



CLP107e User Guide

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European Union (EU) and United Kingdom (UK) Waste of Electrical and Electronic Equipment (WEEE) Directive



The European Union's WEEE directive and the UK's WEEE regulation require that products sold into EU countries and the UK must have the crossed-out wheellie bin label on the product (or the package in some cases). As defined by the WEEE directive, this crossed-out wheellie bin label means that customers and end-users in EU and UK countries should not dispose of electronic and electrical equipment or accessories in household waste.

Customers or end-users in EU and UK countries should contact their local equipment supplier representative or service centre for information about the waste collection system in their country.

Disclaimer

Please note that certain features, facilities, and capabilities described in this document may not be applicable to or licensed for use on a specific system, or may be dependent upon the characteristics of a specific mobile subscriber unit or configuration of certain parameters. Please refer to your Motorola Solutions contact for further information.

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Batteries, Chargers, and Audio Accessories 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
 - the radio attached with battery
- 1** To reduce risk of injury, charge only the rechargeable Motorola Solutions-authorized batteries. Charging the other batteries may cause explosion, personal injury, and damage.
 - 2** Use of accessories not recommended by Motorola Solutions may result in fire, electric shock, or injury.
 - 3** To reduce damage to the electric plug and cord, pull by plug rather than the cord when disconnecting the charger.
 - 4** An extension cord should not be used unless necessary. Use of an improper extension cord may result in fire and electric shock. If an extension cord must be used, make sure that the cord size is 18 AWG for lengths up to 2.0 m (6.5 feet), and 16 AWG for lengths up to 3.0 m (9.8 feet).
 - 5** Do not operate the charger if it has been broken or damaged in any way. Take it to any qualified Motorola Solutions service representatives.
 - 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 off the radio while charging.
- The charger is not suitable for outdoor. Use only in dry locations or conditions.
- Connect charger to an appropriately fused and wired supply of the correct voltage (as specified on the product only).
- Disconnect charger from line voltage by removing main plug.
- Connect the equipment to an outlet which is easy to access and near.
- For 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 the cord is not stepped on, tripped over, subjected to water, damage, or stress.

Acoustic Safety



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

To protect your hearing:

- Use the lowest volume necessary to do your job.
- Increase the volume only if you are in noisy surroundings.
- Reduce the volume before connecting headset or earpiece.
- Limit the amount of time you use headsets or earpieces at high volume.
- If you experience hearing discomfort, ringing in your ears, or speeches that are muffled, you should stop listening to your radio through your headset or earpiece, and have your hearing checked by your doctor.

Radio Frequency Exposure Safety Standards

Product Safety and RF Exposure Compliance.



CAUTION:

Before using the radio, read the operating instructions for safe usage contained in the Product Safety and RF Exposure booklet contained with your radio.

ATTENTION!

This radio is restricted to Occupational use only. Before using the radio, read the RF Energy Exposure and Product Safety Guide for Portable Two-Way Radios which contains important operating instructions for safe usage and RF energy awareness and control for Compliance with applicable standards and Regulations.

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

https://www.motorolasolutions.com/en_xa/CLP107e

Notice to Users

This device complies with Part 15 of the FCC rules per the following conditions:

- This device may not cause harmful interference.
- This device must accept any interference received, including interference that may cause undesired operation.
-  **CAUTION:** Changes or modifications made to this device, not expressly approved by Motorola Solutions, could void the authority of the user to operate this equipment.

Introduction

This user guide covers the operation of your radios.

Your dealer or system administrator may have customized your radio for your specific needs. Check with your dealer or system administrator for more information.

You can consult your dealer or system administrator about the following:

- Is your radio programmed with any preset conventional channels?
- Which buttons have been programmed to access other features?
- What optional accessories may suit your needs?
- What are the best radio usage practices for effective communication?
- What maintenance procedures that helps promote longer radio life?

Package Content

This section provides information regarding package content for the radio.

Your product package contains the following products and manuals:

- Quick Start Guide, RF Energy Booklet
- Warranty Card
- Swivel Belt Clip Holster
- Lithium-Ion Battery and Battery Door
- Drop-In Tray Charger with Transformer¹
- Audio Accessory²
- Audio Jack Cover

For product information, refer to <https://learning.motorolasolutions.com>.

This user guide covers the following models:

Model	Frequency Band	Transmit Power	Repeater Compatibility	No. of Channels
CLP107e	UHF	1 W	Yes	8

¹ Applicable as an option for non-bulk models. Not applicable for bulk models.

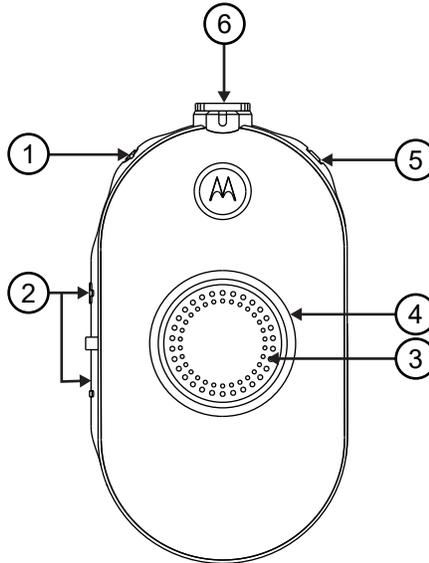
² Applicable to non-bulk models, optional for bulk models.

Chapter 1

Radio Overview

This chapter explains the buttons and functions of the radio.

Figure 1: Radio Controls



Item Number	Description
1	Power and Battery button
2	Volume Control (+/-) and Mute button
3	Push-to-Talk (PTT) button
4	Smart Status Glow Ring
5	Menu button
6	Accessory Connector

Chapter 2

Getting Started

This section helps you to get familiar with the basic operations of the radio.

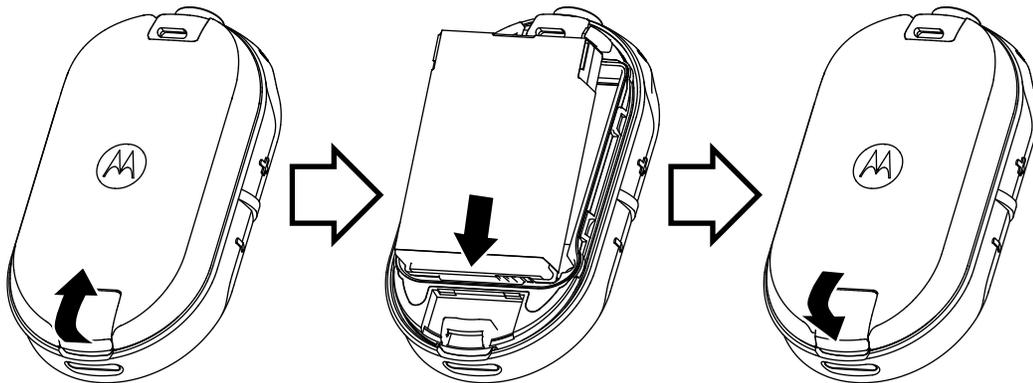
2.1

Installing the Battery

Procedure:

- 1 At the bottom of the battery door, lift the latch up and remove the battery door of the radio.
- 2 Align the battery contacts to the tabs of the battery compartment.
- 3 Insert the end with the battery contacts before pressing the battery down to secure in place.
- 4 Place the battery door on the radio and push the latch down to lock the battery door.

Figure 2: Battery Installation



2.2

Connecting Wired Audio Accessory

Prerequisites: Turn the radio off.

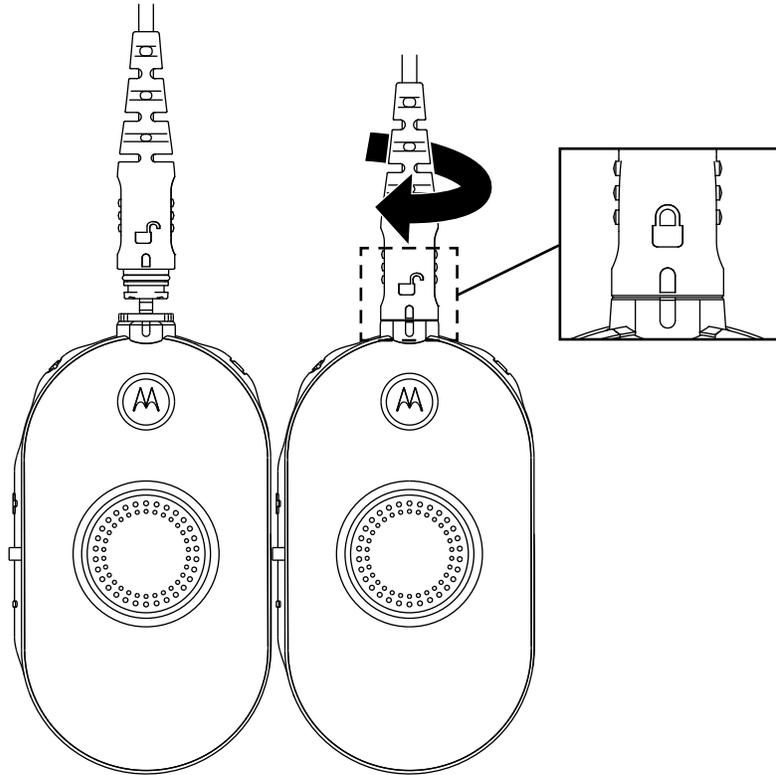
Procedure:

- 1 Plug the audio accessory into the radio with the unlock icon on the audio accessory facing the front of the radio.

Ensure the indicator on the audio accessory and the radio is aligned.

- 2 Turn the audio accessory plug until the lock icon on the plug is facing the front of the radio and the indicators are aligned.

Figure 3: Connecting Wired Audio Accessory



- 3 Turn the radio on.
- 4 Press either the **Battery Status**, **Menu**, or **Volume Control** button to check for audio through the audio accessory.

Table 1: Top LED Configuration if Wired Audio Accessory is not Connected or Removed

User Mode	LED Status	Color
Turn on radio without an audio accessory plugged in.	Solid Blue	
Audio accessory removed while radio is on.	Red/purple blinks until an audio accessory is plugged in	



NOTE:

Lower the radio volume before placing the audio accessory in or near your ear.

2.3

Turning the Radio On or Off

Procedure:

- 1 To turn on the radio, press and hold the **Power** and **Battery** button until you hear a short tone and the Smart Status Glow Ring illuminates.
- 2 To turn off the radio, press and hold the **Power** and **Battery** button until you hear a short tone and the Smart Status Glow Ring indicator blinks once.

2.4

Adjusting the Volume

Procedure:

- 1 To increase the volume, press the (+) button.



NOTE: Radio has 15 increments of volume.

- 2 To decrease the volume, press the (-) button.

2.5

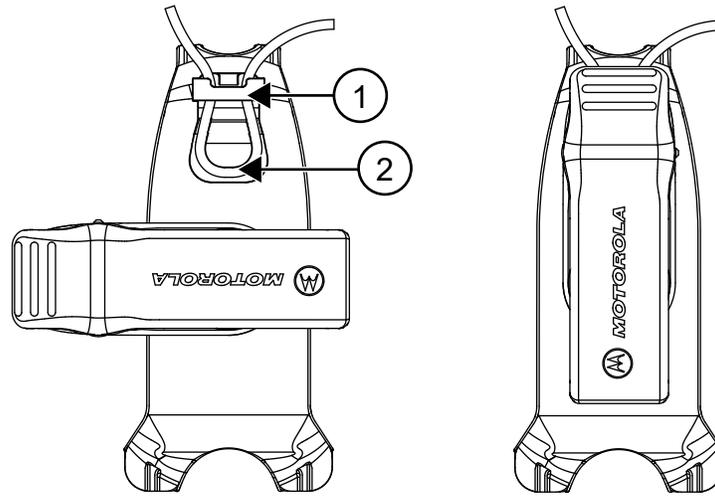
Inserting and Removing the Swivel Belt Clip Holster

The radios offer various flexible carrying accessories. For Motorola Solutions approved accessories list, refer to .

Procedure:

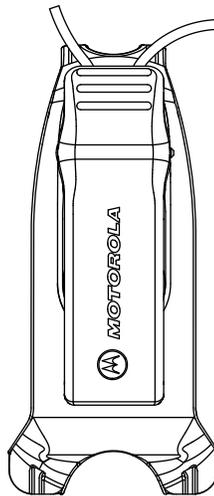
- 1 To insert the radio into the holster, perform the following steps:
 - a Slide the bottom of the radio into the holster.
 - b Snap the top of the holster into the radio around the accessory connector.
- 2 To remove radio from the holster, pull either the top or bottom tab and pull the radio from the holster.
- 3 Make a small loop in the cord and pass the cord through the cord guide. Nest the cord in the U-shaped groove and pull tight to lock the cord in place.

Figure 4: Swivel Belt Clip Holster



Item Number	Description
1	Cord Guide
2	U-Shaped Groove

- 4 Turn the belt clip to the position as needed.



2.6

Transmitting and Receiving

Procedure:

- 1 To transmit calls, perform one of the following actions:
 - Press and hold the **PTT** button on the front of the radio.
 - Press and hold the **PTT** button on the wired audio accessory with the inline **PTT** button.
- 2 Speak clearly into the microphone on the audio accessory.
- 3 Release the **PTT** button to listen.

- 4 To receive calls, listen through the earpiece and press the **PTT** button to respond.

2.6.1

Talk Range

Table 2: Talk Range

Model	Application	Range (Typical Coverage)	Range
CLP107e	Unit to Unit	Up to 10 floors	Up to 100,000 ft ² (9,200 m ²)
	With Repeater	Up to 20 floors	Up to 250,000 ft ² (23,200 m ²)

2.7

Menu Setting

Procedure:

- 1 To navigate through the menu settings, press the **Menu** button.
- 2 To exit the menu, short press the **PTT** button or wait for three seconds.

2.7.1

Operations Using Menu Settings

This section explains operations using the menu settings.



NOTE:

It is not necessary to wait for the voice prompt to be completed before continuing with pressing the next button.

If you are in the menu mode, short press **PTT** or wait 3 seconds to exit the menu.

Procedure:

- 1 Changing channel:
 - a Press **Menu** button to navigate to **Channel**.
 - b Press the **(+)** or the **(-)** button to change channel.
- 2 Entering Monitor Mode:
 - a Press **Menu** button to navigate to **Monitor**.
 - b Press the **(+)** to activate or the **(-)** button to deactivate monitor.
- 3 Entering Scan Mode:
 - a Press **Menu** button to navigate to **Scan**.
 - b Press the **(+)** to activate or the **(-)** button to deactivate scan.
- 4 Enabled through Customer Programming Software (CPS):
 Sending Call Tone:
 - a Press **Menu** button to navigate to **Call Tone**.
 - b Press the **(+)** or the **(-)** button to send call tone.

2.8

Selecting Channels

Procedure:

- 1 Press the **Menu** button.
You hear a voice prompt to change channel by pressing the **(+)** or **(-)** button.
- 2 Select the required channel.
The LED indicates the color of the new channel.
- 3 Press the **PTT** button to confirm or the channel is activated after three seconds hang time.

2.8.1

Default Channel Settings for CPS

The table describes the default channel settings for Customer Programming Software (CPS).

Table 3: Channel Settings for CPS

CLP107e Models		
Channel	LED Status	Color
1		Red
2		Green
3		Yellow
4		Blue
5		Purple

CLP107e Models		
Channel	LED Status	Color
6		White
7		Aqua
8		Orange

2.8.2 LED Indicators

Feature	LED Indicator
Monitor mode	Solid per channel color.
Call tone	Momentary solid per channel color.
Scan	
Turn on or off	
Advanced radio configuration	Blinking green.

2.8.2.1 Volume LED

When volume is increased, Smart Status Glow Ring LED lights up in a clockwise direction from the bottom left to the bottom right of the LED ring.

The followings are the three levels of LED brightness for each LED when volume is increased:

- Dim
- Medium
- Maximum brightness

2.9 Monitoring Channels

This feature allows you to ensure that a channel is free before transmitting. When enabled, the radio overrides all programmed code settings and allows the receiver to listen in on any frequency. On a clear frequency, you can hear a hiss. If a frequency is in use, you can hear the broadcast.

Procedure:

- 1 To activate the monitor selection mode, press the **Menu** button and navigate to **Monitor Selection**.
If the monitor is off, you hear a voice prompt to activate the monitor mode by pressing the **+** or **-** button.
- 2 Press **+** or **-** button to activate or deactivate the monitor mode.
When the monitor mode is on, you hear static if no activity is present or audio if channel activity is present.
- 3 To engage the monitor mode, enable monitor through the menu and let the menu time out.
- 4 To exit the **Monitor** mode, press the **PTT** button.

2.10

Scan

You can scan up to 8 channels on CLP107e model.

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

2.10.1

Scanning Radio Channels

You can scan up to 16 channels on CLR446 and CLR PLUS models. When the radio detects activity, it stops scanning and locks in on the active channel. This allows you to listen and talk to the person transmitting without changing channels.

Procedure:

- 1 To navigate to Scan mode, press the **Menu** button.
If the scan is off, you hear a voice prompt to activate Scan by pressing the **+** or **-** button.
- 2 To activate scan, press **+** or **-** button.
When scan is on, you hear a voice prompt to deactivate Scan by pressing the **+** or **-** button.
- 3 To deactivate scan, press **+** or **-** button.

2.11

Dynamic Talkaround Scan

This feature maximizes communication coverage for an on-site repeater enabled on two way radio systems.

Dynamic Talkaround Scan is enabled on a repeater channel through the Customer Programming Software (CPS). The feature gives the radio the ability to scan the transmit and receive frequencies of a repeater channel.



NOTE: The feature is given higher priority than the scan mode. If the Dynamic Talkaround Scan and Scan are enabled on the home channel, then the radio can only support the Dynamic Talkaround Scan.

2.12

Sending Call Tones

Procedure:

- 1 To navigate to **Call Tone**, press the **Menu** button.
- 2 To transmit a selected call tone, press **+** or **-**.



NOTE:

Six call tones are available.

This feature is enabled through Customer Programming Software (CPS).

2.13

Muting the Radio

The mute function cuts off the speaker on your radio.

Procedure:

- 1 To lower or mute the volume, press and hold **+** or **-** button.
You hear a "Mute" voice prompt from the radio.
- 2 To unmute the volume, press any button.
You hear an "Unmute" voice prompt from the radio.

2.14

Escalate Call

Escalate Call feature allows you to switch to Escalate Call Channel and send a call tone on the Escalate Call Channel.

To enable the Escalate Call feature, Escalate Call Channel must be configured in Customer Programming Software (CPS). Long press menu button activates the Escalate Call feature and automatically send as Escalate Call Tone on the Escalate Call Channel. The Escalate Call Hangtime starts after every call ends. The radio stays in Escalate Call Hangtime for a predefined period. Escalate Call ends when the hangtime expires and the radio returns to the previous channel. The hangtime is configured through CPS.

Pressing the **PTT** button during Escalate Call Hangtime allows you to talk on the channel. Escalate Call Hangtime restarts after the voice call is ended and you can receive calls from other radios on the Escalate Call Channel.

Your radio follows the selected channel behavior except the call tone and no channel announcement upon switching to Escalate Call Channel. The call tone is configured through CPS by selecting one of the six call tones.

To exit Escalate Call Channel before hangtime expires, short press either **On**, **Off**, **Menu** button, or long press **Menu** button.

Chapter 3

Battery and Charger

This chapter describes the battery and charger feature for the radio.

3.1

Battery Specifications

The radio comes equipped with a rechargeable Li-Ion battery. To ensure optimum capacity and performance, the battery should be charged before initial use.

Battery life is determined by several factors. The critical ones are overcharging of batteries and the average depth of discharge each cycle. Typically, the greater the overcharge and the deeper the average discharge, the fewer cycles a battery lasts. For example, a battery which is overcharged and discharged 100 % for several times a day, lasts fewer cycles than a battery that overcharges less and is discharged to 50 % per day. Battery with minimal overcharge and has an average of 25 % discharge, lasts even longer.

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

3.2

Battery Life

Table 4: Estimated Battery Life

Model	Estimated Battery Life
CLP107e	18 hours

3.3

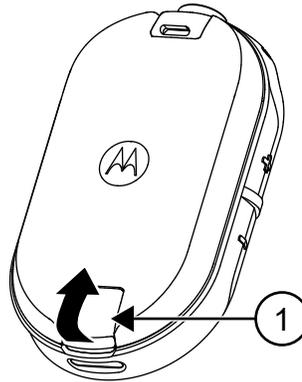
Removing the Li-Ion Battery

Prerequisites: Ensure the radio is turned off.

Procedure:

- 1 At the bottom of the battery door, lift the latch up and remove the battery door of the radio.
- 2 Pull the battery away from the radio.

Figure 5: Battery Removal



Item Number	Description
1	Battery Latch

3.4

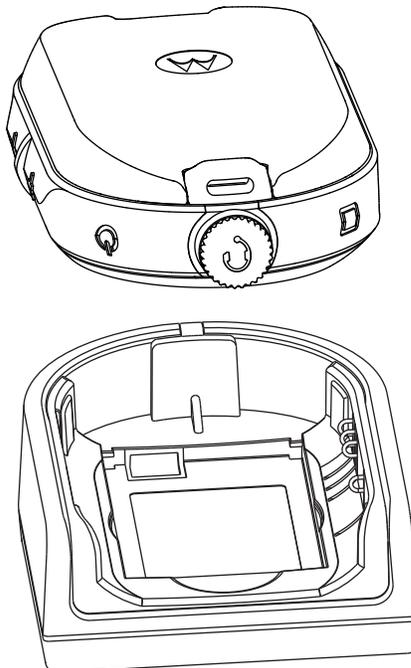
Power Supply, Adapter, and Drop-in Tray Charger

The radio is packaged with one Drop-in Tray Charger with a transformer.

 **NOTE:** .

For information on accessories, see [Accessories on page 40](#).

Figure 6: Power Supply, Adapter, and Drop-in Tray Charger



3.5

Stand-Alone Battery

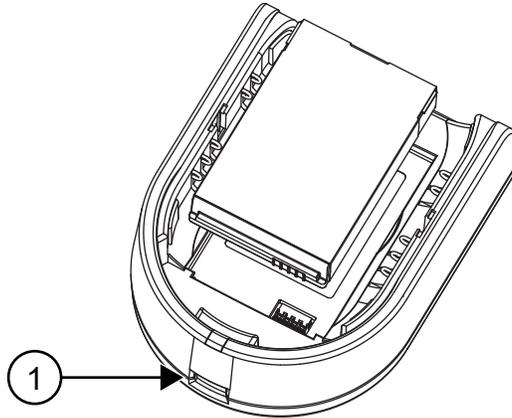
The battery can be charged as a stand-alone battery.

The battery is charged by using either a Single Unit Charger (SUC) or a Multi-Unit Charger (MUC).



NOTE: When acquiring additional chargers or power supplies, ensure that you have a similar drop-in tray chargers and power supplies sets. For more information on accessories, see [Accessories on page 40](#).

Figure 7: Stand-Alone Battery



Item Number	Description
1	Micro-USB port

3.5.1

Charging a Stand-Alone Battery with the Drop-in Tray SUC

Procedure:

- 1 To charge the battery, insert the connector of the power supply into the micro Universal Serial Bus (USB) port on the front of the drop-in tray charger.
- 2 Connect the power supply to a proper AC outlet.
- 3 Insert the battery into the tray, with the inside surface of the battery facing the front of the charger. See [Stand-Alone Battery on page 22](#).
- 4 Ensure that the slots in the battery are correctly engaged in the charger.

3.5.2

Charging a Stand-Alone Battery with the Drop-in Tray MUC-Optional Accessory

Procedure:

- 1 Place the charger on a flat surface or mount it on the wall.
- 2 Insert the power cord plug into the jack on the MUC.
- 3 Plug the cord into an AC outlet and then into the charger.

- 4 Insert the battery into the charging pocket with the inside surface of the battery facing the front of the charger.
- 5 Ensure that the slots in the battery are correctly engaged in the charger.

3.5.3

Estimated Charging Time

The following tables provide the estimated charging time of the battery.

Table 5: Estimated Charging Time

Charging Solution	Standard Li-Ion Battery
Single Unit Charger	5.5 hours
Multi-Unit Charger	4 hours

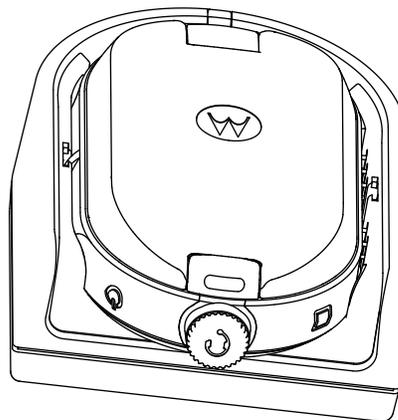
3.6

Charging Radio with the Drop-in Tray SUC

Procedure:

- 1 Place the drop-in Tray Single Unit Charger (SUC) on a flat surface.
- 2 Insert the connector of the power supply into the Micro USB port on the front of the drop-in tray charger.
- 3 Connect the correct power supply to a proper AC outlet.
- 4 Insert the radio with battery installed into the tray, facing down and making sure that the charging contacts on the charger are aligned with the contacts on the radio.

Figure 8: Charging Radio



NOTE: When charging a battery attached to radio, ensure that the radio is turned off. You can enable or disable the radio to automatically turn off when radio is inserted into the charger feature through Customer Programming Software (CPS).

3.7

Charging with the Drop-In Tray MUC-Optional Accessory

The Multi-Unit Charger (MUC) allows drop-in charging of up to six radios. Each of the six charging pockets can hold a radio with a battery installed. The MUC provides pockets for headset storage.

Procedure:

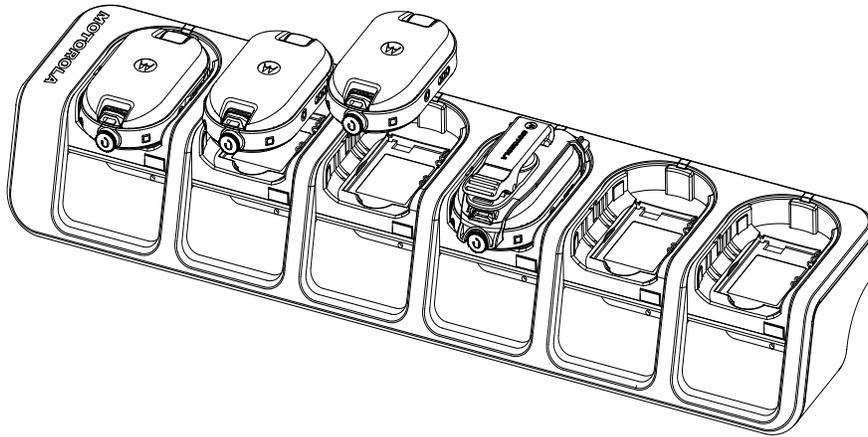
- 1 Place the charger on a flat surface or mount it on the wall.
- 2 Insert the power cord plug into the jack on the MUC.
- 3 Plug the cord into an AC outlet and then into the charger.
- 4 Turn off the radio.

 **NOTE:** When charging a battery attached to radio, ensure that the radio is turned off. You can enable or disable the radio to automatically turn off when radio is inserted into the charger feature through Customer Programming Software (CPS).

- 5 Insert the radio facing down with battery installed into the charging pocket, ensuring that the radio contacts are aligned with the MUC contacts.

 **NOTE:** The battery can be charged by using the slot on the flat surface of the charging pocket.

Figure 9: Charging Radios



3.8

Charger LED Indications

On the drop-in charger, the radio charging pocket has an LED Charger.

On the Multi-Unit Charger (MUC), each of the six charging pockets has an LED.

 **NOTE:** You can clone up to two source radios and two target radios using MUC. For more information on cloning, see [Radio Cloning on page 29](#)

For part number details, see [Accessories on page 40](#).

Table 6: Charger LED Indicator

Status	LED Indication	
Battery is charging	Steady Red	
Battery is fully charged	Steady Green	

Status	LED Indication	
Battery Fault ³	Blinking Red	

3.9

Checking Battery Status

Procedure:

Short press and release the **Power** and **Battery** button.

The Smart Status Glow Ring and Voice Assisted Operation features show the radio battery status.

Table 7: Battery Status

Battery Level	LED Indication	Color
High (50 – 100%)		Green
Medium (20 – 50%)		Yellow
Low (3 – 20%)		Red
Critical (0 – 3%)		Blinking Red

The radio returns to the current channel color after indicating the battery status.

³ Re-seating the battery pack corrects this issue.

Chapter 4

Radio Programming through CPS

You can program or change features on your radios by using the Customer Programming Software (CPS) and the CPS Programming Cable.

CPS is available for free as web based downloadable software at .

4.1

Programming the Radio

Prerequisites:

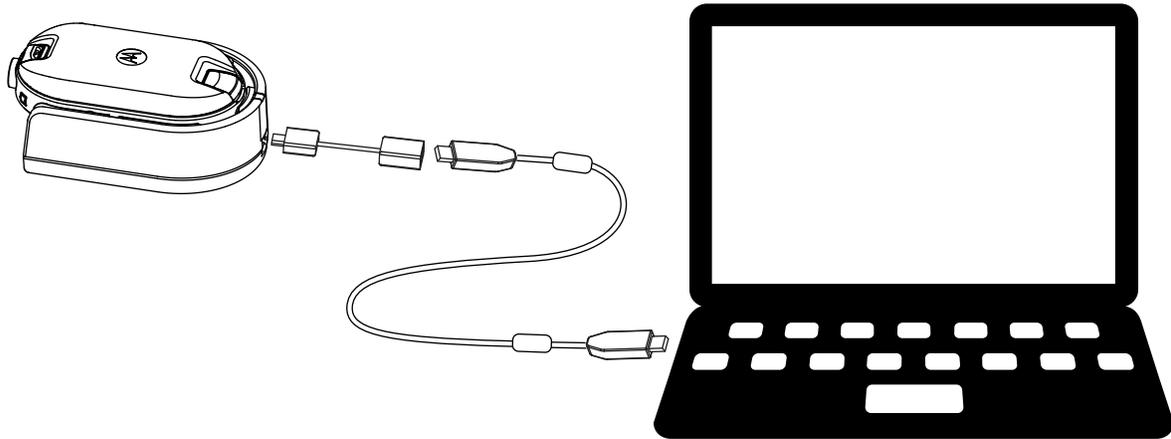
Install the Computer Programming Software (CPS) on your computer.

Ensure that the radio is turned on.

Procedure:

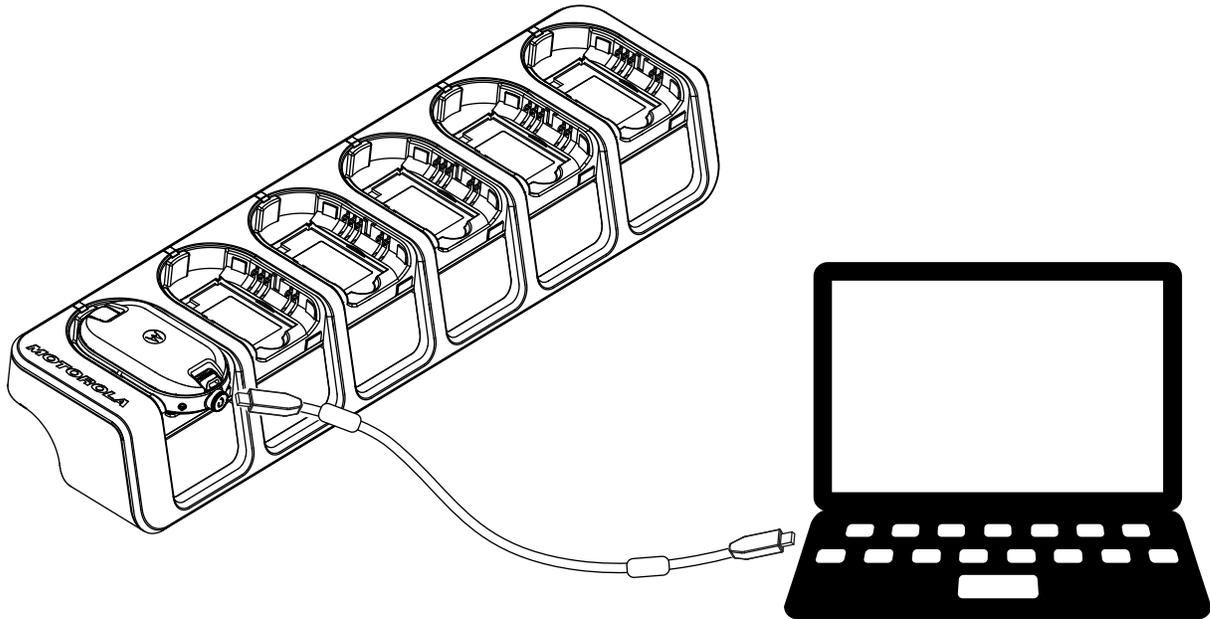
- 1 Connect the radio by using the Drop-in Charger Tray or the Charging Pocket with **PROG** label on the Multi-Unit Charger and CPS Programming Cable⁴.

Figure 10: Programming the Radio through a Single Unit Charger



⁴ CPS Programming Cable (P/N HKKN4027_) is an accessory sold separately. Contact your Motorola Solutions Point of Purchase for more information.

Figure 11: Programming the Radio through a Multi-Unit Charger



- 2 Set the cable switch to analog.
- 3 After the radio is connected, open the CPS and select **Read** on the toolbar to get the radio profile.
 You can change the general, audio, menu, channels, scan list, customized PL/DPL settings and select frequencies and PL/DPL codes on each channel.
- 4 To save the settings, select **Write to radio** on the toolbar.



NOTE: For more information on the CPS, see **Help** menu in the CPS.

4.2

Factory Default Settings

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

Table 8: CLP107e

Channel Number	Frequency Settings (MHz)	Code Value (Hz)	Bandwidth (kHz)
1	464.55	67.0	12.5
2	467.925		
3	467.85		
4	467.875		
5	461.0625		
6	461.1125		

Channel Number	Frequency Settings (MHz)	Code Value (Hz)	Bandwidth (kHz)
7	461.1625		
8	461.2125		

Chapter 5

Radio Cloning

This feature allows you to clone radio settings from one radio to another.

5.1

Cloning Radio Settings

You can copy the radio settings from the source to another radio.

You can use one of the following unit chargers and cables for cloning:

- CLP Series Single Unit Charger (SUC) kit part number PMPN4018_⁵ and CLP Series Cloning Cable kit part number HKKN4028_ (optional accessory).
- Multi-Unit Charger (MUC) Kit Part Number PMPN4020_ (optional accessory)

The MUC does not have to be plugged in for cloning, but both radios require charged batteries.

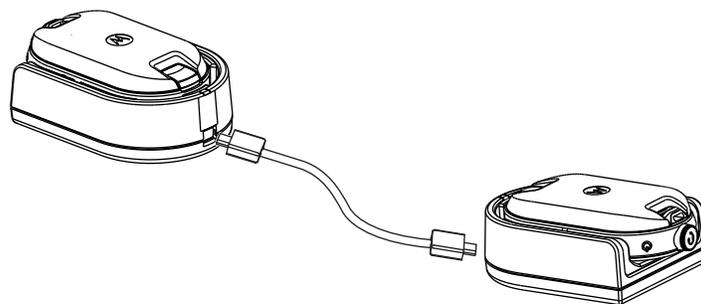
5.2

Cloning Radios using the Cloning Cable

Prerequisites:

- A fully charged battery on each radio.
- Two Single-Unit Charger (SUC) Kits.
- Both radios are turned off.
- Source radio: Radio to be cloned.
- Target radio: Radio to which the configuration of the source radio is to be copied.

Figure 12: Cloning the Radio through a Single Unit Charger



Procedure:

- 1 Unplug any cables such as power supply or micro USB cables from the SUC.

⁵ Revision B onward

- 2 Plug one side of the cloning cable micro USB to one SUC and plug the other end to the second SUC.



NOTE:

Ensure the switch on the cloning cable is set to **Legacy**.

During the cloning process, no power is applied to the SUC. The batteries cannot be charged. A data communication is established between the two radios.

- 3 Turn on the target radio and place it into one of the SUC.
- 4 To power the source radio, press and hold the **PTT** button and the - button simultaneously while turning on the radio until you hear the cloning tone.
- 5 To start the cloning process, place the source radio in its SUC with an audio accessory, then press and release the **Menu** button.

If successful, the source radio sounds a good key chirp tone.

If unsuccessful, the source radio sounds bonk tone.

The tone sounds for no more than five seconds.

- 6 Turn the radios off and on to bring the radios to the user mode by exiting the clone mode when the cloning process is completed.



NOTE: When the radio is in clone mode, the **Auto Power Off** feature is not applicable.

5.3

Cloning Radios using the Multi-Unit Charger

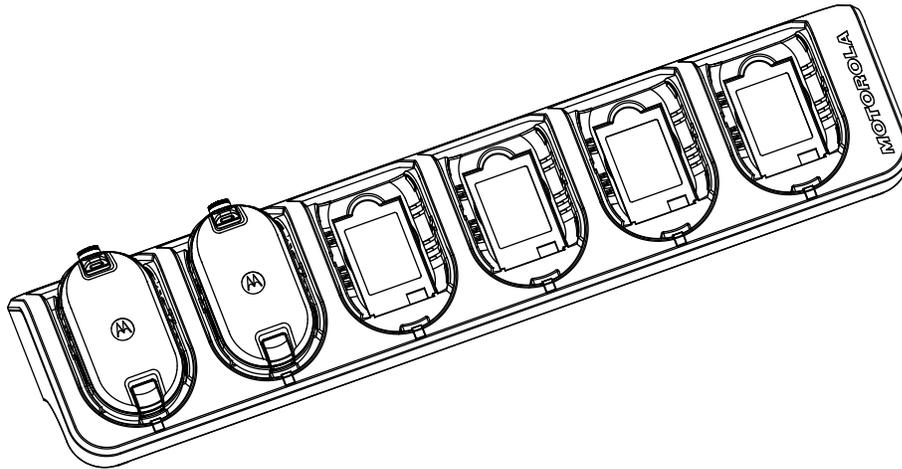
Prerequisites:

- A fully charged battery on each radio.
- CLP Series Multi-Unit Charger (MUC).
- Both radios are turned off.
- Source radio: Radio to be cloned.
- Target radio: Radio to which the configuration of the source radio is to be copied.

Procedure:

- 1 To put the source radio into clone mode, press and hold the source radio **PTT** button and the - button simultaneously while turning on the radio until you hear the cloning tone.
- 2 Place the source radio into one of the charging pockets that has the **CLONE** label.
- 3 Turn on the target radio and place it in the pairing charging pocket that has the **CLONE** label and start the cloning process.
- 4 To start the cloning process, press the **Menu** button on the source radio.
The source radio generates the start clone tone.
- 5 To activate the radio, turn off and on the radios when cloning process is completed.
- 6 To clone another radio, repeat [step 3](#) to [step 5](#).
- 7 To exit clone mode on the source radio, turn off the radio.

Figure 13: Cloning the Radio through a Multi-Unit Charger



5.4

Troubleshooting Cloning Mode

When and where to use:

The radio audible voice announces “Bonk” indicating that the cloning process has failed. In the event that cloning fails, perform each of the following steps before attempting to start cloning process again.

Procedure:

- 1 Ensure that the batteries on both radios are fully charged and engaged properly on the radio.
- 2 Check the cloning cable connection on both Single-Unit Chargers (SUC).
- 3 Ensure that there is no debris in the charging tray or on the radio contacts and the radio contact is touching the SUC or MUC contact firmly.
- 4 Ensure that the Target Radio is turned on.
- 5 Ensure that the Source Radio is in cloning mode.
- 6 Ensure that the two radios are both from the same frequency band, same region and have the same transmission power.



NOTE: This cloning cable is designed to operate only with compatible Motorola Solutions SUC.

When ordering cloning cable kit, refer to part number HKKN4028_ For more information about the accessories, see [Accessories on page 40](#)

Chapter 6

Advanced Radio Configuration

Advanced Radio Configuration allows you to configure settings from a pre-programmed list without using a computer.

Advanced Configuration Mode allows you to customize the following settings:

- Channels
- Frequencies
- Codes (CTCC/DPL)

Frequencies allow you to select frequencies for each channel. **Codes** help minimize interference by providing you with a choice of code combinations that filter out static, noise, and unwanted messages.

6.1

Entering Advanced Radio Configuration Mode

Prerequisites:

Turn the radio off.

Procedure:

- 1** Press the **PTT**, **+** button and **Power** button simultaneously and hold for 3 to 5 seconds until you hear a sound and the voice prompt *Programming Mode*.

The LED blinks green.

- 2** To select the settings you want to change, press the **Menu** button.

The followings are the settings that you can change:

- Channel (for multi-channel models)
- Frequency
- Code

The voice announcements indicate the menu items and their current settings.

- 3** To change the settings, press the **+** or **-** button.
- 4** To go to the next menu item, press the **Menu** button.
- 5** To exit the **Advanced Radio Configuration** mode, press and hold the **PTT** button until you hear a sound.

Chapter 7

Troubleshooting

The following table explains the ways to troubleshoot if the symptom occurs.

7.1

Symptom and Solutions

Procedure:

1

If...	Then...
No power	Recharge or replace the Li-Ion battery.  NOTE: Extreme operating temperatures may affect battery life. See Battery Specifications on page 20 .
Hearing other noises or conversation on a channel	Frequency or Interference Eliminator Code may be in use. Perform one of the following actions: <ul style="list-style-type: none"> • Confirm Interference Eliminator Code is set. • Change frequencies or codes settings on all radios. • Ensure the radio is at the right frequency and code when transmitting.
Message Scrambled	Scramble Code might be on or the setting does not match other radio settings. Change the settings through Customer Programming Software (CPS).
Audio quality not good enough	Radio settings might not be match correctly. Check the frequencies, codes, and bandwidths to ensure the settings are the same in all radios.
Limited talk range	Perform one of the following actions: <ul style="list-style-type: none"> • Check for clear line of sight to improve transmission. Avoid being near steel, concrete structures, heavy foliage, buildings, or vehicles. • Change the placement of the radio. • To increase range and coverage, you can reduce obstructions or increase power. UHF radios provides greater cover-

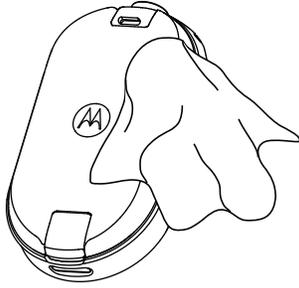
If...	Then...
	<p>age in industrial and commercial buildings. Increasing power provides greater signal range and increased penetration through obstructions.</p>
<p>Message not transmitted or received</p>	<p>Perform one of the following actions:</p> <ul style="list-style-type: none"> • Ensure the PTT button is completely pressed when transmitting. • Confirm that the radios have the same Channel, Frequency, Interference Eliminator Code, and Scramble Code settings. See Transmitting and Receiving on page 14. • Recharge, replace, or reposition batteries. See Battery Specifications on page 20. • Change the radio placement. Obstructions and operating indoors, or in vehicles, may interfere. . • Verify that the radio is not in Scan mode. See Scanning Radio Channels on page 18.
<p>Heavy static or interference</p>	<p>Radios are too close. Ensure the transmitting and receiving radios are at least 5 ft (1.5 m) apart.</p> <p>Radios are too far apart or obstacles are interfering with transmission.</p>
<p>Low batteries</p>	<p>Recharge or replace Li-Ion battery.</p> <p> NOTE: Extreme operating temperatures affect battery life.</p> <p>See Battery Specifications on page 20.</p>
<p>Drop-in Charger LED light does not blink</p>	<p>Perform one of the following actions:</p> <ul style="list-style-type: none"> • Verify that the radio and battery is properly inserted. • Check the battery and charger contacts to ensure that they are clean and charging pin is inserted correctly. <p>See Charging a Stand-Alone Battery with the Drop-in Tray SUC on page 22 and Charger LED Indications on page 24.</p>
<p>Battery does not charge although it has been placed in the drop-in charger for a while</p>	<p>Perform one of the following actions:</p> <ul style="list-style-type: none"> • Verify the drop-in tray charger is properly connected and corresponds to a compatible power supply. See Charging

If...	Then...
	<p data-bbox="915 243 1370 306">a Stand-Alone Battery with the Drop-in Tray SUC on page 22.</p> <ul data-bbox="878 321 1357 415" style="list-style-type: none"><li data-bbox="878 321 1357 415">• Check the charger LEDs indicators to see if the battery has a problem. See Charger LED Indications on page 24.

Chapter 8

Use and Care

This chapter explains the maintenance of the radio.



Use a soft damp cloth to clean the exterior

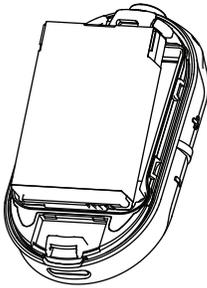


Do not immerse in water

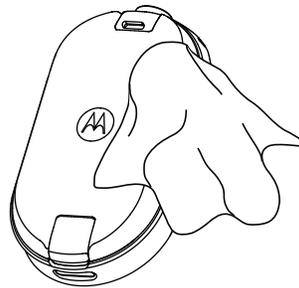


Do not use alcohol or cleaning solutions

If the radio is submerged in water:



Turn the radio off and remove batteries



Dry with soft cloth



Do not use the radio until it is completely dry



NOTE: Radio is IP54 only when the dust cover or audio accessory is plugged into the connector.

Chapter 9

Radio Code Chart

9.1

CTCSS/DPL Interference Eliminator Codes

Table 9: CTCSS/DPL Interference Eliminator Codes

CTCSS	Code	CTCSS/ DPL	Code	DPL	Code	DPL	Code	DPL	Code
0	Disabled	24	151.4	47	54	71	243	95	445
1	67.0	25	156.7	48	65	72	244	96	464
2	71.9	26	162.2	49	71	73	245	97	465
3	74.4	27	167.9	50	72	74	251	98	466
4	77.0	28	173.8	51	73	75	261	99	503
5	79.7	29	179.9	52	74	76	263	100	506
6	82.5	30	186.2	53	114	77	265	101	516
7	85.4	31	192.8	54	115	78	271	102	532
8	88.5	32	203.5	55	116	79	306	103	546
9	91.5	33	210.7	56	125	80	311	104	565
10	94.8	34	218.1	57	131	81	315	105	606
11	97.4	35	225.7	58	132	82	331	106	612
12	100.0	36	233.6	59	134	83	343	107	624
13	103.5	37	241.8	60	143	84	346	108	627
14	107.2	38	250.3	61	152	85	351	109	631
15	110.9	122	69.3	62	155	86	364	110	632
16	114.8	39	23.0	63	156	87	365	111	654
17	118.8	40	25.0	64	162	88	371	112	662
18	123.0	41	26.0	65	165	89	411	113	664
19	127.3	42	31.0	66	172	90	412	114	703
20	131.8	43	32.0	67	174	91	413	115	712
21	136.5	44	43.0	68	205	92	423	116	723
22	141.3	45	47.0	69	223	93	431	117	731
23	146.2	46	51.0	70	226	94	432	118	732
								119	734

Table 10: CTCSS/DPL Interference Eliminator Codes (Continued)

DPL	Code	DPL	Code	DPL	Code	DPL	Code
120	743	146	Inverted DPL 55	171	Inverted DPL 80	195	Inverted DPL 104
121	754	147	Inverted DPL 56	172	Inverted DPL 81	196	Inverted DPL 105
123	645	148	Inverted DPL 57	173	Inverted DPL 82	197	Inverted DPL 106
124	Cus- tomized PL	149	Inverted DPL 58	174	Inverted DPL 83	198	Inverted DPL 107
125	Cus- tomized PL	150	Inverted DPL 59	175	Inverted DPL 84	199	Inverted DPL 108
126	Cus- tomized PL	151	Inverted DPL 60	176	Inverted DPL 85	200	Inverted DPL 109
127	Cus- tomized PL	152	Inverted DPL 61	177	Inverted DPL 86	201	Inverted DPL 110
128	Cus- tomized PL	153	Inverted DPL 62	178	Inverted DPL 87	202	Inverted DPL 111
129	Cus- tomized PL	154	Inverted DPL 63	179	Inverted DPL 88	203	Inverted DPL 112
130	Inverted DPL 39	155	Inverted DPL 64	180	Inverted DPL 89	204	Inverted DPL 113
131	Inverted DPL 40	156	Inverted DPL 65	181	Inverted DPL 90	205	Inverted DPL 114
132	Inverted DPL 41	157	Inverted DPL 66	181	Inverted DPL 90	206	Inverted DPL 115
133	Inverted DPL 42	158	Inverted DPL 67	182	Inverted DPL 91	207	Inverted DPL 116
134	Inverted DPL 43	159	Inverted DPL 68	183	Inverted DPL 92	208	Inverted DPL 117
135	Inverted DPL 44	160	Inverted DPL 69	184	Inverted DPL 93	209	Inverted DPL 118
136	Inverted DPL 45	161	Inverted DPL 70	185	Inverted DPL 94	210	Inverted DPL 119
137	Inverted DPL 46	162	Inverted DPL 71	186	Inverted DPL 95	211	Inverted DPL 120
138	Inverted DPL 47	163	Inverted DPL 72	187	Inverted DPL 96	212	Inverted DPL 121
139	Inverted DPL 48	164	Inverted DPL 73	188	Inverted DPL 97	213	Inverted DPL 123

DPL	Code	DPL	Code	DPL	Code	DPL	Code
140	Inverted DPL 49	165	Inverted DPL 74	189	Inverted DPL 98	214	Customized DPL
141	Inverted DPL 50	166	Inverted DPL 75	190	Inverted DPL 99	215	Customized DPL
142	Inverted DPL 51	167	Inverted DPL 76	191	Inverted DPL 100	216	Customized DPL
143	Inverted DPL 52	168	Inverted DPL 77	192	Inverted DPL 101	217	Customized DPL
144	Inverted DPL 53	169	Inverted DPL 78	193	Inverted DPL 102	218	Customized DPL
145	Inverted DPL 54	170	Inverted DPL 79	194	Inverted DPL 103	219	Customized DPL

Chapter 10

Accessories

Table 11: Audio Accessories

Part No.	Description
PMLN8077_	Over-the-ear earpiece, Single Pin
PMLN8125_	Over-the-ear earpiece, Single Pin, Short Cord
PMLN8190_	Surveillance earpiece, Single Pin

Table 12: Batteries

Part No.	Description
HKNN4013_	CLP Series High Capacity Li-Ion Battery
PMLN8066_	CLPe High Capacity Li-Ion Battery Door

Table 13: Carry Accessories

Part No.	Description
PMLN8064_	CLPe Series Magnetic Case
PMLN8065_	CLP Series Swivel Belt Clip Holster

Table 14: Chargers

Part No.	Description
PMPN4020_	CLP Series Multi-Unit Charger (MUC) Kit
PMPN4018_ ⁶	CLP Series Single-Unit Charger (SUC) Kit
HKLN5009_	CLPe MUC Power Supply Kit ANZ (PSU and Power Cord)

Table 15: Programming Cables

Part No.	Description
HKKN4027_	CLP Series CPS Cable
HKKN4028_	CLP Series Cloning Cable

⁶ Revision B onward