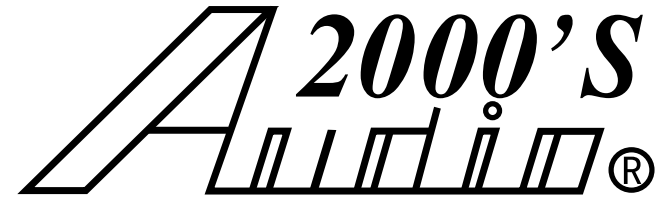




Notes:



**PROFESSIONAL UHF WIRELESS IN-EAR
MONITORING SYSTEM WITH 100
ADJUSTABLE FREQUENCIES**

AWM6304U

OWNER'S MANUAL



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WARNING

To prevent fire or shock hazard, do not expose the unit to rain or moisture.

Dangerously high voltages are present inside the unit. Do not open the cabinet. Refer servicing to qualified personnel only.

PRECAUTIONS

On Safety

- * Operate only on designated AC power supply (120V AC in North America).
- * Should any liquid or solid object fall into the cabinet, unplug the unit and have it checked by qualified personnel before operating it any further.
- * Unplug the unit from the wall outlet or set the Master switch to OFF if it is not to be used for several days.
- * To disconnect the cord, pull it out by the plug. Never pull the cord itself.

On Installation

- * Allow adequate air circulation to prevent internal heat build-up. Do not place the unit on surfaces (rugs, blankets, etc.) or near materials (curtains, draperies) that may block the ventilation holes.
- * Do not install the unit in a location near heat sources such as radiators or air ducts, or in a place subject to direct sunlight, excessive dust, mechanical vibration or shock.

On Repackaging

Do not throw away the carton and packing materials. They make an ideal container in which to transport the unit. When shipping the unit to another location, repack it as it was originally packed at the factory.

PACKAGE CONTENTS

<u>Items</u>	<u>Quantities</u>
AWX6304U Transmitter	1
AWR6404U Wireless Receiver	1
13-15VDC Adaptor, 500mA	1
Antenna	1
1/4" to 1/4" Audio Cables	2
1.5V AA Batteries	2
Owner's Manual	1

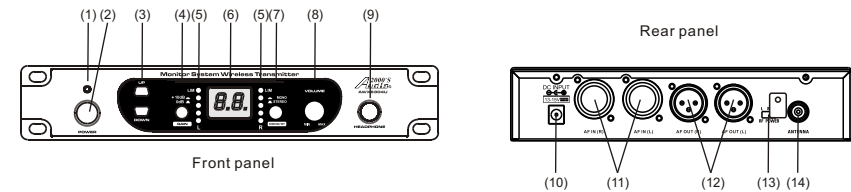
AWM6304U SYSTEM

FEATURES

1. UHF Band Frequencies
2. Frequency Agile with Phase-Lock Loop (PLL)
3. Microcontroller (CPU) Controlled
4. Mono Mode or Stereo Mode
5. Integrated Antenna for Effective RF Output and High Transmission Quality
6. Low-Battery Indicator on the Receiver
7. Two Balanced Combo Audio Inputs and Two Balanced Audio Outputs on the Transmitter
8. One Audio Level Control Knob
9. Rugged Transmitter Chassis
10. Operating Range up to 100ft
11. 13 – 15V DC Power Supply

SYSTEM FUNCTIONS

AWX6304U TRANSMITTER

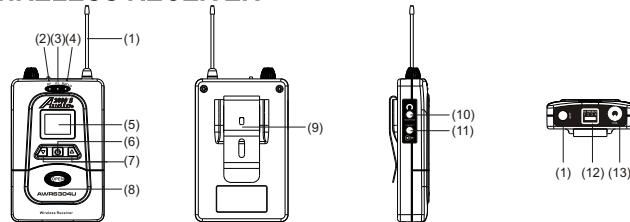


1. **POWER-ON LED INDICATOR** --- When the AWX6304U transmitter power is turned on, this power LED indicator will be on.
2. **POWER ON/OFF BUTTON** --- This button is to be used as a power On/Off switch. When the AWX6304U transmitter power is off, press this button steadily until the power is turned on. When the power is on, the LCD display will light up. While the power is on and trying to turn off the power, press this button steadily until the power is turned off.
3. **CHANNEL SELECTION BUTTONS (“UP” & “DOWN”)** --- Press the “DOWN” button to decrease the wireless channel number. Press the “UP” button to increase the wireless channel number.
4. **“GAIN” BUTTON** --- The audio level gain is to be raised by 10dB when the “GAIN” button is depressed. When the “GAIN” button is released from its depressed position, the audio level will stay at its

original gain, namely 0dB gain. The 10dB gain can be used when the input signal level is low.

5. **AUDIO LEVEL INDICATORS** --- These audio level indicators are used to indicate the audio output levels. There are two audio level indicators, one for the left channel (L) and another for the right channel (R).
6. **CHANNEL NUMBER LED DISPLAY**
7. **MONO/STEREO SELECTION BUTTON** --- When this button is depressed, the audio signal is to be transmitted in mono. When this button is released from its depressed position, the audio signal will be transmitted in stereo.
8. **AUDIO LEVEL ADJUSTMENT KNOB** --- This knob is used to raise or lower the level of the audio signal transmitted to the receiver.
9. **¼-inch PHONE JACK (STEREO)**
10. **13-15VDC INPUT (Tip Positive)**
11. **BALANCED/UNBALANCED AUDIO INPUT JACKS (XLR-1/4" TRS COMBO JACKS)** --- There are two balanced/unbalanced combo audio input jacks, one for the left channel (L) and the other for the right channel (R). The wiring of these combo jacks is as follows:
 - (a) **XLR**
 - Pin 1: Shield or Ground
 - Pin 2: Positive (+) or "Hot"
 - Pin 3: Negative (-) or "Cold"
 - (b) **¼" TRS**
 - Tip (T): Positive (+) or "Hot"
 - Ring (R): Negative (-) or "Cold"
 - Sleeve (S): Shield or Ground
 - (c) **¼" TRS to be connected to a ¼" TS Connector:**
 - Tip (T): Positive (+) or "Hot"
 - Ring (R) and Sleeve (S): Shield or Ground
12. **BALANCED AUDIO OUTPUT JACKS (XLRM)** --- There are two balanced audio output jacks, one for the left channel (L) and the other for the right channel (R).
13. **RF POWER SETTING** --- This setting is set to have the RF power of 10mW.
14. **ANTENNA JACK**

AWR6304U WIRELESS RECEIVER



1. **ANTENNA**
2. **RADIO FREQUENCY (RF) SIGNAL INDICATOR (Green)** --- The RF signal indicator is used to indicate that the radio signal is being received from the AWR6304U wireless transmitter. If the RF indicator is ON while the AWR6304U wireless transmitter is OFF, there is another RF signal source at the same frequency. In this case, change the system wireless frequency to avoid any signal interference.
3. **POWER LED INDICATOR (Orange)** --- When the AWR6304U receiver power is turned on, this power LED indicator will be on.
4. **LOW BATTERY-POWER INDICATOR** --- This red LED is to indicate that the power level of the AA batteries in the battery housing is low and need to be replaced. When the AA batteries are still fresh, this red LED light will flash once when the receiver power is turned On.
5. **LCD DISPLAY** --- Refer to the following section for the details.
6. **POWER ON/OFF & NAVIGATION BUTTON ("⏻")** --- This button is to be used as a power On/Off switch and as a menu-navigation key. When the AWR6304U receiver power is off, press this button steadily until the power is turned on. When the power is on, the LCD display will light up. While the power is on, press this button steadily until the power is turned off. While the power is on, this button is used to navigate among the menu icons on the LCD display (pressing this button once each time to navigate one menu icon at a time).
7. **CHANNEL-SELECTION & FUNCTION-SETTING BUTTONS ("▲" & "▼")** --- There are two channel

selection buttons ("▲" and "▼"). The "▲" button is used to increase the wireless channel number (and the frequency setting). The "▼" button is used to decrease the wireless channel number (and the frequency setting).

8. BATTERY COVER

9. BELT CLIP

10. **3.5mm EARPHONE JACK (STEREO)** --- This 3.5mm earphone jack is to be connected to the supplied earphones. If any other earphones are to be used, the earphone impedance needs to be 16 Ohms or higher.

11. **3.5mm TRS LINE-OUT JACK** --- This 3.5mm line-out jack is to be connected to another audio device (Do not connect any earphones to this jack.). The terminals of this 3.5mm TRS jack is as follows:

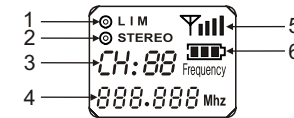
- Tip (T): Left
- Ring (R): Right
- Sleeve (S): Ground

12. **EQUALIZATION-TYPE SELECTION SWITCH** --- Use this switch to select the desired equalization type. There are four equalization types as follows:

- 1 - BYPASS
- 2 - ELEVATING BASS
- 3 - ELEVATING TREBLE
- 4 - ELEVATING BASS AND TREBLE

13. **VOLUME CONTROL KNOB** --- This knob is used to raise or lower the audio level.

AWR6304U RECEIVER LCD DISPLAY AND CONTROL

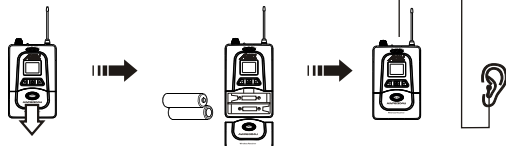


1. **AUDIO LIMITER SETTING (LIM)** --- This "LIM" icon is used to indicate that the audio limiter function is enabled or disabled. When the "LIM" icon light is on, the audio limiter function is enabled and the audio limiter will prevent the signal peaks and reduces distortion. However, **the audio limiter does NOT protect your ears from high sound pressure levels that could damage your ears.** When the "LIM" icon light is off, the audio limiter function is disabled. To enable or disable the audio limiter function,
 - (a) Press the "▲" button steadily until the "LIM" icon starts to blink.
 - (b) While the "LIM" icon is blinking, press the "▲" or "▼" button to turn on or turn off the "LIM" setting. Once the "LIM" setting is turned on, the "LIM" light will stay on.
2. **STEREO/MIX AUDIO SETTING (STEREO)** --- This "STEREO" icon is used to indicate that the stereo function is enabled or disabled. When the stereo function is enabled, the transmitted audio signal is stereophonic. When the stereo function is disabled, the transmitted audio signal is in mono. When the "STEREO" icon light is on, the stereo function is enabled. When the "STEREO" icon light is off, the stereo function is disabled. To enable or disable the stereo function,
 - (a) Press the "▲" button steadily until the "STEREO" icon starts to blink.
 - (b) While the "STEREO" icon is blinking, press the "▲" or "▼" button to turn on or turn off the "STEREO" function. Once the "STEREO" function is turned on, the "STEREO" light will stay on.
3. **CHANNEL NUMBER DISPLAY** --- This display is used to show the wireless channel number setting of the AWR6304U receiver. To work properly, this frequency setting must be the same as the channel number (refer to numeral 6 on page 3) displayed on the AWR6304U transmitter.
4. **FREQUENCY DISPLAY** --- This display is used to show the radio frequency (in MHz) setting of the AWR6304U receiver.
5. **RF SIGNAL RECEPTION INDICATOR ("📶")**
6. **BATTERY LEVEL INDICATOR ("🔋")**

QUICK SETUP

A. Remove packing material

B. Set up the AWR6304U receiver

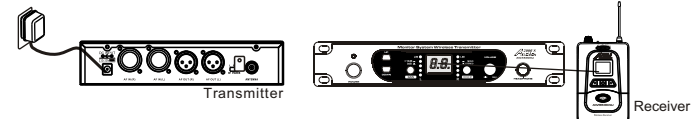


1. Open the battery cover of the body-pack receiver by pushing the battery cover in the direction away from the LCD display.
2. Place two 1.5V AA batteries into the battery housing with the battery polarity orientations as indicated.
3. Slide the cover in the direction toward the LCD display to close the battery cover. Plug the supplied earphones into the earphone output jack on the body-pack receiver.
4. Turn on the power of the body-pack receiver. The LCD will display the current state of the receiver.
5. Check the RF signal reception indicator (“”) (refer to numeral 5 on page 4). If there is no RF signal (“”), proceed to next section (Section C). If the RF signal is present (“”), change the wireless frequency of this AWR6304U receiver. Repeat this step until no RF signal (“”) showing on this receiver.

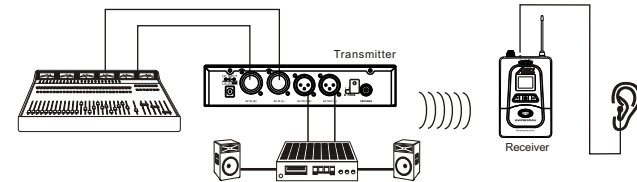
C. Install the AWX6304U transmitter

1. Place the AWX6304U transmitter at least 3.5 feet (1 meter) away from the ground and all walls. Also, keep the AWX6304U transmitter as far away as possible from any electromagnetic noise sources.
2. Mount the antenna onto the antenna jack. The antenna needs to be set at a 45-degree angle. Make sure that the antenna is NOT enclosed in a large metal body.
3. Plug the supplied AC/DC adaptor 13-15VDC output connector to the AWX6304U transmitter's DC input, and then plug the AC input of the adaptor to a 120V AC outlet (North America).
4. There are two ways to connect the inputs of the AWX6304U transmitter to the audio outputs of a mixer or a sound system: (1) Use the supplied unbalanced audio cables (two cables each with 1/4" TS connectors on both ends) to connect the unbalanced inputs (both 1/4" jack) to the 1/4" audio outputs on a mixer or a sound system; or (2) use two balanced audio cables (cables with a male XLR connector at one end and a female XLR connector on the other end OR cables with 1/4" TRS connectors on both ends; balanced cables not included in the package) to connect from both the balanced inputs to two balanced audio outputs on a mixer or a sound system.
5. Turn the audio level adjustment knob all the way to the minimal audio position. Turn on the AWX6304U transmitter by pressing the power On/Off button. After the transmitter is turned on, the LCD on the front panel will display the current state of the system. (**Note:** The audio level adjustment knob will be adjusted to its optimal position after the receiver is turned on as discussed in the following section.)
6. If the frequency of the AWR6404U receiver was changed in step 5 of the previous section (Section B), change the frequency of this AWX6304U transmitter to match the receiver frequency.

D. Setting up the AWM6304U system



1. Adjust the audio level control knob on the mixer or the sound system, which is connected to the AWX6304U audio inputs, to the 12-o'clock position and then adjust the audio level adjustment knob on the AWM6304U to have an optimal sound level. If the sound seems abnormal, it may be caused by overdriven inputs of the AWX6304U. Adjust the audio level adjustment knob on the mixer or sound system to a lower level and turn the audio level control knob on the AWM6304U to a higher level until the abnormal sound quality is eliminated. The AWM6304U is now ready.
2. The frequencies of all new AWM6304U systems are as preset or adjusted in step 5 of Section B and step 6 of Section C. If more than one AWM6304U system is to be used at the same time at the same location, the frequencies of the additional AWM6304U systems need to be adjusted to be different to avoid any frequency interference.



Caution

This system is able to produce a high acoustic pressure level. The nominal sound pressure from the earphones can exceed 85dB. To prevent ears from damages, the time of exposing to high sound pressure levels should be shortened. The following table illustrates the relationship between the maximum allowed sound exposure time duration and the sound level (in dB)

SOUND PRESSURE LEVEL	EXPOSURE DURATION PER DAY
90 dB	8 Hours
95 dB	4 Hours
100 dB	2 Hours
105 dB	1 Hour
110 dB	30 Minutes
115 dB	15 Minutes
120 dB	Damage may occur

OPERATION NOTES

1. The AWR6304U needs to be turned off before changing the AA batteries.
2. Signal dropout or unexpected noise may be caused by a low battery or by an excessive distance between the transmitter and the receiver. If you encounter signal dropout or unexpected noise, please check the batteries first. If the batteries are still fresh, try to readjust the antennas on the AWX6304U transmitter.
3. Avoid placing the transmitter in a corner to prevent any RF reception deterioration.
4. Avoid placing the transmitter antennas close to an obstruction or close to any metal surface.
5. Try to place the transmitter as far away from the digital equipment, including computers and CD players, as possible.
6. If more than one AWM6304U wireless transmitters are stacked together or placed in a rack, do not let the antennas touch each other or cross each other.
7. Before the AWM6304U is to be used in a new location, place the AWX6304U transmitter at the intended location and walk through the area with the receivers to locate any radio frequency blind spots, where a momentary loss of sound or short period of noise may occur whenever the receivers are moved to these spots.
8. Do not drop the receiver on the floor or strike the receiver with any object.

9. Always turn off the receiver and remove the batteries if the receiver is not to be used for a period of time to prevent the receiver from being damaged by leaking batteries.

SPECIFICATIONS

AWX6304U TRANSMITTER

FREQUENCY RANGE	UHF BAND
BANDWIDTH	25MHz
OSCILLATION MODE	PLL SYNTHESIZED
FREQUENCY STABILITY	±0.005% (32°F – 122°F)
MODULATION MODE	FM STEREO MODULATION
OUTPUT POWER	<10mW
SPURIOUS REJECTION	-60dBc
MAX. DEVIATION RANGE	75KHz
FREQUENCY RESPONSE	50 – 15000Hz
T.H.D.	<0.5% (AT MAX. DEVIATION RANGE @ 1KHz)
AUDIO OUTPUT	LINE LEVEL X 2, XLR
AUDIO INPUT	¼" PHONE JACKS X 2
HEADPHONE OUTPUT	¼" STEREO PHONE JACK WITH ADJUSTABLE VOLUME
HEADPHONE OUTPUT IMPEDANCE	≥16Ω
ANTENNA CONNECTOR	TNT (50Ω IMPEDANCE)
DIMENSIONS (W X D X H)	9.4" X 5.4" X 2.0" (240 X 137 X 50 mm)

AWR6304U RECEIVER

FREQUENCY RANGE	UHF BAND
BANDWIDTH	25MHz
OSCILLATION MODE	PLL SYNTHESIZED
FREQUENCY STABILITY	±0.005% (32°F – 122°F)
MODULATION MODE	FM STEREO MODULATION
MAX. DEVIATION RANGE	±68KHz
RECEIVING SENSITIVITY	-107dBm
SQUELCH LEVEL	-100dBm -90dBm -70dBm
T.H.D.	1%
MAX. S/N RATIO	94dB
FREQUENCY RESPONSE	80 – 15000Hz, ±3dB
STEREO SEPARATION	35dB
OUTPUT JACK	3.5mm STEREO HEADPHONE JACK
OUTPUT POWER (@32Ω)	2X50mW UNDER 1KHz (T.H.D. 3%)
HEADPHONE IMPEDANCE	≥16Ω
POWER SUPPLY	2 X AA BATTERIES
CURRENT CONSUMPTION	150mA
DIMENSIONS (W X D X H)	4.2" X 2.6" X 1.1" (107 X 65 X 27.7 mm)

TROUBLESHOOTING

Should problems occur, they are, in many cases, due to simple operation mistakes or the like. On the basis of the following checks, you will be able to rectify a number of problems yourself without difficulty. If the problem cannot be remedied after the following checks, please consult your dealer.

PROBLEM	POSSIBLE CAUSES	SOLUTIONS
No sound and no RF signal	The power of the transmitter is off.	Turn on the transmitter.
	Incorrect AA-battery polarity in the receiver.	Correct the AA-battery polarity.
	Antenna is not on the transmitter or bad antenna connection.	Install the antenna or check the antenna connection.
	Receiver too far away from the antenna or RF signal blocked.	Reposition the receiver to closer area or remove the RF signal block.
No sound while RF and AF signals normal	Transmitter volume turned to minimum	Adjust the volume control knob to have an optimal volume output.
	Transmitter audio cable is missing or defective.	Connect, repair or replace the audio cables.
	Volume control of the sound system connected to the AWX6304U transmitter is set to minimum.	Adjust the volume control on the sound system which is connected to the AWX6304U transmitter.
No sound while RF signal is normal and AF signal does not exist.	The earphones are defective.	Replace the earphones.
Loud noise from receiver only when the transmitter is off.	Interference signal at that frequency	Select another operating frequency.
		Move the transmitter to another location.
	Transmitter is placed too close to an interference source, such as a computer, digital device, or CD player.	Select another operating frequency. Change to a channel with a different frequency.
Loud noise from receiver even when the transmitter is on.	Another transmitter is using the same frequency.	Select another operating frequency.
	Interference signal at that frequency	Move the transmitter to another location.
	Transmitter is placed too close to an interference source, such as a computer, digital device, or CD player.	Select another operating frequency. Move transmitter to another location
Distorted sound	Low receiver battery level	Replace receiver battery.
	The volume control on the transmitter is set too high, overloading the receiver input circuit.	Turn on the audio limiter on the AWR6304U receiver.
Short range or signal dropouts.	Low receiver battery level.	Replace receiver battery.
	Interference Signal	Move the obstacles or move the transmitter away from nearby metal objects.

	Too many obstacles between the receiver and transmitter.	Reposition the transmitter. If the momentary loss of sound problem cannot be removed, walk through the performing area and mark "Blind" spots. Avoid these "Blind" spots during performance.
	Radio frequency (RF) blind spots.	Walk through the performing area and mark "Blind" spots. Avoid these "Blind" spots during performance.

SERVICE INFORMATION

SHIPPING DAMAGE

If the shipping carton is found to be damaged, notify the delivery company immediately. Save the damaged carton as evidence for the delivery company to inspect. It is the responsibility of the consignee to file a claim with the delivery company for any damaged that occurs during shipping. In the case that the shipping carton is in good condition but the unit is damaged or defective, call **Audio2000'S®** at 805/523-2759.

FACTORY SERVICE

If the equipment needs factory service, call **Audio2000'S®** at 805/523-2759 for a Return Authorization number (RA number) and the address of the authorized service representatives. Insure and ship the product, prepaid, in its original carton along with proof of purchase in the form of a bill of sale or receipted invoice to the above address. Please clearly write the RA number on the shipping carton. Also enclose a note describing the problem along with any other helpful information such as where and how the unit was used.

LIMITED WARRANTY

H&F Technologies, Incorporated (H&F) hereby warrants that **Audio2000'S®** products will be free from defects in material and workmanship for a period of 1 (one) year from date of purchase. At its option, H&F will repair or replace the defective product and promptly return it to you.

The Limited Warranty will not cover any item that has been, in H&F's estimation, subject to alteration, misuse, neglect, accident or improper installation. In addition, any service not performed by H&F or an authorized service center will terminate terms of this warranty. Normal wear and tear of this product will not be covered by this or any implied warranty.

No liability will be accepted for damages/loss directly caused from the use of this product. H&F's liability shall be limited to the repair/replacement of this product if found to be defective.

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