



# MOTOTRBO™ REMOTE SPEAKER MICROPHONES

## BUYER'S GUIDE



# REMOTE SPEAKER MICROPHONES

Motorola Solutions Remote Speaker Microphones (RSMs) are ideal for professionals who need to talk and listen without removing their radio from their belt or its case.

Our diverse portfolio of Remote Speaker Microphones is designed with many unique features, including Motorola Solutions' IMPRES™ technology, Windporting, noise-cancellation, and even waterproof models with an ingress protection rating of IP68.

With many RSMs to choose from it can be hard to know if you are getting the right solution; that's where this guide comes in. By reading this guide you will better understand the different options available and be able to make an informed purchase decision.



## RELIABILITY YOU CAN TRUST

Motorola Solutions' Remote Speaker Microphones are built and rigorously tested to the same quality standards as Motorola Solutions' radios. They feature heavy-duty casings, sturdy internal circuitry and engineered shock absorbing materials, which all add up to reliable, high-performing solutions that can withstand the inevitable knocks and drops they will encounter in every-day use out in the field.

## QUALITY DESIGNED IN

In addition to Motorola Solutions' exceptional design, all our accessories are tested with our radios as a complete system to ensure they comply with relevant regulatory standards set out by ETSI, the European Union and local laws. These tests include RF energy exposure, conducted emissions and Restriction of Hazardous Substances (RoHS).



## WHAT ARE REMOTE SPEAKER MICROPHONES?

Remote Speaker Microphones (RSMs) are accessories that connect to your radio to provide audio functionality located in a convenient location close to the head, such as the shoulder or chest.

RSMs are ideal for workers who wear thick gloves when working or those who need quick access to radio functionality without taking their eyes off the task at hand, such as security guards, production workers and emergency service personnel.

A basic RSM combines a loudspeaker, microphone and Push-To-Talk button (PTT) in a compact device with a clip to hold it in place and a cable to connect to the radio accessory connector. Some RSMs also offer enhanced functionality such as dedicated emergency and programmable buttons to allow quick access to frequently used functions, volume controls to adjust received audio levels, or an audio jack that allows an earpiece to be connected, ensuring discreet communication that can't be overheard and won't disturb others.

In addition to standard RSM features, Motorola Solutions has also developed exclusive capabilities for our RSMs including Windporting, background noise reduction and IMPRES™ and Industrial Noise Cancellation (INC) to help ensure optimal performance even in noisy or windy environments.

### TOP VIEW



### FRONT/SIDE VIEW



\*Selected models only



## RSM CONTROLS

All RSMs feature a Push-To-Talk (PTT) button but Motorola Solutions also offers RSMs with additional user controls that add functionality and make it easier to make and receive calls. Volume controls give users the ability to adjust the volume of the RSM without reaching for their radio. Programmable buttons provide quick and easy access to the most frequently used radio features with one press. Some RSMs feature an emergency button which can be programmed to call for urgent assistance. The button can be programmed to give the user priority access, turn their microphone on, and even send the user's location on GPS-enabled radios, giving their colleagues the information they need to render assistance as quickly as possible.

## EARPIECES

Connecting an earpiece to the RSM allows users to discreetly receive calls without disturbing or being overheard by others. This can be an ideal solution for security and maintenance personnel.

## WINDPORTING

When users are operating outdoors, wind blowing across the microphone can distort or mask messages making it difficult to understand what is being said. The Windporting design of our RSMs reduces the effect of wind on the microphone performance and prevents water from clogging the microphone, both of which can be a major problem for transmission in outdoor environments.

## NOISE CANCELLATION

Noise Cancellation uses two microphones to improve audio quality. The microphone on the front of the RSM detects voice and background audio, while the second microphone samples ambient noise, such as machinery or sirens. By comparing and combining both signals, the RSM is able to reduce levels of background noise, making it easier to hear messages clearly. Loud environments such as construction and event security are examples of where this technology can improve the communication of your team.

## IMPRES AUDIO

Motorola Solutions' IMPRES audio technology optimises the performance of your radio by suppressing background noise and improving voice intelligibility, even in noisy situations. IMPRES technology automatically compensates for changes in voice level, whether you are speaking softly or loudly, turning your head, or moving the RSM further away from your mouth. By using an IMPRES RSM, the quality and consistency of audio communications between team members are improved.

## INDUSTRIAL NOISE CANCELLATION (INC)

Some areas, like plant rooms, sports stadia, train yards, and factory floors can experience extreme noise where standard noise cancelling RSMs may struggle to eliminate the overwhelming background noise. Motorola Solutions unique Industrial Noise Cancellation (INC) technology provides superior performance even in the most difficult of situations.

INC RSMs use microphones designed to operate at audio levels that would saturate standard microphones; two microphones are used to follow your voice and eliminate ambient noise. Additionally, the INC technology uses digital signal processing to reduce noise outside the speech band, leaving just the user's speech in the transmission.

Unlike standard noise cancellation, INC RSMs, can remove low frequencies (such as generators), industrial processes (like angle grinding), and even sirens from emergency service vehicles. INC technology is so well designed, it is able to transmit your voice clearly even when you can't hear yourself speaking.

## HAZARDOUS AND POTENTIALLY EXPLOSIVE ENVIRONMENTS

If your radio operatives will be visiting potentially explosive and hazardous environments then they will need intrinsically safe certified radios and accessories. Motorola Solutions offer a selection of TIA4950 intrinsically safe RSMs for use with MOTOTRBO radios to keep them compliant and in contact at all times. Within the European Union, radio equipment used within potentially explosive environments must meet the ATEX directives. Only Motorola Solutions ATEX RSMs have been tested and certified with the radio to ensure compliance with the requirements: using third party RSMs means the user must apply for certification for the complete radio/RSM system themselves.

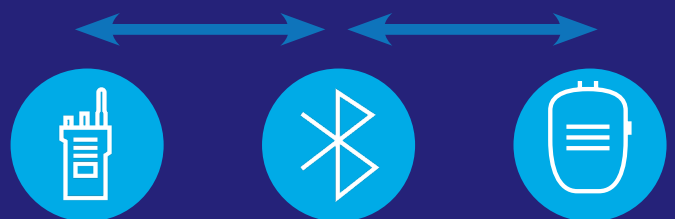


## WIRELESS RSM UNITS

Wires can present a problem for some users because they can get snagged on clothing and keep users tethered to their radio. For workers who need to work unencumbered, wireless RSMs connected to a Motorola Solutions radio via Bluetooth allow workers to make and receive calls without having to worry about wires getting in their way.

By using a Wireless RSM, the portable radio can be left on a desk or in a work bag, allowing control room and maintenance staff greater freedom to move around their work area but still use their radio.

For users of mobile radios, the Long Range Wireless RSM is paired via a Gateway fist microphone to a mobile radio in either a fixed control room installation or in a vehicle and allows the user to operate the radio at distances up to one hundred metres.





## MOISTURE AND DUST









Wet environments can pose a risk to electrical equipment, whether it is rain during outside use, steam in production environments, or high humidity environments such as swimming pools. Dry environments can be a problem as well, with a build up of dust able to degrade performance, or even prevent a radio from working. Within our wide portfolio, Motorola Solutions offer RSMs with IP ratings suitable for any environment, including submersion (IP68).

### IP (INGRESS PROTECTION) RATINGS GUIDE

#### SOLIDS

-  Protected against a solid object greater than 50 mm such as a hand.
-  Protected against a solid object greater than 12.5 mm such as a finger.
-  Protected against a solid object greater than 2.5 mm such as a screwdriver.
-  Protected against a solid object greater than 1 mm such as a wire.
-  Dust Protected. Limited ingress of dust permitted. Will not interfere with operation of the equipment. Two to eight hours.
-  Dust tight. No ingress of dust. Two to eight hours.















#### WATER

-  Protected against vertically falling drops of water. Limited ingress protected.
-  Protected against vertically falling drops of water with enclosure tilted up to 15 degrees from the vertical. Limited ingress protected.
-  Protected against sprays of water up to 60 degrees from the vertical. Limited ingress protected for three minutes.
-  Protected against water splashed from all directions. Limited ingress permitted.
-  Protected against jets of water. Limited ingress permitted.
-  Water from heavy seas or water projected in powerful jets shall not enter the enclosure in harmful quantities.
-  Protection against the effects of immersion in water between 15 cm and 1 m for 30 minutes.
-  Protection against the effects of immersion in water under pressure for long periods.

**IP67**  
RATING EXAMPLE



# REMOTE SPEAKER MICROPHONES

RADIO FAMILY	DESCRIPTION	IMPRES	WINDPORTING	NOISE CANCELLING	IP RATING	INTRINSIC SAFETY
<b>DP1400</b>						
PMMN4092	 MagOne RSM with Omnidirectional mic	No	No	No	IP57	No
PMMN4013	 RSM with Audio Jack with Enhanced Noise Reduction	No	Yes	No	IP54	No
PMMN4029	 RSM with Enhanced Noise Reduction	No	Yes	No	IP57	No
<b>DP2000e SERIES</b>						
PMMN4076	 IP54 RSM with Windporting and Audio Jack	No	Yes	No	IP54	UL TIA4950
PMMN4075	 IP57 RSM with Windporting	No	Yes	No	IP57	UL TIA4950
PMMN4071	 IMPRES IP54 RSM with Audio Jack	Yes	Yes	No	IP54	UL TIA4950
PMMN4073	 IMPRES IP55 RSM with Audio Jack	Yes	Yes	No	IP55	UL TIA4950
PMMN4108	 IMPRES IP67 RSM with Windporting	Yes	Yes	No	IP67	No
<b>DP3000e SERIES</b>						
PMMN4076	 IP54 RSM with Windporting and Audio Jack	No	Yes	No	IP54	UL TIA4950
PMMN4075	 IP57 RSM with Windporting	No	Yes	No	IP57	UL TIA4950
PMMN4071	 IMPRES IP54 RSM with Audio Jack	Yes	Yes	No	IP54	No
PMMN4073	 IMPRES IP55 RSM with Audio Jack	Yes	Yes	No	IP55	UL TIA4950
PMMN4108	 IMPRES IP67 RSM with Windporting	Yes	Yes	No	IP67	No
GMLN5503	 Wireless RSM with Desk Charging Kit (EU)	No	Yes	No	IP55	No
GMLN5504	 Wireless RSM with Desk Charging Kit (UK)	No	Yes	No	IP55	No

























EMERGENCY BUTTON	VOLUME CONTROL	PROGRAMMABLE BUTTONS	EARPIECE CONNECTOR
No	No	0	No
No	No	0	3.5mm
No	No	0	No
No	No	0	3.5mm
No	No	0	No
No	No	0	3.5mm
No	No	0	3.5mm
No	No	0	No
No	No	0	3.5mm
No	No	0	No
No	No	0	3.5mm
No	No	0	3.5mm
No	No	0	No
Yes	Yes	1	3.5mm
Yes	Yes	1	3.5mm





# REMOTE SPEAKER MICROPHONES















RADIO FAMILY		DESCRIPTION
<b>DP4000e SERIES</b>		
PMMN4024		RSM with Audio Jack
PMMN4040		Submersible RSM with Windporting
PMMN4099		IP68 IMPRES RSM with Volume Control
PMMN4025		IMPRES RSM with Audio Jack and Windporting
PMMN4046		IMPRES RSM with Volume Control
PMMN4113		IMPRES RSM with Nexus plug
PMMN4050		IMPRES RSM with Noise Cancellation
PMMN4102		IMPRES Active Noise Cancelling RSM with Nexus plug
NNTN8383		Industrial Noise Cancelling RSM with Audio Jack
NNTN8382		Submersible Industrial Noise Cancelling RSM
GMLN5503		Wireless RSM with Desk Charging Kit (EU)
GMLN5504		Wireless RSM with Desk Charging Kit (EU)
<b>DP4000Ex SERIES</b>		
PMMN4067		ATEX RSM
PMMN4110		IMPRES RSM with Nexus plug
PMMN4094		IMPRES Active Noise Cancelling RSM with Nexus plug
<b>MOTOTRBO ION</b>		
PMMN4127		WM500 Wireless PTT-Over-Cellular RSM
PMMN4128		RM780 IP68 IMPRES RSM with 3.5mm Connector
<b>SL1000 SERIES</b>		
PMMN4125		RM250 Slim RSM with Windporting
<b>SL2000 SERIES</b>		
PMMN4125		RM250 Slim RSM with Windporting
<b>SL4000 SERIES</b>		
PMMN4125		RM250 Slim RSM with Windporting
GMLN5503		Wireless RSM with Desk Charging Kit (EU)
GMLN5504		Wireless RSM with Desk Charging Kit (EU)


















IMPRES	WINDPORTING	NOISE CANCELLING	IP RATING	INTRINSIC SAFETY	EMERGENCY BUTTON	VOLUME CONTROL	PROGRAMMABLE BUTTONS	EARPIECE CONNECTOR
No	No	No	IP54	UL TIA4950	No	No	0	3.5mm
No	Yes	No	IP57	UL TIA4950	No	No	0	No
Yes	No	No	IP68	UL TIA4950	Yes	Yes	1	No
Yes	Yes	No	IP54	UL TIA4950	Yes	No	0	3.5mm
Yes	Yes	No	IP57	UL TIA4950	Yes	Yes	1	No
Yes	Yes	No	IP67	UL TIA4950	Yes	Yes	1	Nexus + 3.5mm
Yes	Yes	Active	IP54	UL TIA4950	No	No	0	3.5mm
Yes	Yes	Active	IP67	UL TIA4950	Yes	Yes	1	Nexus + 3.5mm
Yes	Yes	Industrial	IP54	UL TIA4950	No	Yes	0	3.5mm
Yes	Yes	Industrial	IP57	UL TIA4950	No	Yes	0	No
No	Yes	No	IP55	No	Yes	Yes	1	3.5mm
No	Yes	No	IP55	No	Yes	Yes	1	3.5mm
No	No	No	IP64	ATEX	Yes	Yes	0	No
Yes	Yes	No	IP67	ATEX Ma/M1	Yes	Yes	1	Nexus + 3.5mm
Yes	Yes	Active	IP67	ATEX Ma/M1	Yes	Yes	1	Nexus + 3.5mm
No	Yes	Active	IP67	No	Yes	Yes	4	3.5mm
Yes	Yes	Active	IP68	UL TIA4950	Yes	Yes	2	3.5mm (IP68)
No	Yes	No	IP67	No	No	No	No	3.5mm
No	Yes	No	IP67	No	No	No	No	3.5mm
No	Yes	No	IP67	No	No	No	No	3.5mm
No	Yes	No	IP55	No	Yes	Yes	1	3.5mm
No	Yes	No	IP55	No	Yes	Yes	1	3.5mm

# REMOTE SPEAKER MICROPHONE EARPIECES

RADIO FAMILY		DESCRIPTION	AUDIO CONNECTOR	CE CERTIFIED	INTRINSIC SAFETY	BONE TRANSDUCING
<b>DP1400</b>						
MDRLN4885		Earbud with 3.5mm jack	3.5mm	Yes	UL TIA4950	No
PMLN4620		D-Shell Earpiece with 3.5mm jack	3.5mm	Yes	UL TIA4950	No
PMLN7560		Earpiece with Translucent Tube and Eartip	3.5mm	Yes	No	No
PMLN7396		Adjustable D-Shell Earpiece with 3.5mm jack	3.5mm	Yes	No	No
WADN4190		Over the Ear Receiver with 3.5mm jack	3.5mm	Yes	UL TIA4950	No
<b>DP2000e SERIES</b>						
MDRLN4885		Earbud with 3.5mm jack	3.5mm	Yes	UL TIA4950	No
WADN4190		Over the Ear Receiver with 3.5mm jack	3.5mm	Yes	UL TIA4950	No
<b>DP3000e SERIES</b>						
MDRLN4885		Earbud with 3.5mm jack	3.5mm	Yes	UL TIA4950	No
PMLN4620		D-Shell Earpiece with 3.5mm jack	3.5mm	Yes	UL TIA4950	No
PMLN7560		Earpiece with Translucent Tube and Eartip	3.5mm	Yes	No	No
PMLN7396		Adjustable D-Shell Earpiece with 3.5mm jack	3.5mm	Yes	No	No
WADN4190		Over the Ear Receiver with 3.5mm jack	3.5mm	Yes	UL TIA4950	No



RADIO FAMILY		DESCRIPTION	AUDIO CONNECTOR	CE CERTIFIED	INTRINSIC SAFETY	BONE TRANSDUCING
<b>DP4000e</b>						
GMMN4584		Savox HC-2 helmet communications headset with bone mic and dual speaker	Nexus	Yes	No	Yes
GMMN4585		Savox HC-1 helmet communications headset with bone mic and single speaker	Nexus	Yes	No	Yes
PMLN7188		Earpiece with Translucent Tube and Eartip	3.5mm	Yes	ATEX	No
MDRLN4885		Earbud with 3.5mm jack	3.5mm	Yes	UL TIA4950	No
PMLN4620		D-Shell Earpiece with 3.5mm jack	3.5mm	Yes	UL TIA4950	No
PMLN7560		Earpiece with Translucent Tube and Eartip	3.5mm	Yes	No	No
PMLN7396		Adjustable D-Shell Earpiece with 3.5mm jack	3.5mm	Yes	No	No
WADN4190		Over the Ear Receiver with 3.5mm jack	3.5mm	Yes	UL TIA4950	No
<b>DP4000Ex SERIES</b>						
GMMN4580		Savox HC-2 helmet communications headset with bone mic and dual speaker and ATEX approval	Nexus	Yes	ATEX	Yes
PMLN7188		Earpiece with Translucent Tube and Eartip and ATEX approval	3.5mm	Yes	ATEX	No
<b>MOTOTRBO ION</b>						
PMLN7560		Earpiece with clear acoustic tube for WM500	3.5mm	Yes	No	No
PMLN8120		Earpiece with clear acoustic tube for RM780	3.5mm	Yes	No	No
<b>SL1000 SERIES</b>						
PMLN7560		Earpiece with clear acoustic tube	3.5mm	Yes	No	No
<b>SL2000 SERIES</b>						
PMLN7560		Earpiece with clear acoustic tube	3.5mm	Yes	No	No
<b>SL4000 SERIES</b>						
PMLN7560		Earpiece with clear acoustic tube	3.5mm	Yes	No	No

Earpieces are compatible with any RSM compatible with the same radio family and with a matching earpiece connector type unless stated.



To learn more about MOTOTRBO, visit [www.motorolasolutions.com/MOTOTRBO](http://www.motorolasolutions.com/MOTOTRBO)

Motorola Solutions Ltd. Nova South, 160 Victoria Street, London, SW1E 5LB, United Kingdom.

Availability is subject to individual country law and regulations. All specifications shown are typical unless otherwise stated and are subject to change without notice.

MOTOROLA, MOTO, MOTOROLA SOLUTIONS and the Stylized M Logo are trademarks or registered trademarks of Motorola Trademark Holdings, LLC and are used under license. All other trademarks are the property of their respective owners. © 2021 Motorola Solutions, Inc. All rights reserved. (06-21)

