

Motorola PMNN4106D

Motorola Solutions APX XE500 Remote Speaker Microphone User Manual

Model: PMMN4106D, PMMN4106

1. INTRODUCTION

The Motorola Solutions APX XE500 Remote Speaker Microphone (RSM) is engineered for use in extreme environments, providing reliable communication for professionals. This robust accessory integrates advanced audio technology and durable construction to ensure clear and consistent performance even in challenging conditions.

Key features include an asymmetrical design for easy handling with gloves, a large push-to-talk (PTT) button, an extra-large illuminated emergency button, and a dedicated channel knob (on some models). Its Adaptive Audio Engine, with five integrated microphones, automatically adjusts audio settings for optimal clarity. The XE500 RSM is built to withstand high temperatures and boasts an IP68 submersibility rating.



Figure 1: The Motorola APX XE500 Remote Speaker Microphone (RSM) shown with its coiled cable and a small instruction manual. The RSM is bright green with black accents and clearly labeled "XE500".

2. SETUP AND INSTALLATION

Before operating your APX XE500 RSM, ensure it is properly connected to a compatible Motorola APX series radio. The RSM connects via its integrated cable and radio interface adapter.

2.1 Package Contents

- APX XE Remote Speaker Microphone (RSM)
- Xtreme Temperature Cable (integrated)
- Belt clip (pre-attached or included)

2.2 Connecting the RSM to Your Radio

1. Ensure your radio is powered off before connecting the RSM.
2. Align the connector of the RSM cable with the accessory port on your compatible APX radio (e.g., APX 8000, APX 7000, APX 6000, SRX2200).
3. Gently push the connector into the port until it clicks securely into place. Do not force the connection.
4. Once connected, you may power on your radio.



Figure 2: Rear view of the Motorola APX XE500 RSM, showing the integrated cable and the belt clip attachment point. The robust design is evident from this angle.

APX XE500 REMOTE SPEAKER MICROPHONE SPECIFICATIONS*

PORTABLE MILITARY STANDARDS 810 C, D, E, F & G

	MIL-STD 810C		MIL-STD 810D		MIL-STD 810E		MIL-STD 810F		MIL-STD 810G	
	Method	Proc./Cat.	Method	Proc./Cat.	Method	Proc./Cat.	Method	Proc./Cat.	Method	Proc./Cat.
Low Pressure	500.1	I	500.2	I	500.3	II	500.4	II	500.5	II
High Temperature	501.1	I, II	501.2	I/A1, II/A1	501.3	I/A1, II/A1	501.4	I/Hot, II/Basic Hot	501.5	I/A1, II/A2
Low Temperature	502.1	I	502.2	I/C3, II/C1	502.3	I/C3, II/C1	502.4	I/C3, II/C1	502.5	I/C3, II/C1
Temperature Shock	503.1	I	503.2	I/A1C3	503.3	I/A1C3	503.4	I	503.5	I/C
Solar Radiation	505.1	II	505.2	I	505.3	I	505.4	I	505.5	I/A1
Rain	506.1	I, II	506.2	I, II	506.3	I, II	506.4	I, III	506.5	I, III
Humidity	507.1	II	507.2	II	507.3	II	507.4	Only 1 Proc	507.5	II/Aggravated
Salt Fog	509.1	I	509.2	I	509.3	I	509.4	Only 1 Proc	509.5	Only 1 Proc
Blowing Dust	510.1	I	510.2	I	510.3	I	510.4	I	510.5	I
Blowing Sand	Only 1 Proc	Only 1 Proc	510.2	II	510.3	II	510.4	II	510.5	II
Immersion (Delta-T)	512.1	I	512.2	I	512.3	I	512.4	I	512.5	I
Vibration	514.2	VII/F, Curve-W	514.3	I/10, II/3	514.4	I/10, II/3	514.5	I/24	514.6	I/24
Shock	516.2	I, III, V	516.3	I, V, VI	516.4	I, V, VI	516.5	I, V, VI	516.6	I, V, VI
Shock (Drop)	516.2	II	516.2	IV	516.4	IV	516.5	IV	516.6	IV

MIC ACOUSTICS

Microphone Type	5 integrated microphones with Adaptive Audio and windporting
Sensitivity (@ 1inch)	-42dBV typical

SPEAKER

Rated Power*	2W
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CONTROLS

Channel	Available with a 16 position channel knob or without a channel knob
Volume Toggle	Single up/down steps in 10 intervals
Side Button	Push-to-talk button
Top Button	Orange button
Side Button	One programmable button
Front Button	One strobe light control

ENVIRONMENTAL SPECIFICATIONS

Operating Temp	-40 Degree Celcius to +85 Degree Celcius
Heat Rating	1. NIST Class I, II, III, IV compliant for cable and RSM head 2. 950 Degree Celcius 10 seconds passed for RSM head
Humidity	90-95% relative humidity at +50 Degree Celcius for 8 hours
ESD	IEC/EN61000-4-2
IP Rating	IP68 (2 meters, 4 hours submersion)
Weight in grams	PMMN4106: 333, PMMN4107: 326
Size in mm without clip	75 x 98 x 33
MIL Specs	Meets MIL810F and G for Rain, Salt/Fog, Dust, Vibration and Mechanical Shock

RADIO COMPATIBILITY & HAZARDOUS CERTIFICATION

Hazardous Certified	The XE500 RSM is UL certified with UL certified Motorola APX radios, please see your radio's UL manual for more information.
FM Certified	The XE500 is not FM approved. Although it will work with legacy FM approved radios, due to FM changes, Motorola will not be able to FM approve the XE500 RSM.

PART NUMBERS

PMMN4106	XE500, high impact green, channel knob
PMMN4106_BLK	XE500, black, channel knob
PMMN4107	XE500, high impact green, no channel knob
PMMN4107_BLK	XE500, black no channel knob



PMMN4107



PMMN4107_BLK



PMMN4106



PMMN4106_BLK

APX™ 8000XE ALL-BAND P25 PORTABLE RADIO

The APX 8000XE is redefining mission critical communications by delivering an ultra-durable radio that combines unlimited interoperability, loud audio, and secure WiFi connectivity.

**UNLIMITED MOBILITY.
EXTREME PERFORMANCE.**

*All specification are subject to change.

For more information, please visit: www.motorolasolutions.com/XE500



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Figure 3: An illustration showing various Motorola APX series radios, including the APX XE500 Remote Speaker Microphone, demonstrating the ecosystem of compatible devices.

3. OPERATING INSTRUCTIONS

The APX XE500 RSM is designed for intuitive operation, even in high-stress environments or when wearing protective gear.

3.1 Push-to-Talk (PTT) Button

The large, easily accessible PTT button is located on the side of the RSM. Press and hold this button to transmit your voice, and release it to listen. Its size and tactile feedback are optimized for use with gloved hands.

3.2 Emergency Button

An extra-large emergency button is strategically placed to prevent accidental activation while remaining easy to locate. When activated, this button illuminates orange, signaling an emergency alert through your radio system. Consult your radio's specific programming for emergency feature details.

3.3 Channel Knob (if applicable)

For models equipped with a channel knob, it mimics the functionality of your radio's channel selector. Rotate the knob to change channels. This allows for channel selection directly from the RSM without needing to access the radio itself.

3.4 Adaptive Audio Engine

The XE500 RSM features five integrated microphones and an Adaptive Audio Engine. This system automatically adjusts noise suppression, microphone gain, Windporting, and speaker equalization to deliver clear and loud audio in various environments. This dynamic adjustment ensures optimal audio performance whether you are in a quiet setting or a noisy, windy, or high-stress situation.

3.5 Flexible Wear Options

The strategic placement of microphones and enhanced water drainage allow the RSM to be worn straight, upside down, or even sideways while maintaining clear audio transmission and reception.



Figure 4: A detailed view of the Motorola APX XE500 RSM, highlighting the large PTT button, emergency button, and the speaker grille. The robust construction is visible.

4. MAINTENANCE AND CARE

Proper maintenance ensures the longevity and optimal performance of your APX XE500 RSM.

4.1 Cleaning

- Wipe the exterior of the RSM with a damp cloth. Use mild soap if necessary, but avoid harsh chemicals or abrasive cleaners.
- Ensure the speaker grille and microphone ports are free from debris. Use a soft brush if needed.
- Do not submerge the RSM in cleaning solutions.
- Allow the RSM to air dry completely before re-connecting to a radio or storing.

4.2 Durability Features

The APX XE500 RSM is built for extreme conditions:

- **IP68 Rating:** This rating signifies that the RSM is protected against dust ingress and can withstand submersion in up to 2 meters of water for 4 hours. This makes it suitable for use in wet environments.
- **Extreme Heat Resistance:** The RSM is designed to withstand heat exposure of up to 500°F (260°C) for up to five minutes, ensuring continued operation in high-temperature situations.

Despite these robust features, always handle the RSM with care and avoid unnecessary exposure to extreme conditions beyond its specified limits.

5. TROUBLESHOOTING

If you encounter issues with your APX XE500 RSM, refer to the following common troubleshooting steps:

Problem	Possible Cause	Solution
No audio from RSM speaker.	• RSM not fully connected. • Radio volume too low. • Speaker obstructed.	• Ensure RSM connector is securely seated. • Increase radio volume. • Check speaker grille for debris.
Others cannot hear me (no transmission).	• PTT button not pressed or held correctly. • Microphone obstructed. • Radio not on correct channel.	• Press and hold the PTT button firmly during transmission. • Ensure microphone ports are clear. • Verify radio is on the correct channel.
Audio is unclear or distorted.	• Environmental noise interference. • Microphone or speaker partially obstructed.	• The Adaptive Audio Engine should compensate; ensure RSM is positioned correctly. • Clean microphone ports and speaker grille.
Emergency button does not illuminate.	• Button not fully pressed. • Radio not powered on or connected.	• Press the emergency button firmly until it clicks. • Ensure radio is powered on and RSM is connected.

If problems persist after attempting these solutions, contact Motorola Solutions customer support or your authorized dealer for further assistance.

6. SPECIFICATIONS

Feature	Detail
Model Numbers	PMMN4106D (High-impact green, with channel knob), PMMN4106 (High-impact green, with channel knob), PMMN4107 (High-impact green, without channel knob), PMMN4107_BLK (Black, without channel knob)
Item Weight	12 ounces (340 grams)
Product Dimensions (L x W x H)	2.96 x 1.4 x 3.74 inches (7.52 x 3.56 x 9.5 cm)
Microphone Form Factor	Mini, Lavalier
Polar Pattern	Omnidirectional
Power Source	Radio (powered by connected radio)
Connectivity Technology	Radio Interface Adapter Cable
Compatible Devices	APX 8000, APX8000XE, APX 7000, APX7000XE, APX 6000, APX6000XE, SRX2200
Color	High-impact green (PMMN4106D, PMMN4106, PMMN4107), Black (PMMN4106_BLK, PMMN4107_BLK)
Ingress Protection (IP) Rating	IP68 (2m, 4 hours submersibility)
Heat Resistance	Withstands 500°F (260°C) for up to five minutes
Manufacturer	Motorola Solutions
UPC	748091006425
Country of Origin	Malaysia



Figure 5: The product box label for the APX XE500 RSM, showing the model number PMMN4106D, serial number, and UPC. This label confirms manufacturing details.

7. WARRANTY AND SUPPORT

For specific warranty terms and conditions applicable to your Motorola Solutions APX XE500 Remote Speaker

Microphone, please refer to the warranty documentation provided with your purchase or contact Motorola Solutions directly.

For technical support, service, or additional product information, please visit the official Motorola Solutions website or contact their customer service department.

Official Support Link: www.motorolasolutions.com/XE500

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Example: How do I reset this device or fix this error?

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

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