Multi-Unit Charger Kits User Guide (PMPN4283/ PMPN4286/ PMPN4288/ PMPN4370/PMPN4380/ PMPN4390/PMPN4400/ PMPN4408/PMPN4497)

en-US	fr-CA	es-LA	pt-BR	zh-CN
zh-TW	ja-JP	ko-KR	de-DE	fr-FR
it-IT	nl-NL	ru-RU	uk-UA	ar-EG

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This section provides the safety and legal information for this product.

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附註

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Contact Us

The Centralized Managed Support Operations (CMSO) is the primary contact for technical support included in your organization's service agreement with Motorola Solutions.

Service agreement customers should be sure to call the CMSO in all situations listed under Customer Responsibilities in their agreement, such as:

- Before reloading software
- To confirm troubleshooting results and analysis before taking action

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1. Enter motorolasolutions.com in your browser.
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3. Select "Support" on the motorolasolutions.com page.

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Provide the following information when reporting a documentation error:

- The document title and part number
- The page number or title of the section with the error
- A description of the error

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Icon Conventions

The documentation set is designed to give the reader more visual clues. The following graphic icons are used throughout the documentation set.

DANGER: The signal word DANGER with the associated safety icon implies information that, if disregarded, will result in death or serious injury.

WARNING: The signal word WARNING with the associated safety icon implies information that, if disregarded, could result in death or serious injury, or serious product damage.

CAUTION: The signal word CAUTION with the associated safety icon implies information that, if disregarded, may result in minor or moderate injury, or serious product damage.

CAUTION: The signal word CAUTION may be used without the safety icon to state potential damage or injury that is not related to the product.

IMPORTANT: IMPORTANT statements contain information that is crucial to the discussion at hand, but is not CAUTION or WARNING. There is no warning level associated with the IMPORTANT statement.

NOTE: NOTICE contains information more important than the surrounding text, such as exceptions or preconditions. They also refer the reader elsewhere for additional information, remind the reader how to complete an action (when it is not part of the current procedure, for instance), or tell the reader where something is on the screen. There is no warning level associated with a notice.

Style Conventions

The following style conventions are used:

Convention	Description
Bold	This typeface is used for names of, for instance, windows, buttons, and labels when these names appear on the screen (example: the **Alarms Browser** window). When it is clear that we are referring to, for instance, a button, the name is used alone (example: Click **OK**).
`Monospacing font in bold`	This typeface is used for words to be typed in exactly as they are shown in the text (example: In the **Address** field, type `http://ucs01.ucs:9080/`).
`Monospacing font`	This typeface is used for messages, prompts, and other text displayed on the computer screen (example: `A new trap destination has been added`).
<Monospacing font in bold Italic>	This typeface is used with angle brackets as placeholders for a specific member of the group that the words represent (example: ***<router number>***). **NOTE:** In sequences to be typed in, the angle brackets are omitted to avoid confusion whether to include the angle brackets in the text to be typed.
CAPITAL LETTERS	This typeface is used for keyboard keys (example: Press Y, and then press ENTER).
Italic	This typeface is used for citations. A citation usually is the name of a document or a phrase from another document (example: *Dimetra IP System Overview*).
→	An → (arrow pointing right) is used for indicating the menu or tab structure in instructions on how to select a certain menu item (example: **File→Save**) or a certain sub-tab.

Contents

Important Safety Instructions

This document contains important safety and operating instructions. Please 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.

WARNING:

- To reduce the risk of damage to the power cord, pull the plug rather than the cord when disconnecting power cord from the AC outlet or the charger.
- To reduce the risk of fire or electric shock, avoid using an extension cord. If an extension cord must be used, ensure that the cord size is 18 AWG for lengths of up to 6.5 feet (2 m), and 16 AWG for lengths up to 9.8 feet (3 m).
- To reduce the risk of fire, electric shock, or injury, do not operate the charger if it is broken or damaged in any way. Take it to a qualified Motorola Solutions service representative.
- To reduce the risk of fire or electric shock, do not disassemble the charger. It is not repairable and replacement parts are not available.
- To reduce the risk of electric shock, unplug the charger power adapter from the AC outlet before attempting any maintenance or cleaning.
- To reduce the risk of injury, charge only the rechargeable authorized batteries. Other batteries may explode, causing personal injury and damage.
- To reduce the risk of fire, electric shock, or injury, only use the accessories recommended by Motorola Solutions.
- Changes or modifications made to this device, not expressly approved by Motorola Solutions, could void the authority of the user to operate this equipment.

Operational Safety Guidelines

- This equipment is not suitable for outdoor use. Use only in dry locations and condition.
- Maximum ambient temperature around the charger must not exceed 40 °C (104 °F).
- To ensure optimized charging performance, turn off the radio while charging unless the radio is transmitting data wirelessly on Wi-Fi or Bluetooth.
- Connect the charger only to an appropriate power cord listed in *Motorola Solutions Authorized Power Cord List*.
- The AC outlet to which the power cord is connected should be close and easily accessible.
- Make sure the power cord is located where it will not be stepped on, tripped over, or subjected to water, damage, or stress.
- Connect the power cord only to an appropriately fused and wired AC outlet with the correct voltage, as specified on the product.
- Disconnect from line voltage by removing the power cord from the AC outlet.
- Multi-Unit Charger will charge the batteries listed in Motorola Solutions Authorized Batteries table when used with Multi-Unit Charger Pockets. The batteries may be attached to a radio or may be stand-alone.
- The equipment shall be connected to a nearby and easily accessible socket outlet.

Chapter 1

Supported Models

IMPRES 2™ 1-Display Multi-Unit Chargers

Table 1: IMPRES 2™ 1-Display Multi-Unit Chargers

Kit Number	Description	Communication Interface	Charging Pockets
PMPN4283_	MOTOTRBO Professional Digital Radios Series IMPRES Multi-Unit Charger	Charger Reprogramming and Fleet Management	Six Devices and/or Batteries
PMPN4286_	TPG2200 IMPRES Multi-Unit Charger	Charger Reprogramming and Fleet Management and iTM Programming	
PMPN4288_	GP and HT Professional Series IMPRES Multi-Unit Charger	Charger Reprogramming and Fleet Management	
PMPN4370_	ST Series IMPRES Battery-Only Multi-Unit Charger		Six Batteries
PMPN4380_	Si500/700 Series IMPRES Multi-Unit Charger		Six Devices and/or Batteries
PMPN4390_	ST7500 IMPRES Multi-Unit Charger	Charger Reprogramming and Fleet Management and iTM Programming	
PMPN4400_	MTP6000/MTP3000 Series Multi-Unit Charger		
PMPN4497_	MOTOTRBO ION Series Multi-Unit Charger	Charger Reprogramming and Fleet Management	
PMPN4520_(Korea)			

NOTE: Fleet Management is only available for supported battery.

Charger Specifications (for Taiwan kits only)

Table 2: Charger Specifications (for Taiwan kits only)

Charger	Input	Output
PMPN4390_	DC 15 V ⎓, 6 A	Device: DC 5 V⎓, 1.5 A x 6 pockets

Charger	Input	Output
		Battery: DC 4.2 V⎓, 3 A x 6 pockets
PMPN4408_	DC 15 V⎓, 7 A	Device: DC 5 V⎓, 1.5 A x 6 pockets
		Battery: DC 4.35 V⎓, 3 A x 6 pockets

Multi-Unit Charger Pockets - compatible with chargers in IMPRES 2™ 1-Display Multi-Unit Chargers table

Table 3: Multi-Unit Charger Pockets - compatible with chargers in IMPRES 2™ 1-Display Multi-Unit Chargers table

Multi Unit Charger	Pocket	Description
PMPN4283_	HW001384A_	Tri-Unit Charger Pocket for Radio and Battery
PMPN4286_	HW001386A01	Tri-Unit Charger Pocket for Radio and Battery, with iTM Programming
PMPN4288_	HW001385A01	Tri-Unit Charger Pocket for Radio and Battery
PMPN4370_	AS000111A01	Tri-Unit Charger Pocket for Battery only
PMPN4380_	AS000063A01	Tri-Unit Charger Pocket for Radio and Battery
PMPN4390_	AS000121A01 (Left Pocket)	Tri-Unit Charger Pocket for Radio and Battery, with iTM Programming
	AS000126A01 (Right Pocket)	
PMPN4400_ PMPN4408_	AS000061A01	iTM Tri-Unit Charger Pocket for Radio and Battery, with IMPRES 2 Device
PMPN4497_	HW002356A01	Tri-Unit Charger Pocket for Radio and Battery

NOTE: Some assembly inserts can be ordered from your local vendor. Refer to Charging Pocket Installation on page 62 to order.

Motorola Solutions Authorized Power Supply

Table 4: Motorola Solutions Authorized Power Supply

Part Number	Description
PS000212A01	External 201 W Power Supply (for PMPN4408_ only)
PS000242A01	External 90 W Power Supply

Motorola Solutions Authorized Power Cords

Table 5: Motorola Solutions Authorized Power Cords

Part Number	Description
3087791G01	Power Cord, United States/North America
3087791G04	Power Cord, Europe
3087791G07	Power Cord, United Kingdom/Hong Kong
3087791G10	Power Cord, Australia/New Zealand
3087791G13	Power Cord, Argentina
3087791G16	Power Cord, Korea
3087791G20	Power Cord, Japan
3087791G22	Power Cord, Brazil
CB000199A01	Power Cord, China
CB000805A01	Power Cord, Taiwan
CB000517A01	Power Cord, Bureau of Indian Standards (BIS) 250 VAC 3A

Motorola Solutions Authorized Batteries

Table 6: Motorola Solutions Authorized Batteries

Multi-Unit charger	Part Number	Description
PMPN4283_	NNTN4321A_	IMPRES IECEx/INMETRO IP67 Li-Ion Battery
	NNTN7789_	IMPRES IECEx IP67 Li-Ion Battery
	NNTN8128_	IMPRES Li-Ion Battery
	NNTN8129_	High-Capacity IMPRES IP67 Li-Ion FM Battery
	NNTN8287_	IMPRES CSA 157 IP67 Li-Ion Battery
	NNTN8305_	IMPRES Li-Ion Battery
	NNTN8359_	IMPRES IECEx/ATEX IP67 Li-Ion Battery
	NNTN8386_	IMPRES CSA 157 Li-Ion Battery
	NNTN8560_	IMPRES IP67 TIA4950 Li-Ion Battery
	NNTN8570_	IMPRES IECEx/ATEX IP67 Li-Ion Battery
	NNTN8750_	IMPRES CSA IP67 Li-Ion Battery
	NNTN8840_	IMPRES IECEx IP67 Li-Ion Battery
	PMNN4065_	Ni-MH Battery
	PMNN4066_	IMPRES Li-Ion Battery
	PMNN4069_	IMPRES Li-Ion FM Battery
	PMNN4077_	High-Capacity IMPRES Li-Ion Battery
	PMNN4101_	IMPRES IP57 Li-Ion Battery
	PMNN4102_	IMPRES IP57 Li-Ion FM Battery

Multi-Unit charger	Part Number	Description
	PMNN4103_	High-Capacity IMPRES IP57 Li-Ion Battery
	PMNN4104_	IP57 Ni-MH Battery
	PMNN4262_	Ultra High-Capacity IMPRES IP57 Li-Ion Battery
	PMNN4406_	IP68 Li-Ion Battery
	PMNN4407_	IMPRES IP68 Li-Ion Battery
	PMNN4409_	High-Capacity IMPRES IP68 Li-Ion Battery
	PMNN4412_	IP58 Ni-MH Battery
	PMNN4415_	IP56 Ni-MH Battery
	PMNN4416_	IP56 Li-Ion Battery
	PMNN4417_	IMPRES IP56 Li-Ion Battery
	PMNN4418_	High-Capacity IMPRES IP56 Li-Ion Battery
	PMNN4424_	High-Capacity IMPRES Li-Ion Battery
	PMNN4435_	IP68 Li-Ion Battery
	PMNN4448_	High-Capacity IMPRES IP67 Li-Ion Battery
	PMNN4463_	IP68 Li-Ion Battery
	PMNN4488_	IMPRES IP68 HE DENS Li-Ion Battery for Vibrating Belt Clip
	PMNN4489_	IMPRES IP68 TIA4950 HE DENS Li-Ion Battery
	PMNN4490_	IMPRES IP68 TIA4950 HE DENS Li-Ion Battery
	PMNN4491_	IMPRES IP68 Li-Ion Battery
	PMNN4493_	IMPRES IP68 HE DENS Li-Ion Battery
	PMNN4525_	IMPRES IP68 Li-Ion Battery
	PMNN4543_	IP68 Li-Ion Battery
	PMNN4544_	High-Capacity IMPRES IP68 Li-Ion Battery
	PMNN4807_	IMPRES IP68 Li-ion Battery
	PMNN4808_	IP68 Li-ion Battery
	PMNN4809_	High-Capacity IMPRES IP68 Li-ion Battery
	PMNN4810_	IMPRES IP68 TIA4950 HE DENS Li-ion Battery
PMPN4286_	PMNN4510_	IMPRES 2 Li-Ion Battery
	PMNN4586_	IMPRES 2 Li-Ion Battery
PMPN4288_	HNN4001_	IMPRES Ni-MH Battery
	HNN4002_	IMPRES Ni-MH FM Battery
	HNN4003_	IMPRES Li-Ion Battery
	HNN9008_	High-Capacity Ni-MH Battery
	HNN9009_	Ultra High-Capacity Ni-MH Battery
	HNN9010_	Ni-MH FM Battery

Multi-Unit charger	Part Number	Description
	HNN9013_	Li-Ion Battery
	JMNN4023_	Li-Ion Battery
	JMNN4024_	High-Capacity Li-Ion Battery
	JMNN4025_	Ni-MH FM Battery
	NNTN4503_	Ni-MH Battery
	NNTN5510_	Li-Ion ATEX Battery
	NNTN7380_	Ni-MH MSHA Battery
	NNTN7383_	Li-Ion ATEX Battery
	PMNN4045_	Mag One Ni-MH Battery
	PMNN4073_	IP67 Li-Ion FM Battery
	PMNN4074_	IP67 Li-Ion Battery
	PMNN4094_	IP67 Li-Ion Battery
	PMNN4097_	High-Capacity Ni-MH Battery with Belt Clip
	PMNN4151_	Ni-MH Battery
	PMNN4154_	High-Capacity Ni-MH Battery
	PMNN4156_	IMPRES Ni-MH Battery
	PMNN4157_	IMPRES Ni-MH FM Battery
	PMNN4158_	Li-Ion Battery
	PMNN4159_	High-Capacity IMPRES Li-Ion Battery
	PMNN4201_	Li-Ion Battery
	PMNN4202_	High-Capacity Li-Ion Battery
	PMNN4257_	High-Capacity Mag One Li-Ion Battery
	PMNN4401_	Li-Ion CEPEL Battery
PMPN4288_	PMNN4440_	IP67 Li-Ion Battery
	PMNN4455_	High-Capacity Li-Ion Battery
	PMNN4457_	Mag One Li-Ion Battery
	PMNN4502_	High-Capacity IMPRES IP67 Li-Ion Battery
	PMNN4511_	High-Capacity IMPRES IP67 TIA4950 Li-Ion Battery
PMPN4370_	PMNN4510_	IMPRES 2 Li-Ion Battery
	PMNN4586_	IMPRES 2 Li-Ion Battery
PMPN4380_	PMNN4507_	Li-Ion Battery
	PMNN4508_	Li-Ion Battery
	PMNN4530_	IMPRES 2 Li-Ion Battery
	PMNN4549_	IMPRES 2 Li-Ion Battery
PMPN4390_	PMNN4510_	IMPRES 2 Li-Ion Battery
PMPN4400_	NNTN8020_	Li-Ion Battery

Multi-Unit charger	Part Number	Description
PMPN4408_	NNTN8023_	High-Capacity Li-Ion Battery
	PMNN4522_	High-Capacity IMPRES 2 IP68 Li-Ion Battery
	PMNN4582_	IMPRES 2 IP68 2900T Li-Ion Battery
	PMNN4801_	IMPRES 2 IP68 1900T Li-Ion Battery
	PMNN4802_	IMPRES 2 IP68 3400T Li-Ion Battery
PMPN4497_	PMNN4803_	IMPRES 2 IP68 Li-Ion Battery
	PMNN4804_	IMPRES 2 IP68 Li-Ion Battery
	PMNN4805_	IMPRES 2 IP68 Li-Ion Battery

Chapter 2

Charger, Pocket, and Communications Interface

The Standard Multi-Unit Charger System charges a wide variety of battery types for Motorola Solutions batteries. It has pockets that accommodate either a radio with attached battery or a stand-alone battery.

The IMPRES 2 Adaptive Charger System is a fully automated IMPRES 2 battery care system that is equipped with the following additional features:

- Adaptive charging to accommodate a wide variety of battery types, including IMPRES 2, IMPRES, and other authentic Motorola Solutions batteries.
- Communications Interface
  - Charger reprogramming.
  - IMPRES battery data upload to an IMPRES Battery Fleet Management System.
  - iTM communication through USB hub.
- Keypad Menu
  - Charger Setup.
  - Battery Analysis.
- Information display on Pocket 1.
- Energy Efficiency Features – the charger pockets automatically sleeps, then wake to respond to user activities, or to service a battery in the pocket.
- Preparation of a battery for long-term storage.
- Preparation of a Lithium-ion battery for shipment.

There are additional advantages when charging an IMPRES 2 Lithium-ion battery with an IMPRES 2 Adaptive Charger:

- Maximize battery life by significantly reducing heat during the trickle and post-charge cycles.
- Provide higher-rate IMPRES Lithium-Ion battery charging.
- Eliminate the need to train personnel to manage battery maintenance tasks.

This feature combination is unique in a desktop charger. Therefore, operation of the radio with a battery attached while in the charger is not recommended.

During the charging process, radio operation may result in minimally reduced radio performance and extended battery charge time.

During calibration or reconditioning, the battery is fully discharged before being fully charged. As a result, the radio may shut down during the discharge phase.

Chapter 3

Charger Overview

Figure 1: Charger Overview

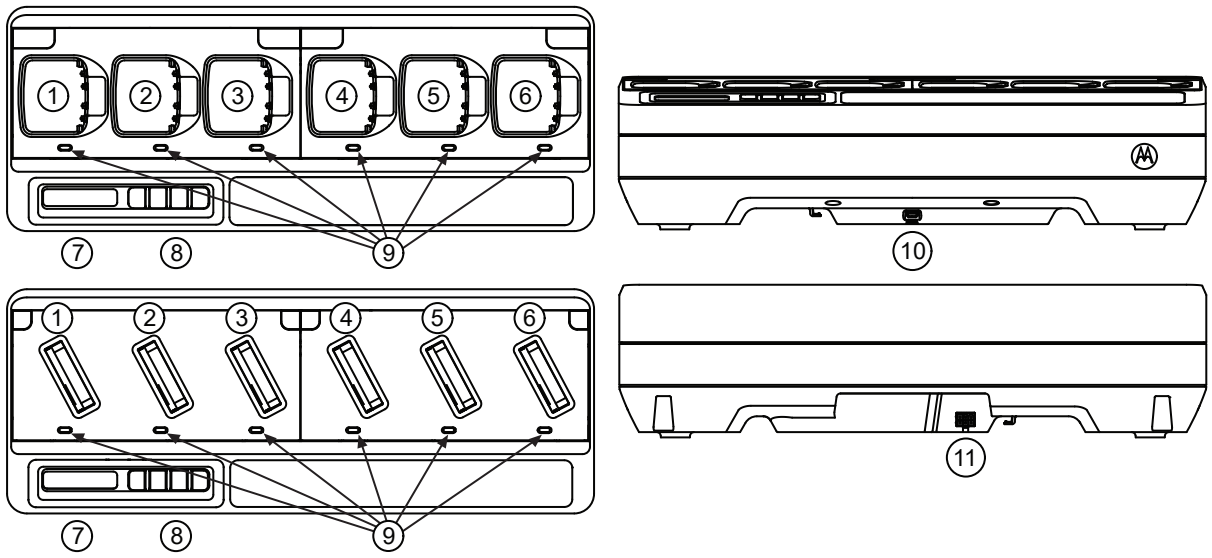


Table 7: Charger Overview and Description

Item	Description
1–6	Charging Pockets – To charge batteries attached to a radio or stand-alone.
7	Display – Displays the available menu selections.
8	Keypad – For menu selection.
9	LED Status Indicator – Indicates the charging status of the battery.
10	Communications Interface – Supports charger reprogramming and data upload to an IMPRES Battery Fleet Management System and iTM communication through USB port. Refer to Supported Models on page 11 for the selected Multi-Unit Charger pockets that support iTM Communication.
11	Power Connector Inlet – Compatible with Power Supply in Motorola Solutions Authorized Power Supply table.

Chapter 4

IMPRES 2 and IMPRES Batteries and Chargers

This section provides information on the IMPRES 2 and IMPRES batteries and chargers.

4.1 Features and Benefits

Charging IMPRES or IMPRES 2 batteries using an IMPRES 2 Adaptive Charger, which periodically calibrates and reconditions the battery yields the following benefits:

- Maximize battery life by significantly reducing heat during the trickle and post-charge cycles.
- Determines the current battery status, giving the radio user an indication of effective use time.
- Provide higher-rate IMPRES or IMPRES 2 Lithium-Ion battery charging.
- Automatically performs calibration and reconditioning when needed.
- Minimizes IMPRES or IMPRES 2 battery heating, regardless of how long the battery is left in the charger pocket.
- Periodically charges a battery stored in the charger, maintaining a high state of readiness for the user.
- Eliminates Nickel battery memory effect, eliminating the need to purchase special equipment or train personnel in tasks to maintain battery life cycle.

Using this unique patented system, there is no requirement to track and record IMPRES 2 battery, conduct manual calibration and reconditioning, or remove batteries from chargers after charging completion.

4.2 IMPRES 2 or IMPRES Battery Initialization

A new IMPRES battery or IMPRES 2 battery must be initialized by the charger for full IMPRES functionality.

The charger automatically detects the new IMPRES or IMPRES 2 battery, and automatically starts Initialization. Initialization is the first IMPRES battery calibration or reconditioning. This is a two-phase process. The first phase is battery discharge, indicated by the status LED in steady amber. The second phase is full charge, indicated by steady green LED. This process may take up to 12 hours or more to complete, depending on the state of charge and capacity of the battery. Interruption of either phase delays the battery initialization until the next charging opportunity.

4.3 Automatic IMPRES 2 or IMPRES Battery Calibration or Reconditioning

The IMPRES 2 charger automatically assesses the condition of an IMPRES or IMPRES 2 battery.

Based on this condition, the charger automatically calibrates or reconditions the battery. Interruption of either the discharge phase or the full charge phase delays the calibration until the next charging opportunity. Calibration or reconditioning may be enabled or disabled using **Charger Setup** mode.

When disabled and the IMPRES battery requires calibration or reconditioning, the LED indicates alternating amber and green at battery insertion and after the battery is charged.

4.4 IMPRES Battery with Self Calibration and Recondition

CAUTION: IMPRES or IMPRES 2 batteries that has this icon on the battery label do not require periodic calibration and reconditioning when docked into this IMPRES 2 charger (with software version V2.01 or newer).

NOTE: Ensure that your charger is always updated with the latest firmware. The Motorola Solutions Charger Reprogrammer application package can be downloaded from Motorola Online (MOL) or Motorola Solutions website.

4.4.1 Updating Firmware

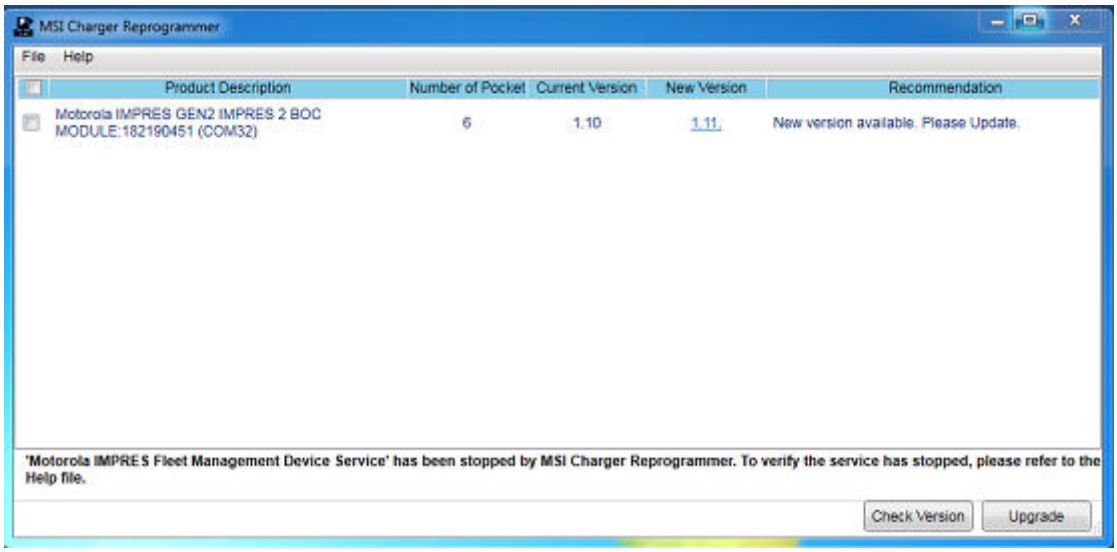
Upgrading an IMPRES device or charger to a newer version.

Prerequisites: Remove all inserted batteries from target device or charger.

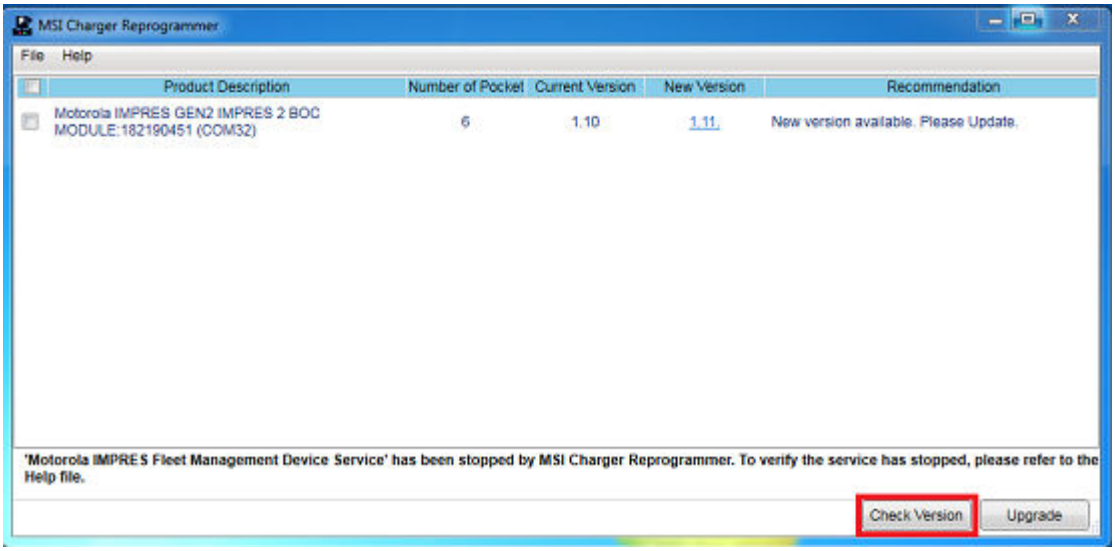
Procedure:

1 Connect the device or charger to your computer using USB.

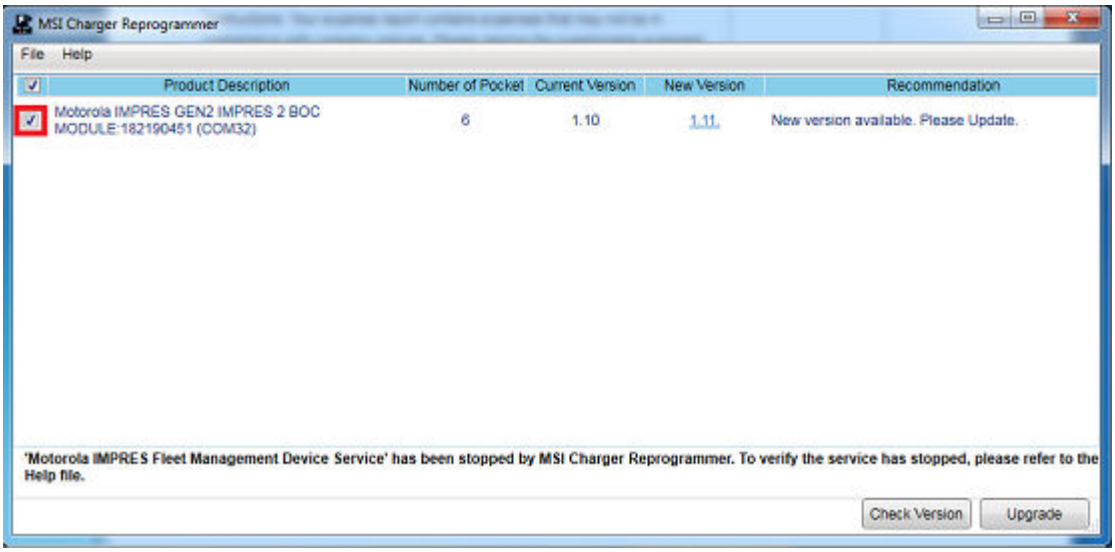
The connected device or charger is shown on the main window of the MSI Charger Reprogrammer.



2 To find the latest available version from MSI server, click **Check Version**.

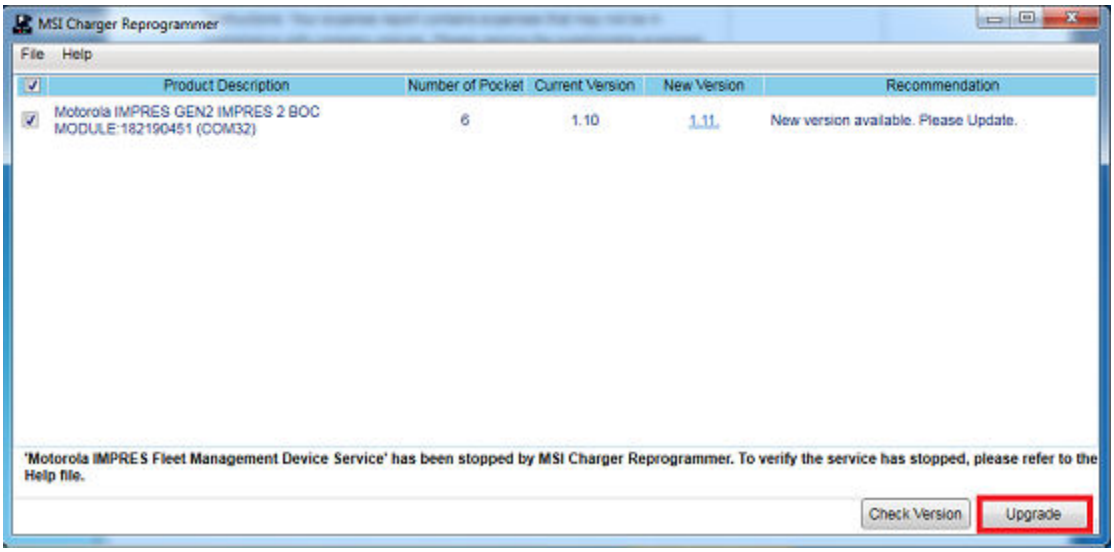


3 Select the device or charger which requires update.

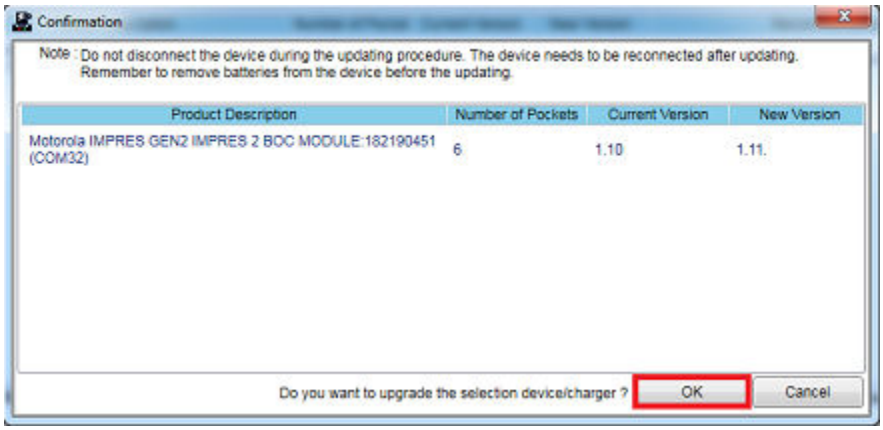


NOTE: You cannot select a device or charger with the latest firmware version.

4 To initiate firmware upgrade, click **Upgrade**.

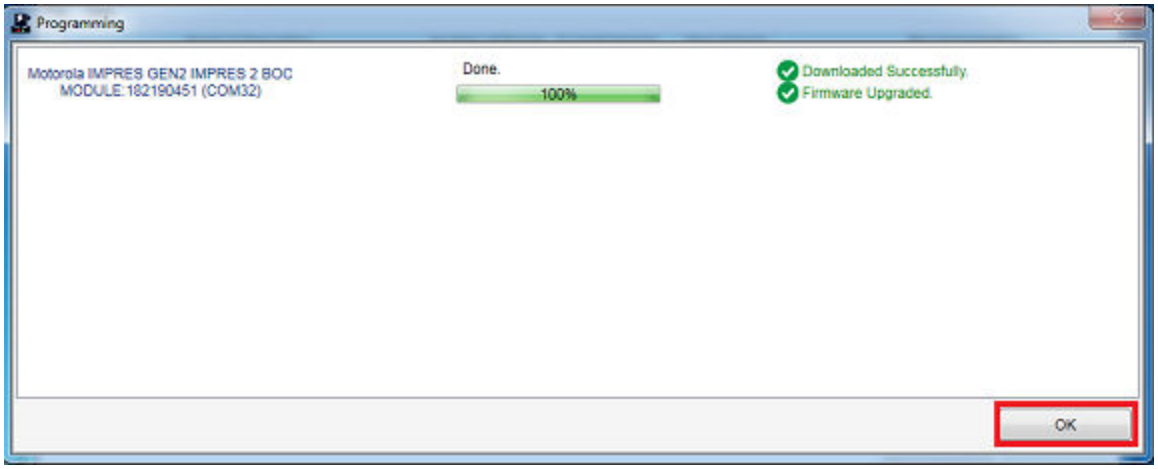


5 When prompted to start the upgrade, click **OK** on the confirmation window.



A window shows the progress of the upgrade until completion.

6 When the upgrades are completed, close the window.



4.5 Manually Initiating Calibration or Reconditioning

Though calibration or reconditioning is automatic, there may be situations in which manual initiation is preferred.

When and where to use:
If within 30 minutes that battery is moved to a charger that has calibration enabled, the last charging state resumes, preventing automatic start of calibration or reconditioning.

To manually initiate calibration or reconditioning, remove IMPRES or IMPRES 2 battery from the charger before performing the following steps:

Procedure:

1. Insert the battery into the charger pocket.
2. Within 2.5 minutes, remove the battery from the charger pocket.
3. Within five seconds, reinsert the battery into the charger pocket.

Calibration or reconditioning starts immediately, beginning with battery discharge, indicated by steady amber LED. Calibration or reconditioning is complete only after full charge, indicated by steady green LED.

4.6 Manually Terminating Calibration or Reconditioning

At any time during IMPRES or IMPRES 2 battery discharge (Steady Amber), calibration or reconditioning may be terminated.

When and where to use: To manually terminate calibration or reconditioning, perform the following steps:

Procedure:

1. Remove the battery from the charger pocket.
2. Within five seconds, reinsert the battery into the charger pocket.

Battery discharge immediately terminates, and normal battery charging starts. The LED indicates charge status.

4.7 End-of-Service-Life Indication

The charger may indicate IMPRES 2 or IMPRES battery End-of-Service by alternating red and green LED upon successful completion of calibration or reconditioning.

As batteries are used, normal wear reduces available capacity. At the successful completion of calibration or reconditioning, IMPRES chargers compare IMPRES battery capacity to the battery rated capacity.

When the capacity is at a very low value, the IMPRES battery may be nearing its end of service. The IMPRES battery remains usable. In some scenarios, it may be preferable to deploy the battery to someone who does not require large battery capacity to complete a work shift.

Chapter 5

Charging Procedure

Batteries charge best at room temperature. IMPRES 2 Multi-Unit Chargers can charge a stand-alone battery or a battery attached to a radio.

When and where to use:

Figure 2: PMPN4283_/PMPN4286_/PMPN4288_/PMPN4497_ Charging Procedure

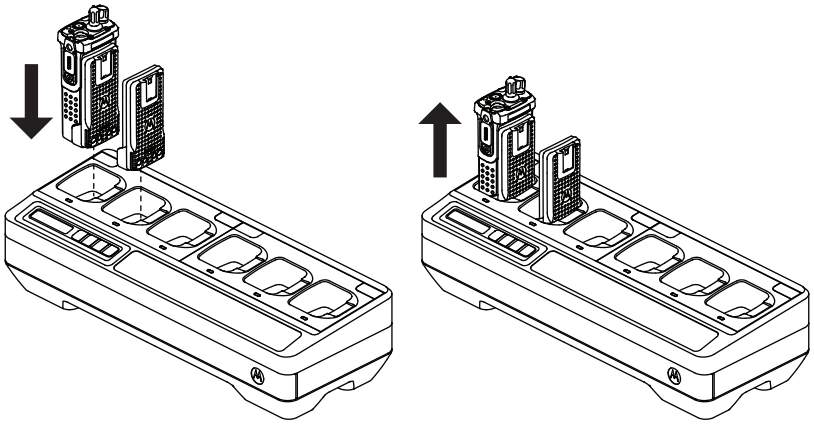


Figure 3: PMPN4370_ Charging Procedure

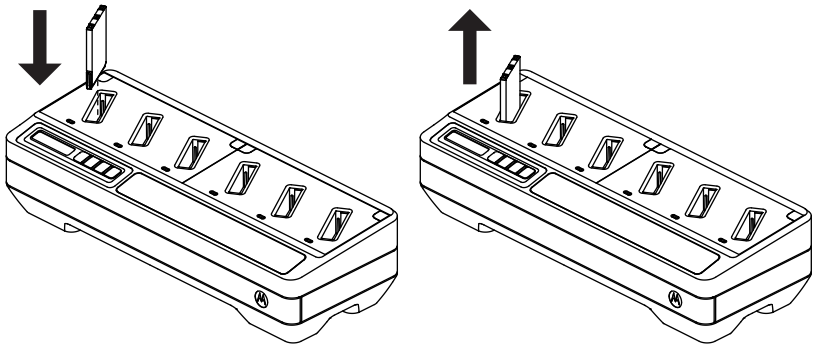
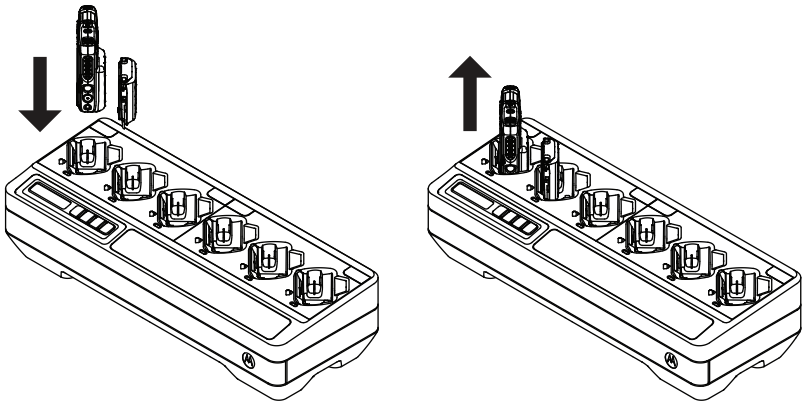


Figure 4: PMPN4380_/PMPN4390_/PMPN4400_/PMPN4408_ Charging Procedure



Procedure:

1. Place the Multi-Unit Charger (MUC) on a flat surface.
2. Firmly insert the power supply into the charger DC Inlet Socket at the back of the charger.
3. Plug the power supply power cord into a matching power outlet.

   Upon successful power-up, each pocket LED shows green for one second and displays `IMPRES 2 CHARGER`. If the LEDs do not flash and no message is displayed, check power cord connections.
4. Insert the radio with battery or stand-alone battery into an available pocket.

   The followings are the indication when the radio or stand-alone battery is properly seated in the pocket:

   - Charging status of a radio is indicated by the LED status indicator or display of the radio.
   - Charging status of a stand-alone battery is indicated by the LED status indicator of the associated pocket on the MUC.
   - The display of the MUC shows the charging status of Pocket 1 only.

   The radio or stand-alone battery is ready for use when the LED is steady green.

   NOTE:
   To ensure optimized charging performance, turn off the radio while charging unless the radio is transmitting data wirelessly on Wi-Fi or Bluetooth.

   Grip the radio body when inserting, or removing the radio from the charger. Avoid pulling the radio antenna when removing the radio.

5.1 Display Messages and LED Indications

Messages and LED indications are associated with charger software version 1.05 and above.

5.1.1 IMPRES 2 Battery or IMPRES Battery

Charging an IMPRES 2 or IMPRES battery uses the display messages and LED indications summarized in Table 8: Charging IMPRES 2 or IMPRES Batteries - Calibration Not Required on page 26 and Table 10: Calibrating/Reconditioning IMPRES 2 or IMPRES Batteries - Calibration Enabled on page 27.

Table 8: Charging IMPRES 2 or IMPRES Batteries - Calibration Not Required

Status	Pocket Display	LED Indicator
Charger Powers On	IMPRES 2 CHARGER	Green for approximately one second 
Battery Detected	IMPRES 2 BATTERY or IMPRES BATTERY	Steady Red 
Rapid Charging	RAPID CHARGE XXXX0mAh yyy%	Steady Red 
Charged to 90 % or more	TRICKLE CHARGE xxxx0mAh yyy%	Blinking Green 
Charged to 95 % or more	CHARGE COMPLETE xxxx0mAh yyy%	Steady Green 
Fault	 **WARNING:** NOT CHARGEABLE REMOVE& REINSERT	Blinking Red 
Standby (Battery is waiting to rapid charge)	 **WARNING:** HOT BATTERY WAITING TO CHRGE or COLD BATTERY WAITING TO CHRGE or VERY LOW BATTERY WAITING TO CHRGE	Blinking Amber 

Charging IMPRES 2 or IMPRES Batteries - Calibration Required, but not Enabled

Calibrating or reconditioning an IMPRES 2 or IMPRES battery uses the display messages and LED indications summarized in the following tables.

Table 9: Charging IMPRES 2 or IMPRES Batteries - Calibration Required, but not Enabled

Status	Charger Display	LED Indicator
Charger Powers On	IMPRES 2 CHARGER	Green for approximately one second 
Battery Detected	IMPRES 2 BATTERY or IMPRES BATTERY	Battery requires calibration, but calibration is disabled in charger: Alternating Amber and Green for four seconds.

Status	Charger Display	LED Indicator
		
Requesting IMPRES Battery Calibration • Calibration is disabled in charger. • Charging Battery until OK is selected or time-out.	**WARNING:** ENABLE BATTERY CALI-BRATION? • Press OK to enable calibration. • Ignore for normal charging (message disappears after one minute).	Steady Red 
Rapid Charging (Request for Calibration time-out)	RAPID CHARGE	Steady Red 
Charged to 90 % or more	TRICKLE CHARGE	Blinking Green 
Charged to 95 % or more	CHARGE COMPLETE	Battery requires calibration, but calibration is disabled in charger: Alternating Amber and Green 
Fault	**WARNING:** NOT CHARGEABLE REMOVE& REINSERT	Blinking Red 
Standby (Battery is waiting to rapid charge)	**WARNING:** HOT BATTERY WAITING TO CAL or COLD BATTERY WAITING TO CAL or VERY LOW BATTERY WAITING TO CHRGE	Blinking Amber 

Calibrating/Reconditioning IMPRES 2 or IMPRES Batteries - Calibration Enabled

Table 10: Calibrating/Reconditioning IMPRES 2 or IMPRES Batteries - Calibration Enabled

Status	Pocket Display	LED Indicator
Charger Powers On	IMPRES 2 CHARGER	Green for approximately one second 
Battery Detected	IMPRES 2 BATTERY or IMPRES BATTERY	Steady Amber

Status	Pocket Display	LED Indicator
		
Battery Discharging • Battery needs calibration. • Battery does not need calibration, but calibration is initiated.	CAL DISCHARGE or CAL DISCHARGE xxxx0mAh yyy%	Steady Amber 
Rapid Charging	CAL RAPID CHARGE xxxx0mAh yyy%	Steady Red 
Charged to 90 % or more	CAL TRICKLE CHRGE xxxx0mAh yyy%	Blinking Green 
Charged to 95 % or more	CHARGE COMPLETE xxxx0mAh yyy%	Battery calibration successful: Steady Green  Battery Calibration successful, but may be nearing End of Service (battery is usable) : Blinking Red and Green 
Fault	 **WARNING:** NOT CHARGEABLE REMOVE & REINSERT	Blinking Red 
Standby (Battery is waiting to rapid charge)	 **WARNING:** HOT BATTERY WAITING TO CAL or COLD BATTERY WAITING TO CAL or VERY LOW BATTERY WAITING TO CHRGE	Blinking Amber 

Calibrating/Reconditioning IMPRES 2 or IMPRES Batteries - Calibration Initially Disabled, then Enabled

Table 11: Calibrating/Reconditioning IMPRES 2 or IMPRES Batteries - Calibration Initially Disabled, then Enabled

Status	Charger Display	LED Indicator
Charger Powers On	IMPRES 2 CHARGER	Green for approximately one second

Status	Charger Display	LED Indicator
		
Battery Detected	IMPRES 2 BATTERY or IMPRES BATTERY	Battery requires calibration, but calibration is disabled in charger: Alternating Amber and Green 
Requesting IMPRES Battery Calibration • Calibration is disabled in charger. • Charging battery until OK is selected or time-out.	**WARNING:** ENABLE BATTERY CALIBRATION? • Press OK to enable calibration. • Ignore for normal charging (message disappears after one minute).	Steady Red 
Battery Discharging (OK selected)	CAL DISCHARGE	Steady Amber 
Rapid Charging	CAL RAPID CHARGE xxxx0mAh yyy%	Steady Red 
Charged to 90 % or more	CAL TRICKLE CHRGE xxxx0mAh yyy%	Blinking Green 
Charged to 95 % or more	CHARGE COMPLETE xxxx0mAh yyy%	Battery Calibration successful: Steady Green  Battery Calibration successful, but may be nearing End of Service (battery is usable): Blinking Red and Green 
Fault	**WARNING:** NOT CHARGEABLE REMOVE & REINSERT	Blinking Red 

Status	Charger Display	LED Indicator
Standby (Battery is waiting to rapid charge)	Before Calibration Enabled: **WARNING:** HOT BATTERY WAITING TO CHRGE or COLD BATTERY WAITING TO CHRGE or VERY LOW BATTERY WAITING TO CHRGE After Calibration Enabled: **WARNING:** HOT BATTERY WAITING TO CAL or COLD BATTERY WAITING TO CAL or VERY LOW BATTERY WAITING TO CHRGE Regardless of Calibration Enabled/Disabled: VERY LOW BATTERY WAITING TO CHRGE	Blinking Amber

5.1.2
Motorola Solutions non-IMPRES Batteries

Table 12: Motorola Solutions non-IMPRES Batteries

Status	Charger Display	LED Indicator
Charger Powers On	IMPRES 2 CHARGER	Green for approximately one second
Battery Detected	MOTOROLA SOLUTNS BATTERY	Steady Red
Rapid Charging	RAPID CHARGE	Steady Red
Charged to 90 % or more	TRICKLE CHARGE	Blinking Green
Charged to 95 % or more	CHARGE COMPLETE	Steady Green

Status	Charger Display	LED Indicator
Fault	**WARNING:** NOT CHARGEABLE REMOVE & REINSERT	Blinking Red 
Standby • Battery is waiting to rapid charge. • Battery may be too hot, too cold or low voltage.	**WARNING:** HOT BATTERY WAITING TO CHRGE or COLD BATTERY WAITING TO CHRGE or VERY LOW BATTERY WAITING TO CHRGE	Blinking Amber 

5.1.3
Unknown Battery

Some unknown batteries may not be detectable by the charger. Unknown batteries do not declare charging parameters in a manner recognizable by the charger. If an unknown battery is detected, then the charger indicates charging as summarized in the following table.

Table 13: Charging Unknown Batteries

Status	Charger Display	LED Indicator
Charger Powers On	IMPRES 2 CHARGER	Green for approximately one second 
Battery Detected	UNKNOWN BATTERY	Steady Red 
Rapid Charging	RAPID CHARGE	Steady Red 
Nearly Charged (Battery Capacity Unknown)	TRICKLE CHARGE	Blinking Green 
Charged (Battery Capacity Unknown)	CHARGE COMPLETE	Steady Green 
Fault	**WARNING:** NOT CHARGEABLE REMOVE & REINSERT	Blinking Red 

Status	Charger Display	LED Indicator
Standby • Battery is waiting to rapid charge. • Battery may be too hot, too cold, or low voltage.	**WARNING:** HOT BATTERY WAITING TO CHRGE or COLD BATTERY WAITING TO CHRGE or VERY LOW BATTERY WAITING TO CHRGE	Blinking Amber

5.2
IMPRES 2 or IMPRES Battery Long-Term Storage

You can prepare authentic Motorola Solutions IMPRES 2 or IMPRES Lithium-Ion, or Nickel batteries for Long-Term Storage. Selection of Long-Term Storage supersedes Calibration/Reconditioning. Lithium batteries prepared for Long-Term Storage may not meet regulations for shipment by air cargo.

Preparing IMPRES 2 or IMPRES Batteries for Long-Term Storage - Calibration Not Required

Table 14: Preparing IMPRES 2 or IMPRES Batteries for Long-Term Storage - Calibration Not Required

Status	Charger Display	LED Indicator
Charger Powers On	IMPRES 2 CHARGER	Green for approximately one second
Battery Detected	IMPRES 2 BATTERY or IMPRES BATTERY	Battery requires Discharge: Steady Amber Battery requires Charge: Steady Red
Battery Discharging (Discharging to selection)	STORAGE DISCHRGE xx% Rated Cap	Steady Amber
Rapid Charging (Charging to selection)	STORAGE CHARGE xx% Rated Cap	Steady Red
Nearly Charged (Charging to selection)	STORE TRKL CHRGE xx% Rated Cap	Blinking Green
• Discharge or Charge Complete	LONGTERM STORAGE xx% Rated Cap	Battery does not require Calibration: Steady Green

Status	Charger Display	LED Indicator
• Ready to Store		 Battery requires Calibration, but Calibration is disabled in charger: Alternating Amber/ Green 
Fault • Battery Faulted • No discharge current • Capacity too low to complete charge	 **WARNING:** `NOT CHARGEABLE REMOVE& REINSERT` or `CANNOT DISCHARGE FOR LT STORAGE` or `STORE INCOMPLETE Low Capacity:yy%`	Blinking Red 
Standby • Battery is waiting to rapid charge. • Battery may be too hot, too cold, or low voltage.	 **WARNING:** `HOT BATTERY WAITING TO CHRGE` or `COLD BATTERY WAITING TO CHRGE` or `VERY LOW BATTERY WAITING TO CHRGE`	Blinking Amber 

Preparing New and Never Calibrated IMPRES 2 or IMPRES Batteries for Long-Term Storage - Calibration Required

Table 15: Preparing New and Never Calibrated IMPRES 2 or IMPRES Batteries for Long-Term Storage - Calibration Required

Status	Charger Display	LED Indicator
Charger Powers On	`IMPRES 2 CHARGER`	Green for approximately one second 
Battery Detected	`IMPRES 2 BATTERY` or `IMPRES BATTERY`	Battery requires Calibration, but Calibration is disabled by Long-Term Storage: Alternating Amber/Green for four seconds 
Battery Discharging (Discharging to find 0 % Rated Capacity)	`STORAGE DISCHRGE`	Steady Amber 

Status	Charger Display	LED Indicator
Rapid Charging (Charging to selection)	STORAGE CHARGE xx% Rated Cap	Steady Red 
Nearly Charged (Charging to selection)	STORE TRKL CHRGE xx% Rated Cap	Blinking Green 
• Charge Complete • Ready to Store	LONGTERM STORAGE xx% Rated Cap	Battery does not require Calibration: Steady Green  Battery requires Calibration: Alternating Amber/Green 
Fault • Battery Faulted • No discharge current • Capacity too low to complete charge	**WARNING:** NOT CHARGEABLE REMOVE& REINSERT or CANNOT DISCHARGE FOR LT STORAGE or STORE INCOMPLETE Low Capacity:yy%	Blinking Red 
Standby • Battery is waiting to rapid charge. • Battery may be too hot, too cold, or low voltage.	**WARNING:** HOT BATTERY WAITING TO CHRGE or COLD BATTERY WAITING TO CHRGE or VERY LOW BATTERY WAITING TO CHRGE	Blinking Amber 

Preparing Other Motorola Solutions, Non-Motorola Solutions, or Unknown Batteries for Long-Term Storage

Table 16: Preparing Other Motorola Solutions, Non-Motorola Solutions, or Unknown Batteries for Long-Term Storage

Status	Charger Display	LED Indicator
Charger Powers On	IMPRES 2 CHARGER	Green for approximately one second 
Battery Detected • Other Motorola Solutions battery • Unknown battery	WRONG BATT TYPE CANNOT LT STORAGE	Blinking Red 

Status	Charger Display	LED Indicator
Fault (Battery Faulted)	**WARNING:** NOT CHARGEABLE RE-MOVE & REINSERT	Blinking Red 
Standby • Battery is waiting to rapid charge. • Battery may be too hot, too cold, or low voltage.	**WARNING:** HOT BATTERY WAITING TO CHRGE or COLD BATTERY WAITING TO CHRGE or VERY LOW BAT-TERY WAITING TO CHRGE	Blinking Amber 

5.3

Lithium-Ion Battery Preparation for Shipment

You can prepare IMPRES 2, IMPRES, or other authentic Motorola Solutions Lithium-Ion batteries for shipment by air cargo. Selection of Lithium Shipment supersedes Calibration/Reconditioning.

Table 17: Preparing IMPRES 2 or IMPRES Lithium-Ion Batteries for Shipment - Calibration Not Required

Status	Charger Display	LED Indicator
Charger Powers On	IMPRES 2 CHARGER	Green for approximately one second 
Battery Detected	IMPRES 2 BATTERY or IM-PRES BATTERY	Battery requires Discharge: Steady Amber  Battery requires Charge: Steady Red 
Battery Discharging (Discharg-ing to selection)	SHIP LI DISCHRG xx% Rated Cap	Steady Amber 
Rapid Charging (Charging to selection)	SHIP LI CHARGE xx% Rated Cap	Steady Red 
• Discharge or Charge Com-plete • Ready to Ship	SHIP LI DISCHRG or LI READY TO SHIP xx% Rat-ed Cap	Battery does not require Cali-bration: Steady Green  Battery requires Calibration, but Calibration is disabled

Status	Charger Display	LED Indicator
		in charger: Alternating Amber/ Green 
Fault • Battery Faulted • No discharge current • Capacity too low to complete charge	 **WARNING:** `NOT CHARGEABLE REMOVE& REINSERT` or `CANNOT DISCHARGE FOR LI SHIPMENT` or `SHIP INCOMPLETE Low Capacity:yy%`	Blinking Red 
Standby • Battery is waiting to discharge or charge. • Battery may be too hot, too cold, or low voltage.	 **WARNING:** `HOT BATTERY WAITING TO CHRGE` or `COLD BATTERY WAITING TO CHRGE` or `VERY LOW BATTERY WAITING TO CHRGE`	Blinking Amber 

Preparing New and Never Calibrated IMPRES 2 or IMPRES Lithium-Ion Batteries for Shipment - Calibration Required

Table 18: Preparing New and Never Calibrated IMPRES 2 or IMPRES Lithium-Ion Batteries for Shipment - Calibration Required

Status	Charger Display	LED Indicator
Charger Powers On	`IMPRES 2 CHARGER`	Green for approximately one second 
Battery Detected	`IMPRES 2 BATTERY` or `IMPRES BATTERY`	Battery requires Calibration, but Calibration is disabled by Ship Lithium: Alternating Amber/Green for four seconds 
Battery Discharging (Discharging to find 0 % Rated Capacity)	`SHIP LI DISCHRG`	Steady Amber 
Rapid Charging (Charging to selection)	`SHIP LI CHARGE xx% Rated Cap`	Steady Red 
• Charge Complete	`LI READY TO SHIP xx% Rated Cap`	Battery does not require Calibration: Steady Green

Status	Charger Display	LED Indicator
• Ready to Ship		 Battery requires Calibration: Alternating Amber/Green 
Fault • Battery Faulted • No discharge current • Capacity too low to complete charge	 **WARNING:** `NOT CHARGEABLE RE-MOVE& REINSERT` or `CANNOT DIS-CHARGE FOR LI STORAGE` or `SHIP INCOMPLETE Low Capacity:yy%`	Blinking Red 
Standby • Battery is waiting to rapid charge. • Battery may be too hot, too cold, or low voltage.	 **WARNING:** `HOT BATTERY WAITING TO CHRGE` or `COLD BATTERY WAITING TO CHRGE` or `VERY LOW BAT-TERY WAITING TO CHRGE`	Blinking Amber 

Preparing Other Motorola Solutions Lithium-Ion Batteries for Shipment

Table 19: Preparing Other Motorola Solutions Lithium-Ion Batteries for Shipment

Status	Charger Display	LED Indicator
Charger Powers On	`IMPRES 2 CHARGER`	Green for approximately one second 
Battery Insertion	`MOTOROLA SOLUTNS BAT-TERY`	Steady Amber 
Battery Discharging	`SHIP LI DISCHRG`	Steady Amber 
Rapid Charging	`SHIP LI CHARGE xx% Rated Cap`	Steady Red 
• Charge Complete • Ready to Ship	`LI READY TO SHIP xx% Rated Cap`	Steady Green 

Status	Charger Display	LED Indicator
Fault	**WARNING:** NOT CHARGEABLE RE-MOVE& REINSERT	Blinking Red 
Standby • Battery is waiting to rapid charge. • Battery may be too hot, too cold, or low voltage.	**WARNING:** HOT BATTERY WAITING TO CHRGE or COLD BATTERY WAITING TO CHRGE or VERY LOW BAT-TERY WAITING TO CHRGE	Blinking Amber 

Preparing Other Motorola Solutions Nickel Batteries or Unknown Batteries for Shipment

Table 20: Preparing Other Motorola Solutions Nickel Batteries or Unknown Batteries for Shipment

Status	Charger Display	LED Indicator
Charger Powers On	IMPRES 2 CHARGER	Green for approximately one second 
Battery Detected • Other Motorola Solutions battery • Unknown battery	WRONG BATT TYPE CANNOT SHIP LI	Blinking Red 
Fault (Battery Faulted)	**WARNING:** NOT CHARGEABLE RE-MOVE& REINSERT	Blinking Red 
Standby • Battery is waiting to rapid charge. • Battery may be too hot, too cold, or low voltage.	**WARNING:** HOT BATTERY WAITING TO CHRGE or COLD BATTERY WAITING TO CHRGE or VERY LOW BAT-TERY WAITING TO CHRGE	Blinking Amber 

Chapter 6

Charger Setup

WARNING: Empty all charger pockets before entering charger setup.

The charger keypad is located beside the display associated with Pocket 1.

Figure 5: Charger Display and Keypad

6.1 Main Menu

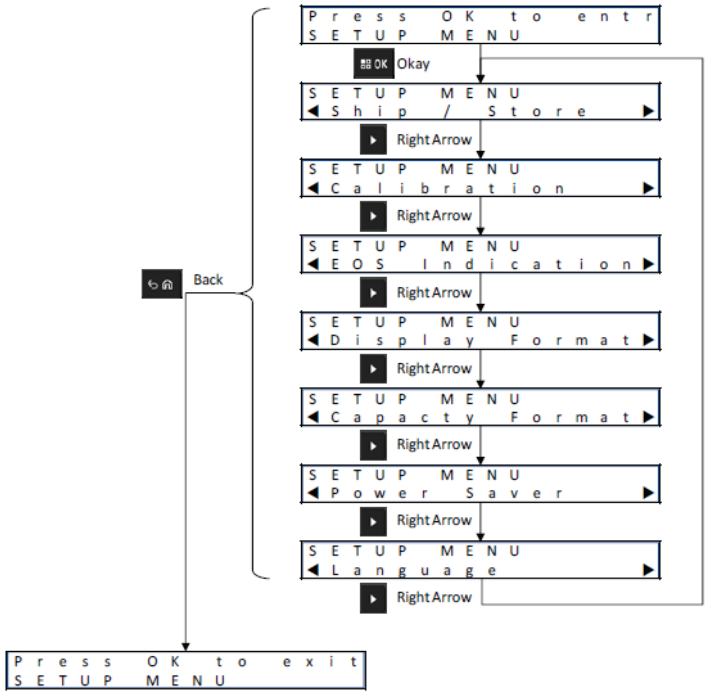
Procedure:

1. To enter **Charger Setup** menu, press and hold the left arrow and right arrow buttons simultaneously for at least three seconds.

   The hold time is adjustable. The display shows `Press OK to entr SETUP MENU`

2. To prompt display of available Charger Setup menu, press **OK**

Figure 6: Charger Setup Menu



3 To sequence through the Charger Setup menu selections, press the right arrow.

4 To sequence through the Charger Setup menu selections in reverse order, press the left arrow.

5 To enter the Charger Setup menu for the selection currently displayed, press **OK**.

6 To exit from the Charger Setup menu, press **Back→ OK**.

If no Keypad button is pressed for 10 minutes, then the charger exits Charger Setup and returns to normal message displays.

6.2 Charger Setup Menu Selection

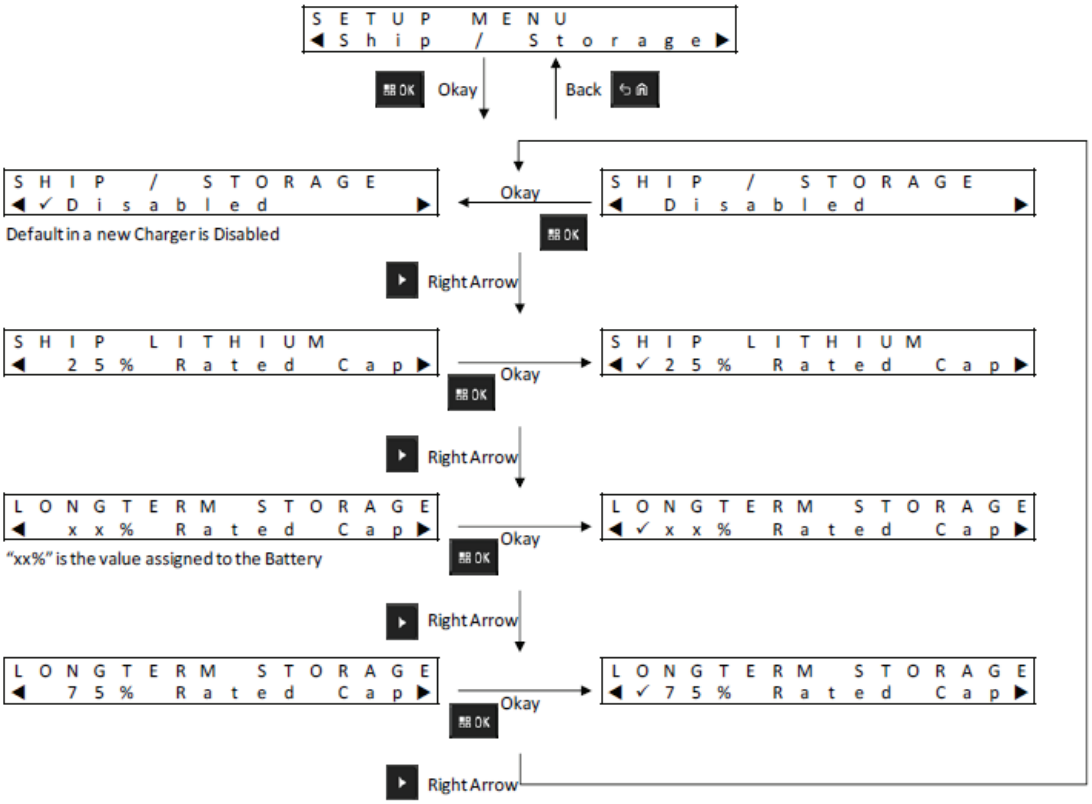
This section describes the Charger Setup menu selections.

- To sequence through the Options as represented, press the right arrow.
- To sequence through the Options in reverse order, press the left arrow.
- Check mark identifies the current Option selection.
- Pressing **OK** removes the Check mark from a selected Option or adds the Check mark to select the displayed Option.
- Press **Back→OK** to exit from the Setup menu.

Charger Setup selections are stored in non-volatile memory. Selections are not affected by cycling charger power.

6.3 Ship/Storage

Figure 7: Ship or Storage Menu



The followings are four Ship or Storage options:

- Disabled
- Ship Lithium-Ion
- Long-Term Storage
- Long-Term Storage at 75 % of Rated Capacity

Ship Lithium-Ion, Long-Term Storage, and Long-Term Storage 75 % selections supersede the calibration setting.

6.3.1 Ship Lithium

Ship Lithium sets the State of Charge (SoC) of a Motorola Solutions Lithium-Ion battery to a low value for bulk air cargo shipment, approximately 25 % of Rated Capacity. This feature applies only to IMPRES 2, IMPRES, or other Motorola Solutions Lithium-Ion batteries.

The charger may fully discharge some Motorola Solutions batteries before charging to the Ship Lithium limit such as the following batteries:

- IMPRES 2 or IMPRES batteries that were never calibrated or need a new calibration.
- Motorola Solutions Lithium-Ion batteries that are not IMPRES 2 or IMPRES.

Ship Lithium does not apply to Nickel batteries or Unknown batteries. These batteries are Faulted.

6.3.2
Long-Term Storage

Long-Term Storage sets the IMPRES 2 or IMPRES battery to a State of Charge (SoC) suitable when storing the battery for a long period of time.

The preferred SoC for storage is significantly less than fully charged, such as 50 %. Long-Term Storage at 75 % Rated Capacity is available for scenarios requiring the stored battery to be at a higher SoC such as minimizing full-charge time if the battery must be quickly fielded.

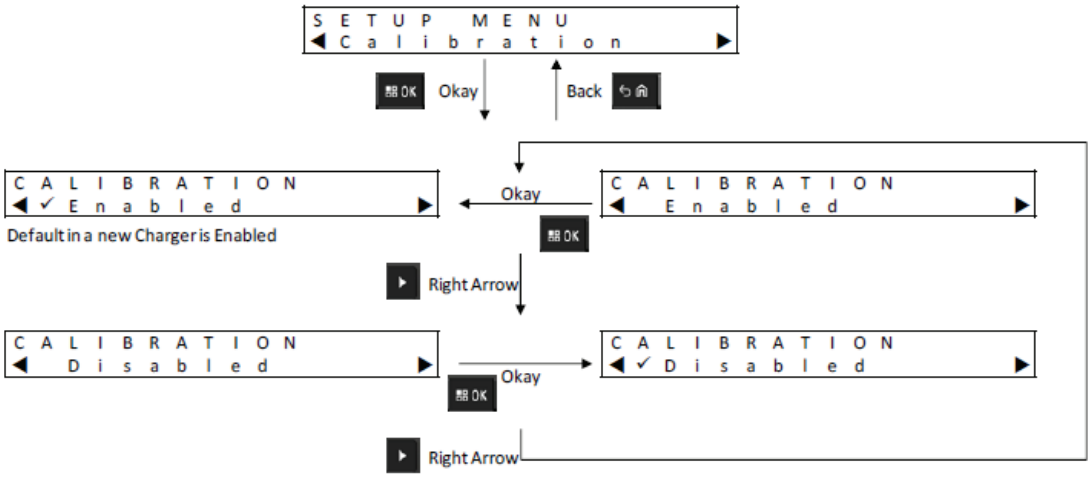
The charger may fully discharge some Motorola Solutions batteries before charging to the Long-Term Storage limit such as IMPRES 2 or IMPRES batteries that were never previously calibrated or need a new calibration.

Long-Term Storage and Long-Term Storage 75 % do not apply to Unknown batteries or Motorola Solutions batteries that are not IMPRES 2 or IMPRES batteries. These batteries are Faulted.

6.4
Calibration Menu

The calibration setup selection enables or disables the discharge phase of calibration or reconditioning.

Figure 8: Calibration Menu



The discharge phase precedes the full charge required for successful calibration or reconditioning. This feature is useful when the charger is deployed to a location requiring the battery to be at a charged state of readiness as quickly as possible. In these situations, waiting for the battery to discharge may be inconvenient.

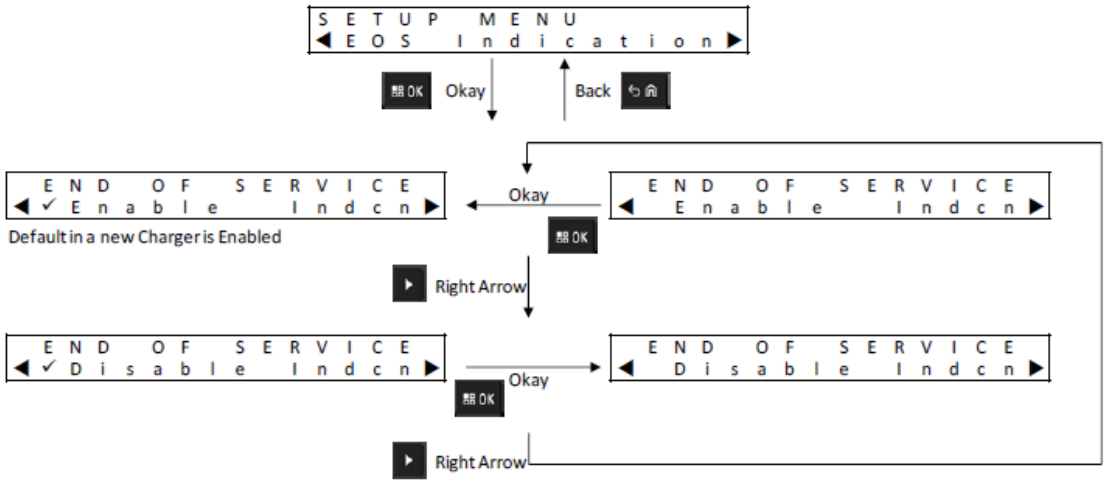
If an IMPRES 2 or IMPRES battery is due for calibration and is already discharged when inserted into the charger, the charger use charge completion as battery calibration.

6.5
End-of-Service Life Indication Menu

Even though the IMPRES 2 or IMPRES battery may be nearing its end-of-service, the battery capacity may be more than adequate given how it is used.

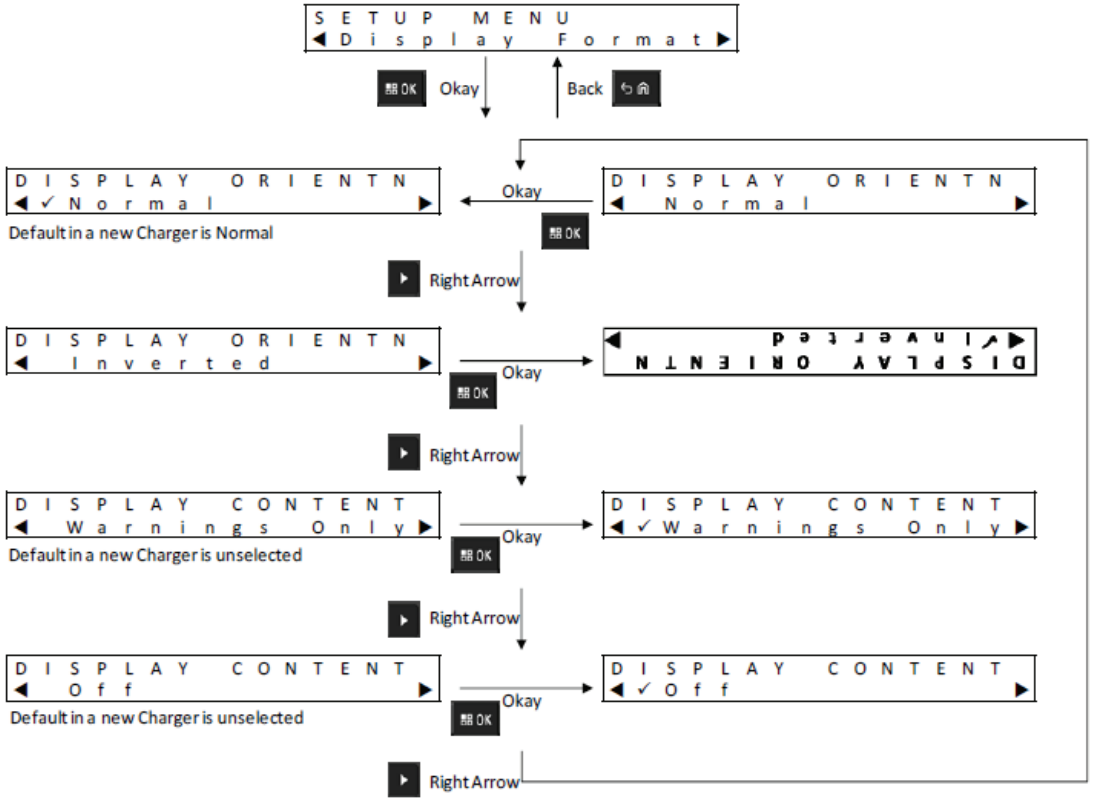
Disable the end-of-service life alternating red and green indication that the charger indicates at the end of battery charge.

Figure 9: End-of-Service Life Indication Menu



6.6 Display Format Menu

Figure 10: Display Format Menu

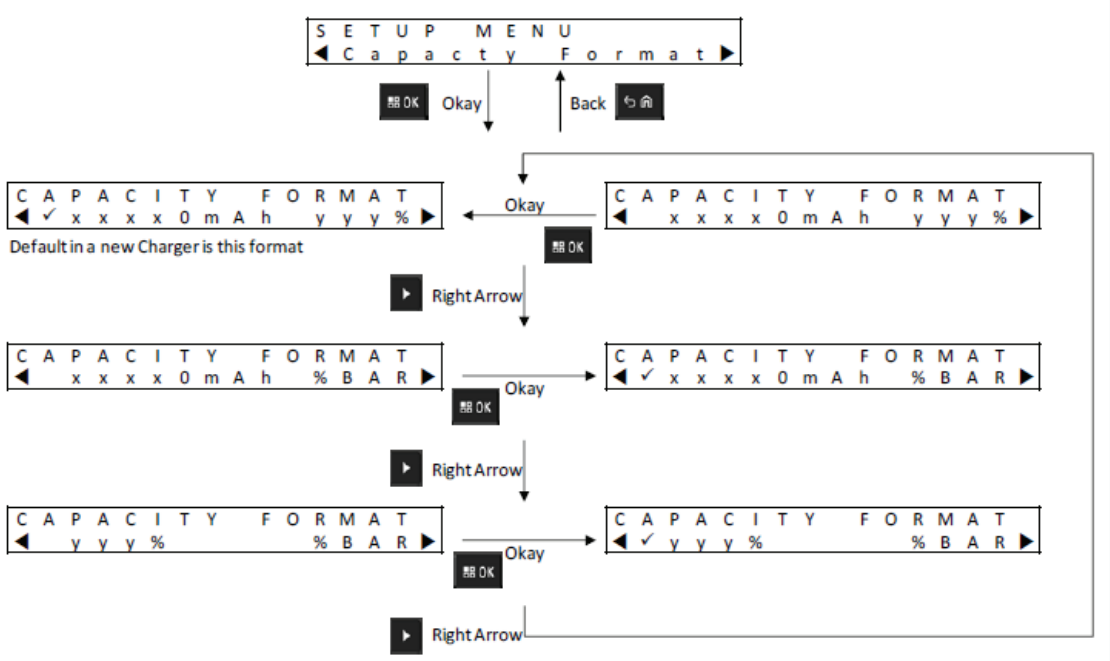


The followings are four display format options:

- Normal orientation (charger sitting on a desktop).
- Inverted orientation (charger hanging on a wall).
- Warning messages only. Other messages are not displayed. This applies to Normal and Inverted orientations. Warning messages are identified in Table 8: Charging IMPRES 2 or IMPRES Batteries - Calibration Not Required on page 26 through Table 20: Preparing Other Motorola Solutions Nickel Batteries or Unknown Batteries for Shipment on page 38.
- Display off.

6.7 Capacity Format Menu

Figure 11: Capacity Format Menu



Battery Capacity display options include the followings:

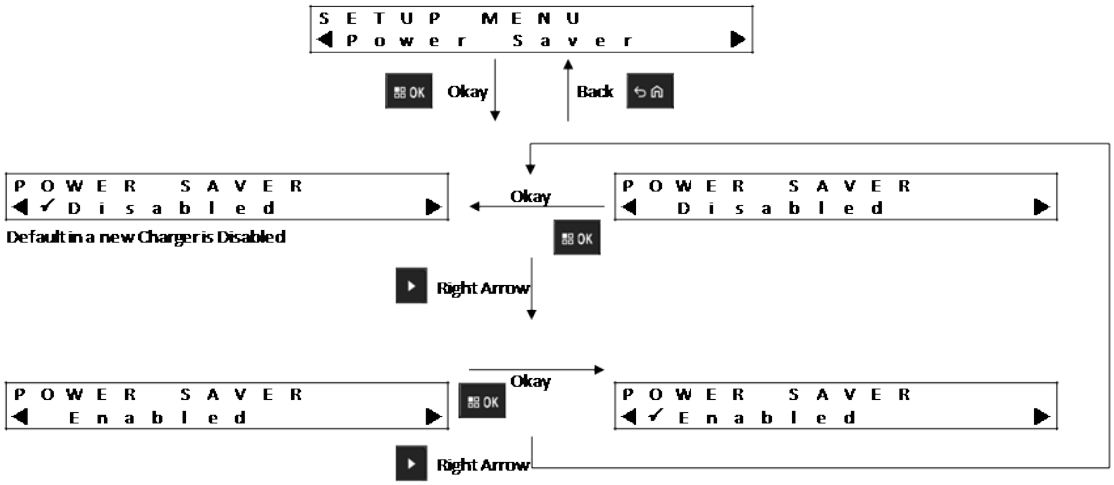
Table 21: Battery Capacity Display Options

Representation	Description
xxx0mAh	Present Charge State of Charge (SoC) in milli-amp-hours.
yyy%	Present Charge relative to the Potential Capacity (when fully charged), in percent. The maximum value is 100 %.
%BAR	The equivalent of yyy % represented in an eight-segment bar.

6.8

Power Saver Menu

Figure 12: Power Saver Menu



To meet certain government low standby power limits, Power Saver mode enables the charger to turn off all pockets except Pocket 1 when there is no activity in those pockets for a period of time. The followings are examples of activities included:

- Radio or battery charging
- Battery calibration or reconditioning
- Lithium-Ion Battery preparation for shipment
- IMPRES 2 or IMPRES battery preparation for Long-Term Storage
- Charger Setup Mode
- Charger Analysis Mode
- Fault
- Recommending calibration or reconditioning

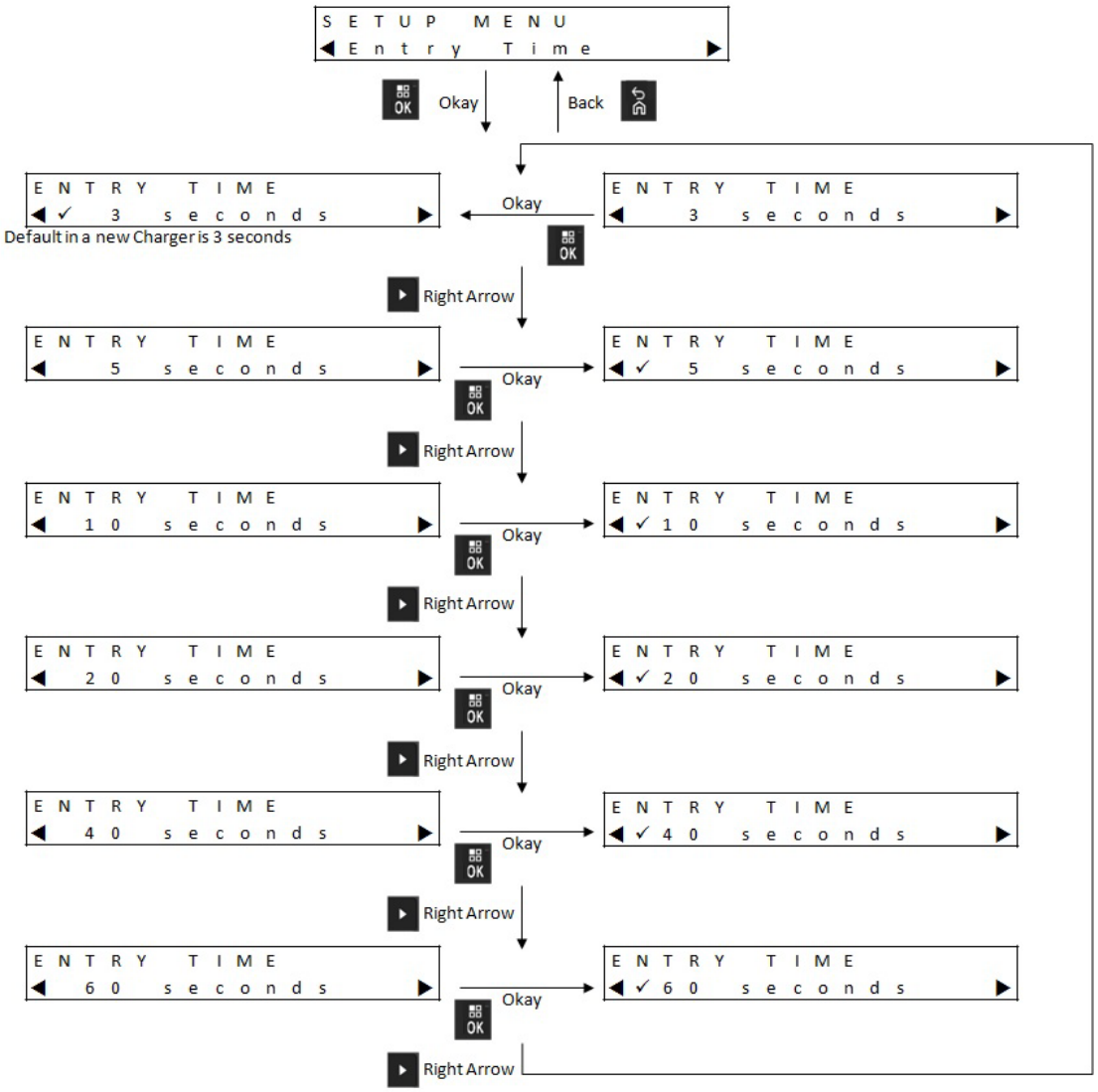
Pocket 1 remains on, but may be sleeping. To turn on the other pockets, press any keypad button. Until other pockets are turned on, they cannot respond to radio or battery insertion, or removal.

6.9

Entry Time Menu

Entry Time is the hold time required to press the left arrow and right arrow buttons simultaneously to enter Charger Setup mode or Charger Analyzer mode.

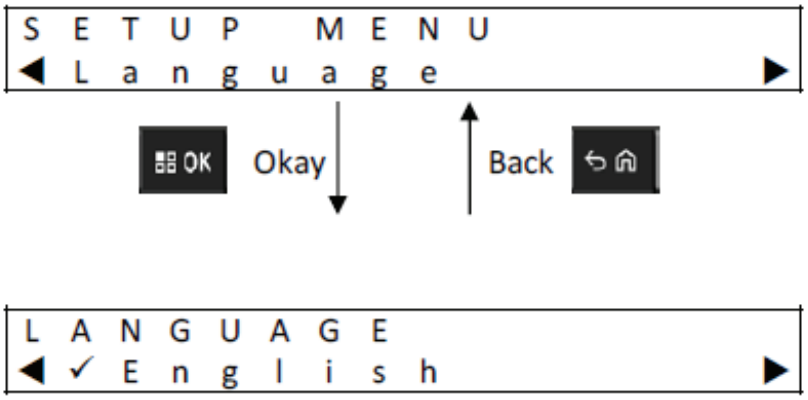
Figure 13: Entry Time Menu



6.10
Language Menu

The charger display supports North American English only.

Figure 14: Language Menu



Chapter 7

Analyzer Mode

Procedure:

1. To enter Analyzer mode, press the **OK** button from more than 3 seconds.

   The hold time is adjustable. The Analyzer mode features described are associated with charger software version 1.05.
2. Press **OK** to display data available from the battery or charging pocket on the display adjacent to the Pocket, followed by charger software version.
3. To sequence through the data, press the right arrow or to sequence through the data in reverse order, press the left arrow.
4. To exit from the Analyzer mode, press **Back→ OK**.

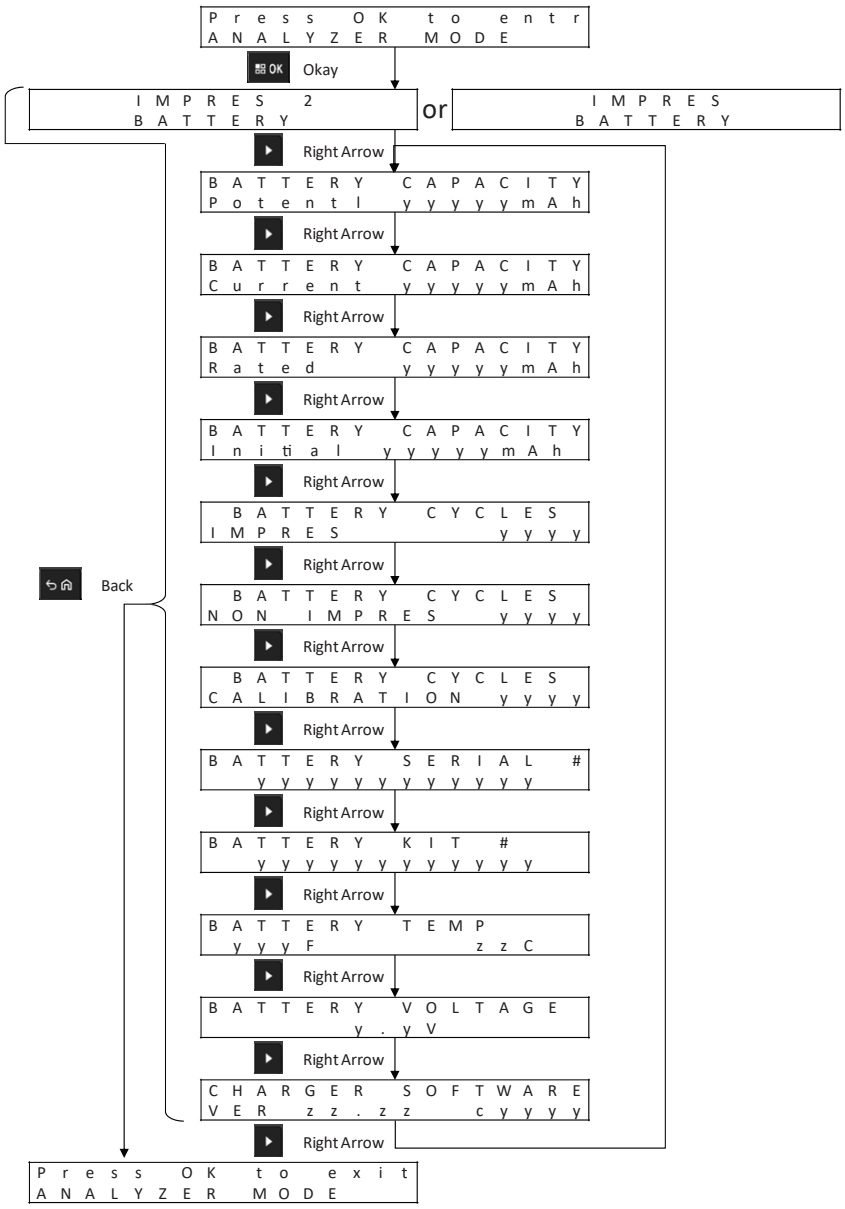
If no keypad button is pressed for 10 minutes, then the charger exits Analyzer mode and returns to normal message displays.

While in Analyzer mode, if the battery is removed and replaced by another battery, the last parameter displayed for the first battery is the first parameter displayed for the second battery. For example, while Battery IMPRES Cycles is being displayed, the IMPRES 2 or IMPRES battery is removed from Pocket 1 and a different IMPRES 2 or IMPRES battery is inserted into Pocket 1. The first parameter display for the second battery is the Battery IMPRES Cycles.

7.1

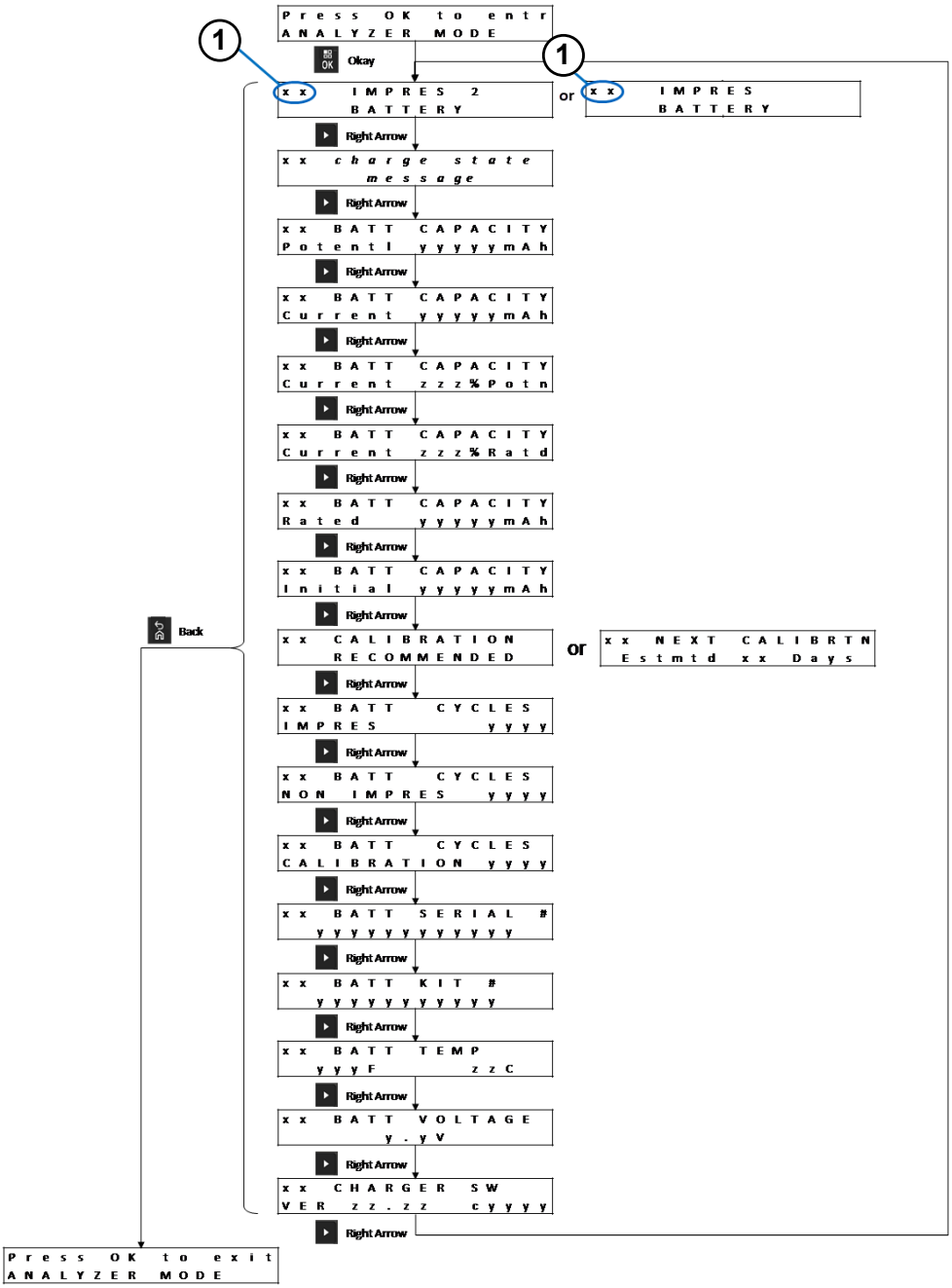
IMPRES and IMPRES 2 Battery

Figure 15: IMPRES and IMPRES 2 Battery Menu



Displaying the Status of Each Pocket

Figure 16: IMPRES and IMPRES 2 Battery Analyzer Mode Menu for Displaying The Status of Each Pocket

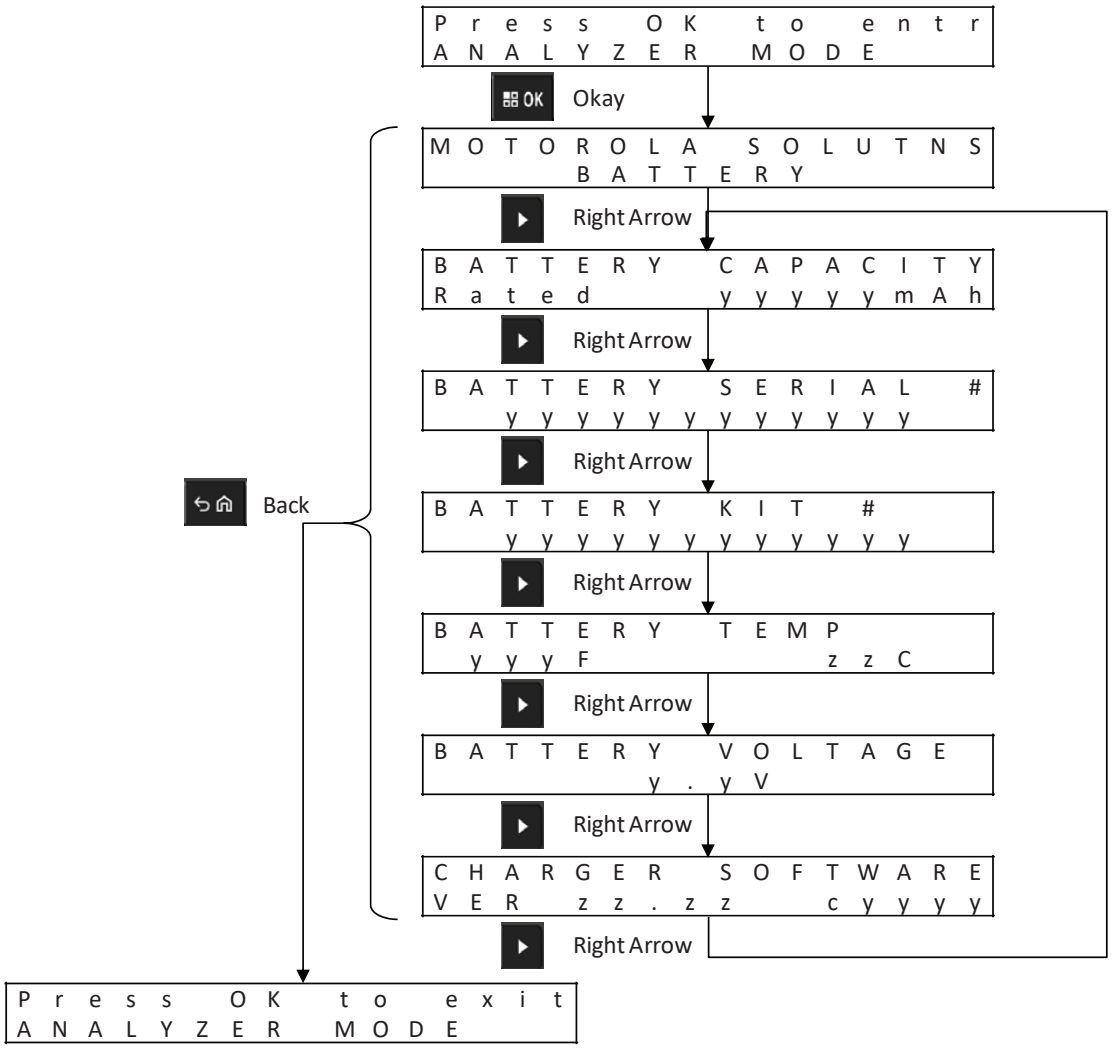


Item	Description
1	Pocket #xx is displayed in the upper left corner of the Display

7.2

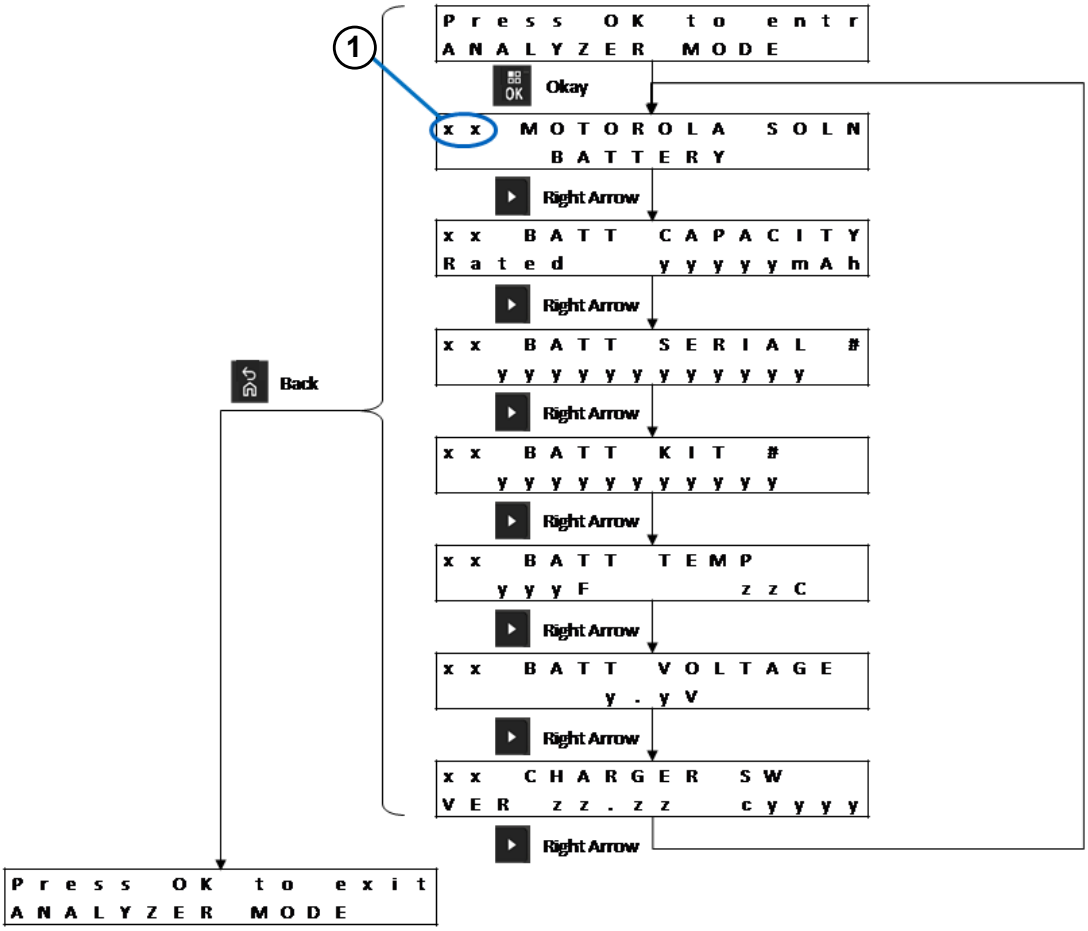
Motorola Solutions non-IMPRES Battery

Figure 17: Motorola Solutions non-IMPRES Battery



Displaying the Status of Each Pocket

Figure 18: Motorola Solutions non-IMPRES Battery Analyzer Mode Menu for Displaying The Status of Each Pocket

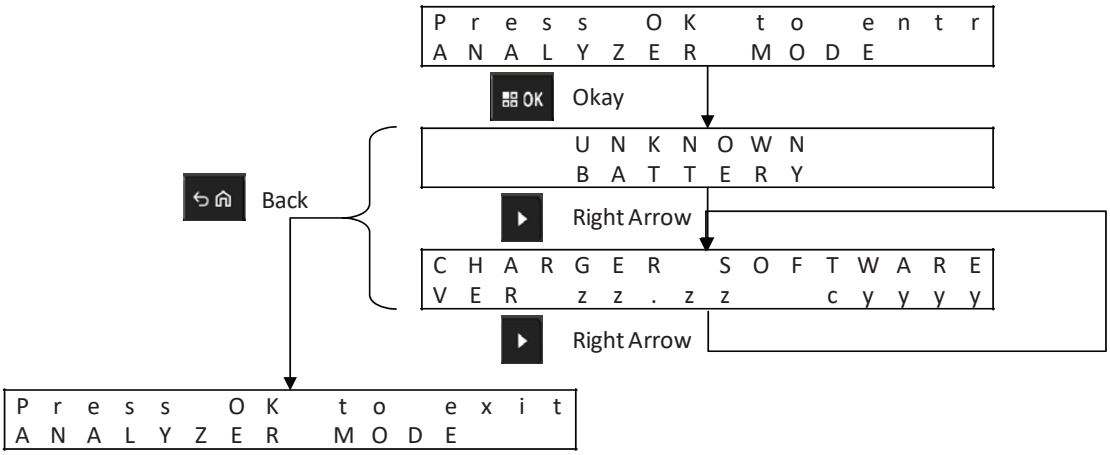


Item	Description
1	Pocket #xx is displayed in the upper left corner of the Display

7.3

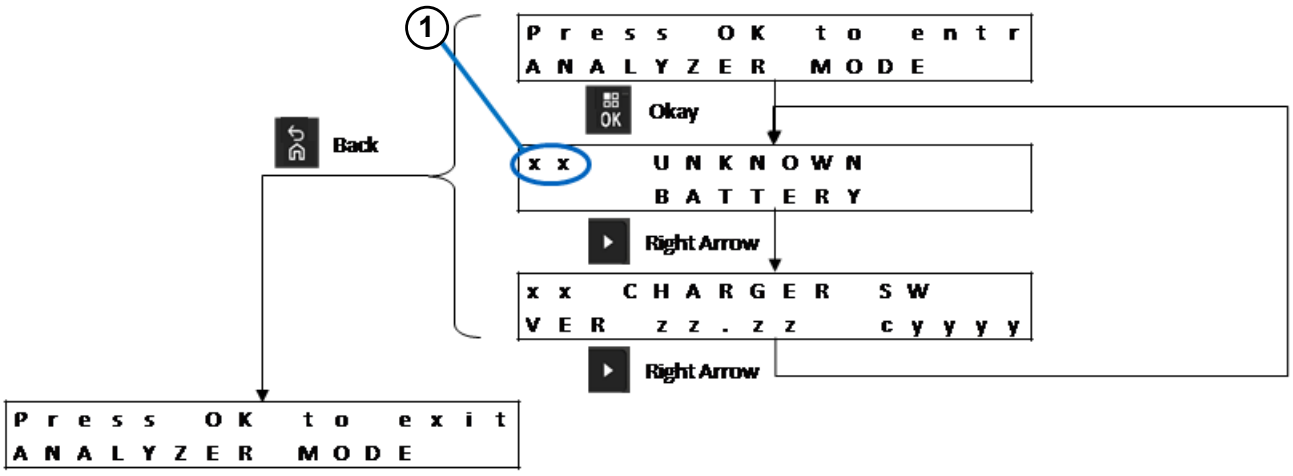
Unknown Battery

Figure 19: Unknown Battery Menu



Displaying the Status of Each Pocket

Figure 20: Unknown Battery Analyzer Mode Menu for Displaying The Status of Each Pocket

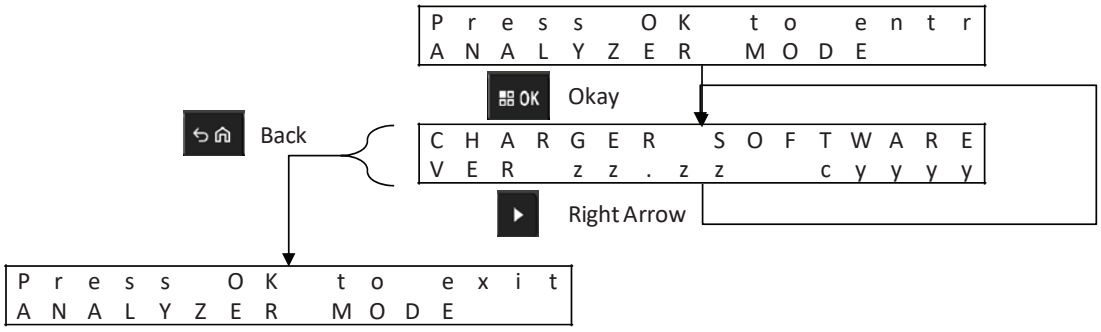


Item	Description
1	Pocket #xx is displayed in the upper left corner of the Display

7.4

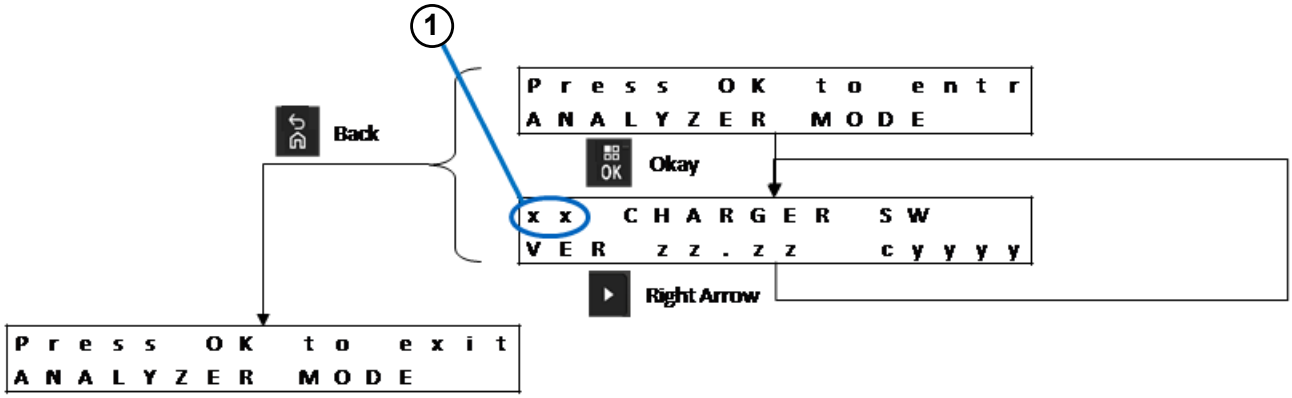
Empty Pocket

Figure 21: Empty Pocket Menu



Displaying the Status of Each Pocket

Figure 22: Empty Pocket Analyzer Mode Menu for Displaying The Status of Each Pocket



Item	Description
1	Pocket #xx is displayed in the upper left corner of the Display

Chapter 8

Charger Reprogramming

Charger reprogramming requires the Communications Interface connected to a computer using a standard USB cable. The following messages are displayed by the charger when using IMPRES Battery Fleet Management System to initiate charger reprogramming.

Table 22: Charger Reprogramming Display Options

Charger Display	Description
REPROGRAMMING REMOVE BATTERIES	Remove batteries from the charger pockets before reprogramming.
REPROGRAMMING WAITING FOR DATA	All charger pockets are empty.
REPROGRAMMING Progress yyy%	Reprogramming data is downloading. For chargers with a display associated with each pocket, the percentage value is the percentage of data successfully downloaded into the pocket associated with the display. For chargers that have only one display (Pocket 1), the percentage value is the percentage of data successfully downloaded into all six pockets.
REPROGRAMMING POCKET#xx FAILED	Reprogramming failed in the identified pocket. The identified charger pocket starts normal operations using the previous software.
IMPRES 2 CHARGER	Reprogramming data download is complete. The charging is completing the Reprogramming process.
REPROGRAMMING COMPLETE	The Reprogramming process completed successfully. The charger starts normal operations using the newly downloaded software.

Chapter 9

Charger Troubleshooting

Table 23: Troubleshooting

Problem	What to do...
Charger powers On, but the LED does not flash Green.	Make sure that the power cord is securely plugged into the charger and an appropriate AC power outlet. Ensure that there is power to the outlet. Inspect fuses and replace as necessary.
Battery inserted, but LED remains Off and display does not identify battery.	If battery is inserted into any Pocket except Pocket 1, and if Power Saver is Enabled, then press the Menu button. See Fault.
Fault	Check if the radio or the stand-alone battery is inserted correctly. Check for contact contamination or corrosion: • Remove the radio or stand-alone battery from the charger. • Verify that the battery is an authorized Motorola Solutions battery listed in Motorola Solutions Authorized Batteries. Other batteries may not charge. • Inspect the charging contacts on the battery for contamination or corrosion. Clean the charging contacts using a dry cloth. • Inspect the charging contacts in the charger pocket for contamination or corrosion. If contamination or corrosion are found, remove power from the charger and clean the charging contacts using a dry cloth. Try replacing the battery. If the fault no longer exists, take the faulted battery out of service. If the fault persists with the replacement battery, take the charger out of service.
• Charger display shows the following when the battery is thought to be an authorized Motorola Solutions battery:`UNKNOWN BATTERY` • Charger display shows the following when preparing an authorized Motorola Solutions Lithium-ion battery for shipment: `CANNOT DISCHARGE FOR LI SHIPMENT`	Remove the radio or stand-alone battery from the charger. Verify that the battery is an authorized Motorola Solutions battery listed in Motorola Solutions Authorized Batteries. Other batteries may not charge. If the battery is an authorized Motorola Solutions battery, then:

Problem	What to do...
	• Inspect the charging contacts on the battery for contamination or corrosion. If contamination or corrosion are found, remove power from the charger, and clean the charging contacts using a dry cloth. • Reinsert the authorized Motorola Solutions radio or stand-alone battery.

Chapter 10

IMPRES Battery Fleet Management System

IMPRES Battery Fleet Management software automatically collects critical data from IMPRES or IMPRES 2 batteries that are inserted into an IMPRES charger.

The critical data include battery age, capacity, charge and calibration or recondition history, date when manufactured, and date when put into service. The Battery Fleet Management software analyzes battery data, communicates battery health, and recommends when to replace the battery. The software can quickly and efficiently determines whether or not to redeploy the battery to a less demanding user, when to purchase a new replacement battery, or that a battery is missing.

The Battery Fleet Management delivers the following battery-critical information:

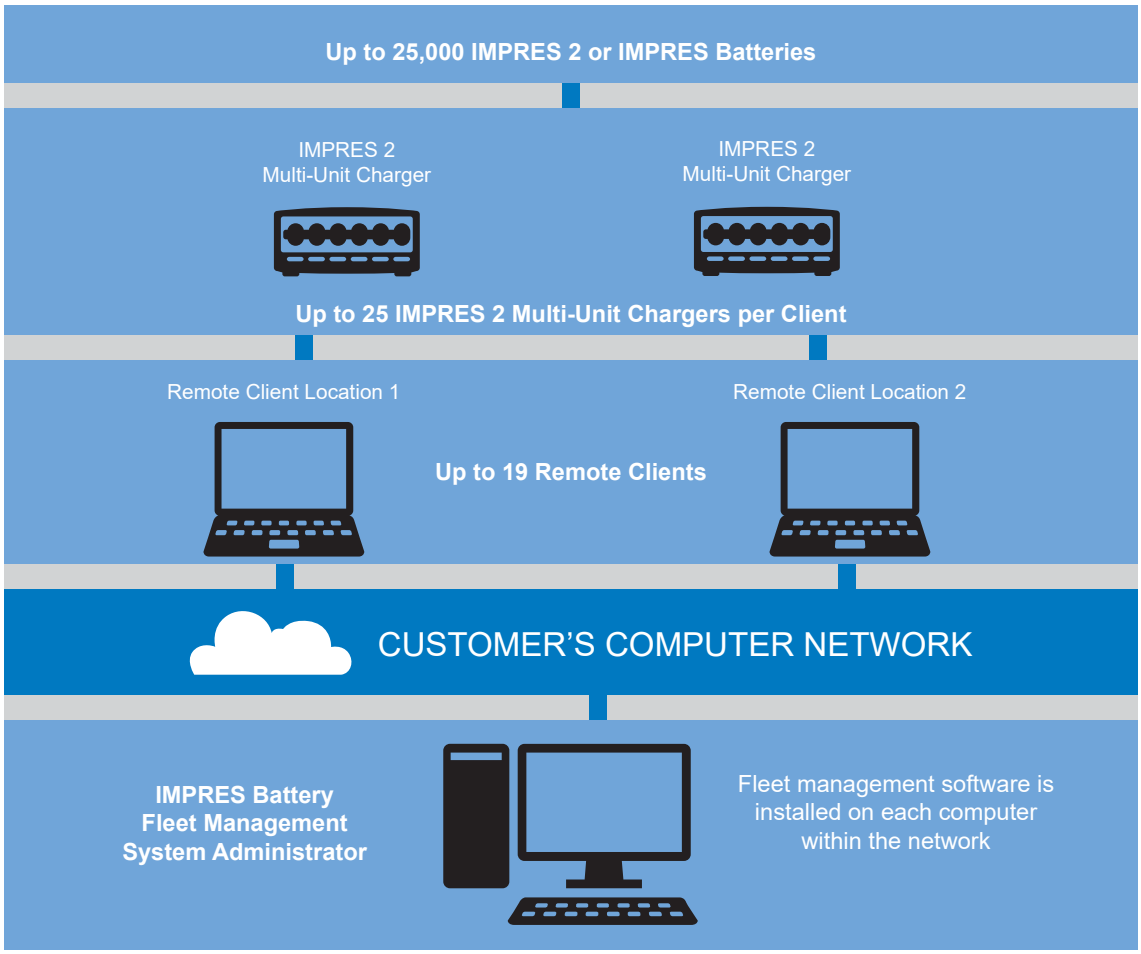
- When batteries are below an acceptable capacity.
- Helps to ensure users have enough capacity for a full work shift.
- Identifies low-capacity batteries so they can be removed from service.
- Eliminates unexpected downtime and work interruptions.
- Avoids the expense of throwing batteries away prematurely.
- Confirms chargers are optimally distributed and used.

IMPRES Battery Fleet Management consists of three major components:

- The application software.
- A software license key.
- A USB cable to connect the IMPRES 2 charger to a computer.

The IMPRES Battery Fleet Management application software is scalable from a single site to a multi-site networked system. The system can be networked to support up to 25,000 batteries in the same location or over geographically dispersed areas.

Figure 23: IMPRES Battery Management through Network Chargers



Each IMPRES Battery Fleet Management System software license supports:

- One system Administrator Server.
- 19 Remote Clients.
- 25 IMPRES Chargers or IMPRES Battery Readers per client.
- 25,000 IMPRES Batteries. The total number of batteries for the entire system cannot exceed 25,000.

Use existing reports to customize new ones to see the most relevant information for your organization. Data is stored in your database and can be exported to an Excel file or printed. IMPRES Battery Fleet Management software records and organizes a variety of data to enable you to do the followings:

- See a status snapshot of your entire battery fleet.
- Evaluate whether batteries are meeting your performance criteria.
- Determine when batteries are nearing their end of life.
- Determine when to buy new batteries.
- Obtain lost battery report.
- Optimize charger utilization.
- Monitor all devices in the system.

Figure 24: Active Battery Report

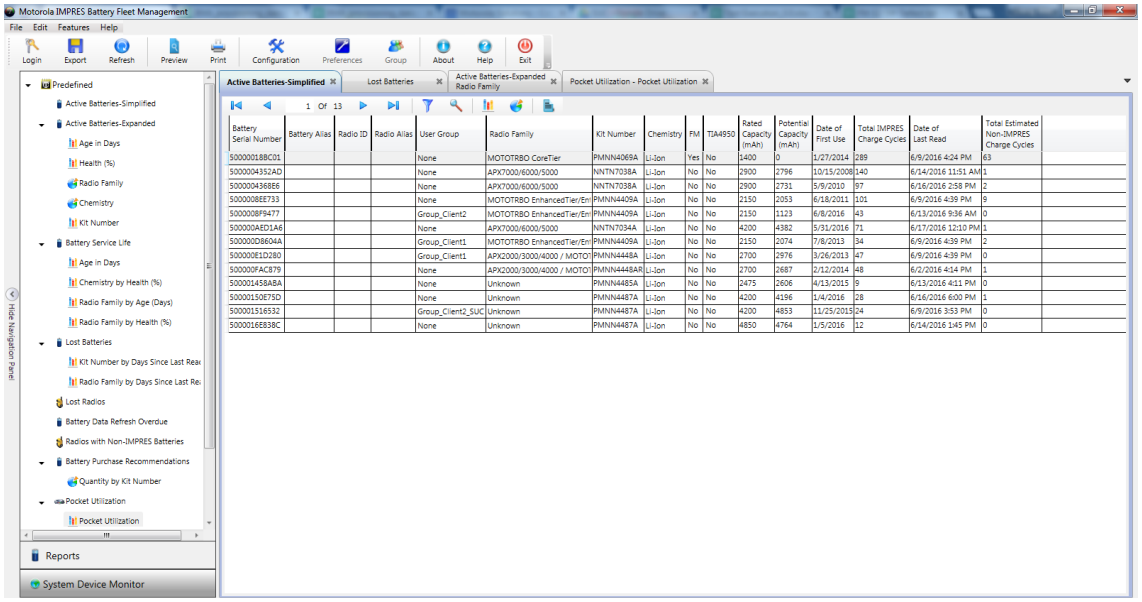


Figure 25: Batteries in Use by Radio Family

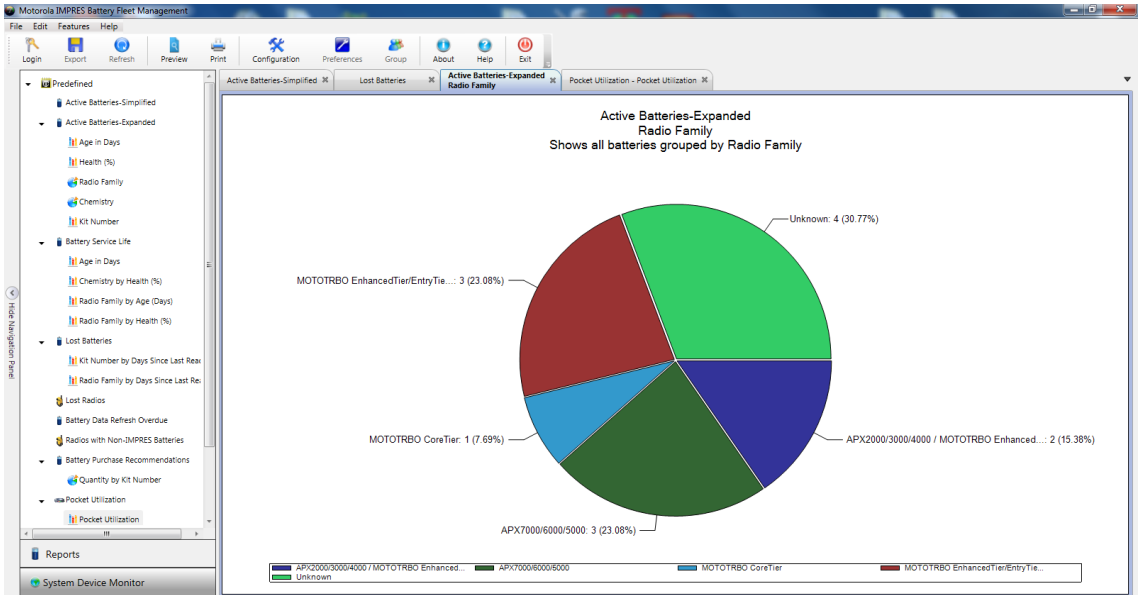


Figure 26: Lost Battery by Location

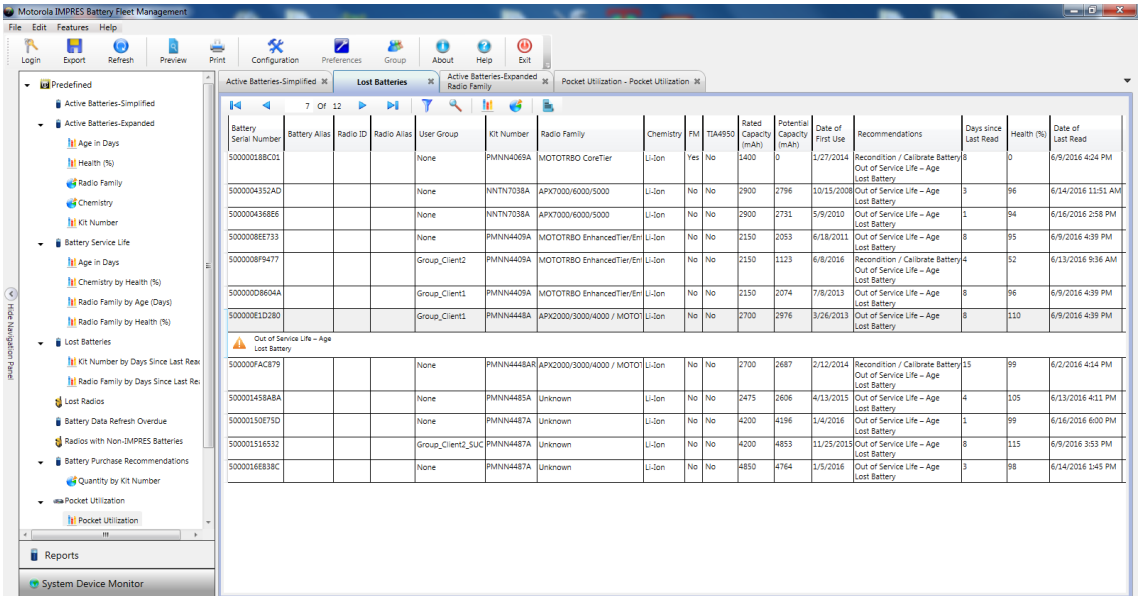
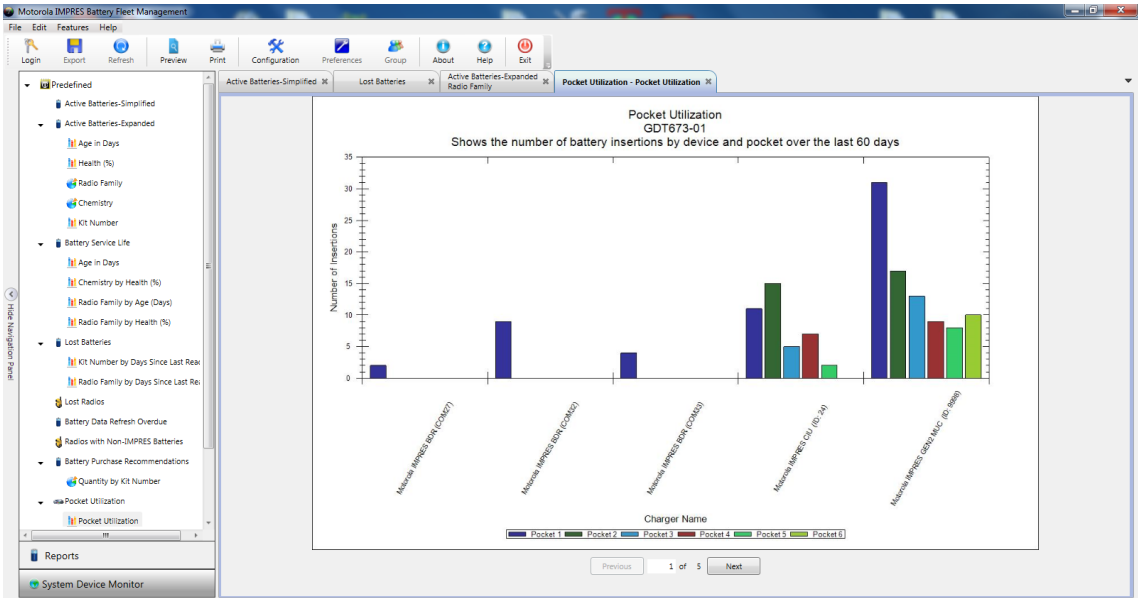


Figure 27: Charger Pocket Utilization



Chapter 11

Charging Pocket Installation

Table 24: Order Number for Assembly Inserts

Insert, Assembly Number	Insert-only, Kit Order Number	Description
AS000061A01	AS000123A01	iTM Tri-Unit Charger Pocket for Radio and Battery, with IMPRES 2 Device
AS000121A01 (Left Pocket)	AS000122A01	Tri-Unit Charger Pocket for Radio and Battery, with iTM Programming
AS000126A01 (Right Pocket)	AS000127A01	
HW001384A_	AS000129A01	Adapter, Charging Pocket Tri-Unit
HW002356A01	AS000180A01	Tri-Unit Charger Pocket for Radio and Battery
NOTE: Some assembly inserts can be ordered from your local vendor.		

11.1 Removing Charging Pocket from Multi-Unit Charger

When and where to use:

Figure 28: Installing and Removing AS000061A01/AS000063A01/AS000121A01/AS000126A01/HW001384A_/HW001385A01/HW001386A01/HW002356A01 Charging Pocket

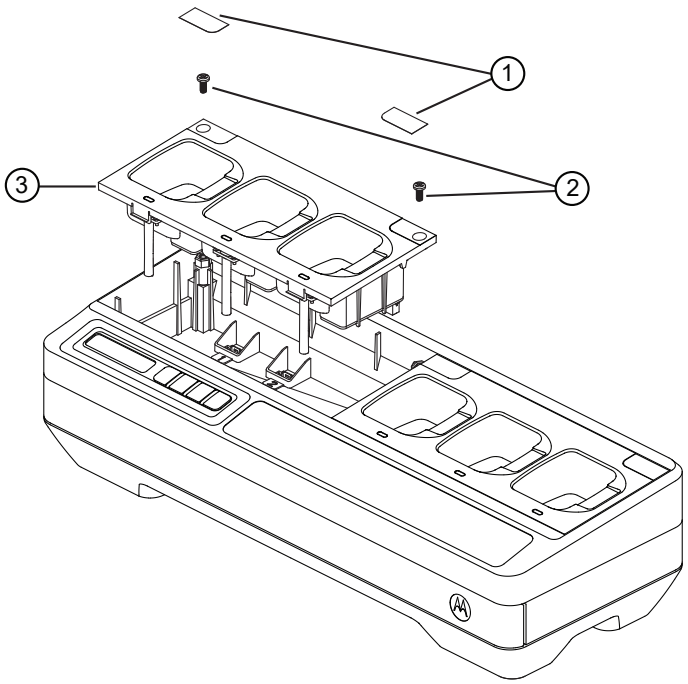
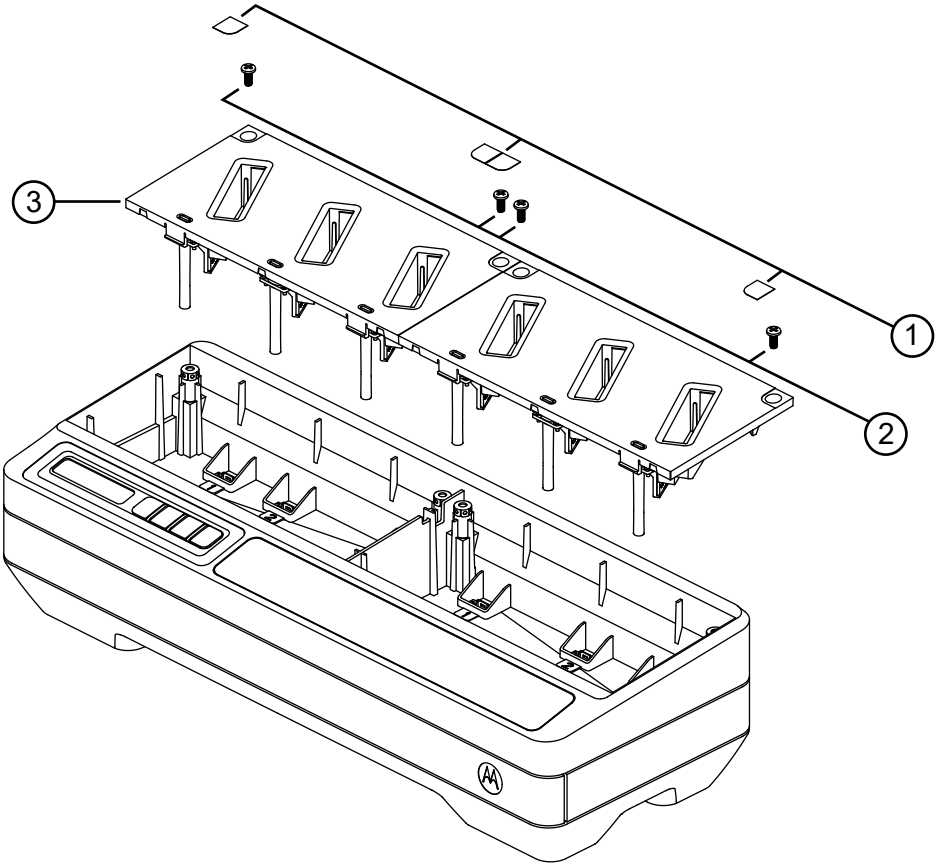


Figure 29: Installing and Removing AS000111A01 Charging Pocket



Item	Description
1	Cover Label
2	Screw
3	Charging Pocket

NOTE: AS000061A01/AS000121A01/AS000126A01/HW001384A_/HW002356A01[1]

Procedure:

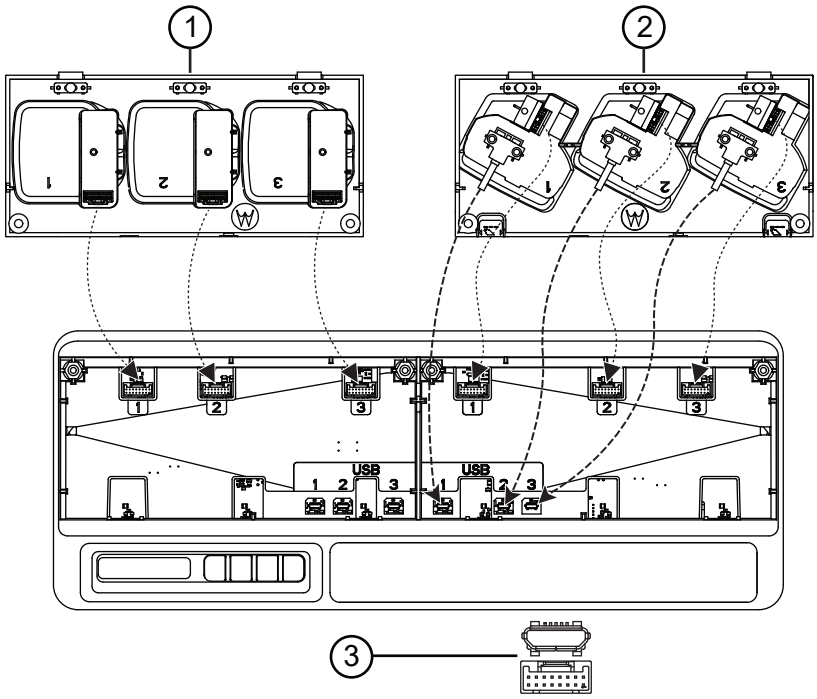
1. Remove the cover label on the charging pocket.
2. Remove the screw that secures the charging pocket to the base.
3. Lift the charging pocket a few inches away from the base.
4. Remove the pocket harness by pulling straight up on the connector.

11.2 Securing Charging Pocket to Multi-Unit Charger

When and where to use:

[1] Some assembly inserts can be ordered from your local vendor.

Figure 30: Securing AS000061A01/AS000063A01/AS000121A01/AS000126A01/HW001384A_/ HW001385A01/HW001386A01/HW002356A01 Charging Pockets to Multi-Unit Charger Base

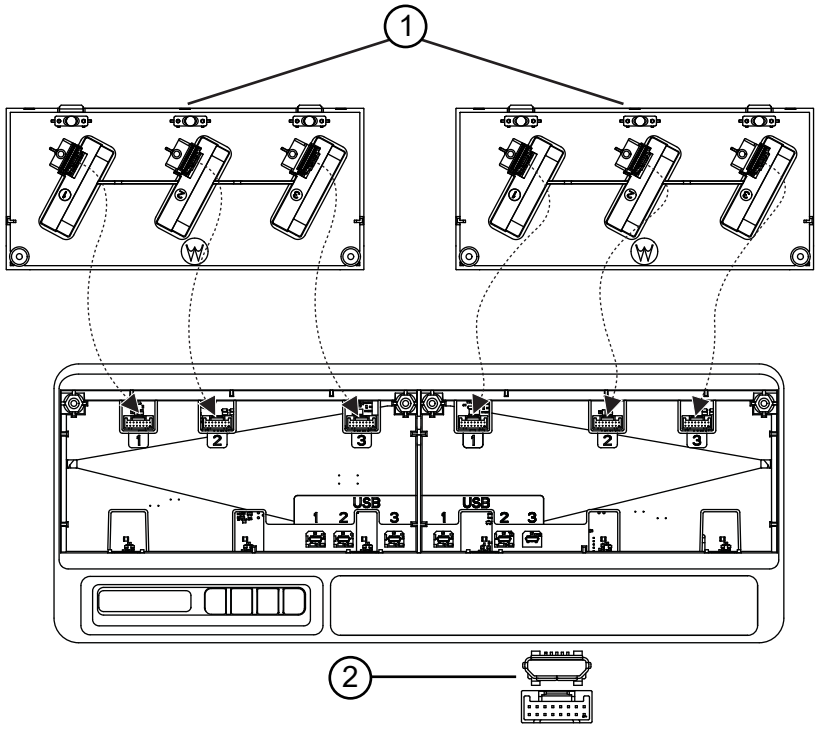


Item	Description
1	AS000063A01/HW001384A_/HW0001385A01
2	AS000061A01/AS000121A01/AS000126A01/HW001386A01/HW002356A01
3	USB Receptacle
4	Harness Receptacle

NOTE: AS000061A01/AS000121A01/AS000126A01/HW001384A_/HW002356A01[2]

[2] Some assembly inserts can be ordered from your local vendor.

Figure 31: Securing AS000111A01 Charging Pockets to Multi-Unit Charger Base



Item	Description
1	AS000111A01
2	USB Receptacle
3	Harness Receptacle

Procedure:

1 Plug in the USB connector and harness connector to the receptacles on the base.

NOTE: The USB or harness connector may not be available on some of the Charger Pocket. Plug in the available connectors to the base.

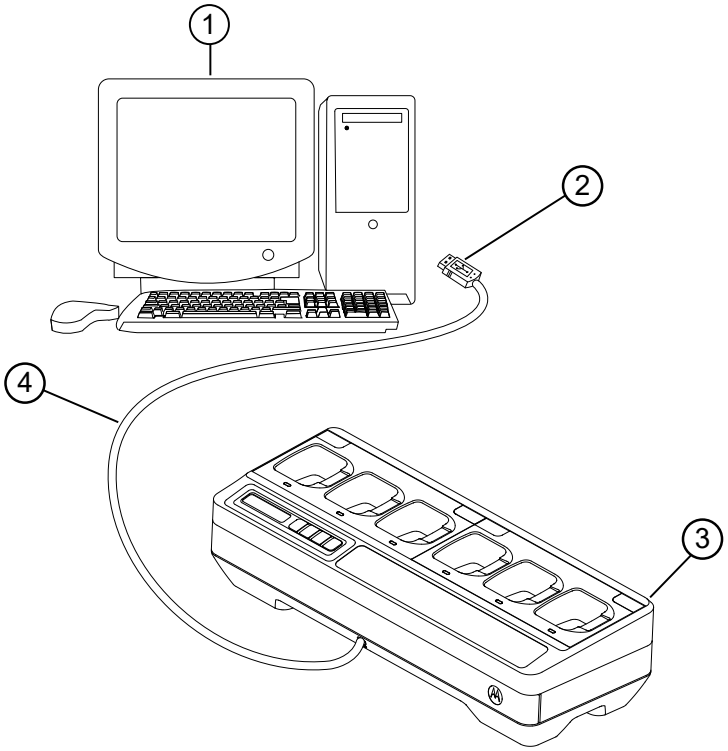
2 Slot in the Charging Pocket to the base and ensure the Charging Pocket is flushed into the Multi-Unit Charger. Affix the Charging Pocket screw.

Chapter 12

Programming a Radio with iTM Proxy

When and where to use:

Figure 32: Connecting Radios to iTM Proxy Using Multi-Unit Charger



Item	Description
1	Proxy with the USB port
2	To the Proxy USB port
3	iTM enabled charging pocket
4	USB Cable

Procedure:

1 Connect the programming cable from the USB hub of the Multi-Unit Charger to the computer.

Table 25: Recommended Programming Cable

Base Kit	Recommended Programming Cable
PMPN4286_ PMPN4370_	USB 2.0 compliant cable, such as CB000521A01 and others
PMPN4380_	CB000458A07

Base Kit	Recommended Programming Cable
PMPN4390_	
PMPN4400_	
PMPN4408_	

NOTE: Contact your local dealer to order the programming cable.

Chapter 13

Optional Equipment

Wall mount brackets are available for the Multi-Unit Charger (MUC).

Table 26: Recommended Bracket for each Multi-Unit Charger Kit

Bracket, Part Number	Multi-Unit Charger, Kit Number
BR000272A01	PMPN4286_
	PMPN4370_
	PMPN4380_
	PMPN4390_
	PMPN4283_
	PMPN4288_
	PMPN4400_
	PMPN4408_
	PMPN4497_

WARNING:

- This wall mount bracket should be installed by a trained and experienced technician. Having the product installed by a non-specialized technician is very dangerous, and can cause damage or injury.
- Do not install the product where the weight cannot be supported. If the strength of the location where the wall mount is installed is not strong enough, it can fall off and cause an injury.
- Do not install on a structure that is prone to vibration, movement, or chance of impact.

Chapter 14

Mounting Multi-Unit Charger to Wall Bracket

Procedure:

1. Position the wall mount bracket in the desired position, and mark the location of the mounting holes on the wall surface.

   CAUTION: Ensure the area behind the mounting surface is always free of electrical wires, cables, and pipes before cutting, drilling, or installing the mounting screws.

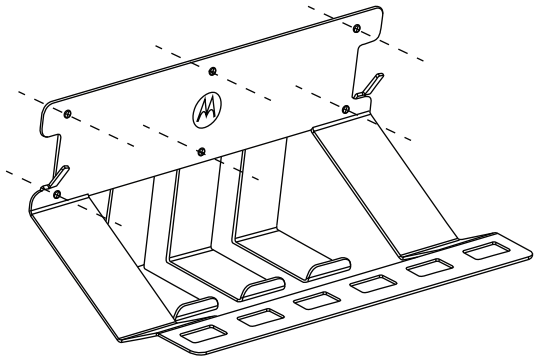
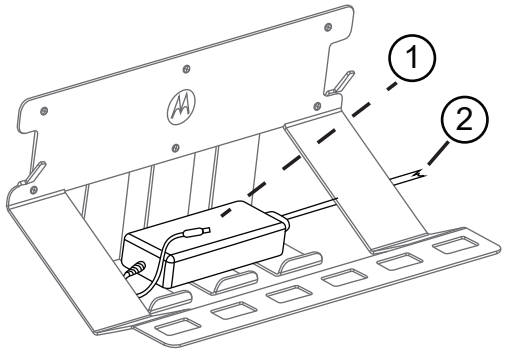
   NOTE: Mount bracket to the wall using the appropriate mounting hardware required for the type of wall material fixture.

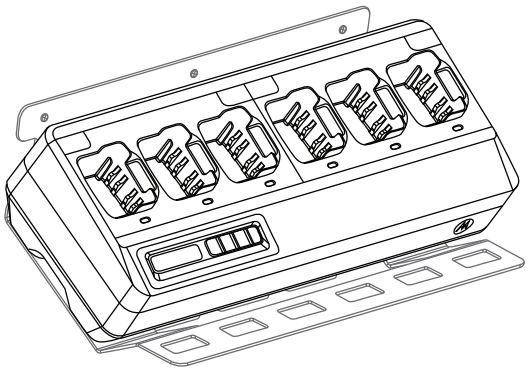
2. Drill based on the marked mounting holes on the wall surfaces.
3. Secure the wall bracket in position by installing mounting hardware over the mounting holes on the wall bracket tightly.

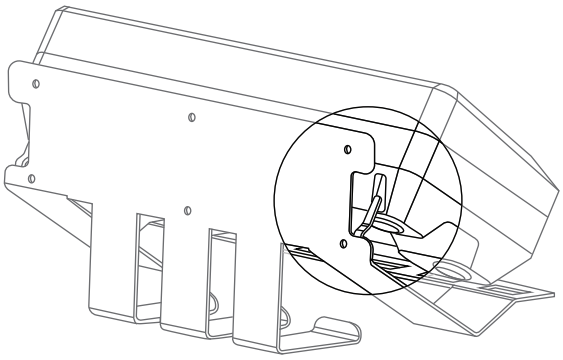
   NOTE: It is recommended to use 10-16 X 1-1/2” tapping screw and washer (not included) on wood stud and solid flat concrete or brick wall.

4. Hang the multi-unit charger to the designated wall bracket as shown in the following images.

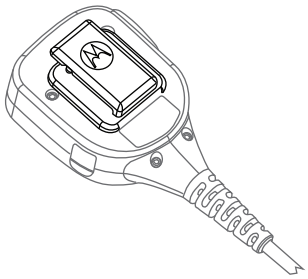
Table 27: Mounting Multi-Unit Charger (MUC) to Wall Bracket

1. Mount the BR000272A01 bracket onto the wall.	2. Install the power adapter.
	
	1 - To MUC 2 - To power plug
3. Install the MUC.	4. Attach the bracket hooks into the MUC slots.

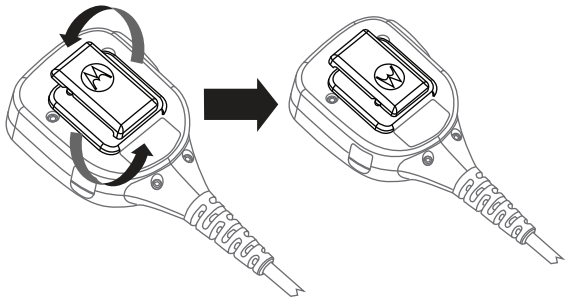




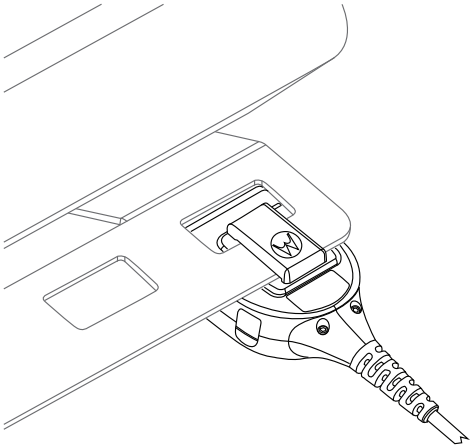
5. Ensure that the RSM belt clip is facing upwards.



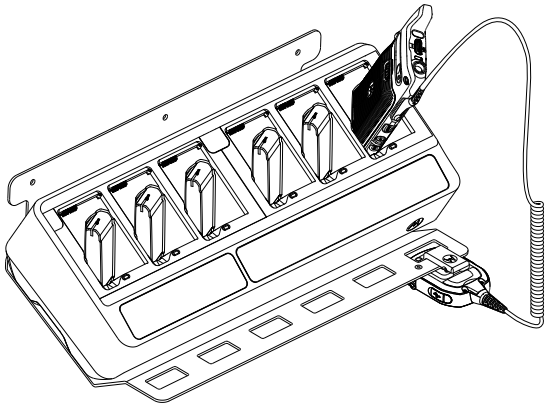
6. Rotate the swivel belt clip by 180 degrees.



7. Attach the RSM to the bracket.



8. Insert the radio into the MUC pocket to charge.



9. OPTIONAL: To secure fit the MUC, remove the top middle screw from the BR000272A01 bracket.

10. Align the retainer to the screw hole and fasten it.