer to expire. Radio plays exit menu tone.

SELECTING A CHANNEL

To select a channel, press Menu button until the voice announcement "*Channel <Number>, to change press + or -*" is heard.

Press (+) or (-) buttons to select the desired channel. An audible voice indicates the selected channel.

To exit Channel Change, press the PTT button or wait for Menu timer to expire.

PROGRAMMABLE TOP BUTTON OPTIONS

The Programmable Top button can be configured to allow multiple calling options. Upon pressing the Programmable Top button, you will be able to transmit and receive based on how the button has been configured. The interaction for all options, with the exceptions of "Disabled" comes with specific LED indications.

Programmable Top Button Options:

Private Reply – Enters the Private Call mode with the last user that was transmitting on the talkgroup when the Programmable Top Button is pressed.

Private Direct Call – Enters into Private Direct Call mode with a pre-programmed radio user ID

Note: The radio user ID must be configured via the CPS

Call All Available – Calls all radio users that are available in all channels. This feature is only available when the radio is programmed using a PIN.

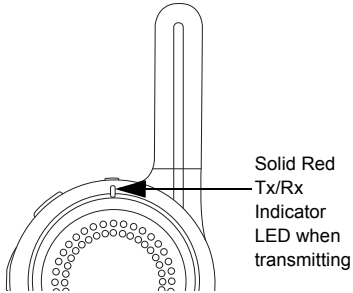
Note: Only radios that are not currently transmitting or receiving hears the call. Radios in private hangtime does not receive the call.

IMPORTANT: Call All Available feature does NOT interrupt ongoing conversations.

Disabled – When the Programmable Top Button is not configured, pressing it returns a bonk tone. No call is made or initiated.

TRANSMITTING AND RECEIVING

- Press the (+) button to increase the volume, or the (-) button to decrease the volume.
- To receive, listen through the speaker. To respond, press the PTT (Push to Talk) and **WAIT** to hear the Talk Permit Tone (a quick double beep) **BEFORE** you start speaking. Hold the radio vertically 1 to 2 inches (2.5cm to 5cm) from mouth when talking. Release the PTT to listen.
- The Tx/Rx Indicator slow blinks RED when on standby. When the radio is transmitting, the Tx/Rx Indicator is solid RED.
- When the radio is receiving, the Tx/Rx Indicator LED blinks RED quickly.



Talking to a Group in a Channel

To transmit, press the PTT (Push to Talk) and **WAIT** to hear the Talk Permit Tone (a quick double beep) **BEFORE** you start speaking.

PRIVATE REPLY

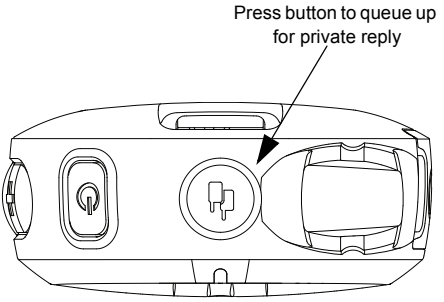
Note: All the DLR Series radio Programmable Top Button is defaulted to Private Reply function. If you need to change this setting, please use the free online CPS software that is available in www.motorolasolutions.com/DLR.

Private Reply Request

Privately reply to someone talking to a group by pressing the Programmable Top Button (while the person is still talking) in order for your Private Reply request to be queued.

If your Private Reply request is successfully in queue, the Programmable Top Button starts blinking GREEN.

Note: You will not be able to talk to the person privately UNTIL the person transmitting finish the transmission.



While waiting in queue to talk privately, you will receive a call reminder tone after 1 minute of being in queue followed by a reminder 4 minutes after that. No other reminder will be heard afterwards, but you will remain in queue until the Private Reply mode is exited.

Private Reply Hang Time

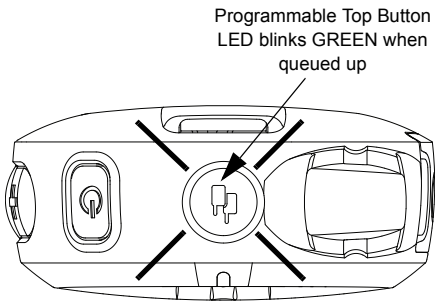
The radio allows a window of a few seconds for anyone to press the Top Programmable and still be able to queue the Private Reply request after a user has finished transmitting (or

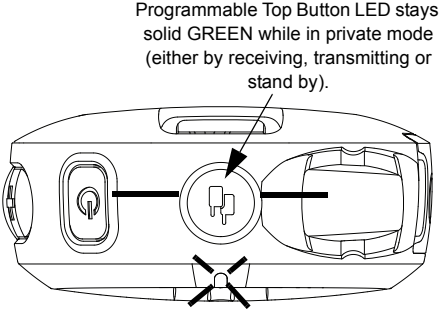
talking). This time window is called "Group Hang Time" (check the CPS settings for more details). If you private reply within this Group Hang Time, you can talk privately to the last user that was transmitting. If the user is busy in another call you receive a "busy" tone instead.

If you're out of the Hang Time window, you cannot talk privately but will still be in Group Talk mode.

Note: The Programmable Top button LED will remain OFF and you will hear a tone if:

- The Private Reply is not successful due to the request being done outside the Group Hang Time.
- Radio ID cannot be stored (outside of hang time).
- Programmable Top Button is set to ‘Disabled’.

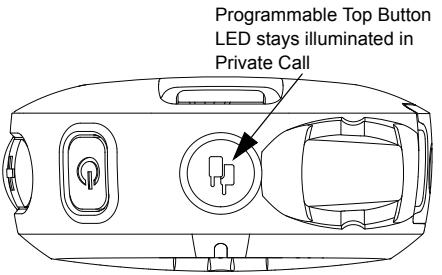




Talking in a Private Mode

Once you have entered the private mode (either due to Private Reply or Direct Private Call), the Programmable Top Button LED illuminates solid GREEN and you will hear a distinct Private Talk Permit Tone, to indicate your conversation is private. (The Tx/Rx LED indications are as described in the "Transmitting and Receiving" on page 29).

To talk, press and hold the PTT button, while in Private Mode. Begin to talk after you hear the Private Talk Permit Tone. Release the PTT button when finished.



IMPORTANT: Always make sure the Programmable Top Button LED is illuminating GREEN before intending to talk in private mode. If the button is not illuminated, your conversations will be heard by all users in the channel.

Ending a Private Reply Or Direct Call

To end a private or direct call:

- Long press and hold the Programmable Top Button to end the private or direct call and return to the current selected channel or talkgroup. An end tone is heard by both call participants when the call is ended, or
- Allow call hang timer to expire, effectively ending the call and return to the current select channel or talkgroup.

Note: Ending a private or direct call by pressing and holding the Programmable Top Button is **NOT** possible if either radio is transmitting.
When a private or direct call is ended, an end tone plays for both call participants when the call is ended.
Only the call initiatior can end a private or direct call.

PRIVATE DIRECT CALL

Note: In order to be able to use this feature, the Programmable Top Button should have been previously mapped for the Private Direct Call function. Refer to the “Setting the Programmable Top Button Options” on page 39 and “Customer Programming Software (CPS)” on page 41 for details.

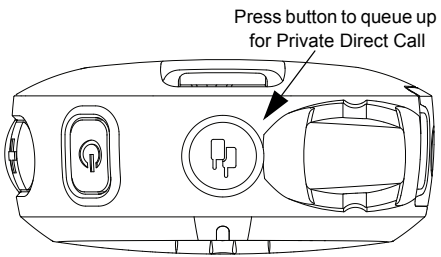
This feature allows you to initiate a private call to a predetermined user, by pressing the Programmable Top Button.

Once you press the Top Programmable Button and if the user on the other end is available, the Top Programmable Button starts blinking GREEN. Push and hold the PTT button to talk. You will hear the distinctive Private Talk Permit Tone and the Top LED illuminates solid GREEN to indicate that you are in a private call. Release the PTT button to hear.

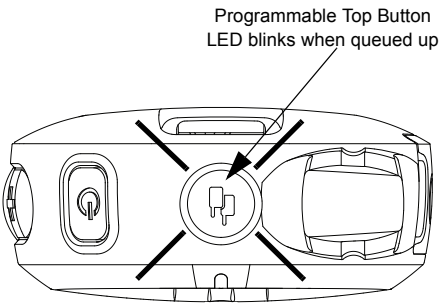
If you press the Programmable Top Button and the user that you are trying to reach is busy, the radio gives you a busy tone. The Programmable Top Button blinks GREEN indicating you are in queue waiting to talk.

There will be tone reminders to alert you that you're still in queue (similar to Private Reply).

Note: You will not be able to talk to the person privately UNTIL the person on the other end finish the transmission.



A call reminder tone sounds after 1 minute of being in queue followed by a reminder 4 minutes after. No other reminder is heard afterwards, but you remain in queue until the mode is physically exited.



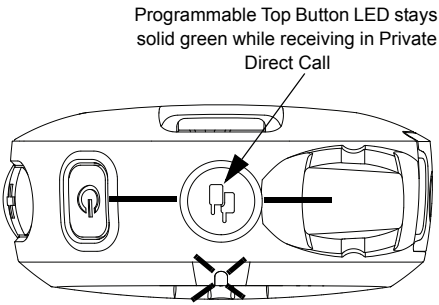
Note: This assumes that the radio ID to be called in private is already stored and is always on Private Direct Call.

While queued for Private Direct Call – press and hold the PTT button to speak directly to the stored Radio ID.

- **If successful:** During Private Direct Call Transmitting, Programmable Top button becomes solid green and the Tx/Rx Indicator LED stays solid red and you will hear a distinct Private Talk permit tone. Begin speaking to the private

individual.

Receiving radio's Programmable Top Button illuminates solid green and the receiver hears a private tone before voice begins, indicating that they are in a private call.



- **If not successful:** A busy unavailable tone sounds and the Programmable Top Button continues to blink and queued up for private call. You can continue trying as long as you are queued up. A beep sounds every few seconds while queued.

TALK RANGE

TALK RANGE		
Model	**Industrial**	**Multi-Level**
	Inside steel/ concrete Industrial buildings	**Inside multi-level buildings**
ISM 900 MHz	Up to 300,000 Sq. Ft.	Up to 20 Floors

To establish a proper two-way communication, the channel and PIN (Profile ID Number) settings must be the same on both radios. This depends on the stored profile that has been preprogrammed on the radio:

1. **Channel:** Current channel that the radio is using, depending on radio model.
2. **PIN (Profile ID Number):** Choose a customized PIN via CPS or Front Panel Programming. Refer to "Setting Profile ID Number (PIN)" on page 38 and "Customer Programming Software (CPS)" on page 41 for more details.

RADIO STATUS

RADIO STATUS	LED INDICATION	AUDIBLE TONE
Channel Busy	Not Available	Busy Tone
Cloning Mode	Not Available	"*Cloning Mode*"
Cloning In Progress	Double Blink Orange	Not Available
Fatal Error at Power up	One Green Blink, One Orange Blink, One Green Blink, then repeat for 4 seconds	TBA
Low Battery	Not Available	TBA
Low Battery Shutdown	Fast Red Heartbeat	TBA
Power-Up	Solid Red for 2 seconds	"*Battery Level <Level>, Channel <Number>*"
'Idle' Programming Mode / Channel Mode	Not Available	Chirp Tone followed by "*Programming Mode*"
Transmit (Tx)	Solid Red	Not Available
Receive (RX)	Fast Red Heartbeat	Not Available

ADVANCED RADIO CONFIGURATION

Advanced Radio Configuration provides you with the ability to check and configure the following settings from a pre-programmed list without the need to use a computer.

The navigation is guided by an audible voice prompt.

- Profile ID Number (PIN),
- Maximum Channels,
- Programmable Top Button Options, and
- Microphone Gain.

The **Profile ID Number (PIN)** feature allows you set unique 4 digits profile identification (0000 – 9999) to your radio.

The **Maximum Channels** feature sets the number of maximum channels allowed in the radio.

The **Programmable Top Button Options** allows you to assign one of the following four features to the Programmable Top Button:

- Private Reply,
- Private Direct Call,
- Call All Available, and
- Disabled.

Note: The default feature for the Programmable Top Button is Private Reply.
Usage of the Direct Call feature requires a User ID to be pre-programmed via the CPS.

The **Microphone Gain** feature allows you to adjust the sensitivity level of the microphone to fit different users or operating environment. The default level of Microphone Gain is “Normal”.

Entering Advanced Radio Configuration

To enter the Advanced Radio Configuration:

1. Turn OFF the radio.
2. Press the PTT, (+) and Power buttons simultaneously and hold for 3~5 seconds. A

"*programming tone*" sounds and you hear the voice announcement "Programming Mode, press Menu to continue".

Note: The Tx/Rx Indicator LED blinks a steady red heartbeat during the Programming Mode.

3. Short press the Menu button to navigate along and loop through the different programmable features available:

- Profile ID Number,
- Maximum Channels,
- Programmable Top Button Options, and
- Microphone Gain.

4. The voice announcements indicate the menu features and their current settings. To modify the settings, press the (+) or (-) buttons.

To exit the Advanced Radio Configuration Mode:

1. Press and hold the PTT button until a "beep" sound is heard.

Setting Profile ID Number (PIN)

While in Programming Mode:

1. Press the Menu button to hear the voice announcement "*Current Profile ID <####>, to change press (+) or (-)*".

Note: User must advance through all 4 digits before new Radio PIN will be saved.

2. Press the (+) or (-) button to start setting the Radio PIN. The voice announces "*First digit <#>, to change press (+) or (-)*". Short press the (+) or (-) button until you reach the desired number. Numbers loop from 0 – 9.

3. To move to the next digit, short press the Menu button. The voice announces "*2nd digit <#>, to change press (+) or (-)*".

4. Repeat Step 2 and 3 until all 4 digits are set and you hear the voice announcement "*Profile ID saved as <####>, press Menu to continue*".

5. Press the Menu button to continue to the next programmable feature available.

Note: If you are done programming, press and hold the PTT button until a "beep" sound is heard, to exit the programming mode.

Setting the Maximum Channels

While in Programming Mode:

1. Press the Menu button until the voice announcement "*Max Channels <current setting>, to change press (+) or (-)*" is heard.
2. Press the (+) or (-) button to cycle through the number of maximum channels allowed. The voice announces the maximum channels set "<#>".

Note: Numbers loop based on the number of channels allowed by your radio model.

3. Press the Menu button to continue to the next programmable feature available – Programmable Top Button Options.

Note: If you are done programming, press and hold the PTT button until a "beep" sound is heard, to exit the programming mode.

Setting the Programmable Top Button Options

While in Programming Mode:

1. Press the Menu button until the voice announcement "*Programmable Button <current setting>, to change press (+) or (-)*" is heard.

Note: The default setting is Private Reply.

2. Press the (+) or (-) button to cycle through the programmable options available. The voice announces the options available "<*option*>".
3. Press the Menu button to continue to the next programmable feature available.

Note: If you are done programming, press and hold the PTT button until a "beep" sound is heard, to exit the programming mode.

Setting the Microphone Gain

While in Programming Mode:

1. Press the Menu button until the voice announcement "*Mic Gain <current setting>, to change press (+) or (-)*" is heard.

Note: The default level of Microphone Gain is "Normal".

2. Press the (+) or (-) button to cycle through the 3 levels (Low, Normal and High) of Microphone Gain Available. The voice announces the options the Microphone Gain level selected "*<level>*".

3. Press the Menu button to continue to the next programmable feature available.

Note: If you are transmitting in a noisy environment set the Microphone Gain to "Low". For quiet environments set the Microphone Gain to "High".
If you are done programming, press and hold the PTT button until a "beep" sound is heard, to exit the programming mode.

CUSTOMER PROGRAMMING SOFTWARE (CPS)

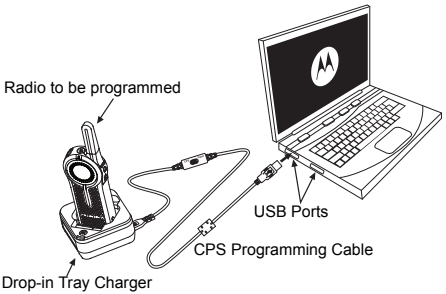


Figure 1: *Setting up the radio to the CPS*

The easiest way to program or change features in your radio is by using the Customer Programming Software (CPS) and the CPS Programming Cable(*). CPS Software is available for free as web based downloadable software at:

www.motorolasolutions.com/DLR

To program, connect the DLR Series radio via the Drop-in Charger Tray and CPS Programming Cable to your computer as shown in the picture above. Prior to programming, verify that the switch in the cable (P/N# HKKN4027)* is in the '**CPS Digital**' position.

CPS allows you to program other features such as: Direct Call, Transmit Time-out timer, Private Group, customized channel announcement, etc. CPS is a very useful tool as it can restrict any specific radio feature to be changed (to avoid accidentally erasing the preset radio values). It also provides security by giving the option to set up a password for profile radio's management. For more information, refer to Features Summary Chart Section at the end of the User Guide.

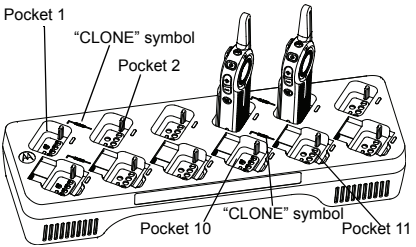
Note: (*) CPS Programming Cable Kit P/N# HKKN4027_ is an accessory sold separately. Please contact your Motorola point of purchase for more information.

CLONING RADIOS

You can clone DLR Series radio profiles from one Source radio to a Target radio by using any one of these 4 methods:

- Using a Multi Unit Charger (MUC- optional accessory),
- Using two Single Unit Chargers (SUC) and a Radio-to-Radio cloning cable (optional accessory),
- the CPS (free software download), and
- Wireless PIN cloning.

Cloning with a Multi-Unit Charger (MUC)



To clone radios using the MUC, there must be at least two radios:

- a Source radio (radio which profiles will be cloned or copied from) and
- a Target radio (the radio which profile will be cloned from the source radio.)

The Source radio has to be in Pocket 1, 4, 7 or 10 while the Target radio has to be in Pocket 2, 5, 8 or 11, matching in the MUCs pockets by pairs as follows:

- 1 and 2,
- 4 and 5,
- 7 and 8, or
- 10 and 11.

When cloning, the MUC does not need to be plugged into a power source, but ALL radios require charged batteries.

1. Turn ON the Target radio and place it into one of the MUC Target Pockets
2. Power the Source radio following the sequence below:

- Press the PTT button and the (-) button simultaneously while turning the radio ON.
- Wait for 3 seconds before releasing the buttons until the audible tone and voice announcement “Clone Mode Serial” are heard.

3. Place the Source radio in the source pocket that pairs with the target pocket you chose in step 1. Press and release the (+) button.
4. After cloning is completed, the Source radio will announce either “*successful*” (cloning is successful) or “*fail*” (cloning has failed).
5. Once you have completed the cloning process, turn the radios OFF and ON or, long press the PTT button to exit the ‘cloning’ mode.

Further details on how to clone radios are explained in the Instructions Sheet provided with the MUC.

When ordering the MUC, refer to P/N# PMLN7135_.

Notes:

- If cloning fails, refer to “What To Do If Cloning Fails” on page 47.
- Paired Target radios and Source radios must be of the same band type in order for the cloning to run successfully.
- MUC pockets numbers should be read from left to right with the Motorola logo facing front.

Wireless PIN Cloning Radios

To clone radios using the Wireless Pin Cloning method:

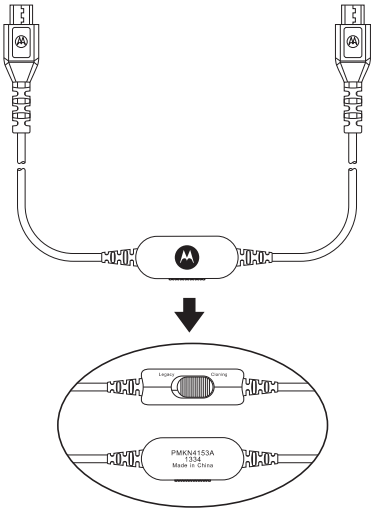
1. Power the Source radio following the sequence below:
   - Press the PTT button and the (-) button simultaneously while turning the radio ON.
   - Wait for 3 seconds before releasing the buttons until the audible tone and voice announcement “*Clone Mode Serial*” are heard.
   - Press and release the (-) button and the Source Radio will announce “*Wireless*”.

2. Power the Target radio following the sequence below:
    - Press the PTT button and the (-) button simultaneously while turning the radio ON.
    - Wait for 3 seconds before releasing the buttons until the audible tone and voice announcement “Clone Mode Serial” are heard.
3. On the Source radio, press and release the (+) button to start the Wireless PIN cloning. The radio generates an audible tone.
4. After cloning is completed, the Source radio will announce either “*successful*” (cloning is successful) or “*fail*” (cloning has failed).
5. On the Target radio, the radio receives the PIN information. The Target radio will announce either “*successful*” (cloning is successful) or “*fail*” (cloning has failed).

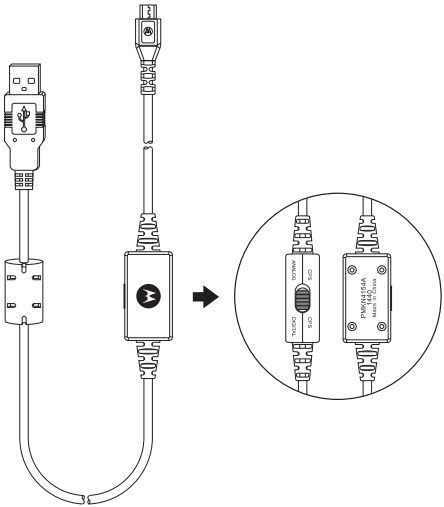
CPS and Cloning Cables (Optional Accessory)

- Both **CPS** and **Cloning Cables** are made to work with DLR Series radios.
- **CPS** cable programs DLR Series radios. Make sure the cable switch is in “CPS Digital” position and the USB converter provided in the CPS cable kit is attached to the cable.
- **Cloning** cable allows you to clone DLR Series radios. Make sure the switch is in “Cloning” position.

CPS Cable



Cloning Cable



USB Converter

Cloning Radio using the Radio to Radio (R2R) Cloning Cable (Optional Accessory)

Operating Instructions

1. Before starting the cloning process, make sure you have:

- A fully charged battery on each of the radios.
- Two Single-Unit Chargers (SUC) for cloning DLR Series radios.
- Turn OFF the radios and,

2. Unplug any cables (power supply or USB cables) from the SUCs.

3. Plug one side of the cloning cable mini USB connector to the first SUC and the other end to the second SUC.

Note: During the cloning process, no power is being applied to the SUC. The batteries will not be charged. Only data communication is being established between the two radios.

4. Turn ON the Target Radio and place it into one of the SUCs.

5. For the Source Radio, power ON the radio with the following sequence:

- Press the PTT button and the (-) button simultaneously while turning the radio ON. Wait 3 seconds before releasing the buttons and you hear a distinctive audible tone saying the word "*Clone Mode Serial*".
- Place the Source Radio in its SUC. Press and release the (+) button.

6. When the cloning is completed, the Source Radio audible voice will announce either "*pass*" (cloning is successful) or "*fail*" (cloning process has failed).

7. Once the cloning process is completed, turn the

Radios OFF and ON or, long press the PTT button to exit the 'cloning' mode

What To Do If Cloning Fails

The radio audible voice will announce "*Fail*" indicating that the cloning process has failed. In the event that the cloning fails, perform each of the following steps before attempting to start cloning process again:

1. Ensure that the batteries on both radios are fully charged.
2. Check the cloning cable connection on both SUCs and the cable is switched to "Cloning".
3. Ensure that the battery is engaged properly on the radio.
4. Ensure that there is no debris in the charging tray or on the radio contacts.
5. Ensure that the Target radio is turned ON.
6. Ensure that the Source radio is in cloning mode.
7. Ensure that the two radios are both from the same type (i.e.:DLR series), same region and have the same transmission power.

Note: This cloning cable is designed to operate only with compatible Motorola SUC PMLN7139_.

When ordering Cloning Cable Kit, please refer to P/N# HKKN4028_. For more information about the accessories, refer to "Accessories" on page 57.

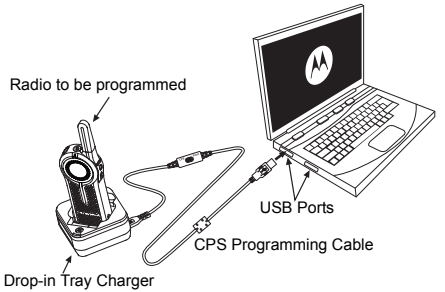
Cloning using the Customer Programming Software (CPS)

When cloning using this method, you need the CPS software, a Drop-In Tray Charger and the CPS Programming Cable.

To order the CPS Programming Cable Kit, please refer to P/N# HKKN4028_.

Information on how to clone using the CPS is available either in:

- the CPS Help File --> Content and Index --> Cloning Radios, or
- in the CPS Programming Cable Accessory Leaflet.



TROUBLESHOOTING

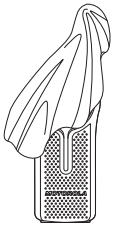
Symptom	Try This...
No Power	Recharge or replace the Li-Ion battery. Extreme operating temperatures may affect battery life. Refer to “About the Li-Ion Battery” on page 12
Hearing other noises or conversation on a channel	Change settings: select a different PIN profile ID on all radios. Make sure radio is at the right frequency and code when transmitting. Refer to “Transmitting and Receiving” on page 29
Audio quality not good enough	Radio settings might not be matching up correctly. Double check to make sure they are identical in all radios

Symptom	Try This...
Limited talk range	Steel and/or concrete structures, heavy foliage, buildings or vehicles decrease range. 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. To increase range and coverage, you can reduce obstructions. Radios provide greater coverage in industrial and commercial buildings. Refer to “Transmitting and Receiving” on page 29
Message not transmitted or received	Make sure the PTT button is completely pressed when transmitting. Confirm that the radios have the same settings and PIN profile ID. Refer to “Transmitting and Receiving” on page 29 for further information. Recharge, replace and/or reposition batteries. Refer to “About the Li-Ion Battery” on page 12. Obstructions and operating indoors, or in vehicles, may interfere. Change location. Refer to “Transmitting and Receiving” on page 29.
Heavy static or interference	Radios are too close; they must be at least five feet apart. Radios are too far apart or obstacles are interfering with transmission. Refer to “Transmitting and Receiving” on page 29.

Symptom	Try This...
Low batteries	Recharge or replace Li-Ion battery. Extreme operating temperatures affect battery life. Refer to “About the Li-Ion Battery” on page 12.
Drop-in Charger LED light does not blink	Check that the radio/battery is properly inserted and check the battery/charger contacts to ensure that they are clean and charging pin is inserted correctly. Refer to “Charging the Battery” on page 18, “Drop-in Tray Charger Charge Status Indicators” on page 20 and “Installing the Lithium-Ion (Li-Ion) Battery” on page 14.
Low battery indicator is blinking although new batteries are inserted	Refer to “Installing the Lithium-Ion (Li-Ion) Battery” on page 14, and “About the Li-Ion Battery” on page 12.
Battery does not charge although it has been placed in the drop-in charger for a while	Check drop-in tray charger is properly connected and correspond to a compatible power supply. Refer to “Charging with the Drop-in Tray Single Unit Charger (SUC)” on page 18 and “Charging A Stand-Alone Battery” on page 19. Check the charger’s LEDs indicators to see if the battery has a problem. Refer to “Drop-in Tray Charger Charge Status Indicators” on page 20.

Note: Whenever a feature in the radio seems to not correspond to the default or preprogrammed values, check to see if the radio has been programmed using the CPS with a customized profile.

USE AND CARE

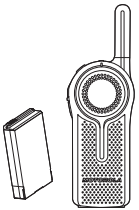


Use a soft damp cloth to clean the exterior

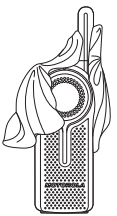
Do not immerse in water

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

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, and consumer and business 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, which are accompanied by this written warranty.

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.
Business Two-way Radio Accessories	**One (1) year** 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.

Use of Non-Motorola Products and Accessories. Defects or damage that result from the use of Non-Motorola branded or certified Products, Accessories, Software or other peripheral equipment are excluded from coverage.

Unauthorized Service or Modification. Defects or damages resulting from service, testing, adjustment, installation, maintenance, alteration, or modification in any way by someone other than Motorola, or its authorized service centers, are excluded from coverage.

Altered Products. Products or Accessories with (a) serial numbers or date tags that have been removed, altered or obliterated; (b) broken seals or that show evidence of tampering; (c) mismatched board serial numbers; or (d) nonconforming or non-Motorola housings, or parts, are excluded form coverage.

Communication Services. Defects, damages, or the failure of Products, Accessories or Software due to any communication service or signal you may subscribe to or use with the Products Accessories or Software is excluded from coverage.

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.

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.

Software NOT Embodied in Physical Media. Software that is not embodied in physical media (e.g. software that is downloaded from the internet), is provided “as is” and without warranty.

WHO IS COVERED?

This warranty extends only to the first consumer purchaser, and is not transferable.

HOW TO OBTAIN WARRANTY SERVICE OR OTHER INFORMATION?

Contact your Motorola point of purchase.

SOFTWARE COPYRIGHT NOTICE

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PATENT NOTICE

This product is covered by one or more of the following United States patents.
5896277 5894292 5864752 5699006 5742484 D408396 D399821 D387758 D389158 5894592 5893027 5789098 5734975 5861850 D395882 D383745 D389827 D389139 5929825 5926514 5953640 6071640 D413022 D416252 D416893 D433001

EXPORT LAW ASSURANCES

This product is controlled under the export regulations of the United States of America. The Governments of the United States of America may restrict the exportation or re-exportation of this product to certain destinations. For further information contact the U.S. Department of Commerce.

ACCESSORIES

AUDIO ACCESSORIES

Part No.	Description
HKLN4599_	Earpiece w/PTT, Mic, Slim Plug
HKLN4601_	Dual Pin Surveillance w/PTT, Slim Plug
HKLN4604_	Swivel Earpiece, w/PTT, Slim Plug
HKLN4605_	Earbud w/PTT, Mic, Slim Plug
HKLN4606_	Remote Speaker Mic, w/PTT, Slim Plug
HKLN4608_	Transparent Acoustic Tube Replacement Part

BATTERY

Part No.	Description
HKNN4013_	Li-Ion Battery 1800mAh

CABLES

Part No.	Description
HKKN4027_	Business Radio CPS Cable Kit
HKKN4028_	Business Radio Cloning Cable Kit

CHARGERS

Part No.	Description
PMLN7140_	DLR Single-Unit Charger (SUC) Kit
PMLN7136_	DLR 12-Pocket Multi-Unit Charger (MUC) Kit

CARRY ACCESSORIES

Part No.	Description
HKLN4615_	DLR Swivel Clip Holster Kit

SOFTWARE APPLICATIONS

Part No.	Description
82012694001	Customer Programming Software (CPS)

Motorola Solutions, Inc.
1303 E. Algonquin Rd.
Schaumburg, IL 60196-1078, U.S.A.
http://www.motorolasolutions.com

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