

3000 Series



Frequency-agile True Diversity UHF Wireless Microphone Systems



Features

- Automatic frequency scanning
- High sensitivity dual IF receiving design for dropout free performance
- High-efficiency compander for flawless audio
- Three compatible frequency bands with 996 - 1001 selectable UHF frequencies per band
- 25 kHz frequency spacing makes it easier to find a clear, open frequency in crowded RF environments
- Nine pre-coordinated frequency scan groups simplify selection of usable frequencies in a multi-channel wireless system
- Receiver internal function menu with soft-touch controls
- Digital Tone Lock™ squelch
- Adjustable receiver squelch
- Transmitter battery life gauge on the front panel
- Operator alert indicators
- True Diversity receiver with silent, automatic switching
- AC or 12–18V DC operation
- Rear panel or front panel antenna mount options
- Antenna power available for powered antennas & other in-line RF devices
- Balanced and unbalanced outputs
- Output level control on the rear panel
- Ground lift switch on balanced output
- Receiver mounts in a single rack space (1 or 2 units)
- All transmitters offer rugged construction, programmable features, dual RF power output, backlit LCDs, and dual-color power/mute LED

Description

The 3000 Series frequency-agile True Diversity UHF wireless systems set a new standard for audio and RF performance. Allowing large operating areas and very superb noise specifications brings its performance to a standard that provides the audio quality and reliability necessary for the high quality sound systems of today. High sensitivity dual IF design using True Diversity operation with silent automatic switching provides dropout-free performance. All 3000 Series components feature soft-touch controls for quick easy access to a large range of functions and a backlit LCD information display in each unit provides convenient visual indication of unit setting and operation.

The ATW-R3100b receiver features automatic frequency scanning that eliminates the need for searching for clear channels by automatically selecting the most appropriate frequency for the area in which the wireless is operating. 25 kHz frequency spacing enables the system to easily find an open frequency in crowded RF environments, while nine pre-coordinated frequency scan groups simplify selection of usable frequencies in a multi-channel wireless system. The flexibility in program-

ming both the receiver and transmitters allows the customizing ability for this wireless system to meet virtually any application. Advanced digital Tone Lock™ squelch provides enhanced rejection of interference. In addition, the Tone Lock signal from the transmitter also conveys information on the transmitter's battery condition and mute status back to the receiver for display. The receiver's front panel display provides continuous indication of RF signal strength along with the audio modulation level of the received signal.

Designed to operate from AC or 12–18V DC, the receiver incorporates rear-panel connections for balanced XLR and unbalanced 1/4" outputs with adjustable gain along with detachable BNC 1/4" wave antennas. Switchable 12V DC antenna power is available on the BNC-type connectors for powered antenna accessories. The receiver is half-width for a standard 1U 19" rack-mount and includes rack-mount adapters.

All transmitters operate using two standard AA batteries and feature high- and low-level RF output settings. The low-level setting allows two additional hours of battery life while retaining a strong RF signal link. Each transmitter's backlit LCD display presents a great deal of setup and operating information clearly and conveniently including battery fuel remaining, mute and operating frequency. A flashing "Lo-Batt" alert visually signals the battery life is almost depleted. A dual-color power/mute indicator LED provides visual indication of transmitter status.

Programmable power/mute locks limit the functioning of the transmitter's power/mute button as desired for particular users and applications. To match the audio input level to the transmitter, audio input gain settings may be selected through the function menu. Each handheld transmitter includes a heavy-duty Quiet-Flex™ stand clamp.

The ATW-T310b UniPak® body-pack transmitter features a safety cover to protect the soft-touch controls from being accidentally activated and a recessed input connector to increase the life of the microphone cable. Inputs are available on the transmitter for low impedance microphone, and high impedance musical instrument or line input. The transmitter supplies 5V DC bias to power condenser microphones. The locking 4-pin HRS-type audio input connector is recessed to protect the connection from damage. A dual-color status LED illuminates green when power is on, and red when the transmitter is muted. Constructed of high-impact materials, the body-pack transmitter features a field replaceable whip antenna, a backlit LCD display, and a secure, locking battery compartment door.

The ATW-T341b dynamic handheld transmitter features the Artist Elite® AE4100 cardioid capsule created for live sound venues. The element includes internal shock mounts for low handling noise. An integral two-stage pop filter within the rugged steel headcase protects against "p" pops and other breath plosives. Transmitter setup functions are menu-driven via soft-touch controls. To prevent accidental changes, the controls are covered by the transmitter's handle case when not being used. A dual-color status LED illuminates green when power is on, and red when the transmitter is muted. The transmitter housing is made of metal with an integral antenna and a backlit LCD display.

The ATW-T371b condenser handheld transmitter features the Artist Series ATM710 cardioid condenser capsule created for vocal applications. The element includes internal shock mounts for low handling noise. An integral two-stage pop filter within the rugged steel headcase protects against "p" pops and other breath plosives. All transmitter setup functions are menu-driven via soft-touch controls. To prevent accidental changes, the controls are covered by the transmitter's handle case when not being used. A dual-color status LED illuminates green when power is on, and red when the transmitter is muted. The transmitter housing is made of metal with an integral antenna and a backlit LCD display.

The ATW-T1802b plug-on transmitter is designed to convert a dynamic or condenser microphone to wireless operation. The transmitter features a 3-pin XLR-type connector with locking ring for secure attachment. Integral

12V DC phantom power will allow the transmitter to power condenser microphones. All transmitter setup functions are menu-driven via soft-touch controls. To prevent accidental changes, the controls are covered by a sliding door when not being used. A dual-color status LED illuminates green when power is on, and red when the transmitter is muted. The transmitter housing is made of metal with an integral antenna and a backlit LCD display.

Architect's and Engineer's Specifications

The frequency-agile FM wireless microphone system shall consist of a receiver and the appropriate transmitter. Operating in the UHF bands of 482.000–507.000 MHz, 541.500–566.375 MHz, or 655.500–680.375 MHz, the system shall be capable of operating on any of 996 – 1001 PLL-synthesized frequencies per band. The frequency-agile FM wireless receiver shall be all-metal and shall provide an automatic scanning function to select appropriate local usable channels for proper wireless system operation. All configuration functions of the receiver shall be controlled by soft-touch controls on the receiver front panel. It shall be a True Diversity receiver with two independent internal receiver sections, automatically selecting the highest quality signal for the receiver's output. The system will be equipped with an advanced Tone Lock™ digital identification system to ensure that only the desired wireless microphone transmitter allows the receiver to be un-muted. The receiver shall have an alert LED on the front panel that indicates transmitter low battery warning, signal loss and input overload. The receiver shall continuously monitor and display the battery life indicator of the wireless transmitter, the RF signal strength and the diversity selection of internal dual tuner sections (A&B). The receiver shall have a rear panel selector to lift the ground connection from pin 1 of the XLR-type output connector to prevent ground loops. The receiver shall be able to be powered by 120V AC 60 Hz or 12–18V DC at 500 mA. Antennas shall be located on the rear of the receiver and shall incorporate standard BNC-type connectors to allow them to be detached from the receiver to facilitate the receiver being used with external antennas or antenna distribution devices. Switchable 12V DC power shall be provided on the BNC-type connectors. An accessory bracket should allow for the antennas to be located at the front of the receiver. The receiver can be rack-mounted singly or in pairs in a single rack space. The receiver's design shall provide totally silent audio output mute when the wireless transmitter is turned off or signal is lost. The wireless receiver and the supplied metal rack-mounting brackets shall be industrial black.

The frequency-agile FM wireless body-pack transmitter shall have microphone and line level inputs. It shall provide DC voltage to power microphones requiring DC bias. The body-pack transmitter shall be a part of a wireless microphone system operating in the bands of 482.000–507.000 MHz, 541.500–566.375 MHz, or 655.500–680.375 MHz. The body-pack transmitter shall have a reversible clip allowing for up or down cable entry. The transmitter shall have a recessed 4-pin locking input connector and a viewable fuel gauge to indicate the remaining battery life. 996–1001 frequencies shall be available and be selected with the soft-touch controls under the safety panel. The device shall have a dual-color LED to indicate power/mute status. There shall be an adjustment to allow input gain changes with a range of 18 dB. The transmitter shall include Tone Lock™ to identify the wireless transmitter to the wireless receiver. This transmitter shall utilize two RF output power levels and shall operate on two AA batteries. The transmitter battery compartment shall be locking. All adjustments shall be via soft-touch controls and shall remain as set even if the transmitter loses power or the batteries are removed. A backlit LCD display shall be provided to show transmitter setup parameters or frequency. The transmitter shall have a removable and field replaceable antenna.

The frequency-agile FM wireless handheld transmitter utilizing a dynamic cardioid element shall be a part of a wireless microphone system operating in the bands of 482.000–507.000 MHz, 541.500–566.375 MHz, or 655.500–680.375 MHz. The capsule shall incorporate internal shock mounting and have a two-stage integral pop filter. It shall be capable

of transmitting on any of 996–1001 frequencies per band. It shall have a metal housing with a plastic antenna end cap. The transmitter shall transmit a digital Tone Lock™ signal that allows the receiver to un-mute. A dual-color LED indicator shall illuminate green when the transmitter is turned on and shall illuminate red when the transmitter is muted. A backlit LCD display shall be provided to show transmitter setup parameters or frequency. The microphone shall have an audio input level adjustment range of 18 dB. All adjustments shall be via soft-touch controls and shall remain as set even if the transmitter loses power or the batteries are removed. The transmitter shall operate on two AA batteries and contain a Hi/Lo RF power selector. A battery fuel gauge shall be incorporated to indicate the status of the internal batteries. The transmitter shall be supplied with a heavy-duty stand clamp.

The frequency-agile FM wireless handheld transmitter utilizing a high quality condenser cardioid element shall be a part of a wireless microphone system operating in the bands of 482.000–507.000 MHz, 541.500–566.375 MHz, or 655.500–680.375 MHz. The capsule shall incorporate internal shock mounting and have a two-stage integral pop filter. It shall be capable of transmitting on any of 996–1001 frequencies per band. It shall have a metal housing with a plastic antenna end cap. The transmitter shall transmit a digital Tone Lock™ signal that allows the receiver to un-mute. A dual-color LED indicator shall illuminate green when the transmitter is turned on and shall illuminate red when the transmitter is muted. A backlit LCD display shall be provided to show transmitter setup parameters or frequency. The microphone shall have an audio input level adjustment range of 18 dB. All adjustments shall be via soft-touch controls and shall remain as set even if the transmitter loses power or the batteries are removed. The transmitter shall operate on two AA batteries and contain a Hi/Lo RF power selector. A battery fuel gauge shall be incorporated to indicate the status of the internal batteries. The transmitter shall be supplied with a heavy-duty stand clamp.

The frequency-agile FM wireless plug-on transmitter with locking 3-pin XLR-type connector shall be a part of a wireless microphone system operating in the bands of 541.500–566.375 MHz or 655.500–680.375 MHz. It shall be designed to convert a dynamic or condenser microphone to wireless operation. It shall be capable of transmitting on any of 996 frequencies (adjustable in 25 kHz steps) per band and shall be compatible with Audio-Technica 3000 Series and 1800 Series receivers. The transmitter shall transmit a digital Tone Lock™ signal that allows the receiver to un-mute. A dual-color LED indicator shall illuminate green when the transmitter is turned on and red when the transmitter is muted. The transmitter shall have an audio input level adjustment range of 24 dB. All adjustments shall be via soft-touch controls and shall remain as set even if the transmitter loses power or the batteries are removed. A sliding door shall cover the setup controls when not in use. The transmitter shall operate on two AA batteries and contain a Hi/Lo RF power selector. The transmitter shall be equipped with a backlit LCD screen used to show operating frequency and programming status. A battery fuel gauge shall be incorporated into the display to indicate the status of the internal batteries. The transmitter shall provide 12V DC to power condenser microphones. The transmitter housing shall be metal with integral antenna and captive battery door.

The wireless system shall be an Audio-Technica (note to specifier: choose one):


ATW-3110b – Basic Body-pack System
 ATW-3131b – Body-pack System with Lavalier Microphone
 ATW-3141b – Dynamic Handheld System
 ATW-3171b – Condenser Handheld System
 ATW-3192b – Body-pack System with Miniature Headworn Condenser Microphone (black)
 ATW-3192b-TH – Body-pack System with Miniature Headworn Condenser Microphone (beige)

3000 Series

Specifications

Overall system	
UHF operating frequencies	Band C: 541.500–566.375 MHz (996 frequencies, 25 kHz increments) Band D: 655.500–680.375 MHz (996 frequencies, 25 kHz increments) Band I: 482.000–507.000 MHz (1001 frequencies, 25 kHz increments)
Minimum frequency step	25 kHz
Modulation mode	FM
Maximum deviation	±35 kHz
Dynamic range	>110 dB (A-weighted), typical
Total harmonic distortion	<1% (at 1 kHz, ±17.5 kHz deviation)
Operating range	100 m (300') typical (open range environment with no interfering signals)
Operating temperature range	–5° C (23° F) to +45° C (113° F) (battery and LCD performance may be reduced at very low temperatures)
Frequency response	70 Hz to 15 kHz (+1 dB, -3 dB)

ATW-R3100b receiver	
Receiving system	True Diversity
Image rejection	60 dB nominal, 55 dB minimum
RF sensitivity	24 dBuV at 60 dB S/N ratio (50 ohms termination)
Maximum output level	Balanced: +9 dBV; Unbalanced: +7 dBV
Output connector(s)	Unbalanced: 6.3 mm (1/4") Balanced: XLR-type
Antenna input	BNC-type, 50 ohms Bias voltage 12V DC, 60 mA, each
Power requirements	12-18V DC, 500 mA
Dimensions	210.0 mm (8.27") W x 164.4 mm (6.47") D x 44.0 mm (1.73") H (not including BNC connectors or feet)
Net weight	1.1 kg (38.8 oz)
Accessories included	Two flexible UHF antennas (country dependent); AC adapter; rack-mount adapters

ATW-T310b UniPak® transmitter	
RF power output	High: 30 mW; Low: 10 mW (switchable)
Spurious emissions	Following federal and national regulations
Input connection	Four-pin locking connector Pin 1: GND, Pin 2: INST INPUT, Pin 3: MIC INPUT, Pin 4: DC BIAS +5V
	
Batteries	Two 1.5V AA, not included
Battery life	High: 6 hours (alkaline), Low: 8 hours (alkaline), (depending on battery type and use pattern)
Dimensions	66.0 mm (2.60") W x 24.0 mm (0.94") D x 87.0 mm (3.43") H
Net weight	81 g (2.9 oz), without batteries

ATW-T341b, ATW-T371b handheld transmitters	
RF power output	High: 30 mW; Low: 10 mW (switchable), at 50 ohms
Spurious emissions	Following federal and national regulations
Microphone element	ATW-T341b: Dynamic cardioid ATW-T371b: Condenser cardioid
Batteries	Two 1.5V AA, not included
Battery life	High: 6 hours (alkaline), Low: 8 hours (alkaline), (depending on battery type and use pattern)
Dimensions	ATW-T341b: 237.0 mm (9.33") long, 48.0 mm (1.89") diameter ATW-T371b: 240.0 mm (9.45") long, 50.0 mm (1.97") diameter
Net weight	ATW-T341b: 284 g (10.0 oz) ATW-T371b: 277 g (9.8 oz) (without batteries)
Accessory included	AT8456a Quiet-Flex™ stand clamp

ATW-T1802 plug-on transmitter	
RF power output	High: 30 mW; Low: 10 mW, nominal
Spurious emissions	Under federal regulations
Dynamic range	>105 dB, A-weighted
Input connections	3-pin locking XLR-F-type
Microphone power	Provides power to condenser microphones rated to operate on 12V phantom power or less
Batteries	Two 1.5V AA alkaline (not included)
Current consumption	High: 180 mA; Low: 160 mA, typical
Battery life	Approximately 6 hours (High); 8 hours (Low), depending on battery type and use pattern
Dimensions	40.0 mm (1.57") x 111.0 mm (4.37") x 40.0 mm (1.57")
Net weight	199 g (7.0 oz) (without batteries)

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.



Audio-Technica U.S., Inc., 1221 Commerce Drive, Stow, Ohio 44224
Audio-Technica Limited, Old Lane, Leeds LS11 8AG England
©2010 Audio-Technica U.S., Inc. audio-technica.com

0001-0024-01