



3000 Series (Fourth Generation) Frequency-Agile True Diversity UHF Wireless Microphone Systems



Features

- Extremely wide 60 MHz UHF tuning bandwidth for maximum versatility in an increasingly congested RF environment
- Available in two frequency bands: DE2 (470–530 MHz) and EE1 (530–590 MHz)
- Up to 40 simultaneous channels per band (open-range environment with no interfering signals)
- Unique multifunction button on transmitters can be used to switch to a backup frequency (on both transmitter and receiver) should interference be encountered
- Auto Squelch feature automatically adjusts squelch setting to maximize range while minimizing potential interference
- Frequency scan and IR sync functionality for ease of setup
- Dual-mode receiver display can switch between standard and performance views
- Transmitters and receivers include easy-to-read OLED screens
- Handheld transmitter offers extremely low handling noise and includes an industry-standard thread mount for use with interchangeable A-T microphone capsules, as well as other compatible capsules
- Rugged cH-style connector on body-pack transmitter provides secure connection to lavalier mics, headworn mics, and cables with cH-style screw-down 4-pin connector
- Body-pack transmitter features a tactile mute toggle switch (defeatable) for physical confirmation of mute status when transmitter display is not visible
- Charging terminals on transmitters work with optional ATW-CHG3 and ATW-CHG3N charging docks to recharge NiMH batteries
- Antenna power available for powered antennas & other in-line RF devices
- Ground-lift switch helps eliminate audible hum caused by ground loops
- Balanced and unbalanced outputs

Description

The fourth-generation 3000 Series frequency-agile True Diversity UHF wireless systems offer rock-solid, latency-free, high-fidelity RF audio performance. Each system offers a 60 MHz tuning bandwidth in one of two available frequency bands: 470.125–529.975 MHz or 530.000–589.975 MHz. High-sensitivity, dual-conversion True Diversity operation with silent automatic switching provides dropout-free performance. The 3000 Series receiver and transmitters feature easy-to-use controls for quick access to a large range of functions, and an OLED screen for convenient visual indication of settings and operating information.

The ATW-R3210 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 pre-coordinated frequency scan groups simplify selection of usable frequencies in a multichannel wireless system. Once selected, frequencies can be synced with transmitters using the system's IR sync functionality. The system's squelch setting can be configured to automatically adjust to maximize range while minimizing potential interference. 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 dual-mode front panel display can switch between the standard view, which provides continuous indication of RF signal strength, frequency, mute status, audio modulation level of the received signal, and transmitter information, and a performance view, which highlights key metering. Settings can be easily adjusted using the control dial and BACK button located on the receiver's front panel. Settings can also be locked to prevent them from being changed.

Operating on 12V DC, the receiver incorporates rear-panel connections for balanced XLR and unbalanced ¼" outputs, along with detachable BNC ¼" 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 AA batteries and feature high- and low-level RF output settings. The low-level setting extends battery life while retaining a strong RF signal link. Charging terminals on the base of each transmitter work with the optional ATW-CHG3 and ATW-CHG3N charging docks to recharge AA NiMH batteries. Each transmitter's OLED screen presents a great deal of setup and operating information, including battery indicator, mute status and operating frequency. Setup functions are menu-driven via soft-touch controls, which are covered to prevent accidental activation. A dual-color status LED illuminates green when power is on and red when the transmitter is muted or battery power is low.

Transmitters have a selectable high-pass filter and a gain setting that can be adjusted in 2 dB increments. As with the receiver, transmitter settings can be locked.

The ATW-T3201 body-pack transmitter features a tactile mute toggle switch (defeatable) for physical confirmation of the mute status when the transmitter display is not visible. It also has a multifunction button that can be programmed to perform one of two functions when pressed and held: turn off RF transmission or switch to a preselected backup frequency to avoid interference. (The multifunction button can also be disabled.) An input is 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 rugged cH-style screw-down 4-pin input connector provides secure connection to cH-style lavalier mics, headworn mics, and cables. The durable metal body-pack transmitter features a field replaceable whip antenna, OLED screen, and a secure, locking battery compartment door.

The ATW-T3202 handheld transmitter offers extremely low handling noise and comes with either an ATW-C510 dynamic or ATW-C710 condenser interchangeable cardioid capsule. Each capsule features an integral two-stage pop filter within the rugged steel headcase to protect against "p" pops and other breath plosives. The transmitter's industry-standard thread mount also allows it to be used with

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additional Audio-Technica capsules (available separately) and other compatible capsules. Its multifunction button can be programmed to perform a specific function when pressed and held: mute the audio; mute the audio even when the transmitter is locked; turn off RF transmission; or switch to a preselected backup frequency to avoid interference. (The multifunction button can also be disabled.) The transmitter housing is made of metal with an integral antenna and an OLED screen. Each handheld transmitter includes a heavy-duty Quiet-Flex™ stand clamp.

The ATW-CHG3 two-bay charging dock (available as an optional component) charges NiMH batteries that are installed in the transmitters. The dock automatically shuts off if alkaline or damaged batteries are detected in the transmitters. Up to five docks can be linked and powered by a single power supply. The ATW-CHG3N networked version of the charging dock allows users to monitor the charging status of all transmitters in the linked docks.

Architect's and Engineer's Specifications

The frequency-agile FM wireless microphone system shall consist of a receiver and the appropriate transmitter, and shall operate in the UHF bands of 470.125–529.975 MHz or 530.000–589.975 MHz. 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. It shall be a True Diversity receiver with two independent internal receiver sections, automatically selecting the highest quality signal for the receiver's output. All receiver settings shall be adjusted by using a control dial and BACK button on the receiver's front panel. The system will be equipped with an advanced pilot tone digital identification system to ensure that the desired wireless transmitter allows the receiver to be unmuted, reducing noise from unwanted signals. The receiver shall have an IR sync window on the front panel to sync settings with transmitters. It shall also have a dual-mode front panel display that switches between a standard view, which provides continuous indication of RF signal strength, frequency, mute status, audio modulation level of the received signal and other transmitter information, and a performance view, which highlights key metering. 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 12V DC 1A. 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 the 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 instrument level inputs. It shall provide DC voltage to power microphones requiring DC bias. The body-pack transmitter shall be part of a wireless microphone system operating in the bands of 470.125–529.975 MHz or 530.000–589.975 MHz. The body-pack transmitter shall have a reversible clip allowing for up or down cable entry. The transmitter shall have a screw-down 4-pin connector and a viewable fuel gauge to indicate the remaining battery life. Frequencies shall be selected using the transmitter's soft-touch controls. The transmitter shall also be equipped with a multifunction button that can be programmed to perform one of two functions when pressed and held: turn off RF transmission or switch to a preselected backup frequency. (The multifunction button can also be disabled.) The device shall have a dual-color LED that illuminates green when the power is on and illuminates red when the transmitter is muted or battery power is low. There shall be an adjustment to allow input gain changes in 2 dB steps with a total range

of 30 dB. There shall be a switchable 125 Hz high-pass filter. The transmitter shall include a pilot tone to identify the wireless transmitter to the wireless receiver. The transmitter shall utilize two RF output power levels and shall operate on two AA batteries. The battery compartment shall be locking. All setting 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 have an IR sync button to allow receiver settings to be synced with the transmitter. An OLED screen shall be provided to show transmitter setup parameters or frequency. Charging terminals on the base of the transmitter shall work with an optional smart charging dock to recharge AA NiMH batteries installed in the transmitter. The transmitter shall have a removable and field-replaceable antenna.

The frequency-agile FM wireless handheld transmitter shall be part of a wireless microphone system operating in the bands of 470.125–529.975 MHz or 530.000–589.975 MHz. The transmitter shall come with either a dynamic or a condenser cardioid microphone capsule, which shall screw onto the transmitter's industry-standard thread mount. Each capsule shall incorporate internal shock mounting and have a two-stage integral pop filter. The transmitter shall also work with additional capsules specifically designed for the transmitter (available separately) as well as other compatible capsules. The transmitter shall have a metal housing with a plastic antenna end cap. The transmitter shall transmit a digital pilot tone that allows the receiver to unmute. The transmitter shall also be equipped with a multifunction button that can be programmed to perform a specific function when pressed and held: mute the audio; mute the audio even when the transmitter is locked; turn off RF transmission; or switch to a preselected backup frequency. (The multifunction button can also be disabled.) A dual-color LED indicator shall illuminate green when the power is on and red when the transmitter is muted or battery power is low. An OLED screen shall be provided to show transmitter setup parameters or frequency. The microphone shall have an audio input level adjustment range of 30 dB in 2 dB steps. It shall also have a switchable 150 Hz high-pass filter. All setting 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 have an IR sync button to allow receiver settings to be synced with the transmitter. 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. Charging terminals on the base of the transmitter shall work with an optional smart charging dock to recharge AA NiMH batteries installed in the transmitter. The transmitter shall be supplied with a heavy-duty stand clamp.

A two-bay charging dock shall also be available as an optional component. It shall charge AA NiMH batteries that are installed in body-pack or handheld transmitters. The charging dock shall automatically shut off if alkaline or damaged batteries are detected in the transmitters. A single power supply shall power up to five linked docks. A networked version of the charging dock shall also be available as an optional component. The networked dock shall be capable of monitoring the charging status of all transmitters in up to five linked docks.

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

- ATW-3211 – Basic Body-Pack System
- ATW-3211/831 – Body-Pack System with AT831cH Lavalier Microphone
- ATW-3211/892 – Body-Pack System with BP892cH MicroSet® Headworn Condenser Microphone (black)
- ATW-3211/892-TH – Body-Pack System with BP892cH-TH MicroSet® Headworn Condenser Microphone (beige)
- ATW-3211/893 – Body-Pack System with BP893cH MicroEarset Headworn Condenser Microphone (black)
- ATW-3211/893-TH – Body-Pack System with BP893cH-TH MicroEarset Headworn Condenser Microphone (beige)
- ATW-3211/894 – Body-Pack System with BP894cH MicroSet® Headworn Condenser Microphone (black)
- ATW-3211/892-TH – Body-Pack System with BP894cH-TH MicroSet® Headworn Condenser Microphone (beige)
- ATW-3212 – Basic Handheld System
- ATW-3212/C510 – Handheld System with ATW-C510 cardioid dynamic microphone capsule
- ATW-3212/C710 – Handheld System with ATW-C710 cardioid condenser microphone capsule

The optional charging docks shall be an Audio-Technica (note to specifier: choose one):

- ATW-CHG3 – Two-bay smart charging dock
- ATW-CHG3N – Networked two-bay smart charging dock

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.

Specifications	Overall system
UHF operating frequencies	Band DE2: 470.125–529.975 MHz Band EE1: 530.000–589.975 MHz
Minimum frequency step	25 kHz
Modulation mode	FM
Maximum deviation	ATW-T3201: ±38 kHz (THD: 10%); ATW-T3202: ±36 kHz (THD: 10%)
Dynamic range (A-weighted, typical)	ATW-T3201: Mic input: >115 dB; ATW-T3201: Inst input: >112 dBI; ATW-T3202: >115 dB
Total harmonic distortion	<1% (at 1 kHz, ±17.5 kHz deviation)
Operating range	100 m (328') typical (open range environment with no interfering signals)
Operating temperature range	–5° C to +45° C (23° F to 113° F) (battery and LCD performance may be reduced at very low temperatures)
Frequency response	ATW-T3201: 31 Hz to 15,500 Hz ATW-T3202: 25 Hz to 16,700 Hz (Frequency response depends on attached microphone element)
Maximum simultaneous use (recommended)	40 channels per band (region and band dependent)
ATW-R3210 receiver	
Receiving system	True Diversity
Image rejection	60 dB nominal
RF sensitivity	20 dBuV at 60 dB S/N ratio (50 ohms termination)
Maximum output level	XLR Balanced: +14 dBV 6.3 mm (¼") Unbalanced: +8 dBV
Antenna input	BNC-type, 50 ohms
Antenna power	12V DC, 160 mA (combined)
Power supply	100-240V AC (50/60 Hz) to 12V DC 1A (center positive) switched mode external power supply
Dimensions	210.0 mm (8.27") W x 191.0 mm (7.52") D x 43.4 mm (1.71") H
Net weight	1,100 g (38.8 oz), without accessories
Accessories included	Two flexible UHF antennas; AC adapter (country dependent); rack-mount adapters; joining plate

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Specifications (continued)		ATW-T3201 body-pack transmitter
RF power output		High: 30 mW; Low: 10 mW (switchable), at 50 ohms
Spurious emissions		Following federal and national regulations
Input connection		cH-style screw-down 4-pin connector
		Pin 1: GND
		Pin 2: INST INPUT
		Pin 3: MIC INPUT
		Pin 4: DC BIAS +5V
High-pass (low-freq. roll-off)		125 Hz, 12 dB/octave
Batteries		Two 1.5V AA, not included
Battery life		High: 8.0 hours (alkaline); Low: 9.0 hours (alkaline) High: 9.0 hours (NiMH 1,900 mAh); Low: 9.5 hours (NiMH 1,900 mAh) (depending on battery type and use pattern)
Dimensions		64.0 mm (2.52") W x 23.0 mm (0.91") D x 82.0 mm (3.23") H
Net weight		102 g (3.6 oz)

		ATW-T3202 handheld transmitter
RF power output		High: 30 mW; Low: 10 mW (switchable), at 50 ohms
Spurious emissions		Following federal and national regulations
Microphone element		Interchangeable industry-standard thread
High-pass (low-freq. roll-off)		150 Hz, 6 dB/octave
Batteries		Two 1.5V AA, not included
Battery life		High: 8.0 hours (alkaline); Low: 9.0 hours (alkaline) High: 9.0 hours (NiMH 1,900 mAh); Low: 9.5 hours (NiMH 1,900 mAh) (depending on battery type and use pattern)
Dimensions		Without capsule: 193.0 mm (7.60") long, 37.0 mm (1.46") maximum diameter; With C510 capsule: 265.0 mm (10.43") long, 54.0 mm (2.13") maximum diameter; With C710 capsule: 271.0 mm (10.67") long, 50.0 mm (1.97") maximum diameter
Net weight		Without capsule: 200 g (7.1 oz); With C510 capsule: 330 g (11.6 oz); With C710 capsule: 314 g (11.1 oz)
Accessory included		AT8456a Quiet-Flex™ stand clamp; 5/16"-27 male to 3/8"-16 female threaded screw adapter

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