

M2 System

Wireless In-Ear Monitor System



Features

- **High-fidelity sound with clean, articulate mix allows you to hear yourself better at lower volume**
- **Three receiver modes: Personal Mix, stereo, and mono**
- **Personal Mix Control allows volume and mix control of two independent signals at the receiver**
- **100 selectable UHF frequencies**
- **Up to 10 simultaneous systems per frequency band**
- **Auxiliary input on receiver offers connection point for ambient microphone, click track, or other mic- or line-level input**
- **LED indicators provide easy-to-read level monitoring**
- **XLR loop (true pass-through) output connects signal to mixing console, additional IEM system or recording device**
- **Pilot tone protects against RF interference when the transmitter is turned off**
- **Adjustable squelch eliminates annoying static**
- **Limiters (defeatable) helps protect your hearing from sudden peaks**

Description

The M2 is a frequency-agile in-ear monitor system designed to make stage monitoring more effective, comfortable, portable, and intelligible. This rugged system is built to stand up to the inevitable bumps of life on the road, delivering clear, natural sound for touring and installed-sound applications.

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 of two independent signals at the receiver. The clean, articulate mix allows performers to hear themselves at comfortable SPL levels.

The wireless UHF M2T Stereo Transmitter provides a choice of 100 selectable frequencies and is equipped with two XLR^{1/4}" combination input jacks into which users can connect line-level inputs from a mixing console or other audio source. While up to 10 complete M2 systems may be used on stage simultaneously, any number of M2R stereo receivers may be used on the same frequency with a single M2T stereo transmitter. The transmitter inputs are equipped with loop-through outputs allowing the audio signal to pass through to another transmitter or device. Two selectable RF output levels on the transmitter allow it to operate successfully on small or large stages or in conjunction with other RF equipment such as wireless microphones and other IEM systems. Easy to use front panel transmitter controls allow for quick level adjustments and RF channel selection. The transmitter incorporates a built-in limiter to help protect the user's hearing from sudden audio peaks. The limiter can be defeated for situations where upstream processors or other equipment connected to the transmitter provide limiting.

The M2 receiver is equipped with LED indicators for AF peaks, RF signal present and battery status. Simple-to-use internal DIP switches on the receiver allow the user to configure the receiver for one of three operation modes. Mono mode supplies a mono signal to both ears while stereo mode supplies a true stereo feed with balance control to the ears. The third mode Personal Mix, enables the user to control the balance between two mono sources effectively providing an on-stage mix control at the receiver. Additionally, a local input is provided for inserting a signal into the receiver. Typically used with a small ambient microphone worn by the performer, this input can also be used to add in a click track or other audio signal. Internal level controls are provided on the receiver for squelch and auxiliary input. A built-in adjustable pilot tone squelch protects against RF interference and annoying static. A standard 3.5 mm locking earphone jack allows the receiver to be used with a wide variety of earphones and headsets. The flexible receiver antenna is removable for field service or storage. The receiver operates using standard 1.5V AA alkaline batteries with an 8-hour battery life.

The supplied earphones are equipped with a proprietary Audio-Technica dynamic driver offering a full frequency response and richly detailed high-fidelity sound. The earphones come with three sizes of rubber flexible eartips and universal-fit foam tips for a custom fit, increased isolation and long-wearing listening comfort.

Architect's and Engineer's Specifications

The wireless IEM (In-Ear Monitor) system shall be designed to allow a performer on stage to control and monitor audio signals over headphones or earbud-type phones. The system shall consist of an FM transmitter and one or more FM receivers. The transmitter shall provide two RF output levels, which shall be switchable to accommodate small or large stages as well as being able to operate with other wireless devices in a coordinated RF environment. The transmitter shall transmit in stereo using one of 100 selectable channels. Up to 10 simultaneous transmitters shall be able to be used within the same frequency group. The transmitter shall be equipped with two XLR^{1/4}" combination connectors designed to accept line level audio signals either balanced or unbalanced. Loop-through XLR-type outputs shall allow the audio signal to be routed to another transmitter or other audio input with no degradation in signal level or quality. Rear panel attenuators shall provide -20 dB, -10 dB and 0 dB of attenuation to allow the transmitter to be matched to a variety of input signal levels. In addition front panel input trim level controls shall be provided on the transmitter for gain adjustment. The transmitter shall provide visual indication of audio input signal using LED indicators. Front panel controls on the transmitter allow the user to select frequency group and channel for a combination of 100 available choices per operating band. A permanently attached front-panel transmitting antenna shall be provided. It shall be possible to adjust the angle and position of the antenna. The transmitter shall be designed to operate on 12-18V DC, 600 mA power via the included AC power supply.

The wireless IEM receiver shall be a user-worn device capable of receiving any one of 100 channels in the same band as the wireless IEM transmitter. It shall be possible to operate an unlimited number of receivers on the same frequency as the transmitter with no interference. The wireless IEM receiver shall provide functionality to allow the user to create his or her own personal mix along with standard mono or stereo receiving operation. It shall be possible to select one of the three operating modes (mono, stereo, or Personal Mix) by setting internal DIP switches within the receiver. When mono mode is selected, the receiver shall output the single (left) channel to both earphones. When stereo mode is selected, the receiver shall output a true left and right stereo image to the earphones. It shall be possible to control the panning and level of the stereo image using the top-mounted concentric level/balance controls on the receiver. When in the Personal Mix mode, the receiver shall output both incoming audio channels to both earphones while providing the user the ability to control the overall level of the mix using the receiver's level control and balance between the two audio channels using the balance control, effectively creating a unique and independent mix. The receiver shall incorporate an additional auxiliary

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input with dedicated level control for mixing in a local ambient microphone, click track or other audio signal at the receiver. Visual indicators shall be provided on the receiver for AF peaks, RF signal present, and battery condition. The receiver shall incorporate pilot-tone squelch with adjustable levels. A built-in limiter shall be provided in the receiver to protect the user's hearing against sudden audio peaks. It shall be possible to defeat the limiter for use in applications where peak limiting is provided in equipment ahead of the IEM system. All internal configuration settings shall be accomplished in the receiver with simple-to-operate intuitive DIP switches and mechanical positive action selectors. All controls shall be properly labeled as to their function. The receiver shall operate on 2 AA-type alkaline batteries providing 8 hours of operation under normal conditions.

Connection to the earphones shall be by a standard 3.5 mm TRS jack. The jack shall be equipped with threads to allow the use of threaded/locking plugs for a secure mechanical connection. The receiver shall incorporate a field-replaceable, removable whip antenna tuned to the receiver's operating band.

Each receiver shall be supplied with a reversible steel wire belt clip designed to hold the receiver securely to the wearer. Included with each receiver shall be a pair of dynamic ear buds designed for IEM applications. The ear buds shall terminate in a threaded locking 3.5 mm TRS plug designed to mate with the receiver's output jack. The ear buds shall include replaceable rubber eartips along with a set of foam eartips.

The Audio-Technica M2 IEM system is specified.

Specifications

Specifications		Overall system
Operating frequency	Band L: 575.000 – 608.000 MHz, 100 frequencies Band M: 614.000 – 647.000 MHz, 100 frequencies	
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 Open range environment with no interfering signals	
Operating temperature range	-5° C (23° F) to +50° C (122° F) Battery performance may be reduced at very low temperatures	
Frequency response	60 Hz to 13 kHz (+/- 3 dB)	
Simultaneous use	10 channels per band (maximum recommended). For assistance with multi-band operation or other frequency coordination issues, please contact your local Audio-Technica customer service representative.	
Components	EP3 Headphones: In-ear dynamic headphones offer high-fidelity sound and excellent isolation. M2T Stereo Transmitter: Wireless UHF transmitter (frequency-agile) offers 100 user-selectable frequencies. M2R Stereo Receiver: Personal Mix Control in a lightweight body-pack	
	M2R stereo receiver	
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	Two 1.5V AA (not included)	
Battery life	8 hours (alkaline) Depending on battery type and use pattern	
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 earphone; frequency sticker; flexible antenna	
	M2T stereo transmitter	
Rf power output	10 mW/30 mW (switchable), 50 ohms Limited to 10 mW within 863 MHz to 865 MHz Following national regulations	
Spurious emissions	Following federal and national regulations	
Input connections	XLRF-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	XLRF-type/6.3 mm stereo, (1/4") balanced: +26 dBu 6.3 mm (1/4") mono, unbalanced: +26 dBu	
Loop output connector	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 dependent); rack-mount adapters	

In the interest of standards development, A.T.U.S. offers full details on its test methods to other industry professionals on request.

Specifications are subject to change without notice.



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