

Professional UHF Wireless Systems

ATW-T93 UHF UniPak™ Transmitter

Installation and Operation



audio-technica®

ATW-T93 UHF UniPak™ Body-pack Transmitter

Introduction

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

The Audio-Technica receivers feature a sophisticated Tone Lock™ tone squelch system that opens only when an transmitter is detected, reducing the possibility of interference. As a result, the 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.

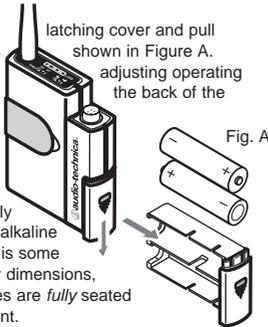
Transmitter Setup

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

- Slide down the battery out the battery drawer as shown in Figure A. (A screwdriver for frequency is stored on drawer.)
- Observe correct polarity as marked inside the battery compartment and carefully insert two fresh 1.5V AA alkaline batteries. Because there is some variation in actual battery dimensions, make certain the batteries are fully seated in the battery compartment.
- Carefully insert the battery drawer fully, but do not force the drawer in. Then slide the cover up to latch the drawer.



Battery Condition Indicator

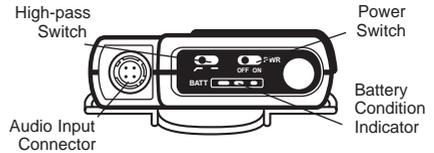
After the batteries are installed, turn the power on. The red battery condition indicator LED on the user control panel should flash momentarily and the green indicator should come on. If this does not happen, the batteries are installed incorrectly or they are dead. If the yellow or red indicator stays 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 Input Connection

Connect an audio input device (microphone or guitar cable) to the audio input connector beside the user control panel (Fig. B).

A number of Audio-Technica professional microphones and cables are available separately pre-terminated with a UniPak™ input connector.

Fig. B
User Control Panel



Transmitter Controls

POWER SWITCH: The Power switch controls the entire transmitter. Its handle is designed to be felt and activated easily even through clothing or other garments. There is about a half-second delay after transmitter turn-on before the receiver's Tone Lock squelch un-mutes.

HIGH-PASS SWITCH: The ATW-T93 offers an audio high-pass switch which reduces low frequencies, when desired. It affects only the microphone input and is recessed to avoid accidental activation. Use this switch to reduce pickup of low-frequency noise caused by clothing and/or user movement.

Fig. C
Setup Control Panel

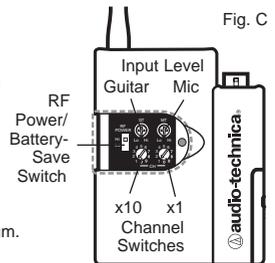
INPUT TRIMMERS:

These controls permit adjustment of Mic Level (MT) and Guitar Level (GT) to match a wide range of input devices, as described in a following section. The trimmer *not* in use should be set to minimum.

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 "Hi" position for maximum range. Switching to the "Lo" position increases battery life somewhat by reducing power. (Note: Effective range may decrease when the switch is set at the Lo position.)



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.

Setting Levels

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

Transmitter Input Levels

Input trimmer controls in the UniPak transmitter (Fig. C) will enable you to use microphones or instruments with different output levels.

1. Set both the transmitter Mic Level (MT) and Guitar Level (GT) controls to their full counter-clockwise position (minimum). (The level control not being used should always be set to minimum.)
2. Plug the mic or instrument into the transmitter and power up the system.
3. For **MIC**: Make an initial adjustment of the mixer's level controls that will allow audio through the system as you increase the transmitter's Mic Level.

Specifications

ATW-T93 UNIPAK™ TRANSMITTER

RF Power Output	50 mW Max (H: 10 mW; L: 5 mW, typical)
Spurious Emissions	Under federal regulations
Input Connections	High impedance, low impedance, bias
Bias Voltage	5V, 5 mA Max
High-pass (low-freq, roll-off)	150Hz, 6 dB per octave (mic input only)
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)	75 grams
Accessory Included	Alternate mounting clip

For **INSTRUMENT**: Make an initial adjustment of the instrument amplifier input level control that will allow audio through the system as you increase the transmitter's Guitar Level.

4. For **MIC**: While speaking/singing into the microphone at typically-loud levels, turn up the transmitter's Mic Level (MT) control until the maximum audio output of the mic lights about three or four green LED segments on the receiver's AF Level indicator.

For **INSTRUMENT**: While playing the instrument at typically-loud levels, turn up the transmitter's Guitar Level (GT) control until the maximum audio output of the instrument lights about three or four green LED segments on the receiver's AF Level indicator.

5. For **MIC**: Next, while again 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 channel and output level controls to operate in their "normal" range (not set too high or too low).

For **INSTRUMENT**: Next, while again playing the instrument at typically-loud levels, adjust the amplifier's input control so the highest signal level causes no overload in the instrument amplifier.

CAUTION! The small trimmer controls are delicate; use only a small screwdriver or alignment tool with a maximum 3/32"-wide blade. Do not force the trimmers beyond their normal 260 degree range of rotation.

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

All of the microphones terminated UniPak can be used with ATW-T93. Please contact your dealer for the information.

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.
- The "MT" or "GT" input control not in use should be set to minimum.
- 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)						
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.



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