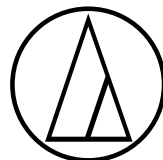


Professional UHF Wireless Systems

ATW-T94 UHF Handheld Microphone /Transmitter

Installation and Operation



audio-technica®

ATW-T94 UHF Handheld Microphone / Transmitter

Introduction

Audio-Technica Engineered Sound wireless systems are offered as separate receiver and transmitter units, rather than in predetermined combinations, for greatest system flexibility. Operating details for Engineered Sound receivers and overall system operation are included with each receiver.

Engineered Sound receivers feature a sophisticated Tone Lock[®] tone squelch system that opens only when an Engineered Sound transmitter is detected, reducing the possibility of interference. As a result, Engineered Sound transmitters and receivers must be used together and should not be used with components from other Audio-Technica wireless systems, or with those of other manufacturers.

Please note that in multiple-system applications there must be a transmitter-receiver pair set to a separate frequency for each input desired (only one transmitter at a time for each receiver). Because the wireless frequencies are on UHF TV frequencies, only certain wireless frequencies may be useable in a particular geographic area. Also, only certain of the available operating frequencies may be used together.

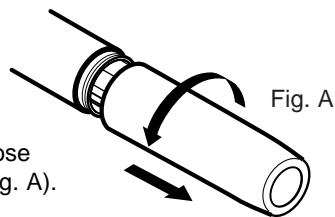
Transmitter Setup

Battery Selection and Installation

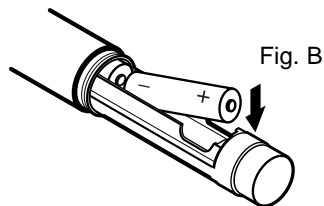
The transmitter uses two 1.5V AA batteries, not included. Alkaline type is recommended. Always replace both batteries. *Make certain the transmitter power switch is turned Off before replacing batteries.*

Battery Installation

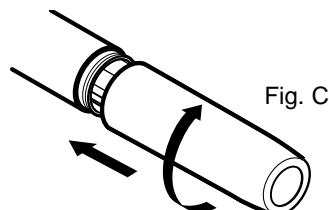
1. While holding the transmitter body at the on-off switch, unscrew the lower body cover and slide it off to expose the battery compartment (Fig. A).



2. Observe correct polarity as marked inside the battery compartment and carefully insert two fresh 1.5V AA alkaline batteries (Fig. B). Because there is some variation in actual battery dimensions, make certain the batteries are *fully* seated in the battery compartment.



3. Replace the lower body cover (Fig. C). **Do not overtighten.**



Battery Condition Indicator

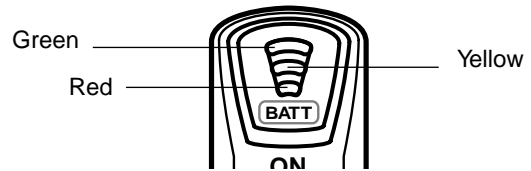


Fig. D

After the batteries are installed, turn the power on. The red battery condition indicator LED (Fig. D) should flash momentarily and the green indicator should come on. If this does not happen, the batteries are installed incorrectly or they are dead. If the yellow or red indicator stays on, the battery voltage is low and the batteries should be replaced. If this happens during use, replace the batteries immediately to ensure continued operation.

Transmitter Controls

POWER SWITCH: The Power switch controls the entire transmitter. There is about a half-second delay after transmitter turn-on before the receiver's Tone Lock squelch un-mutes.

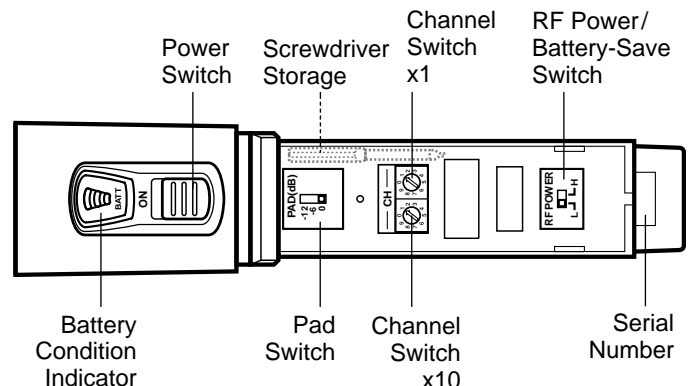
Remove the lower body cover to access the following controls.

PAD SWITCH: The ATW-T94 offers a Pad switch with 0/-6/-12 dB positions which increases the maximum SPL (sound pressure level) capability of the microphone. Use the "0" (no pad) position unless very high SPLs are encountered.

CHANNEL SWITCHES: The left channel selector switch corresponds to the receiver's left-column channel display number (tens); the right switch corresponds to the receiver's right-column channel display number (units). Always turn the transmitter off when changing frequencies.

RF POWER / BATTERY-SAVE SWITCH: As supplied, the switch is set in the "H" (high) position for maximum range. Switching to the "L" (low) position increases battery life somewhat by reducing power. (Note: Effective range may decrease when the switch is set at the "L" position.)

Fig. E
Transmitter Controls



System Operation

Turn down the mixer/amplifier level before starting up the wireless system.

Switch on the receiver. Do *not* switch on the transmitter yet.

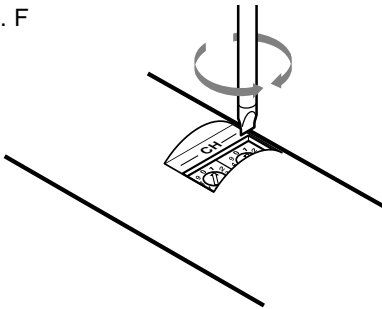
Receiver On-

The Channel Designator Display will light. If any of the RF LEDs light up at this point, there may be RF interference in the area. If this occurs, select another frequency using the front-panel channel selectors. While holding in the "Set" button, press the "Up" or "Down" button to access the desired frequency; then release the Set button to select the channel.

Transmitter On-

Before turning on the transmitter, use the provided screwdriver to set the transmitter channel selector switches (Fig. F) to the same numbers as those displayed on the receiver. Always turn the transmitter off when changing frequencies. When the transmitter is switched on and in normal operation, the receiver's RF signal level indicators will light up from left to right. For optimum performance at least four, and preferably five, of the signal strength indicators should light up when the transmitter is switched on. One of the Tuner LEDs (A or B) also will light up when the transmitter is on, indicating that its signal has been received and the receiver's Tone Lock squelch circuit has opened.

Fig. F



Specifications

OVERALL SYSTEM

Operating Frequency	UHF band, 800.550 to 819.700MHz
Number of Channels	100 total
Frequency Stability	±0.005%, Phase Lock Loop frequency control
Modulation Mode	FM
Normal Deviation	±5 kHz
Tone Squelch Frequency	32.768 kHz
Operating Range	90m typical
Operating Temperature Range	5C degree to 45C degree
Frequency Response	100 Hz to 15 kHz

ATW-T94 HANDHELD TRANSMITTER

RF Power Output	50 mW Max (H: 10 mW ; L: 5 mW, typical)
Spurious Emissions	Under federal regulations
Microphone Element	A-T Hi-ENERGY dynamic, unidirectional
Batteries	Two 1.5V AA type alkaline, not included
Current Consumption	H: 105 mA; L: 95 mA, typical
Battery Life	H: 16 hours; L: 18 hours, typical (depending on battery type and use pattern)
Dimensions	53.5 mm dia. x 239.0 mm long
Net Weight (without batteries)	295 grams
Accessory Included	AT8456 stand clamp

Setting Levels

Although Engineered Sound receivers require no level adjustment, correct adjustment of transmitter audio input and mixer/amplifier input and output levels is important for optimum system performance.

The ATW-T94 handheld transmitter has a 0/-6/-12 dB audio input Pad switch under the lower body cover. It is factory pre-set at "0" for maximum audio input gain. If four or five AF Level LEDs on the receiver illuminate with maximum audio input, first try using the -6 dB position. Extremely high audio input may require use of the -12 dB setting. (Use the Pad switch only when needed; excessive use will affect the maximum signal-to-noise ratio of the system.)

1. Turn the transmitter on and power up the system.
2. Turn down the mixer's input trim control (if provided) on the selected channel; make an initial adjustment of the mixer channel and output level controls that will allow audio through the system.
3. While speaking/singing into the microphone at typically-loud levels, adjust the mixer's input trim control so the highest sound pressure level going into the microphone causes no input overload in the mixer, and yet permits the mixer's level controls to operate in their "normal" range (not set too high or too low).

RF Interference

Please note that wireless frequencies are shared with other radio services. According to Federal Communications Commission regulations, "Wireless microphone operations are unprotected from interference from other licensed operations in the band. If any interference is received by any Government or non-Government operation, the wireless microphone must cease operation..."

If you need assistance with operation or frequency selection, please contact your dealer.

Transmitter Accessories

AT8114	Foam windscreen for handheld transmitter.
AT8456	Stand clamp for handheld transmitter, 5/8"-27 threads.

Tips To Obtain The Best Results

- Use only fresh alkaline batteries. Do not use "general purpose" (carbon-zinc) batteries.
- The transmitter and the receiver should be as close together as conveniently possible, but no closer together than three feet. Maintain line-of-sight between them whenever possible.
- Each transmitter/receiver pair must be set to the same channel number.
- A single receiver cannot receive signals from two transmitters at the same time.
- You need to change channels 1) when a strong interference signal is received, 2) when the channel breaks down, or 3) during multiple-system operation in order to select an interference-free channel.
- Turn the transmitter off when not in use. Remove the batteries if the transmitter is not to be used for a period of time.

Audio-Technica UHF Wireless Operating Frequencies

Frequency and Channel Designator List

Ch.	Frequency (MHz)	Ch.	Frequency (MHz)	Ch.	Frequency (MHz)	Ch.	Frequency (MHz)
00	800.550	25	804.825	50	810.075	75	815.425
01	800.575	26	805.075	51	810.200	76	815.450
02	800.600	27	805.150	52	810.325	77	816.525
03	801.100	28	805.200	53	810.550	78	816.550
04	801.125	29	805.300	54	810.575	79	816.575
05	801.150	30	805.775	55	811.075	80	816.650
06	801.200	31	806.900	56	811.100	81	817.100
07	801.450	32	806.925	57	811.550	82	817.125
08	801.925	33	806.950	58	811.575	83	817.200
09	801.950	34	807.400	59	811.600	84	817.450
10	801.975	35	807.425	60	811.700	85	817.925
11	802.075	36	807.450	61	812.775	86	817.950
12	802.200	37	808.525	62	812.800	87	818.075
13	802.225	38	808.550	63	812.825	88	818.200
14	802.250	39	808.575	64	812.850	89	818.225
15	802.325	40	808.600	65	813.075	90	818.325
16	802.575	41	808.625	66	813.100	91	818.550
17	803.025	42	809.100	67	813.125	92	818.575
18	803.050	43	809.175	68	813.200	93	819.025
19	803.075	44	809.200	69	813.300	94	819.050
20	803.550	45	809.225	70	813.750	95	819.075
21	803.575	46	809.450	71	813.775	96	819.550
22	803.600	47	809.475	72	814.850	97	819.575
23	803.625	48	809.925	73	814.875	98	819.600
24	803.700	49	809.950	74	814.950	99	819.700

Multi-channel Systems

Following are groupings of frequencies suggested for multi-channel wireless systems.

Group A: Channels 01 (or 04), 09, 13, 18, 22, 32, 34, 40, 44, 47 -or-

Group B: Channels 56, 58, 63, 66, 78, 81, 85, 88, 93, 97

Notice to individuals *with implanted cardiac pacemakers or AICD devices* :

Any source of RF (radio frequency) energy *may* interfere with normal functioning of the implanted device. All wireless microphone have low-power transmitters (less than 0.05 watts output) which are unlikely to cause difficulty, especially if they are at least a few inches away. Note also that *any medical-device disruption will cease when the RF transmitting source is turned off*. Please contact your physician or medical-device provider if you have any questions, or experience any problems with the use of this or any other RF equipment.

CAUTION! The circuits inside the receiver and transmitter have been precisely adjusted for optimum performance and compliance with federal regulations. Do not attempt to open the receiver or transmitter. To do so will void the warranty, and may cause improper operation.

