



Operational Critical Wireless Remote Speaker Microphone (RSM) WM500 PMMN4127_Online Installation Guide

APRIL 2022



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Accessory Manager App Introduction

Download and Install Accessory Manager application for future software upgrades and new feature releases.

You are recommended to install Accessory Manager to upgrade accessory firmware to the latest version for the first time before use.



Notice to Users (FCC and Industry Canada)

This device complies with Part 15 of the FCC rules and Industry Canada's license-exempt RSS's 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.
- Changes or modifications made to this device, not expressly approved by Motorola Solutions, could void the authority of the user to operate this equipment.

Avis aux utilisateurs (FCC et Industrie Canada)

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence et à la partie 15 des règlements de la FCC:

- Cet appareil ne doit pas causer d'interférence nuisible.
- Cet appareil doit accepter toute interférence reçue, y compris les interférences pouvant entraîner un fonctionnement indésirable.
- Toute modification effectuée à cet appareil sans l'autorisation explicite de Motorola Solutions peut annuler l'autorisation d'utiliser cet appareil.

Declaration of Conformity

Per FCC CFR 47 Part 2 Section 2.1077(a)



Responsible Party

Name: Motorola Solutions, Inc.

Address: 2000 Progress Pkwy, Schaumburg, IL 60196, U.S.A.

Phone Number: 1-800-927-2744

Hereby declares that the product:

Model Name: **WM500**

conforms to the following regulations:

FCC Part 15, subpart B, section 15.107(a), 15.107(d) and section 15.109(a)

Class B Digital Device

As a personal computer peripheral, this device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- 1 This device may not cause harmful interference.
- 2 This device must accept any interference received, including interference that may cause undesired operation.



NOTE:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio or TV technician for help.

Déclaration de conformité

Règlement CFR 47 partie 2 section 2.1077(a) de la FCC



Partie responsable

Nom : Motorola Solutions, Inc.

Adresse : 1303 East Algonquin Road, Schaumburg, IL 60196-1078, U.S.A.

Numéro de téléphone : 1 800 927-2744.

Déclare par les présentes que le produit :

Nom de modèle : **WM500**

sont conformes aux réglementations suivantes :

Partie 15, sous-partie B, section 15.107(a), 15.107(d) et section 15.109(a) des règlements de la FCC

Appareil numérique de Classe B

En tant que périphérique d'ordinateur personnel, cet appareil est conforme aux stipulations de la partie 15 des règlements de la FCC. Cet appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. Son utilisation est assujettie aux deux conditions suivantes :

- 1 Cet appareil ne doit pas causer d'interférence nuisible.
- 2 Cet appareil doit accepter toute interférence reçue, y compris les interférences pouvant entraîner un fonctionnement indésirable.



REMARQUE :

Cet équipement a fait l'objet de tests et a été déclaré conforme aux limites établies pour un appareil numérique de classe B, conformément à la section 15 des règlements de la FCC et aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. Ces limites sont fixées afin d'offrir une protection suffisante contre des interférences nuisibles dans une installation résidentielle. Cet équipement génère, utilise et peut émettre de l'énergie de radiofréquence et, s'il n'est pas installé ou utilisé conformément aux instructions, il peut provoquer un brouillage nuisible aux communications radio. Cependant, il est impossible de garantir qu'il n'y aura aucune interférence dans une installation particulière.

Si cet appareil cause une interférence nuisible à la réception de la radio ou de la télévision, ce qui peut être déterminé en éteignant et en allumant l'appareil, vous êtes encouragé à remédier à la situation en prenant une ou plusieurs des mesures suivantes :

- Réorienter ou déplacer l'antenne réceptrice.
- Augmenter la distance entre l'équipement et le récepteur.
- Brancher l'appareil dans une autre prise sur un circuit différent de celui du récepteur.
- Consulter un revendeur ou un technicien de radio ou de télévision chevronné pour obtenir de l'aide.

RF Energy Exposure Awareness and Product Safety Guide for Portable Two-Way Radios

**CAUTION:**

Before using this product, read the operating instructions for safe usage contained in the Product Safety and RF Exposure booklet enclosed with your radio which contains important operating instructions for safe usage and RF energy awareness and control for Compliance with applicable Standards and Regulations.

无线电发射设备型号核准代码会在设备标签上注明。



NOTE: This device is intended for use in occupational/controlled conditions where users are aware of their exposure and can exercise control over their exposure to meet the requirements in national and international regulations.

To ensure continued compliances with applicable RF exposure limits, use only Motorola Solutions approved, supplied or replacement antennas, batteries, and accessories.

For more information on what RF energy exposure is, and how to control your exposure to ensure compliance with established RF exposure limits, consult the following websites:

- <https://www.fcc.gov/>
- <http://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf11467.html>
- <http://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf01904.html>
- <https://www.osha.gov/>
- <https://osha.europa.eu/en>
- <http://www.who.int/peh-emf/project/en/>

For additional user training information on exposure requirements, consult the following websites:

- https://www.motorolasolutions.com/en_us/about/company-overview/corporateresponsibility/governance-and-policies/wireless-communication-and-healthfaqs.html
- <http://learning.motorolasolutions.com/>

Information de sensibilisation et de gestion de l'exposition à l'énergie RF, et consignes pour l'usage professionnel

**REMARQUE :**

Cet appareil a été conçu pour un usage professionnel dans un environnement contrôlé, où les utilisateurs sont pleinement conscients de l'exposition à l'énergie RF à laquelle ils sont soumis et peuvent exercer un contrôle sur cette exposition afin de respecter les limites établies par les règlements nationaux et internationaux.

Pour assurer la conformité continue avec les limites d'exposition aux RF applicables, utilisez uniquement les antennes, les batteries et les accessoires de remplacement ou fournis et approuvés par Motorola Solutions.

Visitez les sites Web suivants pour obtenir plus de renseignements sur ce qu'est l'énergie RF et sur les moyens de contrôle à prendre afin de respecter les limites établies en matière d'exposition aux radiofréquences:

- <https://www.fcc.gov/>
- <http://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf11467.html>
- <http://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/sf01904.html>
- <https://www.osha.gov/>
- <https://osha.europa.eu/en>
- <http://www.who.int/peh-emf/project/en/>

Pour plus de renseignements sur la formation des utilisateurs relativement aux limites d'exposition, consultez les sites suivants:

- https://www.motorolasolutions.com/en_us/about/company-overview/corporateresponsibility/governance-and-policies/wireless-communication-and-healthfaqs.html
- <http://learning.motorolasolutions.com/>

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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 wheeled bin label on the product (or the package in some cases). As defined by the WEEE directive, this crossed-out wheeled 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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Document History

Table 1: RF Energy Exposure Awareness and Control Information and Operational Instructions for Occupational Use

Version	Description	Date
MN006126A01-AA	Initial release of the <i>Operational Critical Wireless Remote Speaker Microphone (RSM)–WM500 PMMN4127_Online Installation Guide</i> manual.	September 2019
MN006126A01-AB	Insert "FCC and Industry Canada" and "RF Energy Awareness and Control Information and Operational Instructions for Occupational Use" both in en-US and fr-CA	November 2019
MN006126A01-AC	Update the RSM Overview and Description table and remove the Youtube Law Enforcement link.	January 2021
MN006126A01-AE	Minor update to the manual to RSM Compatibility and RSM Feature sections.	February 2022

Foreword

RF Energy Exposure and Product Safety Guide for Portable Two-Way Radios



CAUTION: Before using this product, read the operating instructions for safe usage contained in the Product Safety and RF Exposure booklet enclosed with your radio which contains important operating instructions for safe usage and RF energy awareness and control for Compliance with applicable Standards and Regulations.

Acoustic Safety

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

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

Chapter 1

Service and Warranty

Other than the clip, the PMMN4127 Remote Speaker Microphone (RSM) is not repairable. The RSM is covered under the standard Motorola Solutions one-year limited warranty.

1.1

Warranty Exclusion

Motorola Solutions does not warrant the installation, maintenance or service of the Product, accessories, batteries, or parts.

Motorola Solutions is not responsible in any way for problems or damage caused by any ancillary equipment or peripherals (specific examples include, but are not limited to: batteries, chargers, adapters, and power supplies) not furnished or manufactured by Motorola Solutions which is attached to or used with the Product. When the Product is used with ancillary or peripheral equipment not supplied by Motorola Solutions, Motorola Solutions does not warrant the operation of the Product/peripheral combination and Motorola Solutions will not honor any warranty claim where the Product is used in such a combination and it is determined by Motorola Solutions that there is no fault with the Product. Upon open or dismantle the Product, the warranty is immediately voided. Motorola Solutions specifically disclaim any responsibility for any damage in any way caused by improper installation by unauthorized personnel.

Chapter 2

Important Information

- Do not charge your accessory in temperature below 0°C (32°F) or above 45°C (113°F).
- Do not store your accessory in direct sunlight or where expected temperatures can exceed this range such as inside a parked car.
- Storing your fully charged accessory in high temperature conditions may permanently reduce the life of the internal battery.
- Battery life may temporarily shorten in low-temperature conditions.
- RSM should be stored in temperatures between -10°C (14°F) and 30°C (86°F) to minimize permanent battery capacity loss.



WARNING:

- To prevent injury, do not disassemble, puncture, or crush the RSM because this action can cause the battery to short-circuit.
- Do not expose or throw the RSM into heat or fire.
- Do not dispose the RSM into household waste.
- Do not fill the audio jack and USB charging port with water. If water enters the audio jack and/or USB charging port, remove water by shaking the RSM. Always cover the audio jack and USB charging port with a dust cap when not in use.

Chapter 3

RSM Compatibility

List of radio(s) or device(s) that are compatible to PMMN4127:

- LEX L11
- TLK 100
- TLK 150
- EVOLVE
- SLN 1000
- BYOD Android (apps released 9.1.1 and later)
- MOTOTRBO ION, requires minimum WM500 firmware R03.00.00 (R03) and later
- R7, requires minimum WM500 firmware R04.00.00 (R04) and later
- MXP600, requires minimum WM500 firmware R04.00.00 (R04) and later

These accessories can be paired with a Kodiak Broadband PTT enabled device. Currently, the supported Kodiak feature is Operational Status Messaging (the additional features will be added in the futures), please refer to your Kodak User Guide for setup instructions



NOTE: MAC Address is located on top of individual box and within QR code behind belt clip. Additional MAC Address labels are provided inside individual box.



NOTE: Always upgrade WM500 firmware to the latest to support new radios and functionality.

Chapter 4

Remote Speaker Microphone (RSM) Features

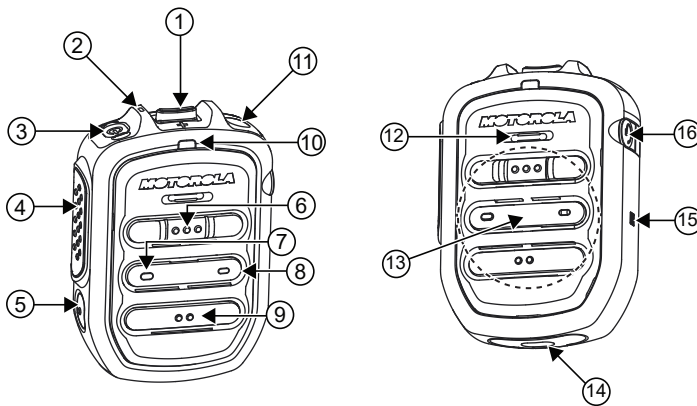


Table 2: WM500 RSM Features

Label	Description
1	Volume toggle
2	Power Indicator
3	Power button
4	Push-To-Talk (PTT) button PTT call can be either transmitted to a talk-group or individual user
5	Multifunction (MFB) Button Available multiple functions: - To change language in disconnected state - To answer telephone calls upon incoming telephone call - To reject telephone calls upon incoming telephone call - To end telephone calls upon ongoing telephone call - To mute/unmute microphone while call (Kodiak/telephone call) is active  NOTE: The MFB button is not available for TLK series.
6	P1 button

Label	Description
	Function configured on the host or the WAVE application. WAVE default function: WAVE OSM
7	P2 button. Function configured on the host but not on the WAVE application. WAVE default function: Channel Down
8	P3 button. Function configured on the host but not on the WAVE application. WAVE default function: Channel Up
9	P4 button Function configured on the host or the WAVE application. WAVE default function: WAVE OSM
10	Audio/Bluetooth Indicator
11	Emergency button
12	Microphone
13	Speaker
14	Charging port
15	NFC Location
16	Audio jack

**NOTE:**

- Operational Status Message(OSM) require per-configuration in the WAVE Application.
- Answer/reject/end call and microphone mute functionality is not applicable for the radios.
- More programmable functions may be added on the WAVE application in the future. Please refer to Kodiak User Guide for detail.

Table 3: WM500 RSM Button Operations

Button	State	Short Press	Long Press (>1.5s)	Very Long Press (>3s)
Power	OFF	N/A	Power ON	Enter Pairing
	ON	Sign Of Life	N/A	Power Off
PTT	Connected	PTT for Kodiak Group Call		
	Not Connected	Kodiak Pairing	N/A	N/A

Button	State	Short Press	Long Press (>1.5s)	Very Long Press (>3s)
Power + PTT	OFF	N/A	N/A	Power ON and Clear PDL
Power + Call Button	ON	N/A	N/A	Enter/Exit Dark Mode
MFB	Not Connected	Switches Language	N/A	N/A
	Incoming Call	Answer Call	Reject Call	N/A
	On Call	Mic Mute	End Call	N/A
Volume +	Connected	Volume increase by one step	Volume Ramp Up	
	At Maximum Volume	Volume Max Tone		
Volume -	Connected	Decrease volume by one step	Volume Ramp Down	
	At Minimum Volume	Volume Min Tone		

Chapter 5

Charging the Battery

Charging the Battery

Procedure:

- 1 Connect the USB charging cable to the RSM.
- 2 Plug the charging cable to USB power source.



IMPORTANT: Charge the RSM immediately to prevent flat-battery condition.

Table 4: Charging Indicator Behavior

Power Indicator	Description
Blinking red	Battery is low.
Solid red	Battery is charging.
Solid green	Battery is fully charged.
Blinking green	More than 90% charged.
Rapid blinking red	Charging error.

Battery Indication

Procedure:

- When RSM is not charging, read the following table to understand the indication.

Table 5: Battery Indication

Power Indication	Description
Rapid Blinking Red	Battery level is critically low.
Blinking Red	Battery level is low.
Off	Battery is medium or high.
 NOTE: Press the Power button to get the status.	

Status Indication

Procedure:

- Read the following table to understand the audio and bluetooth status indication.

Table 6: Audio and Bluetooth Status

Audio/Bluetooth Indication	Description
Blinking in Blue	Enter pairing
Solid Blue	Disconnected
Double blinking Blue (Once)	Connected
Solid Red	Mic Muted
Blinking in Red	Voice Prompt/Tone Mute
Blinking in Green	Receiving Incoming Call

RSM Status Request

Procedure:

- Short press the Power button to determine the details status of the RSM.

Table 7: Status Indication

Indicator	Status	Description
Audio/Bluetooth	Double-blinking Blue	Connected
Power	Double-blinking Green	Battery level is high
	Double-blinking Amber	Battery level is medium

Chapter 6

Maintenance

This chapter provides information about the care and maintenance of this RSM.

6.1

Recommended RSM Wearing Positions

Figure 1: Recommended Wearing Position



NOTE: For better performance, wear the RSM and the device on the same side.

6.2

Pairing the RSM to the Radio

Pairing the RSM through Bluetooth

Procedure:

- 1 While RSM is power off, press and hold the Power button until you hear the "Power On" followed by "Searching for Host", and the blue LED blinks for 90 seconds during pairing mode.
- 2 From the compatible device, search and select **WM500_xxxx** from the Bluetooth list.
Once the devices are paired successfully, a tone is played and a voice prompt from the RSM indicates that the device is "Connected".
- 3 Perform the following choices based on your device:

If you are using...	then, you...
Android devices	no further action is required after step step 2 .
iPhone	a choose RSM from the Bluetooth list b pair again for second time
MXP600	no further action is required after step step 2 .
MOTOTRBO ION	radio display prompts another pairing request with RSM. Tap Pair when prompted. When successful, a tone is played from the RSM.
R7	press the MFB button to start the connection process when you hear the "Ring" tone indicating Host is requesting for connection.



NOTE: The WM500 supports various pairing methods depending on the compatible device. If you are using TLK100 or TLK150, refer to *Wave Portal User Guide* for bluetooth pairing process. If you are using SLN1000, refer to *Nitro Portal User Guide* for bluetooth pairing process.

Pairing the RSM through NFC

Procedure:

- 1 While RSM is power off, press and hold the Power button until the "Power On" voice prompt follows by "Searching for Host" voice prompt is played and blue LED blinks.
- 2 Align the NFC locations on both the RSM and the compatible devices.
- 3 Check the compatible device for indication of successful pairing.

Unpairing the RSM

Procedure:

- 1 Remove the RSM from the paired device list on the previously paired compatible device.
- 2 From the power-off state, press and hold the **Power** and **PTT** buttons simultaneously. The RSM indicates that the paired devices is "Cleared".



NOTE: Always unpair the RSM from the Bluetooth host and ensure that the paired device is "Cleared" before starting another pairing process.

6.3

Replacing the Battery

Prerequisites:



WARNING:

- Before you start the dismantling procedure, power off the RSM.
- Wear an appropriate electrostatic discharge (ESD) protection device.

Procedure:

- 1 Open the USB dust cover.

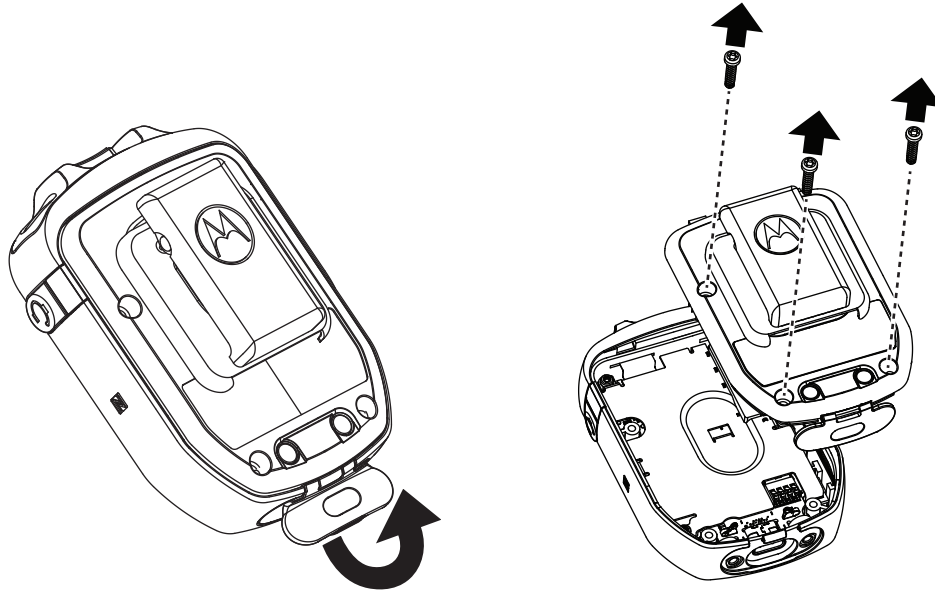
- 2 Unscrew the three screws from the back housing.



WARNING: Safety Critical

Use a T8 tamper proof torx screwdriver with 3.8 +/-0.1 lbf-in torque to remove the screws.

Figure 2: Unscrewing the Back Housing



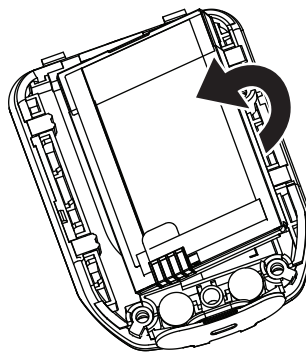
- 3 Remove the battery gently from the left.



WARNING: Safety Critical

Do not use conductive or sharp tools when removing the battery.

Figure 3: Removing the Battery



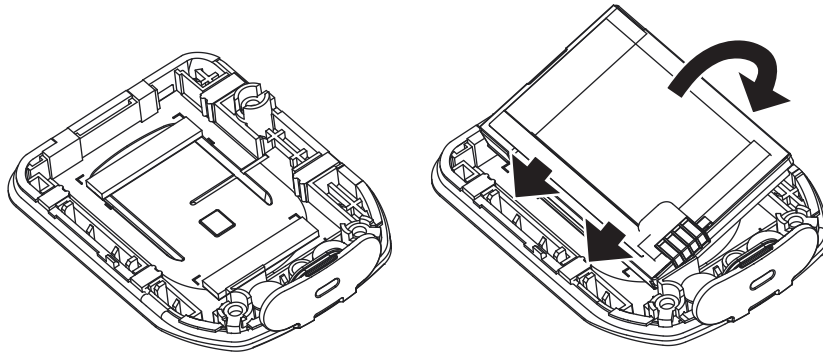
- 4 Insert the battery into the battery compartment. Attach the left side of the battery first.



WARNING: Safety Critical

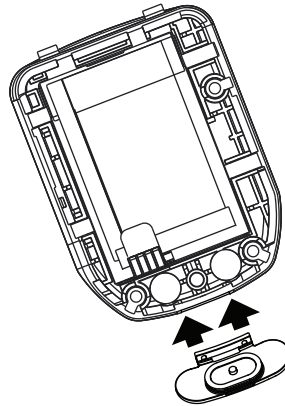
Use only Motorola Solutions authorized BT60 Battery (HKNN4014_).

Figure 4: Inserting the Battery



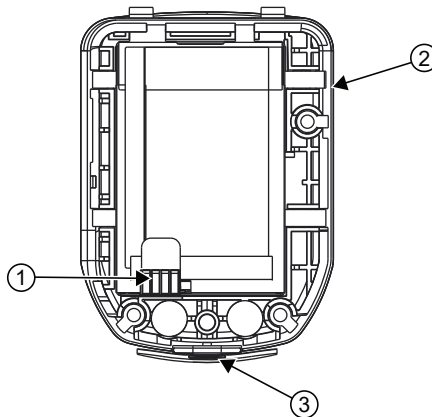
- 5 Attached the USB Dust Cover using two guide pin on back housing if it detached.

Figure 5: Assembling USB Dust Cover



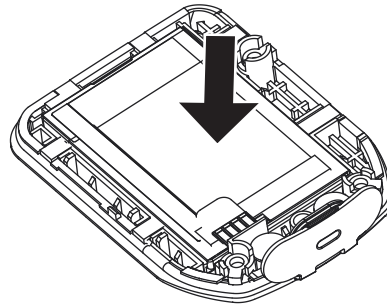
CAUTION:

- 1 Ensure that the battery contact is facing bottom left.
- 2 Ensure that the rubber seal is securely in place.
- 3 Ensure USB dust cover attached to back housing.



- 6 Secure the battery by pressing it down.

Figure 6: Securing the Battery



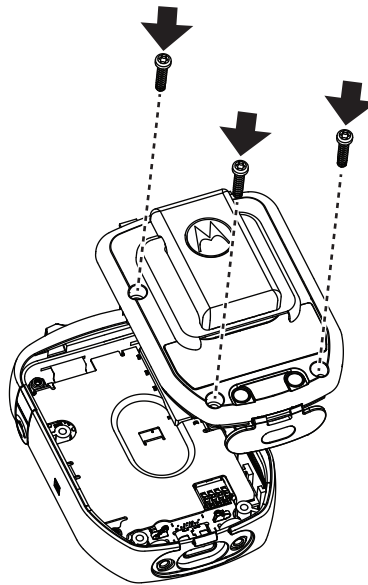
- 7 Reassemble the back housing by screwing in the three screws.



WARNING: Safety Critical

Use a T8 tamper proof torx screwdriver with 3.8 +/-0.1 lbf-in torque to ensure that the screws are tightened.

Figure 7: Reassembling the Back Housing

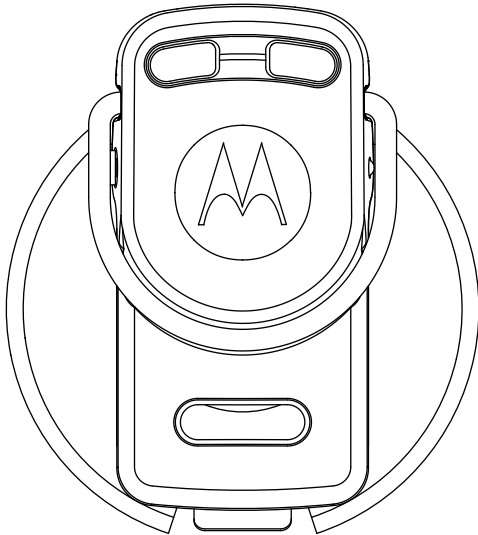
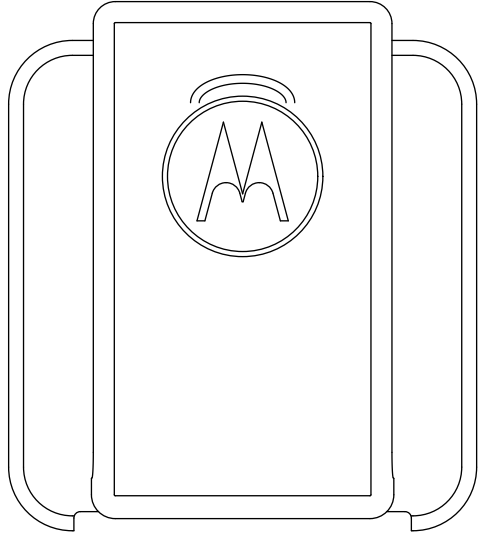


WARNING: Safety Critical

- Do not power up the RSM and/or connect the audio jack immediately after replacing the battery.
- To ensure that there are no loose elements left, shake the device gently.
- If you hear any internal rattling or any abnormal sound, disassemble the RSM to inspect for any abnormalities, for example, loose components.

Chapter 7

Optional Accessories

Part Number	Description
PMLN7560_ 42009312001	Receive-only Earpiece with Translucent Tube 
4205823V01	
CB000756A01	USB-C Cable (1m)