3000 Series Professional
UHF Wireless Systems

**ATW-3110** UniPak™ Transmitter System
**ATW-3141** Handheld Dynamic Microphone System

*Installation and Operation*
Professional UHF Wireless Systems

Installation and Operation

This device complies with part 15 of the FCC Rules. Operation is subject to the condition that this device does not cause harmful interference.

This device complies with INDUSTRY CANADA R.S.S. 210, en conformite avec IC: RSS-210/CNR210. Operation is subject to the following conditions: 1) This device may not cause harmful interference and 2) this device must accept any interference received, including interference which may cause undesired operation.

CAUTION! Electrical shock can result from removal of the receiver cover. Refer servicing to qualified service personnel. No user-serviceable parts inside. Do not expose to rain or moisture.

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.

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 microphones 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. However, since a “body-pack” mic transmitter typically is placed against the body, we suggest attaching it at the belt, rather than in a shirt pocket where it may be immediately adjacent to the medical device. 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.

Introduction

Thank you for choosing an Audio-Technica professional wireless system. You have joined thousands of other satisfied customers who have chosen our products because of their quality, performance and reliability. This Audio-Technica wireless microphone system is the successful result of years of design and manufacturing experience.

3000 Series systems and components operate on 200 PLL-synthesized frequencies in one or two 25 MHz-wide UHF frequency ranges:

- **Band C** 541.500–566.375 MHz (TV Channels 25–30)
- **Band D** 665.500–680.375 MHz (TV Channels 44–49)

For simplicity, model numbers used throughout the manual will reference only the basic model number without the “C” or “D” band indications.

Each wireless system includes a receiver and either a body-pack or handheld transmitter. Individual components are also available separately.

All 3000 Series components feature soft-touch controls for quick, easy access to a formidable range of functions; an LCD information display in each unit provides convenient visual indication of unit settings and operation.

The ATW-R310 receiver features true diversity reception. Two antennas feed two completely independent RF sections on the same frequency; automatic logic circuitry continuously compares and selects the superior received signal, providing better sound quality and reducing the possibility of interference and dropouts. Soft-touch controls provide convenient access to a variety of functions, while an LCD information display provides constant monitoring of system operation, including indication of the transmitter’s battery status. The receiver is half-width for a standard 1U 19” rack mount; rack-mount adapters are included. Two receivers can be mounted side by side, using an optional AT8630 joining-plate kit.

The versatile ATW-T310 UniPak™ body-pack transmitter has both low- and high-impedance inputs plus a bias connection, for use with dynamic and electret condenser microphones, as well as Hi-Z instrument pickups. In addition to its programmable functions, the transmitter features a three-position sliding cover to limit access, if desired, to just the Power/Mute button, or to no controls, as appropriate for the application and user.

The ATW-T341 handheld dynamic microphone/transmitter features the same element used in the Artist Elite® AE4100 dynamic handheld microphone created for professional live-sound venues.

Transmitters in the 3000 Series use two 1.5V AA batteries for economical operation and wide availability. The receiver and both transmitters have “fuel gauge” battery condition indicators with low-battery warnings.

An advanced Digital Tone Lock™ tone squelch system in the ATW-R310 receiver opens only when a 3000 Series transmitter is detected, reducing the possibility of interference. As a result, 3000 Series 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 combination set to a separate frequency for each input desired (only one transmitter for each receiver).

Because the wireless frequencies are within UHF TV frequency bands, only certain operating frequencies may be useable in a particular geographic area. System operating frequencies will be found on page 12.
**Location**
For best operation the receiver should be at least 3 ft. (1 m) above the ground and at least 3 ft. away from a wall or metal surface to minimize reflections. The transmitter should be at least 3 ft. from the receiver, as shown in Figure A. Keep antennas away from noise sources such as digital equipment, motors, automobiles and neon lights, as well as away from large metal objects.

**Output Connections**
There are two audio outputs on the back panel: balanced (32 mV) and unbalanced (50 mV). Use shielded audio cable for the connection between the receiver and the mixer. If the input of the mixer is a ¼" jack, connect a cable from the ¼" unbalanced audio output on the back of the receiver housing to the mixer. If the input of the mixer is an XLR-type input, connect a cable from the balanced XLR-type audio output on the back panel to the mixer. The two isolated audio outputs permit simultaneous feeds to both unbalanced and balanced inputs. For example, both a guitar amp and a mixer can be driven by the receiver.

**Antennas**
Attach the included pair of UHF antennas to the antenna input jacks. The antennas are normally positioned in the shape of a "V" (both 45° from vertical) for best reception.

Antennas can be remotely located from the receiver. However, due to signal loss in cables at UHF frequencies, use the lowest-loss RF cables practical for any cable runs over 25 feet. RG8-type is a good choice. Use only copper-shielded cable, not CATV-type foil-shielded wire. Audio-Technica offers quality RF cables in four lengths, as well as remote antennas; see the Optional System Accessories section on page 11.

**Power Connections**
Connect the included AD1205AA in-line AC adapter to the DC power input on the back of the receiver. Loop the small cord from the DC plug over the cord hook above the jack, to keep the plug from being detached by an accidental tug on the cord. Then plug the larger cord from the in-line adapter into a standard 120 Volt 60 Hz AC power outlet. Operation of the receiver is controlled by the front-panel Power switch.

(Note: Units supplied to countries with 230V mains should include an in-line AC adapter appropriate for that country. Use the AD1205AA adapter only with 120V 60 Hz AC power sources.)

See pages 16-17 for illustrations.
Front Panel Controls and Functions (Fig. B)

1. POWER SWITCH: Press Power switch in and the receiver readouts will light.

2. ALERT INDICATOR: The Alert Indicator lights:
   (a) When the receiver is in the Function Edit mode,
   (b) When no RF signal is received from transmitter,
   (c) When only one or two RF signal-strength bars are on,
   (d) When the transmitter is in the Mute mode,
   (e) When audio modulation level from the transmitter is close to the clipping point (AF +3/+6 bars),
   (f) When only one bar of the Battery “fuel gauge” is on (transmitter battery is weak).

3. LCD WINDOW: Liquid Crystal Display indicates control settings and operational readings. See Figure D on page 16 for examples.

4. TUNER OPERATION INDICATOR: Indicates which Tuner (A or B) has the better reception and is in operation. The “B” indicator also lights to serve as confirmation of Mode/Set button entries.

5. UP/DOWN BUTTONS: Press Up or Down arrow buttons, in conjunction with the Mode/Set button, to step through menus, select operating frequency and edit receiver function choices.

6. MODE/SET BUTTON: Use in conjunction with the Up/Down arrow buttons to step through menus, select operating frequency and edit receiver function options.

7. MOUNTING ADAPTERS: For mounting the receiver in any standard 19” rack. Attach adapters to the receiver with the screws supplied and remove the four receiver feet. (Use optional AT8630 joining-plate kit to mount two ATW-R310 receivers side-by-side.)

Rear Panel Controls and Functions (Fig. C)

8. ANTENNA INPUT JACK: BNC-type antenna connector for Tuner “B.” Attach the antenna directly, or extend it with a low-loss antenna cable. See the “Antennas” section on page 3 for more details.

9. ANTENNA INPUT JACK: Input for Tuner “A.” Attach the antenna directly, or extend it with a low-loss antenna cable.

10. AF LEVEL CONTROL: Adjusts audio output level of both AF Output jacks; maximum output is fully clockwise.

11. GROUND LIFT SWITCH: Disconnects the ground pin of the balanced output jack (12) from ground. Normally, the switch should be to the left (ground connected). If hum caused by a ground loop occurs, slide switch to the right (ground lifted).

12. BALANCED AUDIO OUTPUT JACK: XLRM-type connector. A standard 2-conductor shielded cable can be used to connect the receiver output to a balanced microphone-level input on a mixer or integrated amplifier.

13. UNBALANCED AUDIO OUTPUT JACK: 1/4” phone jack. Can be connected to an unbalanced aux-level input of a mixer, guitar amp or tape recorder.

14. POWER INPUT JACK: Connect the DC plug from the included in-line AC adapter.

15. CORD HOOK: Loop the small DC cord around the cord hook to keep the DC plug from pulling out accidentally.

Power On/Off

To turn the receiver on, press in the Power switch. The Alert light and the LCD window will come on (about 1-2 seconds). The operating frequency will be displayed in the window after the power-up sequence. To turn the receiver off, press the Power switch again.

LCD Window

The LCD (Liquid Crystal Display) presents a great deal of setup and operating information clearly and conveniently. (See Figure D for examples.)

Up/Down Arrow Buttons

In conjunction with the Mode/Set button, the arrow buttons permit moving through the menu of functions, and choice of settings within each function.

Mode/Set Button

The Mode/Set button shifts the receiver from normal operation into Menu mode and, in conjunction with the Up/Down arrow buttons, permits selection of different features and changing of their stored values in the Edit mode.

How to Make Setting Changes

1. From the normal operating mode, press the Mode/Set button once to enter the Function Menu mode. (Only the frequency will remain in the LCD window, and the receiver’s audio output will be cut off.)

2. Use the Up/Down arrow buttons to reach the desired function. The value in the LCD window is the current setting for that function.

3. Press the Mode/Set button once again to open the list of available choices for that function. The value will flash, indicating that it can be changed (Edit mode).

4. Use the arrow buttons to go through the available choices, stopping on the desired new choice.

5. (a) To accept and enter the new choice, press and hold the Mode/Set button until “STORED” appears in the LCD. This changes the value and puts the function of the buttons back at Menu level (step 2 above). (The “B” tuner light will come on while the Mode/Set button is depressed, to confirm its action.)

   (b) To “back out” of the Edit mode without making a new choice, simply press the Mode/Set button once. The word “ESCAPE” will appear in the window and the function of the buttons will revert to the Menu level (step 2 above), without making any changes.

6. Repeat this selection process for any other function changes desired. When finished with any changes, use the arrow buttons to move to “QUIT”. Press the Mode/Set button once to exit the menu and return the receiver to normal operation. (“RF” and “AF” will reappear in the window, indicating the return to normal receiver operation, with the receiver’s audio output again enabled.)

How to Restore Default Settings

To return all the receiver functions to their original factory-default settings, first turn the receiver off. Then hold in the Mode/Set button while pressing the Power switch. The LCD will briefly show “RESET”, followed by “WAIT” (release the Mode/Set button), before commencing normal-mode operation at the default settings.
When the receiver is in the Menu or Edit mode, its audio output is silenced. Once control-setting operations are completed (or Escape is used), normal receiver operation will resume with its audio output restored.

While in the Edit mode, if no action is taken for approximately 30 seconds (no buttons pressed), the receiver will “back out” to the Menu mode. Similarly, after about 30 seconds of inaction in the Menu mode, the receiver will “back out” to normal receiver operation with audio output restored.

High-pass Filter
Internal high-pass filter circuitry may be set to four positions: High-pass Off, or a 6 dB, 12 dB or 18 dB slope at 150 Hz. The default setting is Off (“HP OFF”). Increasing the slope of the high-pass filter further suppresses unwanted low frequencies, while maintaining the frequency response in the desired audio range.

Meter Hold Setting
When activated (“MH ON”), this function permits the bar-meters in the LCD window to capture and display the highest-level “AF” audio modulation (a solid bar) and the lowest-level “RF” signal (a flashing bar) received from the transmitter. This is particularly useful when setting up the system initially, during a sound-check, or when diagnosing operating problems. The default setting is Off (“MH OFF”).

When the Meter Hold is On, it is possible to reset it – to obtain a new set of RF and AF readings – without turning it off-and-on using the Menu/Edit functions. Simply press the transmitter’s Power/Mute button once (to mute the transmitter) and wait until the receiver’s Alert light comes on, indicating the Mute condition. Then press the transmitter’s Power/Mute button once again, to un-mute the transmitter. After the Alert light goes out, a new set of min/max RF/AF readings will be indicated on the bar-meters. (Note that, depending upon the digital updating-and-confirming sequence of the Mute condition data from the transmitter, it may take several seconds for the Alert light condition to change. The Meter Hold function is not reset until the Alert light has turned on, then turned off.)

Digital Tone Lock™ Squelch
The 3000 Series employs a unique Digital Tone Lock squelch system that provides enhanced rejection of interference. In addition to providing highly effective control of unwanted noise, the Tone Lock signal from the transmitter also conveys data on the transmitter’s battery condition and mute status back to the receiver for display.

The squelch level is adjustable from 15 dB (the default value) to 42 dB in 3 dB steps. Increasing the squelch level – also called “tightening the squelch” – can cause a reduction in useable range of the wireless transmitter, so use the lowest value that reliably mutes the unwanted RF signals. (If interference is a problem, first consider trying a different frequency.)

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### Receiver Functions

<table>
<thead>
<tr>
<th>Function Menu</th>
<th>Default Setting*</th>
<th>Choices (Edit)</th>
<th>Wrap-around**</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Choices (Edit)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Receiver powers-up at Frequency)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>▲▼ Frequency</td>
<td>Lowest in band †</td>
<td>200 discrete frequencies</td>
<td>Yes</td>
</tr>
<tr>
<td>▲▼ Quit (exit Menu)</td>
<td>QUIT</td>
<td>Press Mode/Set to exit</td>
<td>–</td>
</tr>
<tr>
<td>▲▼ Squelch</td>
<td>SQ 15 dB</td>
<td>SQ 15 dB to SQ 42 dB in 3 dB steps</td>
<td>No</td>
</tr>
<tr>
<td>▲▼ Meter Hold</td>
<td>MH OFF</td>
<td>MH OFF MH ON</td>
<td>Yes</td>
</tr>
<tr>
<td>▲▼ High-pass Filter</td>
<td>HP OFF</td>
<td>HP OFF HP –6 HP –12 HP –18</td>
<td>No</td>
</tr>
</tbody>
</table>

* To reset to Default values, hold in the Mode/Set button while pressing the Power button to turn on the unit.

** Continue in the same Up/Down direction and choices “wrap around” to the other end of the range.

† Band C: 541.500 MHz; Band D: 655.500 MHz.

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Table 1. Receiver Functions

See pages 16-17 for illustrations.
Transmitter Controls And Functions

Refer to Figures E, F, G and H for an overview of transmitter features and controls.

**LCD Window**
The Liquid Crystal Display presents a great deal of setup and operating information clearly and conveniently (See examples in Fig. J). The LCD in the transmitters is designed for greatest contrast and best viewing with the window rotated somewhat away from the viewer (about 30 degrees), not straight-on, for a more convenient holding/viewing position.

**Power/Mute Button**
The transmitters have a combination Power and Mute switch. When used in combination with the programmed choices explained below, the various functions available to the transmitter user may be tailored to fit personal preferences or particular situations of use.

**Power On/Off**
To turn the transmitter on, press and hold the Power/Mute button until the red power indicator and the LCD window come on (about 1-2 seconds). The operating frequency will show in the window after the power-up sequence.

To turn the transmitter off, press and hold the Power/Mute button again, until the red power indicator and the LCD window are extinguished (about 1-2 seconds). The LCD window will show “PWR.OFF” before shutdown.

**Mute Off/On**
When the transmitter is muted, it produces RF with no audio signal modulation. When the transmitter is un-muted, it produces both RF and audio.

To mute the transmitter (cut off the audio, but continue the RF output), press and release the Power/Mute button once. A small “MUTE” will appear in the LCD window, just below the frequency (Fig. J-2).

To un-mute the transmitter (restore the audio), press and release the Power/Mute button once again. The “MUTE” will disappear from the LCD window.

**Power/Mute Locks**
Programmable Power/Mute Locks limit the functioning of the Power/Mute button as desired for particular users and/or applications. Power can be locked On; Mute can be locked Off. Selection of the desired locks, if any, is made through the function menu:

<table>
<thead>
<tr>
<th>Setting</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>NO.LOC</td>
<td>The normal Power and Mute functions are fully operational.</td>
</tr>
<tr>
<td>ALL.LOC</td>
<td>Both the Power and Mute functions are locked into their status as of the time “ALL.LOC” is applied. (Power On, and Mute either On or Off.) Note: ALL.LOC must be re-accessed and the setting changed to turn the transmitter off.</td>
</tr>
<tr>
<td>MUT.LOC</td>
<td>In this mode, the audio cannot be muted. The Power functioning is unaffected. (If MUT.LOC is applied while the transmitter is muted, pressing the Power/Mute button once will return to un-muted operation; thereafter the Mute function is disabled until the setting is changed again.)</td>
</tr>
<tr>
<td>PWR.LOC</td>
<td>Power is locked On as of the time “PWR.LOC” is applied. The Mute functioning is unaffected. Note: When in the PWR.LOC mode, the transmitter may be turned off by: (1) Re-accessing the LOC Menu and changing the setting, or (2) Removing and re-installing the batteries. When the transmitter is turned on again, it will power-up in the NO.LOC mode. (Only the PWR. LOC function will change when batteries are removed; all other settings remain stored in memory.)</td>
</tr>
</tbody>
</table>

If an attempt is made to take an action that currently is locked out, the LCD will display “LOC.KED” briefly, then return to its previously-displayed contents.

**Audio Input Selector**
The UniPak™ body-pack transmitter provides input connections for both low-impedance (Lo-Z) microphones and high-impedance (Hi-Z) instruments. A wide range of Audio-Technica Wireless Essentials™ microphones and cables is available pre-terminated with the appropriate professional latching connector. (See page 11.)

Selection of the desired input – microphone or instrument – is made through the function menu. Depending upon the input selected, a small “MIC” or “INST” will show in the LCD window, just below the frequency. (In the handheld transmitter, only “MIC” will show in the LCD window.)

**Setting Audio Input Level**
A 4-position audio input gain setting, selected through the function menu, serves to match the audio input level to the transmitter for best modulation with minimum distortion.

Available choices are +12 dB, +6 dB, 0 dB and –6 dB. The default value is +6 dB. Select the highest setting that does not result in over-modulation with the highest audio/instrument input levels (an AF indication on the receiver no higher than “0”); watch the receiver’s “AF” meter “+3/+6” indications and the Alert light to make certain they are not triggered by the highest audio levels.

The transmitter’s normally-on red LED power indicator will blink off if the peak audio input exceeds the maximum desirable level.

**Restore Default Settings**
A “PRESET” selection in the menu permits resetting of all transmitter functions to their factory-default values.

1. Press the Set button once to move to Menu mode.
2. Press the Up arrow twice to move to “PRESET” in the LCD window.
3. Press the Set button once and “LOAD” will appear in the LCD.
4. Press and hold the Set button until “DEF” appears in the LCD.
5. Press and hold the Set button until “LOADED” appears briefly in the LCD. The window will then revert to “PRESET”.
6. Press the Down arrow once to move to “QUIT”.
7. Press the Set button once to exit the Menu mode and return to normal operation, with all factory-default settings restored.
### UniPak Transmitter Functions

<table>
<thead>
<tr>
<th>Function Menu</th>
<th>Default Setting</th>
<th>Choices (Edit)</th>
<th>Wrap-around**</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency</td>
<td>Lowest in band†</td>
<td>200 discrete frequencies</td>
<td>Yes</td>
</tr>
<tr>
<td>RF Power</td>
<td>RF LOW</td>
<td>RF LOW RF HI</td>
<td>Yes</td>
</tr>
<tr>
<td>Audio Input Level</td>
<td>+6 dB</td>
<td>-6 dB 0 dB +6 dB +12 dB</td>
<td>No</td>
</tr>
<tr>
<td>Power/Mute Locks</td>
<td>NO.LOC</td>
<td>NO.LOC ALL.LOC MUT.LOC PWR.LOC</td>
<td>Yes</td>
</tr>
<tr>
<td>Input Select</td>
<td>MIC</td>
<td>MIC INSTR</td>
<td>Yes</td>
</tr>
<tr>
<td>Reset to Defaults</td>
<td>PRESET</td>
<td>LOAD (b) hold until: DEF (c) hold until: LOADED</td>
<td>--</td>
</tr>
<tr>
<td>Quit (exit Menu)</td>
<td>QUIT</td>
<td>Press Set to exit</td>
<td>--</td>
</tr>
</tbody>
</table>

** Continue in the same Up/Down direction and choices "wrap around" to the other end of the range.

† Band C: 541.500 MHz; Band D: 655.500 MHz.

Table 2. UniPak Transmitter Functions

### Handheld Transmitter Functions

<table>
<thead>
<tr>
<th>Function Menu</th>
<th>Default Setting</th>
<th>Choices (Edit)</th>
<th>Wrap-around**</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency</td>
<td>Lowest in band†</td>
<td>200 discrete frequencies</td>
<td>Yes</td>
</tr>
<tr>
<td>RF Power</td>
<td>RF LOW</td>
<td>RF LOW RF HI</td>
<td>Yes</td>
</tr>
<tr>
<td>Audio Input Level</td>
<td>+6 dB</td>
<td>-6 dB 0 dB +6 dB +12 dB</td>
<td>No</td>
</tr>
<tr>
<td>Power/Mute Locks</td>
<td>NO.LOC</td>
<td>NO.LOC ALL.LOC MUT.LOC PWR.LOC</td>
<td>Yes</td>
</tr>
<tr>
<td>Reset to Defaults</td>
<td>PRESET</td>
<td>LOAD (b) hold until: DEF (c) hold until: LOADED</td>
<td>--</td>
</tr>
<tr>
<td>Quit (exit Menu)</td>
<td>QUIT</td>
<td>Press Set to exit</td>
<td>--</td>
</tr>
</tbody>
</table>

** Continue in the same Up/Down direction and choices "wrap around" to the other end of the range.

† Band C: 541.500 MHz; Band D: 655.500 MHz.

Table 3. Handheld Transmitter Functions

See pages 16-17 for illustrations.
Transmitter Setup

**Battery Selection and Installation**
Each transmitter uses two 1.5V AA batteries, not included. Alkaline type is recommended. Always replace both batteries. **Make certain the transmitter power is Off before replacing batteries.**

**UniPak™ Transmitter Battery Installation**
1. Open the battery compartment door by sliding the catch down (Fig. K). (If no batteries are inside, the door will not spring open by itself.)
2. **Observe correct polarity as marked on the metal contacts on the door** and carefully insert two fresh 1.5V AA alkaline batteries (Fig. L).
3. Close the door, making certain the latch clicks securely in place.

**Handheld Transmitter Battery Installation**
1. While holding the lower body cover (near the LCD window), grasp the upper part of the transmitter body just below the grille and unscrew it at least four complete turns (Fig. G); then slide the lower body cover down until it stops (Fig. H). Once the cover has been lowered, turn the transmitter over to reveal the battery compartment on the side opposite the LCD window.
2. **Observe correct polarity as marked inside the battery compartment** and carefully insert two fresh 1.5V AA alkaline batteries (Fig. M). Insert the first battery and slide it down. Then insert the second battery, bottom first, into the space remaining. Make certain the batteries are fully seated in the battery compartment.
3. Slide the lower body cover back up the body, then screw the housing together. **Do not overtighten.**

Note: Remove batteries from the handheld transmitter starting at the **bottom** (– end) of the top battery (Fig. M). The top (+ end) of the top battery is captured in a recess and will not come straight out.

**Battery Condition Indicator**
After the batteries are installed, turn the power on by pressing and holding the Power/Mute button. The small red power-on LED (Fig. E/F) should light and the LCD window should come on. If this does not happen, the batteries are installed incorrectly or they are dead. The transmitter’s “fuel gauge” battery indicator displays a maximum of four bar segments. When it flashes “LOW/BAT”, the batteries should be replaced immediately to ensure continued operation. (The receiver also displays transmitter battery condition in the LCD window with bar segments; the Alert indicator comes on to warn of a low-battery condition.)

**UniPak Transmitter Input Connection**
Connect an audio input device (microphone or guitar cable) to the audio input jack on the bottom of the transmitter. A number of Audio-Technica professional microphones and cables are available separately, pre-terminated with a UniPak input connector (see “Optional System Accessories” on page 11). The cable connector latches automatically when inserted into the transmitter jack. To unlatch and remove the connector, simply pull up on the connector’s knurled metal collar.

**UniPak Transmitter Antenna**
The UniPak transmitter includes a field-replaceable flexible antenna. For best results, allow the antenna to hang freely and full length from the bottom of the transmitter. If the received signal is marginal, experiment with different transmitter positions on your body or instrument; or try repositioning the receiver or using remote receiver antennas. Since the transmitter antenna simply screws in, check it occasionally to make certain it is snugly attached (finger-tight). **Do not change the length of the transmitting antenna.**

**Handheld Transmitter Antenna**
The antenna for the handheld mic/transmitter is in the black, non-metallic section at the bottom of the unit (Fig. F). For best results, hold the mic/transmitter naturally, around its painted metal case; holding or otherwise covering the antenna housing may affect operating range.

**UniPak Transmitter Mounting Clip**
The UniPak transmitter’s mounting clip may be installed with the case positioned either “up” or “down,” depending upon which is preferred for the application. To turn the clip around, spring the ends of the clip out of the two holes on the sides of the transmitter case (Fig. E) and reinstall it facing in the opposite direction.
System Operation

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

Selecting/Setting Frequency
Selection of the desired operating frequency is made through the function menus. It’s usually best to start by setting the receiver’s frequency, to determine there is no local interference on that frequency. Then, always make certain to set the transmitter to the receiver’s exact frequency. The receiver’s unique Digital Tone Lock system squelches the audio only, permitting any RF energy on the frequency to show on the “RF” bar-meter.

Note: It’s often convenient to start with the factory-default frequency, if there is no TV station on Channel 25 (for Band C systems) or Channel 44 (for Band D systems).

Receiver On...
The Alert indicator and the LCD window will light up; the normal-operation LCD display will appear after 1-2 seconds (Fig. D-1). If any of the bars show in the “RF” bar-graph meter, there may be RF interference in the area. If this occurs, select another frequency as explained below. (If the Meter Hold function has been selected, one of the RF bars will be flashing, indicating the lowest RF level received.)

Setting Receiver Frequency
1. Press the Mode/Set button once; then only the frequency will appear in the LCD window. (The receiver is now in the Menu mode.) See Figure D-2.

2. Press the Mode/Set button again; the Alert light will come on and the frequency in the window will flash. (The receiver is now in the Edit mode, Fig. D-3.)

3. Use the Up/Down arrow buttons to change the frequency. Press either arrow for single steps, or hold down either arrow for rapid cycling through the band. Frequencies “wrap around” to the other end of the range when the top or bottom of the band is reached. Choose a frequency appropriate for your area, avoiding frequencies with active TV channels. (See the frequency listings on page 12.)

4. To activate this frequency selection, press and hold the Mode/Set button until the word “STORED” appears in the receiver’s window. (If you do not wish to complete this particular selection, just press the Mode/Set button once. The word “ESCAPE” will appear briefly in the window and the receiver will return to the Menu mode.)

5. When finished entering a frequency, press the Down arrow button once to move to “QUIT”. Then press the Mode/Set button once to exit the menu. The “RF” and “AF” scales will reappear in the window, indicating the return to normal operation.

Transmitter On...
Turn on the transmitter by pressing and holding the Power/Mute button (Fig. E/F) for a second or two, until the red power indicator and the LCD window have come on.

Setting Transmitter Frequency
1. Press the Set button once and the small word “MENU” will appear above the frequency. Press the Set button again and the small flashing word “EDIT” will appear to the right of “MENU”. See Figures J-3 and J-4.

2. Use the Up/Down arrow buttons to change the transmitter frequency. Press either arrow for single steps, or hold down either arrow for rapid cycling through the range. Frequencies “wrap around” when the top or bottom of the band is reached. Select the exact frequency displayed on the receiver.

3. To activate this frequency selection, press and hold the Set button until the word “STORED” appears in the transmitter’s window. (If you do not wish to complete this selection, just press the Set button once; the word “ESCAPE” will appear briefly in the window and the transmitter will return to the Menu mode.)

4. When finished entering a frequency, press the Up arrow button once to move to “QUIT”. Then press the Set button once to exit the menu. The word “MENU” in the transmitter window will go off, indicating the return to normal operation.

When the transmitter is switched on and in normal operation, the receiver’s “RF” signal-level bars will display from bottom to top, with more bars indicating increased signal reception. For optimum performance at least four, and preferably five or more, of the RF indicators should be displayed.

Setting Levels
Correct adjustment of transmitter audio input, receiver audio output, and mixer/amplifier input and output levels is important for optimum system performance.

Set Transmitter Audio Input Level
A 4-position audio input gain setting, selected through the function menu, serves to match the audio input level to the transmitter for best modulation with minimum distortion.

Available choices are +12 dB, +6 dB, 0 dB and –6 dB. The default setting is +6 dB. Select the highest setting that does not result in over-modulation with the highest audio/instrument input levels (an AF indication on the receiver no higher than “0”); watch the receiver’s “AF” bar-graph “+3/+6” indications and the Alert light, to make certain that they are not triggered by the highest audio levels.

The transmitter’s normally-on red LED power indicator will blink off if the peak audio input exceeds the maximum desirable level.

RF Power Adjustment
RF power may be set to “RF HI” (30 mW nominal) or “RF LOW” (10 mW nominal) through the function menu. The default setting is “RF LOW”. While the High setting normally provides maximum operating range, the Low setting will help extend battery life. The Low setting may also be preferred in multi-channel systems, or when operating very close to the receiver, to reduce the possibility of interference or overload.

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 or the Audio-Technica professional division. Extensive wireless information also is available on the Audio-Technica Web site at www.audio-technica.com.

See pages 16-17 for illustrations.
## Specifications

### OVERALL SYSTEM

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>UHF Operating Frequency</strong></td>
<td></td>
</tr>
<tr>
<td>Band C:</td>
<td>541.500 to 566.375 MHz</td>
</tr>
<tr>
<td>Band D:</td>
<td>655.500 to 680.375 MHz</td>
</tr>
<tr>
<td><strong>Number of Channels</strong></td>
<td>200 total per band</td>
</tr>
<tr>
<td><strong>Frequency Stability</strong></td>
<td>±0.005%, Phase Lock Loop frequency control</td>
</tr>
<tr>
<td><strong>Modulation Mode</strong></td>
<td>FM</td>
</tr>
<tr>
<td><strong>Normal Deviation</strong></td>
<td>±10 kHz</td>
</tr>
<tr>
<td><strong>Operating Range</strong></td>
<td>300' typical</td>
</tr>
<tr>
<td><strong>Operating Temperature Range</strong></td>
<td>41° F (5° C) to 113° F (45° C)</td>
</tr>
<tr>
<td><strong>Frequency Response</strong></td>
<td>70 Hz to 15 kHz</td>
</tr>
</tbody>
</table>

### ATW-R310 RECEIVER

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Receiving System</strong></td>
<td>Dual independent receivers, automatic-switching diversity</td>
</tr>
<tr>
<td><strong>Image Rejection</strong></td>
<td>60 dB nominal, 55 dB minimum</td>
</tr>
<tr>
<td><strong>Signal-to-noise Ratio</strong></td>
<td>110 dB at 35 kHz deviation (IEC-weighted), maximum modulation 75 kHz</td>
</tr>
<tr>
<td><strong>Total Harmonic Distortion</strong></td>
<td>≤1% (10 kHz deviation at 1 kHz)</td>
</tr>
<tr>
<td><strong>Sensitivity</strong></td>
<td>24 dBµV (S/N 60 dB at 5 kHz deviation, IEC-weighted)</td>
</tr>
<tr>
<td><strong>Intermediate Frequency</strong></td>
<td>85.38 MHz, 10.7 MHz</td>
</tr>
<tr>
<td><strong>Audio Output</strong></td>
<td></td>
</tr>
<tr>
<td>Unbalanced</td>
<td>50 mV at 1 kHz, ±5 kHz deviation, 10k ohm load</td>
</tr>
<tr>
<td>Balanced</td>
<td>32 mV at 1 kHz, ±5 kHz deviation, 10k ohm load</td>
</tr>
<tr>
<td><strong>Output Connectors</strong></td>
<td></td>
</tr>
<tr>
<td>Unbalanced</td>
<td>1/4” TS (“mono”) phone jack XLRM-type</td>
</tr>
<tr>
<td>Balanced</td>
<td></td>
</tr>
<tr>
<td><strong>Power Supply</strong></td>
<td>120V AC 60 Hz, or 12-18V DC, 500 mA, center positive, with external supply</td>
</tr>
<tr>
<td><strong>Dimensions</strong></td>
<td>8.27” (210.0 mm) W x 1.93” (49.0 mm) H x 6.93” (176.0 mm) D</td>
</tr>
<tr>
<td><strong>Weight</strong></td>
<td>2.4 lbs (1.1 kg)</td>
</tr>
<tr>
<td><strong>Accessories Included</strong></td>
<td>AD1205AA 120V 60 Hz in-line AC adapter; two flexible UHF antennas; rack-mount adapters</td>
</tr>
</tbody>
</table>

### ATW-T310 UNIPAK™ TRANSMITTER

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>RF Power Output</strong></td>
<td>High: 30 mW; Low: 10 mW, nominal</td>
</tr>
<tr>
<td><strong>Spurious Emissions</strong></td>
<td>Under federal regulations</td>
</tr>
<tr>
<td><strong>Dynamic Range</strong></td>
<td>≥110 dB, A-weighted</td>
</tr>
<tr>
<td><strong>Input Connections</strong></td>
<td>High impedance, low impedance, bias</td>
</tr>
<tr>
<td><strong>Antenna Tip Color</strong></td>
<td>Band C: Blue; Band D: Green</td>
</tr>
<tr>
<td><strong>Batteries (not included)</strong></td>
<td>Two 1.5V AA alkaline</td>
</tr>
<tr>
<td><strong>Current Consumption</strong></td>
<td>High: 200 mA; Low: 150 mA, typical</td>
</tr>
<tr>
<td><strong>Battery Life</strong></td>
<td>Approximately 6 hours (High); 8 hours (Low), depending on battery type and use pattern</td>
</tr>
<tr>
<td><strong>Dimensions</strong></td>
<td>2.60” (66.0 mm) W x 3.43” (87.0 mm) H x 0.94” (24.0 mm) D</td>
</tr>
<tr>
<td><strong>Net Weight (without batteries)</strong></td>
<td>2.8 oz (80 grams)</td>
</tr>
</tbody>
</table>

### ATW-T341 HANDHELD TRANSMITTER

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>RF Power Output</strong></td>
<td>High: 30 mW; Low: 10 mW, nominal</td>
</tr>
<tr>
<td><strong>Spurious Emissions</strong></td>
<td>Under federal regulations</td>
</tr>
<tr>
<td><strong>Dynamic Range</strong></td>
<td>≥110 dB, A-weighted</td>
</tr>
<tr>
<td><strong>Microphone Element</strong></td>
<td>Dynamic cardioid (unidirectional)</td>
</tr>
<tr>
<td><strong>Batteries (not included)</strong></td>
<td>Two 1.5V AA alkaline</td>
</tr>
<tr>
<td><strong>Current Consumption</strong></td>
<td>High: 230 mA; Low: 180 mA, typical</td>
</tr>
<tr>
<td><strong>Battery Life</strong></td>
<td>Approximately 6 hours (High); 8 hours (Low), depending on battery type and use pattern</td>
</tr>
<tr>
<td><strong>Dimensions</strong></td>
<td>9.33” (237.0 mm) long, 1.89” (48.0 mm) diameter</td>
</tr>
<tr>
<td><strong>Net Weight (without batteries)</strong></td>
<td>9.9 oz (280 grams)</td>
</tr>
<tr>
<td><strong>Accessory Included</strong></td>
<td>AT8456a Quiet-Flex™ stand clamp</td>
</tr>
</tbody>
</table>

† 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.
**Optional System Accessories**

**WIRELESS ESSENTIALS™ MICROPHONES AND CABLES**

All Wireless Essentials accessories are terminated for use with ATW-T310 and other UniPak™ transmitters.

- **AT829cW** Miniature cardioid condenser lavalier microphone. Includes clothing clip and windscreens.
- **MT830cW** Miniature omnidirectional condenser lavalier microphone. Includes clothing clip and windscreens.
- **MT830cW-TH** "Theater" model, same as MT830cW except beige color mic and cable for concealment.
- **AT831cW** Miniature cardioid condenser lavalier microphone. Includes clothing clip and windscreens.
- **AT851cW** Surface-mount wide-range hemi-cardioid condenser microphone.
- **AT857AМLcW** 19" gooseneck cardioid microphone. Mounts to 1/4"-27 thread. Includes windscreens.
- **AT889cW** Headworn noise-canceling condenser microphone. Includes windscreens and clip.
- **AT898cW** Subminiature cardioid condenser lavalier microphone. Includes clothing clip base, viper clip base, magnet clip base, three single mic holders, two double mic holders and two windscreens.
- **AT899cW** Subminiature omnidirectional condenser lavalier microphone. Includes AT899AK accessory kit.
- **AT899cW-TH** "Theater" model, same as AT899cW except beige color mic and cable concealment. Includes AT899AK-TH accessory kit.
- **ATM35cW** Cardioid condenser instrument microphone. Includes AT8418 clip-on instrument mount.
- **ATM73cW** Headworn cardioid condenser microphone. Includes windscreens.
- **ATM75cW** Headworn cardioid condenser microphone. Includes windscreens.
- **PRO 8HEcW** Headworn hypercardioid dynamic microphone. Includes windscreends and cable clip.
- **PRO 35cW** Cardioid condenser instrument microphone. Includes AT8418 clip-on instrument mount.
- **AT-GCW** Hi-Z instrument/guitar cable with 1/4" phone plug.
- **XLRW** Connecting cable for UniPak transmitter with an XLRF-type input connector, for Lo-Z microphones with XLRM-type output terminations.

**RECEIVER ACCESSORIES**

- **AEW-DA550C** UHF (540–565 MHz) active unity-gain antenna distribution system provides two “1-in, 4-out” RF channels; connects a pair of antennas to as many as four diversity receivers; cascade output provided as a directional coupler. AC pass-through allows daisy-chain AC hookup. Defeatable antenna power. Metal receiver chassis with reinforced mounting ears and rear rack mount capability. Includes detachable IEC power cable, IEC pass-through cable, ten RF cables, front-mount antenna cables and connectors, four DC power cables to power up to four 3000 Series receivers. Mounts in a single 19" rack space. For use with ATW-R310C (Band C) receivers.
- **AEW-DA660D** Same as AEW-DA550C except for 655-680 MHz operation. For use with ATW-R310D (Band D) receivers.
- **AT8630** Joining-plate kit allows rack-mounting two ATW-R310 receivers side-by-side in a single (1U) 19" rack space.
- **ATW-A20** Pair of UHF ground-plane antennas with 1/4"-27 thread for mounting to microphone stands, etc. For use with ATW-R310D (Band D) receivers. Takes RF cables with BNC connectors, not included; see RF Cables below.
- **ATW-A49** Pair of UHF wide-band directional LPDA (log periodic dipole array) antennas provide enhanced signal pickup for UHF wireless systems throughout a wide band range (440-900 MHz). Each antenna paddle is matched to 50 ohms impedance with integral high-quality low-loss BNC connector; 6 dB gain. For permanent or temporary installation; mounts to 1/4"-27 threads.
- **ATW-RA1** Rack-mount antenna kit brings antenna inputs to the front of receiver for ease of setup, or when receiver is enclosed in a metal rack. Includes a pair of extendible antennas. NOTE: Two adapter kits are required when mounting two receivers side-by-side in a single 19" rack space.

**RF Cables**

- **AC12** RG58-type cable (12')
- **AC25** RG8-type cable (25')
- **AC50** RG8-type cable (50')
- **AC100** RG8-type cable (100')

**TRANSMITTER ACCESSORIES**

- **AT8114** Foam windscreens for handheld transmitters.
- **AT8141** Water-resistant pouch for UniPak transmitter.
- **AT8390** Shielded audio cable with 1/4" to 1/4" phone plugs. Available in a variety of lengths. (Also available with one straight and one 90° phone plug as the AT8316.)
- **AT8456a** Quiet-Flex™ stand clamp for handheld transmitter, 1/4"-27 threads.

See pages 16-17 for illustrations.
### 3000 Series UHF Wireless Operating Frequencies

<table>
<thead>
<tr>
<th>TV Ch.</th>
<th>Band C: 541.500 - 566.375 MHz</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>542.000</td>
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<td>26</td>
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<tr>
<td>30</td>
<td>566.000</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>TV Ch.</th>
<th>Band D: 655.500 - 680.375 MHz</th>
</tr>
</thead>
<tbody>
<tr>
<td>44</td>
<td>656.000</td>
</tr>
<tr>
<td>45</td>
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<td>45</td>
<td>679.000</td>
</tr>
<tr>
<td>45</td>
<td>680.000</td>
</tr>
</tbody>
</table>
Ten Tips to Obtain the Best Results

1. Use only fresh alkaline batteries. Do not use “general purpose” (carbon-zinc) batteries.
2. Position the receiver so that it has the fewest possible obstructions between it and the normal location of the transmitter. Line-of-sight is best.
3. The transmitter and the receiver should be as close together as conveniently possible, but no closer than three feet (1 m).
4. Avoid placing the receiver in a low or shielded location where the transmitter and receiver antennas are not visible to each other. If necessary, use remotely-located receiver antennas.
5. Avoid placing the receiver near computers or other RF generating equipment.
6. The receiver and transmitter must be set to the same frequency.
7. A receiver cannot receive signals from two transmitters at the same time.
8. Do not obstruct the handheld transmitter’s antenna (located at the base) or attached body-pack transmitter’s antenna with your hands.
9. You need to change frequencies 1) when a strong interference signal is received, 2) when audio quality is poor due to weak RF, or 3) during multiple-system operation in order to select an interference-free frequency.
10. Turn the transmitter off when not in use. Remove the batteries if the transmitter is not to be used for a period of time.

A word about “Digital TV”

The advent of “digital TV” has greatly increased the number of TV broadcast transmitters in operation and has added a new and different type of TV signal to the airwaves.

Digital TV spreads its transmitted power fairly uniformly across an entire 6 MHz-wide TV channel, effectively “blocking” use of any of the frequencies for wireless mic systems in the local area.

By comparison, the original type of television transmission, “analog TV,” concentrates the broadcast power within certain fairly narrow frequency ranges within the 6 MHz-wide TV channel. As a result, wireless systems usually can still operate on frequencies where the power is not concentrated, even though an analog TV station is transmitting. This ability for wireless systems to “co-exist” with analog TV stations permits the use of many more frequencies than would seem to be available, just based upon the number of “TV channels in use” locally.

And while “analog vs. digital” does add a new complexity to wireless frequency selection and system design, it remains the case that your wireless needs can be achieved. Our website, www.audio-technica.com, offers a wide range of information about multi-channel operation and frequency selection. In addition, A-T’s resources are on call at any time to assist you in specifying, installing and troubleshooting large wireless systems.

For future reference, please record your system information here:

| Receiver | ATW-R310___ | S/N_______ __________ __________ __________ __________ |
| Transmitter | ATW-T310___ | S/N_______ __________ __________ __________ __________ |
| ATW-T341___ | S/N_______ __________ __________ __________ __________ |

Serial Number appears on the FCC label on the back of the receiver.

Serial Number appears on the FCC label on the back of the transmitter.

Serial Number appears in a recess in the battery compartment of the transmitter.
Troubleshooting Guide

Receiver is not on (LCD window does not light).
• Receiver Power switch is not pressed in.
• Small DC power cord from included in-line power supply is not plugged into jack on back of receiver. (Use the cord hook to secure it.)
• The in-line power supply is not plugged into AC power outlet.
• AC power is not present at the AC outlet.

Receiver is on (LCD window lights)
• No sound • Alert light is OFF:

✓ "RF", "AF" and "BATT" legends do not appear in LCD...
• Receiver is in the Menu mode. [See p. 4.]

✓ "RF" and "AF" level meters both show good signals.
• AF Level control on back of receiver not turned up (clockwise). [See p. 4.]
  Note: If the "AF" level meter shows a good signal on the receiver when the transmitter is receiving audio input, and the AF Level control is turned up, then the problem is in connections to or control settings on the mixer, amplifier, etc.

✓ Only "RF" level meter shows good signal; no "AF" signal.
• No sound input to mic.
• ATW-T310 body-pack only: Wrong input selected ("INST" or "MIC"). [See p. 6.]

Receiver is on (LCD window lights)
• No sound • Alert light is ON:

✓ "RF", "AF" and "BATT" legends do not appear in LCD, and LCD is flashing...
• Receiver is in the Edit mode. [See p. 4.]

✓ "RF" and "AF" level meters both show good signals.
• The transmitter audio level is too high ("+3"/"+6" on receiver). [See p. 9.]
  • Batteries may be weak. (Check "BATT" fuel gauge.)

✓ Only "RF" level meter shows good signal; no "AF" signal.
• Transmitter may be muted. (Note: Normally it takes several seconds for the Alert light to turn off/on after the transmitter mute is switched off/on.) [See p. 5.]

✓ Neither the "RF" nor the "AF" level meter shows any signal.
• Receiver antennas not connected.
• Transmitter is turned off.
• Transmitter batteries are dead or missing.
• Transmitter is set to a different frequency.
• Transmitter and receiver not in same Band (C/D).

Receiver is on (LCD window lights)
• Distorted sound • Alert light is ON:

✓ "RF" and/or "AF" level meters may show good signals.
• The transmitter audio level is too high ("+3"/"+6" on receiver). [See p. 9.]
• Received RF level may be too low (only one or two bars).
• Batteries may be weak; check "BATT" fuel gauge. (Sound may or may not be distorted.)

Momentary loss of sound/noisy sound as transmitter is moved around performing area.
• Transmitter and receiver antennas not in line-of-sight (or perhaps too far apart). Adjust positions of units so they are visible to each other/closer together; use remote antennas located closer to the transmitter location.
• Signal blockage or interference from large metal objects, other wireless units located too close and/or on incompatible frequencies, computer or lighting equipment.
• Squelch setting may be set “tighter” than it needs to be. (Recommended squelch setting is the minimum/default value, 15 dB.) [See p. 5.]
  Tip: Use the Meter Hold function to help identify and resolve (or at least avoid) RF problem locations. [See p. 5.]

With transmitter on, received signal is noisy or contains extraneous sounds.
• Batteries may be weak. Check "BATT" fuel gauge and "RF" meter level.
• Local TV transmissions on this frequency.
• Nearby sources of RF interference, such as computers, lighting equipment, etc.
• Two transmitters may be operating on the same frequency. Locate and turn one off or change its frequency.
• In multiple-system use, two (or more) incompatible frequencies may have been selected.
Troubleshooting's First Line of Defense: Factory-Default Settings

Incorrect settings on the receiver and/or transmitter can make the wireless system’s operation seem poor, or even “dead.” To eliminate the possibility that incorrect function settings are the source of problems, restore both the receiver and the transmitter to their factory-default settings.

RECEIVER – To return all receiver functions to their original factory-default settings:

1. First, turn the receiver off.

2. **Hold in the Mode/Set button** while pressing the Power switch to turn the receiver back on. The LCD will briefly show “RESET”, followed by “WAIT” (release the Mode/Set button), before commencing normal-mode operation with all factory-default settings restored.

3. (If the default frequency is not useable in your area, set both the receiver and the transmitter to the same suitable frequency.)

TRANSMITTER – To return all transmitter functions to their factory-default settings:

1. Press the Set button once to move to Menu mode.

2. Press the Up arrow twice to move to “PRESET” in the LCD window.

3. Press the Set button once and “LOAD” will appear in the LCD.

4. **Press and hold** the Set button until “DEF” appears in the LCD.

5. **Press and hold** the Set button until “LOADED” appears briefly in the LCD. The window will then revert to “PRESET”.

6. Press the Down arrow once to move to “QUIT”.

7. Press the Set button once to exit the Menu mode and return to normal operation, with all factory-default settings restored.

8. (If the default frequency is not useable in your area, set both the receiver and the transmitter to the same suitable frequency.)

“Alert” Conditions

The red Alert indicator on the receiver signals the user regarding a number of operating conditions.

Transmitter conditions:

✓ No RF  When no RF signal is received from transmitter.
✓ Weak RF  When only one or two “RF” signal-strength bars are on.
✓ Transmitter Muted  When the transmitter is in the Mute* mode.
✓ Transmitter Audio Too High  When audio modulation level from the transmitter is close to the clipping point (AF +3/+6 bars).
✓ Batteries Weak  When only one bar of the Battery* “fuel gauge” is on.

Receiver conditions:

✓ Edit Mode  When the receiver is in the Function Edit mode.

* These functions use digital data supplied from the transmitter. It can take up to several seconds for the receiver display to be “updated” with the latest mute/unmute and battery status information. This is normal operation for both the Alert light and the “BATT” indication.
**Receiver Front Panel**

Figure B

**Receiver Rear Panel**

Figure C

**Receiver LCD Window**

Figure D

**UniPak Transmitter**

Figure E

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**Figure B**

- **1. Power/Mute Button**
- **2. Up/Down Arrows**
- **3. Sliding Control Cover (3-position)**
- **4. Power-on LED**
- **5. Antenna**
- **6. Audio Input Jack**
- **7. Mounting Clip**

**Figure C**

- **10. UniPak Transmitter**
- **11. Band C: Blue**
- **12. Band D: Green**
- **13. LCD Window**
- **14. Battery Door**

**Figure D**

- **D-1. Normal Receiver Operation (Transmitter off)**
- **D-2. Menu Mode (Frequency)**
- **D-3. Edit Mode (Frequency)**

**Figure E**

- **Band C: Blue**
- **Band D: Green**
- **Antenna**
- **Power-on LED**
- **Audio Input Jack**
- **Mounting Clip**
- **Set Button**
- **Sliding Control Cover (3-position)**
Handheld Transmitter Exterior

Figure F

Handheld Transmitter Interior

Figure H

Transmitter LCD Window

Figure J

UniPak Battery Door

Figure K

Installing UniPak Transmitter Batteries

Figure L

Installing Handheld Transmitter Batteries

Figure M

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J-1. Normal Operation

J-2. Operation with Mute On

J-3. Menu Mode (Frequency)

J-4. Edit Mode (Frequency)

* ATW-T310 only: “INST”
One-Year Limited Warranty

Audio-Technica professional wireless systems purchased in the U.S.A. are warranted for one year from date of purchase by Audio-Technica U.S., Inc. (A.T.U.S.) to be free of defects in materials and workmanship. In event of such defect, product will be repaired promptly without charge or, at our option, replaced with a new product of equal or superior value if delivered to A.T.U.S. or an Authorized Service Center, prepaid, together with the sales slip or other proof of purchase date. Prior approval from A.T.U.S. is required for return. This warranty excludes defects due to normal wear, abuse, shipping damage, or failure to use product in accordance with the instructions. This warranty is void in the event of unauthorized repair or modification, or removal or defacing of the product labeling.

For return approval and shipping information, contact the Service Dept., Audio-Technica U.S., Inc., 1221 Commerce Drive, Stow, Ohio 44224.

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