1800 Series (dual-channel systems)

audio-technica

Dual-channel Camera-mount UHF Wireless Systems

Features

- **Easy, user-friendly operation and clear natural sound quality**
- **Compact receiver ideal for on-camera use**
- **True diversity operation for dropout protection and silent switching**
- **Automatic frequency scanning allows selection of open channels**
- **996 selectable frequencies in 25 kHz steps in each of two frequency bands**
- **Tone Lock™ squelch eliminates interference when the transmitters are off**
- **Battery life gauge on the receiver's LCD display**
- **Soft-touch controls for controlling transmitters and receivers**
- **Balanced, adjustable outputs for connection to any mic level inputs**
- **Monitor output on the receiver with level control**
- **Receiver is powered by AA batteries or external 12V DC supply**
- **Diversity antenna selection and AF peak LED indicators on the receiver**
- **Transmitters operate on two AA batteries**
- **Transmitters offer rugged construction, programmable features and dual RF power output**

Description

The 1800 Series dual-channel, frequency-agile true diversity UHF wireless systems provide a new standard for audio and RF performance with user-friendly features and flawless operation for camera-mount and special remote applications. The systems provide the audio quality, range and reliability necessary for the most demanding requirements of today's video and audio systems with two independent receivers in one small housing.

The compact ATW-R1820 receiver incorporates automatic frequency scanning which eliminates the need for searching for clear channels and automatically selects the most appropriate frequency for each channel's operation. The flexibility in programming both receivers and transmitters allows the user to customize this wireless system to the needs of virtually every application. True Diversity reception with automatic logic circuitry within each receiver selects the strongest RF signal. The top-mount antennas are removable allowing for different types of antennas and antenna accessories to be used with the receiver. All components have an easy to read LCD display with back lighting for easy function monitoring. An advanced digital Tone Lock™ squelch system provides enhanced rejection of interference on the receiver. Multi-function LED indicators are provided on the receiver for diversity, power and peak signal indication. The receiver's compact design and included pouch with stainless steel clip allow for easy attachment to cameras, sound mixer bags or the user's belt. Designed to operate on six standard AA alkaline batteries, or external 12V DC, the dual receiver's power switch allows for one receiver section to be switched "off" if not being used to increase battery life. Dual balanced outputs with built-in mixer allow the audio from each receiver to be routed to independent outputs or mixed together into a single output for enhanced flexibility in the field. Full headphone confidence monitoring with level control enables the operator to monitor the receiver's audio. All audio output connections are standard mini-XLRM type connections with TA3F- to XLRM-type adapter cables included with the system.

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 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 is almost depleted. 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, a five-position audio input gain setting selected through the function menu is provided.

The ATW-T1801 UniPak® body-pack transmitter features a safety cover to protect the soft-touch controls from being accidently activated and a recessed input connector to increase the life of the microphone cable. A two-color LED, which can be seen from the top or side of the transmitter, indicates power on and mute status. Inputs are available on the UniPak® for low impedance microphone and high impedance musical instrument or line input. The UniPak® supplies 5V DC to power condenser microphones. The locking 4-pin HRS-type audio input connector is recessed to protect the connection from damage. Constructed of high impact materials, the body-pack transmitter features a field replaceable whip antenna.

The ATW-T1802 plug-on transmitter is designed to convert a dynamic or condenser microphone to wireless operation. The transmitter features a 3-pin XLRF-type connector with locking ring for secure attachment. Integral 12V DC phantom power will allow the transmitter to power condenser microphones. 24 dB of gain adjustment enables the transmitter to work with a wide variety of microphones and signal sources. 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. The rugged ergonomic metal body housing the transmitter will provide years of dependable operation.

Additionally, the frequency configuration used in 1800 Series components allows them to be interchangeable with the Audio-Technica 3000 Series components.

Architect's and Engineer's Specifications

The frequency-agile FM dual-channel wireless microphone system shall consist of a dual receiver and the appropriate transmitters. Operating in the UHF bands of either 541.500–566.375 MHz or 655.500–680.375 MHz the system shall be capable of operating on any of 996 PLL-synthesized frequencies per band (25 kHz steps).

The all-metal receiver shall be designed for camera mount or portable operation and shall consist of two complete wireless receivers along with an integral antenna distribution system allowing the two receivers to share a single set of antennas. Each of the two receivers shall utilize True Diversity with automatic logic switching to choose the strongest RF signal appearing at either antenna. Each receiver section shall provide an automatic scanning function to select appropriate local usable frequencies for proper wireless system operation. All configuration functions of the receiver shall be controlled by soft-touch controls on the receiver top. A selector switch with lockout/hold function shall be provided for selecting which receiver section is controlled by the soft-touch controls. The receiver shall incorporate a four-position power switch allowing for direct selection of one or two receiver sections on internal batteries or external power. The receiver shall have LED operator indicators on the top panel for diversity operation (A-B) for each receiver section, power/peak indicators for each receiver and a dual channel control LED which shows which receiver is selected to the soft-touch controls for configuration and

setup. A backlit LCD display shall be provided on the receiver for showing receiver battery status and selected frequency. A three-position select/hold switch shall be provided to select which receiver appears on the display and is controlled by the soft-touch configuration controls. The switch shall incorporate a hold function to disable the soft-touch controls. An associated LED shall illuminate "red" when the select/hold switch is in the receiver 1 or 2 position and "green" when the switch is set in the hold position. The system will be equipped with an advanced Tone Lock™ digital identification system. The receiver design shall provide totally silent audio output mute when the wireless transmitter is turned off or signal is lost to ensure that only the desired wireless microphone transmitter allows the receiver to be un-muted. The receiver shall incorporate a built-in audio mixing and monitoring section. This mixer shall allow for the two receiver sections to be mixed together to a single output connector, operate as independent outputs or select one of the receivers to appear at both audio outputs. Each receiver section shall be provided with an independent level control. Independent audio monitoring shall be provided with monitor level control and monitor select (1-both-2). A headphone connector shall be provided on the bottom of the receiver.

The receiver shall be able to be powered by 6 alkaline AA batteries or 12 volts DC at 500 mA. Antennas shall be located on the top 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.

The receiver as supplied shall include a soft pouch with stainless steel clip for attaching it to a camera, sound mixer bag or the operator's belt. The receiver shall have a metal case with removable battery door and be finished in low-reflectance black. All controls and indicators shall be clearly labeled as to their function and operation.

The frequency-agile FM wireless body-pack transmitter shall have microphone and line level inputs. Connections shall be via a recessed 4-pin locking connector. It shall provide DC voltage to power microphones requiring DC bias. The body-pack transmitter shall have a reversible clip allowing for up or down cable entry. 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 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 housing shall be of high-impact materials with a captive battery door. The transmitter antenna shall be removable and field replaceable.

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 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 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. An LED indicator shall illuminate when the transmitter is turned on. 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 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 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. An LED indicator shall illuminate when the transmitter is turned on. 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 XLRF-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 PLL-synthesized frequencies (adjustable in 25 kHz steps) per band and shall be compatible with Audio-Technica 3000 Series or 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 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-1821(C/D) – Basic Body-pack System
ATW-1822(C/D) – Plug-on System
ATW-1823(C/D) – Combo System (body-pack w/microphone and plug-on transmitter)

Note to Specifier: If handheld systems are specified, choose:
ATW-R1820(C/D) plus ATW-T341b dynamic handheld transmitter
or
ATW-R1820(C/D) plus ATW-T371b condenser handheld transmitter

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Specifications

Overall system	
UHF operating frequency	Band C: 541.500–566.375 MHz Band D: 655.500–680.375 MHz
Number of channels	996 total per band (25 kHz increments)
Frequency stability	±0.005%, Phase Lock Loop frequency control
Modulation mode	FM
Normal deviation	±10 kHz
Operating range	100 m (300') typical
Operating temperature range	- 5° C (23° F) to 45° C (113° F)
Frequency response	70 Hz to 15 kHz

ATW-R1820 receiver	
Receiving system	Dual independent RF sections, automatic-switching diversity
Image rejection	>50 dB typical
Signal-to-noise ratio	104 dB at 30 kHz deviation (A-weighted), maximum modulation 37 kHz
Total harmonic distortion	≤1% (±10 kHz deviation at 1 kHz)
Sensitivity	25 dBµV, (S/N 60 dB at 5 kHz deviation, A-weighted)
Audio output	Balanced: 27 mV (at 1 kHz, ±5 kHz deviation)
Output connector(s)	3-pin mini XLR (TA3M-type)
Monitor headphone output (typical)	35 mW max., 32 ohm load (per channel)
Monitor headphone jack	3.5 mm TRS, signals on both Tip and Ring
External power requirements	12V DC nominal, 500 mA
Batteries	Six 1.5V AA alkaline (not included)
Current consumption (battery)	Dual-channel operation: 600 mA typical Single-channel operation: 350 mA typical
Battery life	6 hours typical (dual-channel); 10 hours typical (single-channel), depending on battery type and use pattern
Dimensions	85.0 mm (3.35") W x 133.0 mm (5.24") H x 36.0 mm (1.42") D
Net weight	425 g (15.0 oz) (without batteries)
Accessories included	Two flexible UHF antennas; two 18" TA3F- to XLRM-type output cables; belt pouch

ATW-T1801 UniPak® transmitter	
RF power output	High: 30 mW; Low: 10 mW, nominal
Spurious emissions	Under federal regulations
Dynamic range	>105 dB, A-weighted
Input connections	High impedance, low impedance, bias
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	66.0 mm (2.60") W x 87.0 mm (3.43") H x 24.0 mm (0.94") D
Net weight	80 g (2.8 oz) (without batteries)

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 XLRF-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.

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