

System 10 PRO

Rack-Mount Digital Wireless System

wireless systems



Features

- **Digital 24-bit/48 kHz wireless operation for ultimate sound quality and dependable performance**
- **Operates in the 2.4 GHz range – completely free from TV interference**
- **Receiver units can be docked in the chassis or mounted remotely (up to 328 feet away) via UTP cable for added versatility**
- **Up to five chassis (ten receiver units) can be linked and used simultaneously**
- **Each receiver unit can be paired with up to 10 transmitters, allowing users to instantly switch between different transmitter configurations**
- **Chassis' System ID Display shows RF signal level, system ID, transmitter battery level, and system link status**
- **Automatic frequency selection for seamless, interference-free operation**
- **Extremely easy operation with instantaneous channel selection, sync, and setup**
- **Three levels of diversity assurance: frequency, time & space**
- **Ground-lift switch helps eliminate audible hum caused by ground loops**

Description

System 10 PRO Rack-Mount brings new versatility to the System 10 family of 2.4 GHz digital wireless products. With remote-mountable receiver units and the simultaneous use of up to 10 channels, System 10 PRO combines innovation with rock-solid performance, easy setup and clear, natural sound quality.

The ATW-RC13 half-rack receiver chassis features two receiver unit docks, each designed to house an ATW-RU13 receiver unit. Two RJ45 connectors on the rear of the chassis allow each receiver unit to be released from the chassis and mounted up to 100 m (328 ft.) away via standard UTP cable. The chassis is also equipped with IN/OUT RJ12 connectors that can be used to link the chassis to another chassis (up to five chassis – 10 receiver units – can be linked together) allowing for simultaneous use of all receivers and increased stability of a multichannel system. The front of the chassis is equipped with a System ID Display that indicates the RF signal strength, System ID number and battery level for the transmitter currently engaged with each receiver unit. The display also shows if the chassis is currently linked to another chassis. Additionally, the chassis features an AF level control, ground lift switch, unbalanced $\frac{1}{4}$ " output connection and balanced XLRM-type output connection for each receiver unit.

The ATW-RU13 receiver unit features two detachable antennas that screw onto the face of the unit via SMA connectors. The rear of the unit is equipped with a $\frac{1}{4}$ "-20 thread socket for mounting the receiver unit remotely to a tripod or other device with a $\frac{1}{4}$ " screw. An RJ45 connector, also on the rear of the unit, allows a remotely mounted receiver unit to be connected to the chassis with UTP cable. An LED status indicator, located between the mounting

socket and the RJ45 connector, blinks slowly when the receiver unit is not paired with a transmitter, blinks quickly during the pairing process, and illuminates solidly green once the receiver unit is paired with a transmitter. An AT8690 RU13 Holder is supplied for each receiver unit, providing a convenient means to mount the unit remotely.

The ATW-T1001 UniPak® body-pack transmitter is powered by two AA batteries and features a sliding battery compartment cover that also protects the internal controls from being accidentally activated. The transmitter is equipped with a recessed 4-pin HRS-type locking input connector that helps to increase the life of the microphone or guitar cable and a microphone/instrument level control that provides trim adjustment. The transmitter supplies DC bias voltage to power condenser microphones. A power/mute button on the top of the unit allows for the transmitter to be easily muted or turned on and off. A pairing switch in the battery compartment works to pair the transmitter with a receiver unit. The transmitter also features a dual-color LED power/battery/mute indicator that glows green when the transmitter is turned on and the batteries are in good operating condition. The LED flashes green when batteries are low and turns red when the mute function has been activated. A System ID display on the front of the transmitter indicates the transmitter's System ID number.

The ATW-T1002 handheld transmitter uses a specially designed dynamic cardioid capsule to maintain sonic consistency with wired counterparts, while an adjustable trim control helps match the microphone to the audio source. The ergonomically designed handle unscrews and slides off to reveal the battery compartment and controls. The power/mute button is placed at the end of the microphone to maintain a clean, uncluttered appearance. A rugged steel head case protects the capsule while providing relief from wind-induced noise. Like the body-pack transmitter, the handheld transmitter is equipped with a dual-color power/battery/mute indicator, a System ID display, input level control and a pairing switch, and operates on two AA batteries.

Architect's and Engineer's Specifications

The 2.4 GHz wireless microphone system shall operate in the ISM band: 2.4000 GHz to 2.4835 GHz. The transmission shall be 24-bit digital audio with a total system latency of 3.8 ms. The system shall support a 24-bit/48k digital audio stream without analog audio companding. The wireless microphone system shall be capable of automatic frequency selection and assign transmitter operating frequencies without user intervention and actively avoid interference without interrupting the audio signal. The system shall transmit and receive two frequencies, one as a primary transmission with the digital audio data and the second a transmission with the same digital audio data but on a separate, time-shifted frequency for error correction. The system shall also utilize two antennas on each receiver unit and transmitter, thus achieving three levels of wireless diversity in frequency, time and space.

The receiver chassis shall be all-metal and capable of housing two removable receiver units. The chassis shall have on its front panel an LED Audio Indicator for each receiver unit that shows when audio is received from a transmitter, when audio is nearing peak level and when it reaches peak level. The receiver chassis shall also have a System ID Display that indicates (for each receiver unit) the RF signal level received from the transmitter, System ID number, transmitter battery level and chassis link status. The receiver chassis 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 rear panel shall also have Link IN/OUT connectors that accept RJ12 cable (included with each system) to link one receiver chassis to another (up to five chassis total). When using more than one chassis they are to be linked with the RJ12 cable for optimum frequency coordination and system timing. The receiver chassis shall be able to be powered by 120V AC 60 Hz or 12–18V DC at 500 mA. Two half-wave antennas per receiver unit shall be located on the front of the unit and shall incorporate SMA-type connectors. To facilitate

extending the antennas, the receiver unit may be removed from the chassis and mounted on a tripod or other device with a ¼"-20 threaded bolt or slipped into the included AT8590 holder for mounting on a wall or other structure. The receiver unit shall be connected with standard Category 5e or better structured cable via a RJ45 with a maximum cable length of 100 m (328 ft). Each receiver unit shall require a separate cable home run to the receiver chassis to carry proprietary digital audio information and power. The receiver chassis can be rack-mounted alone or with another chassis 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 chassis and supplied metal rack-mounting brackets and metal joining plate shall be industrial black.

The frequency-agile 2.4 GHz wireless body-pack transmitter shall have microphone and line level inputs, and transmit in the 2.4000 GHz to 2.4835 GHz ISM frequency band. The transmitting frequency shall be determined by the paired receiver and automatically changed based on the monitoring of the spectrum by the receiver. The body-pack shall provide DC voltage to power microphones requiring DC bias. The body-pack transmitter shall have a reversible clothing clip allowing for up or down cable entry. The transmitter shall have a recessed 4-pin locking input connector. A dual-color LED indicator shall illuminate green when the transmitter is turned on, shall illuminate red when the transmitter is muted, and shall blink when the battery power is low. An LED System ID Display shall show the pairing number of the associated receiver unit. There shall be an adjustment to allow input gain changes with a range of 18 dB. The body-pack transmitter shall support a 24-bit/48 KHz digital audio stream without analog audio companding. The body-pack shall pair with a receiver unit using a unique identification number. Up to 10 transmitters (body-pack or handheld) shall pair with a single receiver unit and the active body-pack shall be that which was turned on first (among all body-packs currently on). Each body-pack transmitter shall have two antennas that both transmit and receive signals. The transmitter shall operate on two AA batteries.

The frequency-agile 2.4 GHz wireless handheld transmitter shall utilize a dynamic cardioid element and transmit in the 2.4000 GHz to 2.4835 GHz ISM frequency band. The transmitting frequency shall be determined by the paired receiver and automatically changed based on the monitoring of the spectrum by the receiver. The transmitter shall support a 24-bit/48 KHz digital audio stream without analog audio companding. The capsule shall incorporate internal shock mounting and have a two-stage integral pop filter. It shall have a durable plastic housing. A dual-color LED indicator shall illuminate green when the transmitter is turned on, shall illuminate red when the transmitter is muted, and shall blink when the battery power is low. An LED System ID Display shall be provided to show transmitter pairing number. The transmitter shall have an audio input level adjustment range of 18 dB. The handheld transmitter shall pair with a receiver unit using a unique identification number. Up to 10 transmitters (handheld or body-pack) shall pair with a single receiver unit and the active handheld shall be that which was turned on first (among all handheld transmitters currently on). Each handheld transmitter shall have two antennas that both transmit and receive signals. The transmitter shall operate on two AA batteries. The transmitter shall be supplied with a heavy-duty stand clamp.

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

- ATW-1301 – Single Body-Pack System
- ATW-1301/L – Single Body-Pack System with Lavalier Microphone
- ATW-1302 – Single Dynamic Handheld System
- ATW-1311 – Dual Body-Pack System
- ATW-1311/L – Dual Body-Pack System with Lavalier Microphones
- ATW-1312 – Dual System: One Handheld, One Body-Pack
- ATW-1312/L – Dual System: One Handheld, One Body-Pack with Lavalier Microphone
- ATW-1322 – Dual Dynamic Handheld System

Specifications

Overall system	
Operating Frequencies	2.4 GHz ISM band
Dynamic Range	>109 dB (A-weighted), typical
Total Harmonic Distortion	<0.05% typical
Operating Range	60 m (200')
	<i>Open range environment with no interfering signals</i>
Operating Temperature Range	0° C to +40° C (32° F to 104° F)
	<i>Battery performance may be reduced at very low temperatures</i>
Frequency Response	20 Hz to 20 kHz
	<i>Depending on microphone type</i>
Audio Sampling	24 bit / 48 kHz
Latency	3.8 mS


ATW-RU13 Receiver UNIT

Receiving System	Diversity (frequency/time/space)
Dimensions	57 mm (2.24") W x 19 mm (0.75") H x 77.6 mm (3.06") D
Net Weight	64 grams (2.3 oz)
Remote receiver connector	RJ45
Mounting Thread Insert	¼" x 20
Accessories Included	Antennas, AT8690 RU13 holder

ATW-RC13 Receiver Chassis

Maximum Output Level	XLR, balanced: 0 dBV ¼" (6.3 mm), unbalanced: +6 dBV
Power Supply	100-240V AC (50/60 Hz) to 12V DC 0.5A power supply switched mode external
Dimensions	209.8 mm (8.26") W x 44 mm (1.73") H x 169.3 mm (6.67") D
Net Weight	940 grams (33.2 oz)
Remote receiver connector	RJ45
Accessories Included	AC adapter, Link cable, Rack-mount adapters, Joining plate, Rubber feet

UniPak® Transmitter

RF Output Power	10 mW
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 +9V
Batteries (not included)	Two 1.5V AA
Battery Life	>7 hours (alkaline)
	<i>Depending on battery type and use pattern</i>
Dimensions	70.2 mm (2.76") W x 107.0 mm (4.21") H x 24.9 mm (0.98") D
Net Weight (without batteries)	100 grams (3.5 oz)

UniPak® Transmitter

RF Output Power	10 mW
Spurious Emissions	Following federal and national regulation
Batteries (not included)	Two 1.5V AA
Battery Life	>7 hours (alkaline)
	<i>Depending on battery type and use pattern</i>
Dimensions	254.8 mm (10.03") long, 50.0 mm (1.97") diameter
Net Weight (without batteries)	280 grams (9.9 oz)
Accessory Included	AT8456a Quiet-Flex™ stand clamp

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

