

**M2**  
Wireless In-Ear Monitor System

wireless  
wireless  
wireless  
wireless  
wireless

**CE 0168** ⓘ

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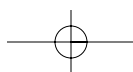
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**WARNING!**

USE AS LOW A VOLUME AS POSSIBLE. PERMANENT HEARING DAMAGE CAN RESULT FROM USING THIS SYSTEM AT EXCESSIVE VOLUMES.

For safe operation of this in-ear monitor system, do not listen at excessive sound pressure levels.

Most national safety and health administrations have established guidelines for maximum time being exposed to sound pressure levels before hearing damage occurs.

85 dB(A) SPL at 8 hours  
88 dB(A) SPL at 4 hours  
91 dB(A) SPL at 2 hours  
94 dB(A) SPL at 1 hour  
97 dB(A) SPL at 30 minutes  
100 dB(A) SPL at 15 minutes

**120 dB(A) SPL — avoid or hearing damage may occur**

In live settings it is difficult to make exact measurements of Sound Pressure Levels (SPL) present at the eardrum, which is affected not only by the In-Ear Monitor volume, but by ambient sound on the stage and other factors.

To protect your ears from hearing damage:

- Use the in-ear monitor system at the lowest volume possible; turn up the volume only enough to hear
- Be aware that ringing in your ears may indicate that the volume is set too high.
- Have your ears examined regularly by an audiologist.
- If wax builds up in your ears, stop using the in-ear monitor system until you have seen an audiologist.
- To avoid infections, use an antiseptic to wipe the earphones before and after using the system.
- Stop using the earphones if you experience ear discomfort or infection.

This device complies with the European R&TTE directive 1999/05/EC. Operation is subject to the condition that this device does not cause harmful interference. For Licensing information, please contact your local dealer or radio authority.

This device complies with part 15 of the FCC Rules. Operation is subject to the condition that this device does not cause harmful interference.

This device complies with INDUSTRY CANADA R.S.S. 210, en conformité avec IC: RSS-210/CNR210.

Operation is subject to the following conditions: 1) This device may not cause harmful interference and 2) this device must accept any interference received, including interference which may cause undesired operation. Changes or modifications not expressly approved by Audio-Technica could void your authority to operate this equipment.

**Notice to individuals with implanted cardiac pacemakers or AICD**

**devices:** Any source of RF (radio frequency) energy may interfere with normal functioning of the implanted device. All wireless microphones have low-power transmitters (less than 0.05 watts output) which are unlikely to cause difficulty, especially if they are at least a few inches away. However, since a "body-pack" mic transmitter typically is placed against the body, we suggest attaching it at the belt, rather than in a shirt pocket where it may be immediately adjacent to the medical device. Note also that any medical-device disruption will cease when the RF transmitting source is turned off. Please contact your physician or medical-device provider if you have any questions, or experience any problems with the use of this or any other RF equipment.

**CAUTION!** The circuits inside the receiver and transmitter have been precisely adjusted for optimum performance and compliance with federal regulations. Do not attempt to open the receiver or transmitter. To do so will void the warranty, and may cause improper operation.

**Warning:** To prevent fire or shock hazard, do not expose this appliance to rain or moisture.

- To avoid electrical shock, do not open the cabinet. Refer servicing to qualified personnel only.
- Do not expose this apparatus to drips and splashes.
- Do not place any objects filled with liquids such as vases on the apparatus.
- Do not install this apparatus in a confined space such as a bookcase or similar unit.
- The apparatus should be located close enough to the AC outlet so that you can easily grasp the AC adapter at anytime.

Dispose of batteries in an environmentally responsible manner according to the local laws and regulations of your region. Some batteries may be recycled, and may be accepted for disposal at your local recycling center. If you are not able to identify the applicable rules in your area, please check the instructions of the battery manufacturer.

Do not dispose of batteries in a fire or trash incinerator, or leave batteries in hot places such as an automobile under direct sunlight. Do not store batteries near an oven, stove, or other heat source.

**About RF Interference**

Please note that wireless frequencies are shared with other radio services. According to Federal Communications Commission regulations, "Wireless microphone operations are unprotected from interference from other licensed operations in the band. If any interference is received by any Government or non-Government operation, the wireless microphone must cease operation..." If you need help with operation or frequency selection, please contact your local dealer or Audio-Technica. Extensive wireless information also is available at [www.audio-technica.com](http://www.audio-technica.com).

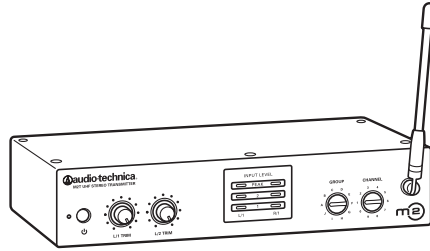
**Warning—Use as low volume levels as possible.**

To prevent damage to your eardrums, never use this system at excessive volume levels. Listening to loud sounds for an extended period may cause temporary or permanent hearing damage.

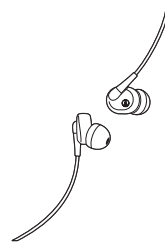
## M2 System Components



**M2R**  
UHF Stereo Receiver



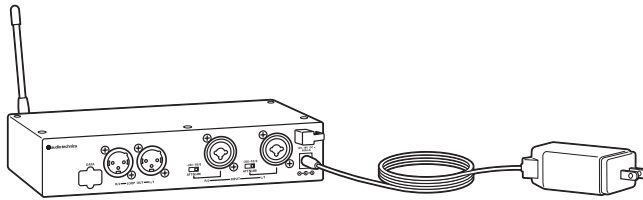
**M2T**  
UHF Stereo Transmitter with  
AC adapter



**EP3**  
Dynamic Earphones

## Quick-start guide

1. Plug in the included AC adapter and connect to transmitter's DC input.

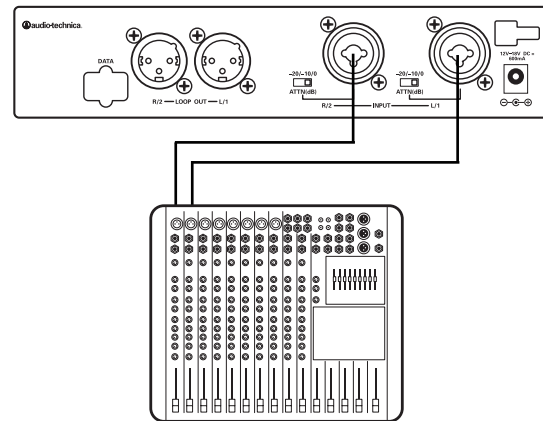


2. Insert 2 AA batteries in the M2R Stereo Receiver following polarity as indicated.

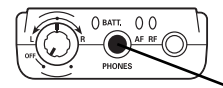


3. Set M2R Stereo Receiver and M2T Stereo Transmitter to the same frequency. (See page 8.)
4. Power on M2R Stereo Receiver with **volume in minimum position**; power on M2T Stereo Transmitter. Check to see that RF LED on M2R Stereo Receiver is illuminated.
5. Power off receiver and transmitter.

6. Connect audio source(s) to inputs on the rear panel of the transmitter.



7. Power on M2T Stereo Transmitter.
8. Adjust attenuator on rear panel of M2T Stereo Transmitter to appropriate level. (See page 5.)
9. Adjust trim level on front panel of M2T Stereo Transmitter, if needed. (See page 8.)
10. Plug supplied Dynamic Earphones into earphones locking output jack on M2R Stereo Receiver. **NOTE: Do not put the earphones in your ears at this point.**



11. Turn on receiver with volume in **minimum position**.
12. With volume on receiver at **minimum position**, put earphones into your ears and gradually increase volume until appropriate level is reached.

## M2 Wireless In-Ear Monitor System – Introduction

**Thank you for buying the Audio-Technica M2 Wireless In-Ear Monitor System.** This feature-rich in-ear monitor system is designed to provide you with comfortable high-fidelity sound on stage.

The M2 is a frequency-agile in-ear monitor system designed to make stage monitoring more effective, comfortable, portable, and intelligible. The M2R Stereo Receiver allows the user to create and control his/her own mix on stage with Personal Mix Control that offers independent control of volume and mix at the receiver. The M2T Stereo Transmitter offers two 1/4"/XLR combo input connectors into which users can connect line-level inputs (from a mixing console, for example). The supplied earphones are equipped with a proprietary Audio-Technica dynamic driver offering a full frequency response and richly detailed high-fidelity

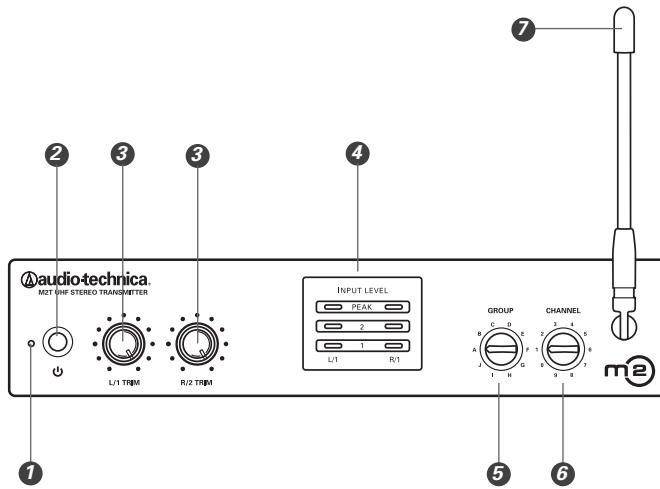
sound. The clean, articulate mix allows performers to hear themselves at comfortable SPLs. The earphones come with three sizes of rubber flexible eartips and a universal-fit foam tip for a custom fit, increased isolation and long-wearing listening comfort.

**Note: M2 "L" Band receivers must be used only with "L" Band transmitters; the same holds true for M2 "M," "E," and "F" Band receivers and transmitters. For multiple-channel applications, as many as ten systems may be used together per frequency band.**

## System Features

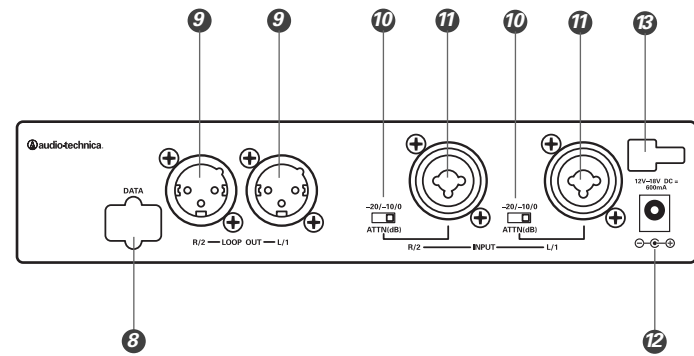
- **High-fidelity sound with clean, articulate mix allows you to hear yourself better at lower volumes**
- **100 selectable UHF channels**
- **Up to 10 simultaneous systems per frequency band**
- **Three receiver modes: Personal Mix, stereo, and mono**
- **Personal Mix Control allows you to adjust your own mix on stage**
- **3.5 mm line-in jack connects to ambient microphone, click track & more**
- **LED indicators provide easy-to-read level monitoring**
- **XLR loop output (true pass-through) connects signal to mixing console, additional IEM system or recording device with no signal degradation**
- **Adjustable squelch eliminates annoying static**
- **Pilot tone protects against RF interference when the transmitter is turned off**
- **Limiters (defeatable) helps protect your hearing from sudden peaks**
- **Portable system is quick to load and set up**
- **Reduces on-stage audio clutter for better overall mix & less feedback**
- **Use any number of M2R Stereo Receivers on the same frequency**
- **Audio-Technica earphones with proprietary dynamic driver offer full frequency response and outstanding isolation**
- **Earphones feature personal fit with 3 sizes of rubber eartips plus an ear-conforming foam tip**

## M2 Transmitter Controls (front panel)



1. **Power LED.** Lights red when power is applied.
2. **Power switch.** Depress once to turn on. Depress again to turn off.
3. **L/1 and R/2 trim control.** Controls level of corresponding audio input.
4. **Input level indicator.** Shows signal level from audio input L/1 and R/2.
5. **Frequency group selector.** Selects frequency group.
6. **Frequency channel selector.** Selects frequency channel.
7. **Flexible antenna.** Permanently attached antenna transmits to receivers.
8. **Data port.** For factory use only.
9. **Loop output.** The R/2 XLR jack duplicates the unprocessed signal of the R/2 input; the L/1 XLR jack duplicates the unprocessed signal of the L/1 input. Not affected by front panel settings.
10. **Attenuators.** Offer -20 dB, -10 dB, and 0 dB attenuation for each input.

## (rear panel)



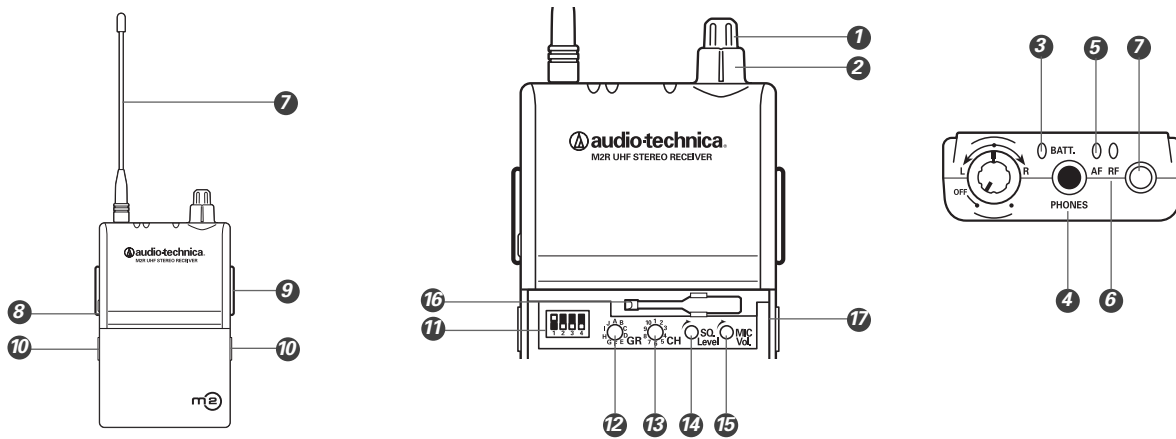
11. **Inputs.** Combination input jacks offer both XLR and 1/4" jacks.
12. **DC input.** Plug the included power supply in here.
13. **Cord hook.** Loop the small DC cord around the cord hook to keep the DC plug from pulling out accidentally.

### Phantom Power

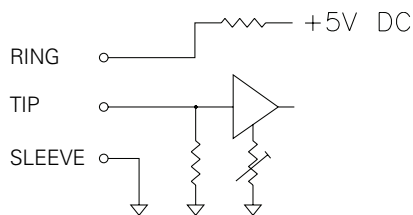
The transmitter does not provide phantom power, but it does allow phantom power to pass through from your phantom power supply to a device plugged into either input jack.

**CAUTION: If connecting instruments to a mixing console through the transmitter loop output, then use a direct box to prevent damage to your instruments and/or equipment from the mixing console's phantom power; i.e. hook your instrument into a direct box, then hook your direct box into the transmitter.**

## M2 Receiver Controls



1. **On/off volume knob.** Turn inner knob to the right; turns on with click. Turn volume up with clockwise turn; turn volume down with counterclockwise turn.
2. **Balance control.** 12 o'clock position offers equal left (L1) and right (R2) level in both ears. In typical setups, turn the knob counterclockwise from the 12 o'clock position to hear more of L1 in both ears; turn the knob clockwise from the 12 o'clock position to hear more of R/2 in both ears. (See page 7 for other detailed functions of the balance control.)
3. **Battery indicator.** Green indicates functioning battery; low battery is red.
4. **Earphones locking output jack.** Connect the supplied earphones to this 3.5 mm locking jack.
5. **AF peak indicator.** Illuminates orange to indicate audio signal is at peak level.
6. **RF indicator.** Illuminates green to indicate RF signal is present.
7. **Removable flexible antenna.** Receives RF signal from the transmitter.
8. **Aux input.** Connect a 3.5 mm line- or mic-level input to this auxiliary input. (Mic- or line-level is selectable by DIP switch inside receiver.) (See page 7.)
9. **Belt clip.** Attach the receiver to your belt or guitar strap with this belt clip.
10. **Battery door release.** Slide tabs in direction of arrows to open battery compartment door.
11. **DIP switches.** (See page 7.)
12. **Frequency group selector.** Use included miniature screwdriver to select frequency group here. (See *How to select a frequency*, page 8.)
13. **Frequency channel selector.** Use included miniature screwdriver to select a frequency channel here. (See *How to select a frequency*, page 8.)
14. **Squelch level.** Use included miniature screwdriver to adjust squelch on receiver, eliminating unwanted background RF noise. Full clockwise is maximum squelch setting (minimum range); full counterclockwise is minimum squelch setting (maximum range). (Squelch level is preset at the factory. See *Squelch control*, page 8.)
15. **Mic volume.** Use included miniature screwdriver to control the level of Aux In (auxiliary input) when using an ambient microphone  
**Note: The mic volume control is functional only when DIP switch #3 is in the MIC position (UP). The mic volume control is disabled with DIP switch #3 is in the LINE level position (DOWN).**
16. **Miniature screwdriver.** For selecting frequency group and channel, adjusting squelch level and controlling the level of your auxiliary input.
17. **Data port.** For factory use only.



**Note: If you connect a stereo source (such as an MP3 player) into the M2R Stereo Receiver's Aux Input, be certain to use a mono adapter to protect your equipment from the DC voltage that is applied to the ring of the stereo connector.**

## DIP Switches

### DIP Switch 1—Limiter

Limits output level to earphones. Up—ON (factory setting); Down—OFF. **IMPORTANT:** Leave limiter ON. This setting protects your hearing from unexpected signal peaks; it does not protect your hearing from long-term exposure to high SPLs.

### DIP Switch 2—Headphones Output

Switches headphones output between Mix and Stereo.

Up—MIX; Down—STEREO (factory setting).

#### Basic Function

In the Stereo setting (Down) the L1 signal goes to the left earphone; the R2 signal goes to the right earphone. In the Mix setting (Up), a combined signal from both the L/1 and R/2 inputs goes to both earphones.

#### Advanced Function

These DIP switches interact with the Mode Switch (4) settings (see below). Please see page 10-11 for diagrams of combined settings.

### DIP Switch 3—Mic/Line

The Mic/Line switch changes the auxiliary input from mic level to line level. Up—MIC; Down—LINE (factory setting). See page 10-11 for more information.

### DIP Switch 4—Mode Switch: Mono/Stereo

The Mode Switch changes the receiving mode from Mono to Stereo.

Up—MONO; Down—STEREO (factory setting).

This switch is used in conjunction with Headphones Output (2) as follows:

Stereo Mode & Stereo Output. See image A on page 10.

2 4 2 in STEREO Output (Down)

 4 in STEREO Mode (Down)

The Stereo/Stereo configuration is used as follows: the L/1 input signal goes to the left earphone; the R/1 input signal goes to the right earphone. Use the receiver's balance control to adjust the stereo image.

Stereo Mode & Mix Output. See image B on page 10.

2 4 2 in MIX Output (Up)

 4 in STEREO Mode (Down)


The Stereo/Mix configuration is used as follows:

The signals from both the L/1 and R/2 inputs go to both the left and right earphones. Use the receiver's balance control as follows: turn clockwise to make R/2 louder and L/1 quieter; turn counterclockwise to make L/1 louder and R/2 quieter. (However you adjust the balance control, both the left and right earphones will have the same total volume).

#### Mono Mode.

(Output setting does not apply here; either Mix or Stereo has the same result)

4 Output (either Up or Down...)

 4 in MONO Mode (Up)

The Mono/Mix configuration is used as follows: there is only one output from your mixer (connected to either the L/1 or R/2 input of your transmitter). This signal will go to both left and right earphones.

When two-signal transmission is not required, use Mono Mode for improved signal-to-noise performance.

## How to install the batteries in your M2R Stereo Receiver



Each M2R Stereo Receiver uses two 1.5V AA batteries, not included. Alkaline type is recommended. Always replace all batteries. Make certain the receiver power is Off before replacing batteries.

1. Open the battery compartment door by sliding tabs in the direction of the arrows and rotating the door open.
2. Observe correct polarity as marked and carefully insert two fresh 1.5V AA alkaline batteries
3. Close the door, making certain the latches click securely in place.

**Note:** If the battery indicator LED turns red, replace the batteries.

## System Operation

### Placement:

#### Location

For best operation, place the transmitter near the performance location. The transmitter should be at least 1 meter (3 feet) from the receiver. Keep antennas away from noise sources such as digital equipment, motors, automobiles and neon lights, as well as away from large metal objects. Audio-Technica recommends that you do not locate the M2T Stereo Transmitter in the same rack with a wireless microphone receiver.

### System set-up:

1. Plug in the included AC adapter and connect to transmitter's DC input.
2. Insert two AA batteries in the receiver, observing polarity as indicated.
3. Set the receiver and transmitter to the same frequency group and frequency channel. (*See below.*) **Note: Do not set more than one transmitter to the same frequency. Multiple receivers may be set to the same frequency.**
4. Power on your receiver (without earphones) with volume in minimum position. **Note: At this point, check to be certain the RF indicator is not illuminated. If it is illuminated before you have powered on the transmitter, this means the frequency you have chosen is already in use. Choose another frequency.**
5. Power on the transmitter.
6. Check the RF LED on your receiver to be certain it is illuminated. (This indicates that it is receiving a signal from the transmitter.)
7. Power off both units (transmitter and receiver).

### Audio set-up:

8. Connect audio source(s) to inputs on the rear panel of the transmitter. There are two combination audio inputs on the back panel; each offers both XLR and 1/4" inputs. Use shielded audio cable for the connection between the transmitter and the audio source (mixer or instrument). **Note: If you want to send the audio signal through your transmitter (to another transmitter or recording device, for instance), use the Loop output connectors on the back of the M2T Stereo Transmitter. The R/2 XLR jack duplicates the unprocessed signal of the R/2 input; the L/1 XLR jack duplicates the unprocessed signal of the L/1 input. These are not affected by front panel settings.**
9. Turn on the transmitter.
10. Set the attenuator on rear panel of transmitter to appropriate level. If Input Level LEDs are consistently red or orange, set the attenuator to -10 or -20 dB or turn the trim down for corresponding audio input.
11. Trim levels are set at the factory to the maximum position; adjust if necessary. (*See below.*)
12. Plug earphones into jack on receiver. Turn the locking ring clockwise until tight. **NOTE: Do not put the earphones in your ears at this point.**
13. Turn on receiver with volume in minimum position.
14. With volume on receiver at minimum position, put earphones into your ears and gradually increase volume until appropriate level is reached.

## How to select a frequency

1. Select a frequency group (A-J) via the Frequency Group Selector on the front panel of the M2T Stereo Transmitter.
2. Next, select a channel (1-10) via the Frequency Channel Selector on the front panel of the M2T Stereo Transmitter.
3. Before turning on your receiver, use the provided screwdriver to set the receiver channel selector switches (*see page 6*) to the same frequency group and channel you have selected on the transmitter. Select frequency groups A-J and channels 1-10. The transmitter may be either on or off when changing channels (frequencies).

Each transmitter/receiver system operates on a choice of 100 switch-selected frequencies per band (10 frequencies in 10 frequency groups). Available frequencies are shown in the chart on page 13. When using multiple transmitters, always use the same frequency group.

M2 "L" Band transmitters must be used only with "L" Band receivers; the same holds true for all the frequency bands (i.e., always use receivers and transmitters that operate in the same band). The Band marking will be found on the antenna of both the M2T Stereo Transmitter and M2R Stereo Receiver.

**Note: Because these frequencies are shared with TV broadcasting (depending on country of use), frequency selection is largely dependent upon which TV broadcast channels are in operation where the wireless system is to be used.**

### Squelch Control

The squelch control is preset at the factory, but can be adjusted if you must use the system in a high RF interference area. If there is audio output from the receiver when your transmitter is off, adjust the squelch control so the system will receive the signal from your transmitter but "squelch" or eliminate the unwanted background RF noise. This adjustment can cause a reduction in useable range of the wireless transmitter, so set the control to the lowest position which reliably mutes the unwanted RF signals.

### Setting Levels

Correct adjustment of transmitter audio input is important for optimum system performance.

The M2T Stereo Transmitter trim (volume) controls (*See L/1 and R/2 trim control, page 5*) have factory pre-set audio input levels. Factory setting is full clockwise, no attenuation. With a source plugged into the transmitter (at typical levels), check the AF peak indicator on the transmitter. If the AF peak indicator is red, it may be necessary to adjust the transmitter trim control counter-clockwise until the AF peak indicator is illuminated only on audio peaks. No further transmitter trim adjustments should be needed, as long as the acoustic input does not change significantly.

### Aux In jack

The M2R Stereo Receiver offers a 1/8" Aux In jack that allows you to add another audio source, such as a click track, or ambient microphone (optional Audio-Technica lavalier microphone, available separately).

- To use a condenser microphone as an ambient microphone, select Mic-level on the DIP switch inside receiver (*see page 7*), plug optional Audio-Technica lavalier microphone into the Aux In jack, and adjust volume control as needed.
- To use the Aux In jack as a line-level input, select Line-level on the DIP switch inside the receiver (*see page 7*), plug line-level source (a click track, for example) into the Aux In jack.

**Note: If you connect a stereo source (such as an MP3 player) into the M2R Stereo Receiver's Aux Input, be certain to use a mono adapter to protect your equipment from the DC voltage that is applied to the ring of the stereo connector.**



## System Applications

The nature of in-ear monitoring allows for endless experimentation; the M2 Wireless In-Ear Monitor System can be easily configured to meet your individual needs. While there are countless ways to use the system, we have illustrated some typical setups below.

**Note: In conjunction with these setups, follow instructions for system operation. (See page 8.)**

### 3 Receiver Modes: Personal Mix Control, Stereo, Mono

The M2 Wireless In-Ear Monitor System offers three receiver modes:

**Personal Mix Control:** The signals from L/1 and R/2 are mixed.

The user hears the combined signal in both ears—and controls the mix (by adjusting the relative strength of the L/1 and R/2 signals) via the M2R Receiver's balance control.

This is most often used when the transmitter receives two very distinct mixes—such as band and vocal. During the performance, the user can control how much vocal is heard relative to the band mix.

**Stereo setup:** The signals from L/1 and R/2 are separate (not mixed). The user hears L/1 through the left earphone, and R/2 through the right earphone. The user adjusts the relative level of each signal via the M2R Receiver's balance control.

**Mono setup:** The mono setup is used when only a single mono mix is available. The user hears that mix through both ears. When two-signal transmission is not required, use Mono Mode for improved signal-to-noise performance.

**Stereo setup.** See image A on page 10.

Basic stereo setup

1. Inside the M2R Stereo Receiver:  
Set DIP switch 2 to STEREO Output (Down);  
Set DIP switch 4 to STEREO Mode (Down). (See page 7)
2. Create separate left and right band mixes using two aux channels from your mixing console.
3. Connect one of these aux outputs from your mixing console to the L/1 input on your M2T Stereo Transmitter; connect the second aux output from your mixer to the R/2 input on your M2T Stereo Transmitter.
4. Monitor the LED indicators on front of transmitter to make certain signal is not clipping. (Signal is clipped when the peak light is on constantly.)
5. If necessary, use the trim control to adjust input level.
6. Use the balance control on your M2R Stereo Receiver to control the left/right stereo image. (Turn the balance control to the left to hear more of L/1; turn the balance control to the right to hear more of R/2.)
7. Adjust volume control to a comfortable, safe level. **Note: Use volume levels as low as possible.**
8. (Optional). Use M2T Stereo Transmitter's loop output to connect L/1 and R/2 to a recording device.
9. (Optional). Insert optional Audio-Technica lavalier microphone (available separately) into M2R Stereo Receiver to increase awareness of ambient sound.
10. Any number of additional M2R Stereo Receivers can be set to the same frequency and receive the same mix.

**Personal Mix Control.** See image B on page 10.

Typical two-channel operation using Personal Mix Control

1. Inside the M2R Stereo Receiver:  
Set DIP switch 2 to MIX Output (Up);  
Set DIP switch 4 to STEREO Mode (Down).
2. Create a band mix with an aux channel of your mixing console.
3. On a separate aux channel of your mixing console, create a second mix featuring vocals. (Alternatively, this second mix could feature guitars, drums, keyboards, etc.)
4. Connect the band mix aux output to the L/1 input on your M2T Stereo Transmitter.
5. Connect the vocal mix aux output to the R/2 input on your M2T Stereo Transmitter.
6. Monitor the LED indicators on front of transmitter to make certain the signal is not clipping. (Signal is clipped when the peak light is on constantly or distortion is heard.)
7. If necessary, use the trim control to adjust input level.
8. Turn the M2R Stereo Receiver's balance control toward the left to hear more vocal (L/1) in both ears; turn the receiver's balance control to the right to hear more band (R/2) in both ears.
9. (Optional). Use M2T Stereo Transmitter's loop output to connect L/1 and R/2 to a recording device.
10. (Optional). Insert optional Audio-Technica lavalier microphone (available separately) into M2R Stereo Receiver to increase awareness of ambient sound.
11. (Optional). Connect click source (for drummers) to your belt pack's Aux Input.
12. Any number of additional M2R Stereo Receivers can be set to the same frequency and receive the same mix.

**Advanced two-channel setup** (Personal Mix Control) Using direct outputs and multiple M2 systems. See image C on page 11.

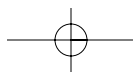
Inside the M2R Stereo Receiver:

- Set M2R Stereo Receiver DIP switch 2 to MIX Output (Up);
- Set M2R Stereo Receiver DIP switch 4 to STEREO Mode (Down).

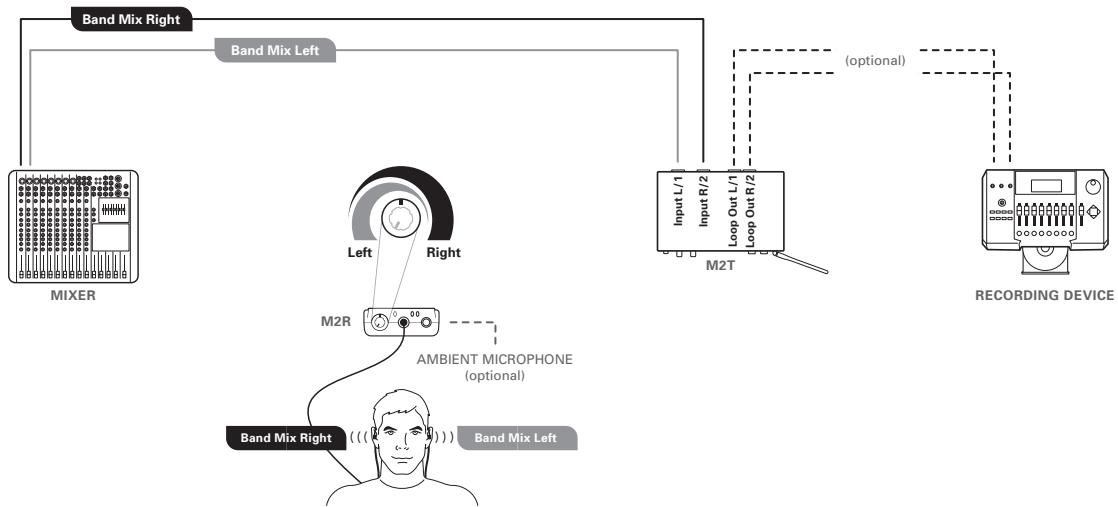
This setup enables each individual band member to control his/her relative mix levels using the balance control on his/her M2R Stereo Receiver. Turn the M2R Stereo Receiver's balance control toward the left to hear more vocal or instrument of choice level (L/1) in both ears; turn the receiver's balance control to the right to hear more band, (R/2) in both ears.

**Advanced two-channel stereo setup.** See image D on page 11. Multiple auxiliary sends and ambient audience microphones  
**Note: Do not feed ambient microphones to main output of PA.**

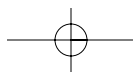
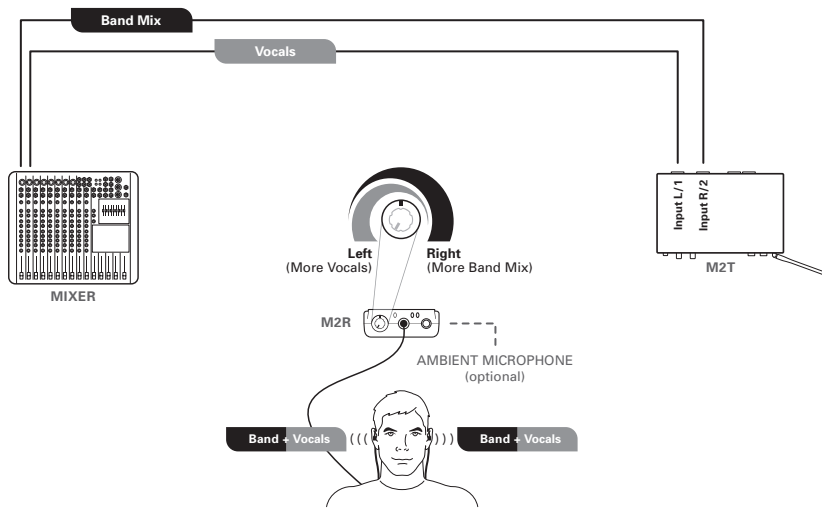
This setup enables you to create custom stereo mixes for each band member using individual auxiliary outputs and IEM systems for each band member.



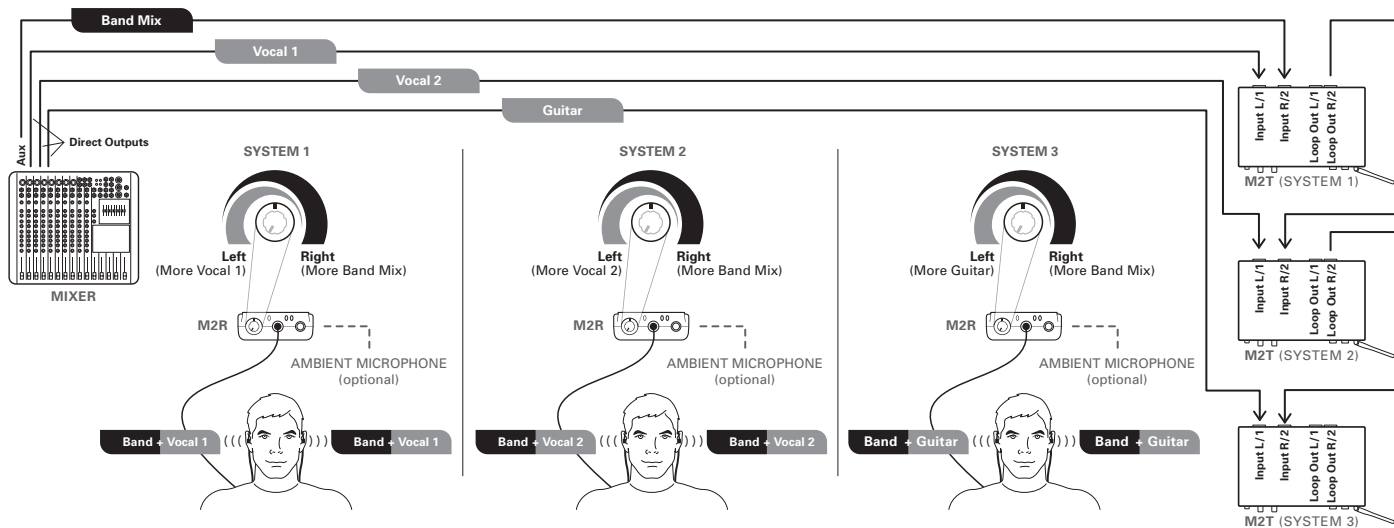
### A. Basic Stereo Set-up



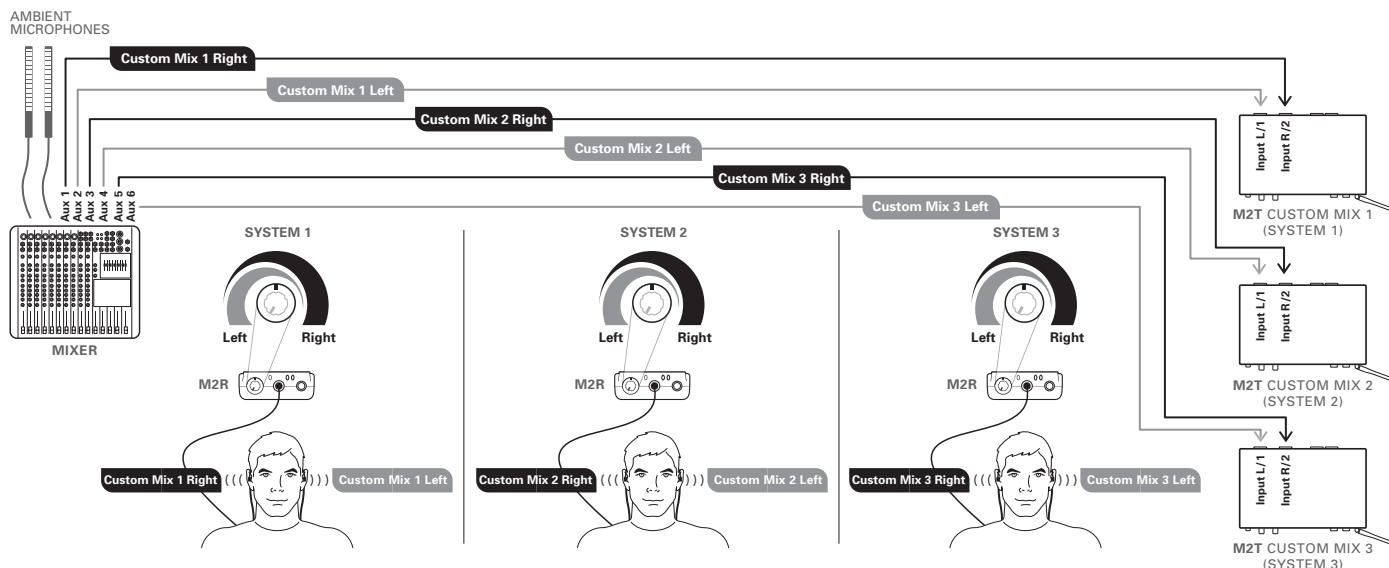
### B. Typical 2 Channel Set-up (Personal Mix Control)



### C. Advanced 2 Channel Set-up (Personal Mix Control Using Direct Outputs)



### D. Advanced 2 Channel Stereo Set-up Multiple Aux Sends and Ambient Audience Mics



## Specifications†

<b>Overall System</b>		
UHF Operating Frequencies		
	Band	Frequency Range
	Band E:	790.000 to 822.000 MHz
	Band F:	832.000 to 865.000 MHz
	Band L:	575.000 to 608.000 MHz
	Band M:	614.000 to 647.000 MHz
		Number of Frequencies
		100
		100
		100
		100
	<i>Not all frequency bands available in all areas.</i>	
	<i>Please check with local regulations.</i>	
Minimum Frequency Step	25 kHz	
Modulation Mode	FM stereo	
Maximum Deviation	±40 kHz	
Dynamic Range	90 dB (typical), A-weighted	
Total Harmonic Distortion	<1% (at 1 kHz, ±20 kHz Deviation)	
Operating Range	100 m (300'), typical	
	<i>Open range environment with no interfering signals.</i>	
Operating Temperature Range	-5° C (23° F) to 50° C (122° F)	
	<i>Battery performance may be reduced at very low temperatures.</i>	
Frequency Response	60 Hz to 13 kHz (±3 dB)	
Simultaneous Use	10 channels per band (maximum recommended)	
	<i>For assistance with multi-band operation or other frequency coordination issues, please contact your regional Audio-Technica customer service representative.</i>	
<b>Receiver</b>		
Receiving System	Double conversion superheterodyne	
RF Sensitivity	20 dBuV (at 60 dB S/N ratio, 50 ohms termination)	
Headphone Output Connector	3.5 mm TRS stereo phone jack	
Headphone Output Power	65 mW (at 32 ohms)	
Antenna Input	SMA-type, 50 ohms	
Aux Input Connector	3.5 mm TRS stereo phone jack	
Batteries	2 x 1.5V AA (not included)	
Battery Life	8 hours (alkaline)	
	<i>Depending on battery type and use pattern</i>	
Dimensions	70.0 mm (2.76") W x 25.0 mm (0.98") D x 110.0 mm (4.33") H	
Net Weight	110 g (3.9 oz), without batteries	
Accessories Included	EP3 earphones; frequency sticker; flexible antenna	
<b>Transmitter</b>		
RF Power Output	10 mW/30 mW (switchable), 50 ohms	
	<i>Limited to 10 mW within 863 MHz to 865 MHz.</i>	
	<i>Following national regulations.</i>	
Spurious Emissions	Following federal and national regulations	
Input Connection	XLR-type/6.3 mm stereo (1/4") combination connector	
	Pin 1 and Sleeve: Ground	
	Pin 2 and Tip: Hot	
	Pin 3 and Ring: Cold	
Maximum Input Level	XLR-type/6.3 mm stereo (1/4"), balanced: +26 dBu	
	6.3 mm (1/4") mono, unbalanced: +26 dBu	
Loop Output Connection	XLRM-type connector	
	Pin 1: Ground	
	Pin 2: Hot	
	Pin 3: Cold	
Power Requirement	12-18V DC, 600 mA	
Antenna	Attached whip	
Dimensions	210.0 mm (8.30") W x 132.0 mm (5.20") D x 44.0 mm (1.70") H	
Net Weight	870 g (30.7 oz.), without accessories	
Accessories Included	AC adapter (country dependant); rack-mount adapters	

† Specifications are subject to change without notice.

## M2 Frequency Plans

### M-Band

	GroupA	GroupB	GroupC	GroupD	GroupE	GroupF	GroupG	GroupH	GroupI	GroupJ
CH-1	615.125	614.000	614.500	615.875	616.750	614.750	614.875	614.125	614.250	616.625
CH-2	619.625	619.500	619.500	619.625	617.750	618.750	615.625	621.125	617.625	617.125
CH-3	621.375	622.000	626.125	620.375	622.625	621.000	620.500	622.375	622.250	618.875
CH-4	624.375	623.125	632.375	622.375	624.500	631.250	624.125	628.625	623.875	623.875
CH-5	630.875	628.250	634.375	630.625	629.625	633.750	626.875	629.625	631.125	626.875
CH-6	632.375	629.125	641.500	633.625	632.625	635.750	629.250	636.375	632.500	633.375
CH-7	639.875	639.500	642.000	640.375	642.250	642.500	637.125	640.625	636.625	640.875
CH-8	642.625	642.250	644.500	642.125	643.000	643.500	641.500	642.375	642.500	641.875
CH-9	644.875	644.000	645.500	643.625	646.625	645.250	643.125	645.625	643.625	645.375
CH-10	646.875	647.000	646.250	646.125	646.875	646.750	644.500	646.375	644.375	646.625
Used U.S. TV - Channels	38, 39, 40, 41, 42, 43	38, 39, 40, 41, 42, 43	38, 39, 40, 41, 42, 43	38, 39, 40, 41, 42, 43	38, 39, 40, 41, 42, 43	38, 39, 40, 41, 42, 43	38, 39, 40, 41, 42, 43	38, 39, 40, 41, 42, 43	38, 39, 40, 41, 42, 43	38, 39, 40, 41, 42, 43
Used European TV-Channels	39, 40, 41, 42, 43	39, 40, 41, 42, 43	39, 40, 41, 42, 43	39, 40, 41, 42, 43	39, 40, 41, 42, 43	39, 40, 41, 42, 43	39, 40, 41, 42, 43	39, 40, 41, 42, 43	39, 40, 41, 42, 43	39, 40, 41, 42, 43

### L-Band

	GroupA	GroupB	GroupC	GroupD	GroupE	GroupF	GroupG	GroupH	GroupI	GroupJ
CH-1	576.125	575.000	575.500	576.875	577.750	575.750	575.875	575.125	575.250	577.625
CH-2	580.625	580.500	580.500	580.625	578.750	579.750	576.625	582.125	578.625	578.125
CH-3	582.375	583.000	587.125	581.375	583.625	582.000	581.500	583.375	583.250	579.875
CH-4	585.375	584.125	593.375	583.375	585.500	592.250	585.125	589.625	584.875	584.875
CH-5	591.875	589.250	595.375	591.625	590.625	594.750	587.875	590.625	592.125	587.875
CH-6	593.375	590.125	602.500	594.625	593.625	596.750	590.250	597.375	593.500	594.375
CH-7	600.875	600.500	603.000	601.375	603.250	603.500	598.125	601.625	597.625	601.875
CH-8	603.625	603.250	605.500	603.125	604.000	604.500	602.500	603.375	603.500	602.875
CH-9	605.875	605.000	606.500	604.625	607.625	606.250	604.125	606.625	604.625	606.375
CH-10	607.875	608.000	607.250	607.125	607.875	607.750	605.500	607.375	605.375	607.625
Used U.S. TV - Channels	31, 32, 33, 34, 35, 36	31, 32, 33, 34, 35, 36	31, 32, 33, 34, 35, 36	31, 32, 33, 34, 35, 36	31, 32, 33, 34, 35, 36	31, 32, 33, 34, 35, 36	31, 32, 33, 34, 35, 36	31, 32, 33, 34, 35, 36	31, 32, 33, 34, 35, 36	31, 32, 33, 34, 35, 36
Used European TV-Channels	34, 35, 36, 37, 38	34, 35, 36, 37, 38	34, 35, 36, 37, 38	34, 35, 36, 37, 38	34, 35, 36, 37, 38	34, 35, 36, 37, 38	34, 35, 36, 37, 38	34, 35, 36, 37, 38	34, 35, 36, 37, 38	34, 35, 36, 37, 38

### E-Band

	GroupA	GroupB	GroupC	GroupD	GroupE	GroupF	GroupG	GroupH	GroupI	GroupJ
CH-1	790.850	790.300	790.100	790.750	790.100	790.300	790.100	800.100	806.125	790.000
CH-2	792.525	790.700	790.600	791.250	790.500	791.000	790.500	800.350	806.375	790.250
CH-3	793.925	791.950	792.050	792.500	792.025	792.975	792.750	801.100	807.125	791.000
CH-4	797.750	796.150	794.425	794.500	794.225	796.000	796.425	803.350	810.650	793.250
CH-5	798.850	798.700	797.500	801.250	797.300	802.775	800.750	811.900	812.150	795.250
CH-6	809.175	806.300	808.050	807.750	802.975	805.100	805.400	813.900	813.400	796.750
CH-7	811.100	809.775	812.950	812.250	813.300	813.900	810.675	815.400	813.900	801.500
CH-8	813.300	812.625	813.900	815.250	818.225	818.025	812.425	818.150	792.000	804.250
CH-9	813.800	813.600	797.900	819.250	820.900	821.500	813.900	819.400	794.325	805.500
CH-10	810.325	792.950	809.325	819.500	821.700	821.900	791.750	819.900	797.325	806.000
Notes:	German user group d)	German user group cc)	German user group b)	French series 1	French series 2	French series 3	German user group a)	800.100 819.900	channel 63 focus	channel 61 + 62 only
	German musicians	German rental companies	German private broadcasters				German public broadcasters			

### F-Band

	GroupA	GroupB	GroupC	GroupD	GroupE	GroupF	GroupG	GroupH	GroupI	GroupJ
CH-1	854.900	863.100	838.850	838.300	838.100	838.100	832.000	832.500	832.000	863.125
CH-2	855.275	863.500	840.525	838.700	838.600	838.500	832.250	832.750	832.250	863.375
CH-3	856.575	864.900	841.925	839.950	840.050	840.750	833.000	833.500	833.000	864.900
CH-4	857.625	854.125	845.750	844.150	842.425	844.425	835.250	836.500	835.250	832.000
CH-5	860.900	854.775	846.850	846.700	845.500	848.750	837.250	840.750	837.250	832.500
CH-6	861.550	856.825	857.175	854.300	856.050	853.400	838.750	843.250	854.000	833.250
CH-7	864.550	857.975	859.100	857.775	860.950	858.675	844.250	856.250	857.500	836.050
CH-8	838.025	838.375	861.300	860.625	861.900	860.425	851.500	858.500	860.250	839.100
CH-9	839.950	839.275	861.800	861.600	845.900	861.900	857.500	859.750	861.500	853.000
CH-10	838.275	842.725	858.325	840.950	857.325	839.750	860.250	861.250	862.000	858.575
	UK shared frequencies +ch 67 use for Dutch	deregulated+ 69 (Spain) UK indoor Dutch ch 67	German user group d)	German user group cc)	German user group b)	German user group a)	Fullrange	Fullrange2	66 + 69 first	deregulated first
			German musicians	German retail companies	German private broadcasters	German public broadcasters				