

# AMERICAN AUDIO

## UHF SERIES

UHF 540-590MHz (US)

UHF 863-865MHz (EU)

PROFESSIONAL WIRELESS MICROPHONE SYSTEM

## WM-219

### User Manual

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#### DOCUMENT VERSION

Please check [www.adj.com](http://www.adj.com) for the latest revision/update of this manual.

Date	Document Version	Notes
04/12/18	1.0	Initial Release

Europe Energy Saving Notice

Energy Saving Matters (EuP 2009/125/EC)

Saving electric energy is a key to help protecting the environment. Please turn off all electrical products when they are not in use. To avoid power consumption in idle mode, disconnect all electrical equipment from power when not in use. Thank you!

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## GENERAL INFORMATION

### INTRODUCTION

This rack mountable UHF wireless microphone system has been designed to perform reliably for years when the guidelines in this booklet are followed. Please read and understand the instructions in this manual carefully and thoroughly before attempting to operate this device. These instructions contain important information regarding safety during use and maintenance.

### UNPACKING

Every device has been thoroughly tested and has been shipped in perfect operating condition. Carefully check the shipping carton for damage that may have occurred during shipping. If the carton appears to be damaged, carefully inspect your device for damage and be sure all accessories necessary to operate the device have arrived intact. In the event damage has been found or parts are missing, please contact our customer support team for further instructions. Please do not return this device to your dealer without first contacting customer support at the number listed below. Please do not discard the shipping carton in the trash.

Please recycle whenever possible.

### BOX CONTENTS

- (1) Selectable Channel UHF Wireless Receiver
- (2) Hand Held Wireless Microphones
- (4) AA batteries
- (2) UHF Antennas (length 10.5" / 267mm)
- (2) Rack Mount Ears with Antenna Mounting Holes and Screws
- (2) BNC Antenna Extension Cables (length 0.20" / 0.5m)
- (1) External 12-15VDC Power Supply
- (2) Microphone Stand Clips

### CUSTOMER SUPPORT

If you encounter any problems, please contact your trusted American Audio shop. We also offer the possibility, to contact us directly: You can contact us via our website [www.adj.eu](http://www.adj.eu) or via email: [support@adj.eu](mailto:support@adj.eu)

### IMPORTANT NOTICE!

There are no user serviceable parts inside this device. Do not attempt any repairs yourself; doing so will void your manufactures warranty. Damages resulting from modifications to this fixture and/or the disregard of safety and general user instructions found in this user manual void the manufactures warranty and are not subject to any warranty claims and/or repairs.

## SAFETY INSTRUCTIONS AND GUIDELINES

To guarantee a smooth operation, it is important to follow all instructions and guidelines in this manual. The manufacturer of this device is not responsible for injury and/or damages resulting from the misuse of this device due to the disregard of the information printed in this manual. Any modifications to the device and/or the accessories included will void the original manufacturer's warranty and increase the risk of damage and/or personal injury.



**NEVER OPEN THIS DEVICE WHILE IN USE!**  
**DO NOT PLUG DEVICE INTO A DIMMER PACK!**  
**UNPLUG POWER BEFORE CLEANING DEVICE!**  
**CLEAN ONLY WITH A DRY CLOTH!**  
**KEEP FLAMMABLE MATERIALS AWAY FROM DEVICE!**



**INDOOR / DRY LOCATIONS USE ONLY!**  
**DO NOT EXPOSE DEVICE TO RAIN OR MOISTURE!**



**DO NOT EXPOSE DEVICE TO:**  
**HIGH TEMPERATURE OR HIGH HUMIDITY ENVIRONMENTS!**  
**AMBIENT OPERATING TEMPERATURE: 23° to 113°F. (-5° to 45°C)**

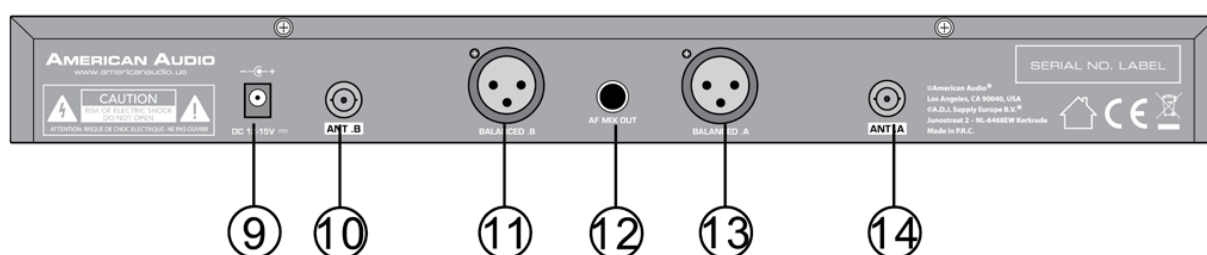
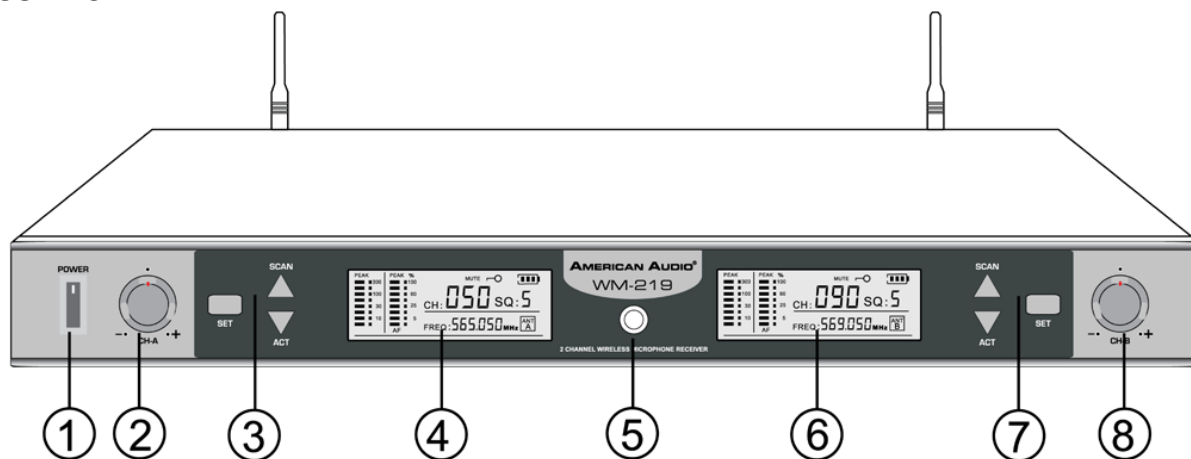


**DO NOT USE DEVICE IF BATTERIES ARE DAMAGED, DEFORMED, OR HAVE AN ODOR!**  
**DO NOT DISASSEMBLE BATTERIES!**  
**DISPOSE OF BATTERIES ACCORDING TO LOCAL, STATE, AND COUNTRY REGULATIONS!**

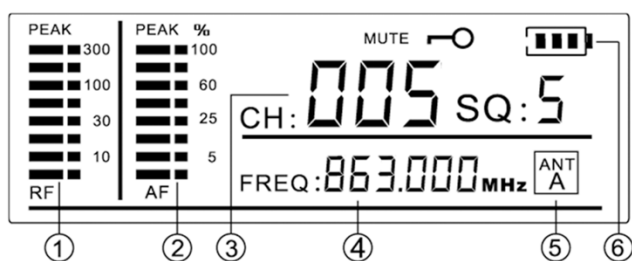
- **DO NOT** shake device, avoid brute force when operating device.
- **DO NOT** operate device if the power cord or power supply has become frayed, crimped and/or damaged. If the power cord or power supply is damaged, replace it immediately with a new one of similar power rating.
- **ONLY** use accessories that are specified by the manufacturer.
- The device should be serviced and repaired by authorized personnel only.
- Use the original packaging and materials to transport the fixture in for service.

# OVERVIEW

## WIRELESS RECEIVER

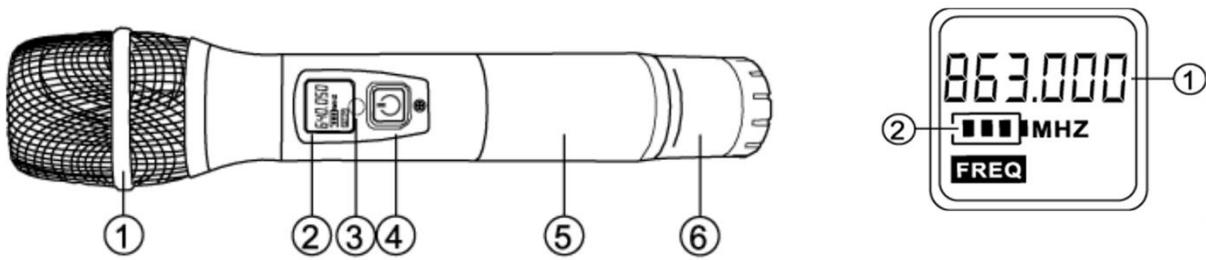


- |                             |   |
|-----------------------------|---|
| 1. Power Switch             | 8. CH-B Volume Control Dial             |
| 2. CH-A Volume Control Dial | 9. DC Power Supply Input                |
| 3. CH-A Function Buttons    | 10. CH-B Antenna Input (BNC)            |
| 4. CH-A LED Control Display | 11. CH-B 3pin XLR Balanced Audio Output |
| 5. Infrared Transmitter     | 12. CH-A and CH-B 1/4" Audio Mix Output |
| 6. CH-B LED Control Display | 13. CH-A 3pin XLR Balanced Audio Output |
| 7. CH-B Function Buttons    | 14. CH-A Antenna Input (BNC)            |



1. RF Radio Intensity
2. AF Radio Intensity
3. Channel Display
4. Frequency Display
5. Signal Channel Display
6. Battery Level

### HANDHELD MICROPHONE TRANSMITTERS



1. Grill
2. LED Control Display
3. Infrared Receiver
4. Power Switch
5. Battery Compartment Cover\*
6. Internal Antenna – Colored Ring

### INSTALLATION LOCATION GUIDELINES

There are many factors that can affect and/or interrupt the wireless UHF signal. These factors can include walls, glass, metal objects and surfaces, other digital or electronic devices (CD/DVD/Media players, computers, laptops, Wi-Fi devices, cell phones, wireless phones, two-way radio communication devices, and wireless remote controls), electronic appliances, and people.

Therefore, it is highly recommended to position the wireless receiver away from the above-mentioned items and a minimum of **3.0 ft. (1m)** above audiences and/or above ground level. Careful planning and testing of the selected installation location is critical to ensure optimum and reliable wireless operation.

3.0 ft (1m)  
Above Ground



### USING MULTIPLE WM-219 UNITS AT THE SAME TIME

When using multiple WM-219 units at the same time within 100 meters of each other, a different frequency must be set for each microphone to avoid inference issues.

**INSTALLATION AND POWER**

1. Place receiver on a flat non-metal surface.
2. Connect both included UHF antennas to the back of the receiver.
3. Position both UHF antennas vertically and ensure they are fully extended.
4. Turn both Channel A and B Volume Control Dials counter-clockwise to (-).
5. Connect 3pin XLR audio cable to Balanced Channel A and B outputs.
6. Connect ¼" audio cable to Audio Mix Out.
7. Connect included power supply to back of receiver.
8. If installing receiver in a 19-inch rack, follow steps below.
  - a) Connect included (2) BNC antenna extension cables to back of receiver
  - b) Install included (2) Rack Ears to both sides of receiver with included screw kit
  - c) Route antenna BNC extension cables from back of receiver to Rack Ears
  - d) Secure antenna BNC extension cables to Rack Ears
  - e) Connect 3pin XLR audio cable to Balanced Channel A and B outputs.
  - f) Connect ¼" audio cable to Audio Mix Out.
  - g) Connect included power supply to back of receiver.
  - h) Install receiver into 19-inch rack space, routing cables accordingly
  - i) Secure receiver into 19-inch rack space with rack screws (not included)
  - j) Connect both included UHF antennas to the Rack Ears on each side
9. Power ON receiver.
10. Power ON both microphones by pushing the power switch.
11. Check battery levels of both microphones and replace batteries if needed.

**MICROPHONE BATTERY REPLACEMENT**

1. Power microphone OFF.
2. Unscrew the battery compartment cover off and Insert batteries as indicated.
3. Screw on the battery compartment cover securely.
4. Power ON microphone and check battery level on LED Control Display.

**OPERATION****MANUAL FREQUENCY SETTING**

1. Select one of the microphones and power it ON.
2. On the receiver, press the **SET** button for channel A or B and **CH**: will begin flashing the current frequency set for that channel on the LED display. Immediately press the **SCAN** or **ACT** buttons for the same channel (A or B) to scroll up or down the 100 total frequency presets.
3. Press the **SET** button to select/lock a desired frequency for the channel (A or B).
4. Hold the desired microphone close to the wireless receiver so both the infrared receiver on the microphone and the infrared transmitter on the wireless receiver are in a direct unobstructed line of sight. Press the **ACT** button for the selected frequency to be transmitted to the microphone.
5. Confirm the desired frequency was set by pushing the power button on the microphone to toggle between **CH** and **MHz** on the LED display. If successful, the **CH** and **MHz** on the receiver channel and on the microphone should match.
6. Repeat this process for the other channel and microphone or repeat this process again if there are any issues.
7. Adjust the volume control dials for each channel (A&B) accordingly and test.



## OPERATION (continued)

### AUTO FREQUENCY SETTING

1. Select one of the microphones and power it ON.
2. On the receiver, press the **SCAN** button for channel A or B and the receiver will begin to scan for the best available frequency.
3. After the receiver completes its search and sets the frequency on the LED Control Display, hold the desired microphone close to the wireless receiver so both the infrared receiver on the microphone and the infrared transmitter on the wireless receiver are in a direct unobstructed line of sight. Press the **ACT** button for the selected frequency to be transmitted to the microphone.
4. Confirm the desired frequency was set by pushing the power button on the microphone to toggle between **CH** and **MHz** on the LED display. If successful, the **CH** and **MHz** on the receiver channel should match on the microphone.
5. Repeat this process for the other channel and microphone or repeat this process again if there are any issues.
6. Adjust the volume control dials for each channel (A&B) accordingly and test.

### TROUBLE SHOOTING TIPS

PROBLEM	POSSIBLE CAUSE	REMEDY
NO Sound	<ol style="list-style-type: none"><li>1. AC Adapter not connected to Receiver or power source.</li><li>2. Receiver and/or Microphone is OFF.</li><li>3. Receiver is not connected to mixer or amplifier.</li><li>4. Volume control on Receiver is at zero.</li><li>5. Transmitter and Receiver frequencies are not identical.</li><li>6. Transmitter ON/OFF switch is at "OFF" or "MUTE"</li><li>7. Transmitter batteries are not inserted properly or are missing.</li><li>8. Transmitter batteries are dead.</li><li>9. Receiver is invisible from Transmitter location.</li><li>10. Receiver is too close to metal objects.</li></ol>	<ol style="list-style-type: none"><li>1. Connect AC Adapter to Receiver and/or power source.</li><li>2. Turn power switch to ON position.</li><li>3. Connect Receiver output to mixer and/or amplifier input.</li><li>4. Turn Volume control dial clockwise.</li><li>5. Use the same frequency for the Transmitter and the Receiver.</li><li>6. Set Transmitter ON/OFF switch to "ON"</li><li>7. Insert batteries in the corresponding direction as indicated by "+" and "-".</li><li>8. Replace batteries.</li><li>9. Relocate the Receiver to a direct line of sight location to the Transmitter.</li><li>10. Keep Receiver away from metal objects that may cause interference.</li></ol>
Noise, Crackling, Unwanted Signals	<ol style="list-style-type: none"><li>1. Antenna location.</li><li>2. Interference from TV, Radio, or defective electrical appliances or installations.</li></ol>	<ol style="list-style-type: none"><li>1. Relocate the Receiver to a direct line of sight location to the Transmitter.</li><li>2. Power off interference sources and/or defective appliances or change the frequency used by these devices.</li></ol>
Distortion	<ol style="list-style-type: none"><li>1. Interference from other wireless systems, TV, Radio, or defective electrical appliances or installations.</li></ol>	<ol style="list-style-type: none"><li>1. Power off interference sources and/or defective appliances or change the frequency used by these devices.</li></ol>
Momentary loss of sound at some locations within performance area	<ol style="list-style-type: none"><li>1. Antenna location.</li></ol>	<ol style="list-style-type: none"><li>1. Relocate the Receiver to a direct line of sight location to the Transmitter. If dead spots persist, mark these areas and avoid performing in or around them.</li></ol>

## TECHNICAL SPECIFICATIONS

### PERFORMANCE

Carrier Frequency: UHF 540-599MHz (US) / 863-865Mhz (EU)

Frequency Stabilization: <  $\pm 20$ PPM

Dynamic Range: >98dB

Total Harmonic Distortion: <1%

Frequency Response: 50Hz ~ 14Hz

Audio Output Level: 0-300mV ¼ TRS | 0-2V XLR Balanced

Range: 300 ft.\* (980m) Unobstructed Line of Sight

\*May vary based on line of sight, UHF signal retention and/or interference.

⊙SLA Factor

### RECEIVER

Power Supply: 110V

DC Power Supply: 12VDC

Max Power Consumption: 3W

Signal/Noise Ratio: >85dB

Image and Spurious Rejection: >90dB

Neighbor Interference Ratio: >90dB

Receiving Sensitivity: >90dB

### TRANSMITTERS (x2)

Power: +10dBm

Modulation Type: FM

Battery Voltage: 1.5V x2 AA Batteries (not included)

Battery Life with Full Charge: 6-10 Hours

### CONTROL / CONNECTIONS

(2) Rotary Channel Volume Dials

(2) Channel LCD Control Displays

(2) 3pin Balanced XLR Audio Outputs

(2) BNC Antenna Inputs

(1) ¼" TRS Mix Audio Patch Output

(1) Power Switch

(1) DC Power Supply Input

### RECEIVER SIZE / WEIGHT

Length: 16.5" (420mm)

Width: 7.09" (180mm)

Height: 1.7" (43mm)

Weight: 4.25 lbs. (1.9 kg)

### ELECTRICAL

(Input) AC 100-240V, 50/60Hz / (Output) DC 12V,  $\pm 0.5$ , 500mA Min.

Please Note: Specifications and improvements in the design of this unit and this manual are subject to change without any prior written notice.

Dear Customer,

The European Union has adopted a directive on the restriction / prohibition of the use of hazardous substances. This directive, referred to as ROHS, is a frequently discussed topic in the electronic industry.

It restricts, among other things, six materials: Lead (Pb), Mercury (Hg), hexavalent chromium (CR VI), cadmium (Cd), polybrominated biphenyls as flame retardant (PBB), polybrominated diphenyl, also a flame retardant (PBDE). The directive applies to nearly all electronic and electrical devices whose mode of operation involves electric or electromagnetic fields – in short: each kind of electronics we have around us in our households or at work.

As manufacturers of products of the brands of AMERICAN AUDIO, AMERICAN DJ, ELATION Professional and ACCLAIM Lighting, we are obligated to comply with the RoHS directive. Therefore, as early as two years prior to the directive coming into force, we started our search for alternative environmentally friendly materials and manufacturing processes.

Well before the RoHS directive took effect, all of our products were manufactured meeting the standards of the European Union. With regular audits and material tests we can still assure that the components we use are always RoHS-compliant and that the manufacturing process, as far as the state of technology allows, is environmentally friendly.

The ROHS directive is an important step to the protection of our environment. We, as manufactures, feel obligated to make our contribution in this respect.

Every year thousands of tonnes of electronic components, which are harmful to the environment, end up at the waste disposals around the world. To ensure the best possible disposal or recovery of electronic components, the European Union has adopted the WEEE directive.

The WEEE-system (Waste of Electrical and Electronic Equipment) can be compared with the system of the “Green Spot”, which has been in use for several years. The manufactures have to make their contribution to the utilization of waste at the time they release the product. Money resources obtained by doing so will be applied to develop a common system of waste management. Thereby we can ensure professional and environmentally friendly scraping and recycling program.

As manufactures, we are part of the German system of EAR and we make our contribution towards it.

(Registration in Germany: DE41027552)

That means that products of AMERICAN DJ and AMERICAN AUDIO can be left in the collection points free of charge and they will be used in the recycling program. Products of ELATION Professional, which are used only by professionals, shall be handled by us. Please send Elation products directly to us at the end of their lifetime so that we can professionally dispose of them.

Like the above ROHS, the WEEE directive is an important contribution to the environment protection and we are glad to help to clean the environment with this disposal system.

We are happy to answer any of your inquiries and welcome your suggestions at: [info@americandj.eu](mailto:info@americandj.eu)



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