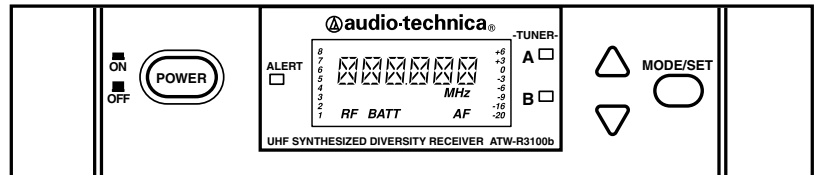


## 3000 Series

Frequency-agile True Diversity UHF Wireless System



### **Installation and Operation**

3000 Series  
Frequency-agile True Diversity UHF Wireless System

**French**  
French  
French

**Spanish**  
Spanish  
Spanish

**Portuguese**  
Portuguese  
Portuguese

**German**  
German  
German

**Italian**  
Italian  
Italian

**Dutch**  
Dutch  
Dutch

**Traditional Chinese**  
Traditional Chinese  
Traditional Chinese

**Simplified Chinese**  
Simplified Chinese  
Simplified Chinese

**Korean**  
Korean  
Korean

## 3000 Series Installation and Operation

(english)

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 conformité 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 batteries to excessive heat such as fire, near heating units or in direct sunlight.
- To prevent fire or shock hazard, do not expose this product to rain or moisture.
- To prevent fire, do not place any naked flame sources (such as lighted candles) on the apparatus.
- To prevent fire, do not cover the ventilation of the apparatus with newspaper, tablecloths, curtains etc.
- Do not expose this apparatus to drips or splashes.
- Do not place any objects filled with liquids, such as vases, on the apparatus.
- Do not install this apparatus in a confined space such as a bookcase or similar unit.
- The apparatus should be located close enough to the AC outlet so that you can easily grasp the AC adapter at any time. In case of emergency, disconnect the AC adapter quickly.
- Always consider environmental issues and follow your local regulations when disposing of batteries. Do not expose batteries to excessive heat.

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.

### 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 Audio-Technica.

Thank you for choosing this Audio-Technica 3000 Series Frequency-agile True Diversity UHF Wireless System.

The 3000 Series wireless system is available in six UHF frequency bands to provide flexible performance in a wide variety of regions worldwide:

	<i>Frequency Range</i>	<i>Number of frequencies</i>
Band C	541.500 – 566.375 MHz	996
Band D	655.500 – 680.375 MHz	996
Band E	795.500 – 820.000 MHz	981
Band F	840.125 – 864.900 MHz	953
Band G	721.500 – 746.375 MHz	996
Band I	482.000 – 507.000 MHz	1001

The band letter reference at the end of 3000 Series Stock Numbers indicates what band the system/component operates in. For simplicity, model numbers used throughout this manual will reference only the basic model number without the band indications.

Each wireless system includes a receiver and either a body-pack or handheld transmitter. UniPak® body-pack transmitter systems may include an accessory microphone for a particular application. All A-T Wireless Essentials® microphones and cables, available separately, are pre-terminated for use with any Audio-Technica 3000 Series wireless system.

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-R3100b receiver is equipped with automatic frequency scanning for easy setup. It also 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 a backlit 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-T310b 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 cover all the controls, as appropriate for the application and user. The ATW-T341b handheld dynamic microphone/transmitter features the same element used in the Artist Elite® AE4100 dynamic handheld microphone created for professional livesound venues. The ATW-T371b handheld condenser microphone/transmitter features the same element used in the Artist Series ATM710 cardioid condenser vocal microphone.

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-R3100b 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. Exception: 3000 Series components are compatible with Audio-Technica 1800 Series wireless system components.

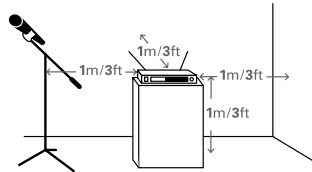
Please note that in multiple-system applications there must be a transmitter-receiver combination set to a separate frequency for each input desired (only one transmitter for each receiver). Because the wireless frequencies are within UHF TV frequency bands, only certain operating frequencies may be useable in a particular geographic area.

## Receiver Installation

### 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.

**Fig. A**



### Output Connections

There are two audio outputs on the back panel: balanced and unbalanced. Use shielded audio cable for the connection between the receiver and the mixer. If the input of the mixer is a 1/4" jack, connect a cable from the 1/4" 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 8 m/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.

Either passive or active antennas may be used. Both input jacks offer switchable +12 V DC output on their center pins to operate Audio-Technica powered antennas or other in-line RF devices if desired. Up to 60 mA can be drawn from each antenna input jack.

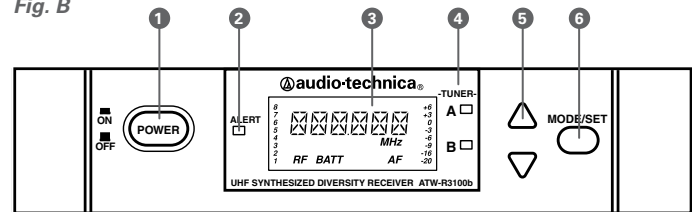
### Power Connections

Connect the included 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 AC adapter into an AC power outlet. Operation of the receiver is controlled by the front-panel Power switch.

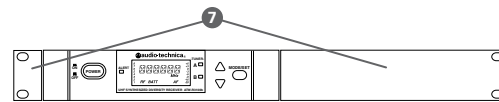
## Receiver Controls and Functions

### Front Panel Controls and Functions

**Fig. B**



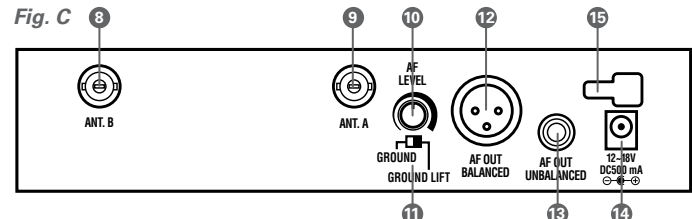
- POWER SWITCH:** Press Power switch in and the receiver readouts will light.
- ALERT INDICATOR:** The Alert Indicator lights:
  - When the receiver is in the Function Edit mode,
  - When no RF signal is received from transmitter,
  - When only one or two RF signal-strength bars are on,
  - When the transmitter is in the Mute mode,
  - When audio modulation level from the transmitter is close to the clipping point (AF +3/+6 bars),
  - When only one bar of the Battery "fuel gauge" is on (transmitter battery is weak).
- LCD WINDOW:** Backlit screen indicates control settings and operational readings. See **Figure D** for examples.
- 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.
- 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.
- MODE/SET BUTTON:** Use in conjunction with the Up/Down arrow buttons to step through menus, choose operating frequency, initiate automatic scanning and select receiver function options.



- 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-R3100b receivers side-by-side.)

### Rear Panel Controls and Functions

**Fig. C**



- ANTENNA INPUT JACK:** BNC-type antenna connector for Tuner "B." Attach the antenna directly, or extend it with a low-loss antenna cable.
- ANTENNA INPUT JACK:** Input for Tuner "A." Attach the antenna directly, or extend it with a low-loss antenna cable.
- AF LEVEL CONTROL:** Adjusts audio output level of both AF Output jacks; maximum output is fully clockwise.
- GROUND LIFT SWITCH:** Disconnects the ground pin of the balanced output jack (12) from ground. Normally, the switch should

## 3000 Series Installation and Operation

(english)

- be to the left (ground connected). If hum caused by a ground loop occurs, slide switch to the right (ground lifted).
- 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.
  - 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.
  - POWER INPUT JACK: Connect the DC plug from the included in-line AC adapter.
  - CORD HOOK: Loop the small DC cord around the cord hook to keep the DC plug from pulling out accidentally.

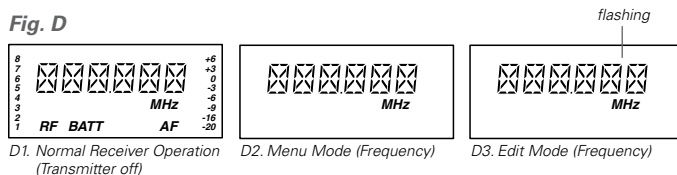
### Power On/Off

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.)

Fig. D



### Up/Down Arrow Buttons

In conjunction with the Mode/Set button, the arrow buttons permit moving through the menu of functions, and they offer a 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

- 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.)
- Use the Up/Down arrow buttons to reach the desired function. The value in the LCD window is the current setting for that function.
- 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).
- Use the arrow buttons to go through the available choices, stopping on the desired new choice.
- (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.
- 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.)

### Frequency Group Selection

To select a frequency scan group, press the Mode/Set button, then use the arrow button until the desired group appears in the display. To store the selected frequency scan group, press the Mode/Set button to enter the desired group; then use the arrow button to start the scan. When a flashing number is displayed, press and hold Mode/Set button to select the frequency. See detailed instructions in System Operation.

### 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 and releasing 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 39 dB in 6 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.)

#### Antenna Power

The antenna input jacks also can provide +12V DC output on their center pins to power inline RF devices. A maximum of 60 mA can be drawn from each of the jacks. While an accidental short-circuit will not harm the internal 12V supply, make certain that an antenna cable shield does not contact the center conductor. Antenna Power (“ANT.PWR”) is selected (switched on or off) from the LCD menu.

#### Pre-coordinated Frequency Scan Groups 1-9

The nine scan groups provided on the 3000 Series receivers simplify the selection of usable frequencies in a multi-channel wireless system. If you are using multiple systems, stay within one of the nine frequency groups for all of your systems. The available frequencies within each group have been selected for simultaneous use, eliminating the frustration encountered when trying to select compatible frequencies in a multi-channel system.

Scan Groups 8 and 9 have been designed to allow for use on adjoining stages. Use Group 8 on one stage and Group 9 on a second nearby stage. Or use these two groups in two different rooms, with one room using Group 8, and the second using Group 9.

#### Receiver Functions

Function Menu	Default Setting*	Choices (Edit)▲▼	Wrap-around**
(Receiver powers-up at Frequency)			
▲▼ Frequency	Lowest in band†	All frequencies in band	Yes
▲▼ High-pass Filter	HP OFF	HP OFF, HP-6, HP-12, HP-18	No
▲▼ Meter Hold	MH OFF	MH OFF MH ON	Yes
▲▼ Squelch	SQ 15 dB	SQ 15 dB to SQ 39 dB in 6 dB steps	No
▲▼ Antenna Power	OFF	PWR OFF PWR ON	Yes
▲▼ Group 1	Lowest in frequency group	All frequencies in Group 1	No
▲▼ Group 2	Lowest in frequency group	All frequencies in Group 2	No
▲▼ Group 3	Lowest in frequency group	All frequencies in Group 3	No
▲▼ Group 4	Lowest in frequency group	All frequencies in Group 4	No
▲▼ Group 5	Lowest in frequency group	All frequencies in Group 5	No

#### Receiver Functions (continued)

Function Menu	Default Setting*	Choices (Edit)▲▼	Wrap-around**
▲▼ Group 6	Lowest in frequency group	All frequencies in Group 6	No
▲▼ Group 7	Lowest in frequency group	All frequencies in Group 7	No
▲▼ Group 8	Lowest in frequency group	All frequencies in Group 8	No
▲▼ Group 9	Lowest in frequency group	All frequencies in Group 9	No
▲▼ Quit (exit Menu)	QUIT	Press Mode/ Set to exit	–

\* 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 I: 482.000 – 507.000 MHz; Band C: 541.500 – 566.375 MHz; Band D: 655.500 – 680.375 MHz; Band G: 721.500 – 746.375 MHz; Band E: 795.500 – 820.000 MHz; Band F: 840.125 – 864.900 MHz

#### Transmitter Controls And Functions

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

#### LCD Window

The backlit 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. The display is illuminated with a backlight when you power on the device and when you press Set to access transmitter functions. The backlight remains on during the Set process, only turning off if no action is taken within 30 seconds or if Quit is pressed; otherwise, it automatically turns off in ten seconds.

#### 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 green 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 green 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

## 3000 Series Installation and Operation

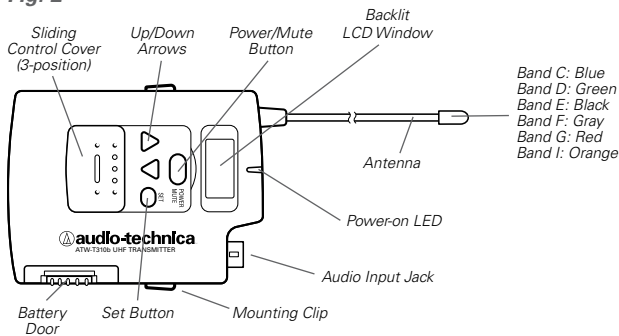
(english)

modulation. When the transmitter is un-muted, it produces both RF and audio.

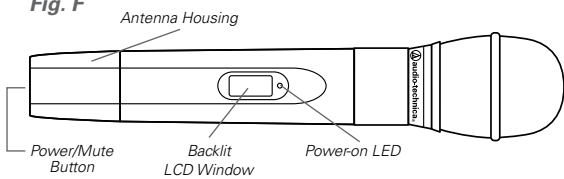
To mute the transmitter (cut off the audio, but continue the RF output), *press and release* the Power/Mute button *once*. A small "MUTE" will appear in the LCD window, just below the frequency (**Fig. M-2**) and the power/mute LED will change from green to red.

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 and the power/mute LED will change from red to green.

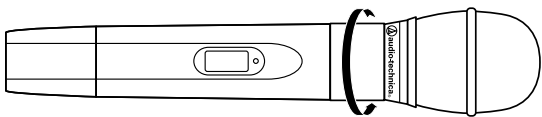
**Fig. E**



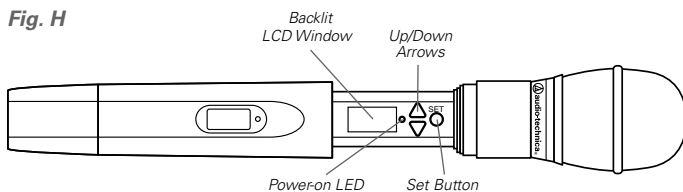
**Fig. F**



**Fig. G**



**Fig. H**



### 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:

Setting	Description
NO.LOC	The normal Power and Mute functions are fully operational.
ALL.LOC	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.
MUT.LOC	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.)
PWR.LOC	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.)

If an attempt is made to take an action that currently is locked out, the LCD will display "LOCKED" 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. 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.)

### Frequency Group Selection

To select a frequency scan group, press the Set button, then use the up or down arrow until the desired group appears in the display. To store the selected frequency scan group, press the Set button to enter the desired group; then use the arrow button to find desired frequency. Press and hold Set button to select the frequency. See detailed instructions in System Operation.

### 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**

Function Menu	Default Setting*	Choices (Edit)▲▼	Wrap-around
(Transmitter powers-up at Frequency)			
▲▼ Frequency	Lowest in band†	All frequencies in band	Yes
▲▼ RF Power	RF LOW	RF LOW, RF HI	Yes
▲▼ Audio Input Level	+6 dB	-6 dB, 0 dB, +6 dB, +12 dB	No
▲▼ Power/Mute Locks	NO.LOC	NO.LOC, ALL.LOC, MUT.LOC, PWR.LOC	Yes
▲▼ Input Select	MIC	MIC, INST	Yes
▲▼ Group 1	Lowest in frequency group	All frequencies in Group 1	Yes
▲▼ Group 2	Lowest in frequency group	All frequencies in Group 2	Yes
▲▼ Group 3	Lowest in frequency group	All frequencies in Group 3	Yes
▲▼ Group 4	Lowest in frequency group	All frequencies in Group 4	Yes
▲▼ Group 5	Lowest in frequency group	All frequencies in Group 5	Yes
▲▼ Group 6	Lowest in frequency group	All frequencies in Group 6	Yes
▲▼ Group 7	Lowest in frequency group	All frequencies in Group 7	Yes
▲▼ Group 8	Lowest in frequency group	All frequencies in Group 8	Yes
▲▼ Group 9	Lowest in frequency group	All frequencies in Group 9	Yes
▲▼ Reset to Defaults	PRESET	LOAD (b) hold until: DEF (c) hold until: LOADED	-
▲▼ Quit (exit Menu)	QUIT	Press Set to exit	-

**Handheld Transmitter Functions**

Function Menu	Default Setting*	Choices (Edit)▲▼	Wrap-around**
(Transmitter powers-up at Frequency)			
▲▼ Frequency	Lowest in band†	All frequencies in band	Yes
▲▼ RF Power	RF LOW	RF LOW, RF HI	Yes
▲▼ Audio Input Level			
Dynamic	+6 dB	-6 dB, 0 dB, +6 dB, +12 dB,	No
Condenser**	+6 dB	0 dB, +6 dB, +12 dB	No
▲▼ Power/Mute Locks	NO.LOC	NO.LOC, ALL.LOC, MUT.LOC, PWR.LOC	Yes
▲▼ Group 1	Lowest in frequency group	All frequencies in Group 1	Yes
▲▼ Group 2	Lowest in frequency group	All frequencies in Group 2	Yes
▲▼ Group 3	Lowest in frequency group	All frequencies in Group 3	Yes
▲▼ Group 4	Lowest in frequency group	All frequencies in Group 4	Yes
▲▼ Group 5	Lowest in frequency group	All frequencies in Group 5	Yes
▲▼ Group 6	Lowest in frequency group	All frequencies in Group 6	Yes
▲▼ Group 7	Lowest in frequency group	All frequencies in Group 7	Yes
▲▼ Group 8	Lowest in frequency group	All frequencies in Group 8	Yes
▲▼ Group 9	Lowest in frequency group	All frequencies in Group 9	Yes
▲▼ Reset to Defaults	PRESET	LOAD (b) hold until: DEF (c) hold until: LOADED	-
▲▼ Quit (exit Menu)	QUIT	Press Set to exit	-

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

\*\* Additional 6 dB pad switch on capsule.

† Band I: 482.000 – 507.000 MHz; Band C: 541.500 – 566.375 MHz; Band D: 655.500 – 680.375 MHz; Band G: 721.500 – 746.375 MHz; Band E: 795.500 – 820.000 MHz; Band F: 840.125 – 864.900 MHz

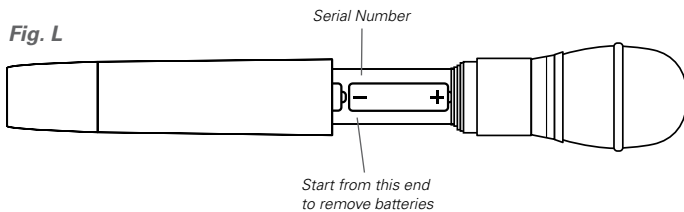
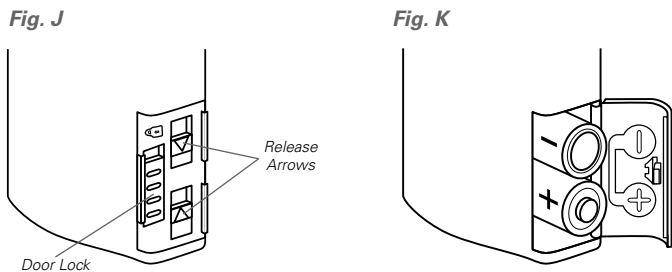
## Transmitter Setup

### Battery Selection and Installation

Each transmitter uses two 1.5V AA batteries, not included. Alkaline type is recommended; other types of 1.5V AA batteries (including rechargeable) may be used, however performance may vary. Always replace both batteries. Make certain the transmitter power is *Off* before replacing batteries.

### UniPak® Transmitter Battery Installation

1. Open the battery compartment door as follows:  
Slide door lock down to the unlocked position. Pinch the release arrows together to open the compartment. (Fig. J)
2. *Observe correct polarity as marked on the metal contacts on the door and carefully insert two fresh 1.5V AA alkaline batteries (Fig. K).*
3. Close the door, making certain the latch clicks securely in place.
4. Slide the door lock up to the locked position.



### 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 batteries (Fig. L).* 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. L). 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 power-on LED (Fig. E/F) should light green 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 transmitter. A number of Audio-Technica professional microphones and cables are available separately, pre-terminated with a UniPak input connector. 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 extend to its full length from 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 reduce the 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, pull 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

Turn the receiver on by pressing in the Power switch. Do *not* switch on the transmitter yet.

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.)

### 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 is often convenient to start with the factory-default frequency, if there is no RF energy showing on the RF bar meter.

### Using the Automatic Scan Function to Set Receiver Frequency

1. Press the Mode/Set button once; then the "RF" and "AF" scales will disappear from the window and only the frequency will appear in the LCD window. (The receiver is now in the Menu mode.) See Figure D-2.
2. Use the Up arrow button to reach Group 1 through Group 9. Press the Mode/Set button once to select one of these nine scan groups. The lowest frequency in the selected scan group will appear in the LCD window.
3. Press the Up arrow button to begin the scan. "G SCAN" will flash in the LCD window.
4. The first available frequency will flash in the LCD window. To activate this frequency selection, press and hold the Mode/Set button until the word "STORED" appears in the LCD 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. After you have activated your frequency selection (step 4), the "RF" and "AF" scales will reappear in the window, indicating the return to normal operation.
6. If you are using multiple systems, all frequencies must be selected from the same group (Group 1 through Group 9). After completing the first receiver's scan and frequency selection, set the transmitter to the same frequency (see *Setting Transmitter Frequency* instructions); leave the transmitter *On*, and run the next receiver's automatic scan function. Always set a receiver-transmitter pair to the same frequency before using the automatic scan function to select a frequency for the next receiver. "End" will show on the receiver display when no further usable frequencies remain in the selected scan plan.

#### NOTES ON USING THE RECEIVER SCAN FEATURE:

- Selecting low power on your transmitter can be helpful for multiple system setup, if you are experiencing problems with radio frequency interference.
- To prevent raised noise floors that a receiver scan might interpret as radio frequency interference: during setup, keep all transmitters at least three feet apart and at least 15 feet from the receivers.

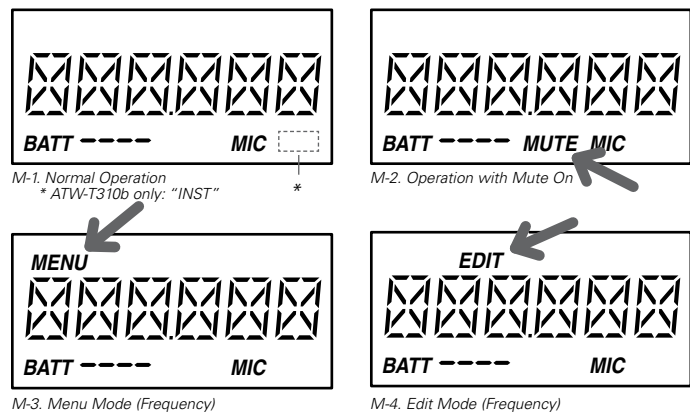
### Setting Receiver Frequency Manually

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 first three digits of the frequency will flash in the window. (The receiver is now in the Edit mode, Fig. D-3.)
3. Use the Up/Down arrow buttons to change the first three digits (MHz) to the desired frequency. Choose a frequency appropriate for your area, avoiding frequencies with active TV channels. 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.
4. Press the Mode/Set button once to set the first three digits to the desired frequency.
5. Use the Up/Down arrow buttons to change the second three digits (kHz) to the desired frequency. Again, be certain to choose a frequency appropriate for your area, avoiding frequencies with active TV channels.
6. 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.)
7. 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 green power indicator and the LCD window have come on.

Fig. M



### 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 M-3 and M-4.
2. Use the Up/Down arrow buttons to change the first three digits of 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. Press the Set button once to set the first three digits to the desired frequency.

4. Use the Up/Down arrow buttons to change the second three digits to the desired frequency.
5. 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.)
6. 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 Transmitter Audio Input Levels**

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

#### **ATW-T310b and ATW-T341b Transmitters**

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").

#### **ATW-T371b Transmitter**

A 3-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, and 0 dB. The default value is +6 dB. In addition, a mechanical pad switch on the condenser capsule (inside the screw-on wire mesh grille) can provide another 6 dB of attenuation. For best performance, adjust the input level using the function menu choices, keeping the capsule's mechanical switch at 0 dB. If more audio attenuation is needed than the menu provides, then set the capsule's pad switch to -6 dB.

#### **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 multichannel 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 Audio-Technica.

### **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 within line-of-sight. 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.

## 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.
- ✓ **"RF" and "AF" level meters both show good signals.**
  - AF Level control on back of receiver not turned up (clockwise).  
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-T310b body-pack only: Wrong input selected ("INST" or "MIC").

### **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.
- ✓ **"RF" and "AF" level meters both show good signals.**
  - The transmitter audio level is too high (" +3"/" +6" on receiver).
  - 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.)
- ✓ **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.

### **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).
  - 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.)  
Tip: Use the Meter Hold function to help identify and resolve (or at least avoid) RF problem locations.

### **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.

**Please note:** This manual is offered in other languages at [www.audio-technica.com](http://www.audio-technica.com)

## 3000 Series Installation and Operation

(english)

### Specifications†

#### Overall System

UHF Operating Frequencies		
	Frequency Range	Number of Frequencies
Band C:	541.500 to 566.375 MHz	996
Band D:	655.500 to 680.375 MHz	996
Band E:	795.500 to 820.000 MHz	981
Band F:	840.125 to 864.900 MHz	953
Band G:	721.500 to 746.375 MHz	996
Band I:	482.000 to 507.000 MHz	1001

Not all frequencies are available in all areas. Please check with local regulations.

Minimum Frequency Step	25 kHz
Modulation Mode	FM
Maximum Deviation	±35 kHz
Dynamic Range	> 110 dB (A-weighted), typical
Total Harmonic Distortion	< 1% (at 1 kHz, ±175 kHz deviation)
Operating Range	100 m (300'), typical
<i>Open range environment with no interfering signals.</i>	
Operating Temperature Range	-5 °C to +45 °C 23 ° F to 113 °F

Battery and LCD performance may be reduced at very low temperatures.

Frequency Response	70 Hz to 15 kHz (+1 dB, -3 dB)
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#### ATW-R3100b Receiver

Receiving System	True diversity
Image Rejection	60 dB nominal, 55 dB minimum
RF Sensitivity	24 dBuV at 60 dB S/N ratio (50 ohms termination)

Maximum Output Level	
XLR, balanced:	+9 dBV
¼" (6.3 mm), unbalanced:	+7 dBV

Antenna Input	BNC-type, 50 ohms Bias voltage 12V DC, 60 mA, each
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Power Requirements	12-18V DC, 500 mA
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Dimensions	210.0 mm (8.27") W x 164.4 mm (6.47") D x 44.0 mm (1.73") H
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Not including BNC connectors or feet.

Net Weight	1.1 kg (38.8 oz), without accessories
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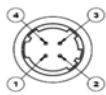
Accessories Included	Two flexible UHF antennas; AC adapter (country dependent); rack-mount adapters
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#### ATW-T310b UniPak® Transmitter

RF Power Output	High: 30 mW, Low: 10 mW (switchable), at 50 ohms
-----------------	---

Spurious Emissions	Following federal and national regulations
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Input Connection	Four-pin Locking Connector Pin 1: GND, Pin 2: INST INPUT, Pin 3: MIC INPUT, Pin 4: DC BIAS +5V
------------------	--



Batteries	Two 1.5V AA, not included
Battery Life	High: 6 hours (alkaline) Low: 8 hours (alkaline)

Depending on battery type and use pattern.

Dimensions	66.0 mm (2.60") W x 24.0 mm (0.94") D x 87.0 mm (3.43") H
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Net Weight	81 g (2.9 oz), without batteries
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#### Handheld Transmitters

RF Power Output	High: 30 mW; Low: 10 mW, (switchable), at 50 ohms
-----------------	--

Spurious Emissions	Following federal and national regulations
--------------------	--

Microphone Element	
ATW-T341b	Dynamic cardioid
ATW-T371b	Condenser cardioid

Batteries	Two 1.5V AA, not included
-----------	---------------------------

Battery Life	High: 6 hours (alkaline) Low: 8 hours (alkaline)
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Depending on battery type and use pattern.

Dimensions	
ATW-T341b	237.0 mm (9.33") long, 48.0 mm (1.89") diameter
ATW-T371b	240.0 mm (9.45") long, 50.0 mm (1.97") diameter

Net Weight	
ATW-T341b	284 g (10.0 oz), without batteries
ATW-T371b	277 g (9.8 oz), without batteries

Accessory Included	AT8456a Quiet-Flex™ stand clamp
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† 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.

### CAUTION: U.S. Public Safety/Security Restrictions (Private Land Mobile Radio Services)

Avoid the frequencies/channels listed below in each of the following U.S. metropolitan areas (as of November 2009). Refer to [www.fcc.gov](http://www.fcc.gov) for updates

Urbanized Area	Geographical Center		Bands (MHz)	TV Channels
	North Latitude	West Longitude		
Boston, MA	42°21'24.4"	71°03'23.2"	470-476, 482-488	14, 16
Chicago, IL <sup>1</sup>	41°52'28.1"	87°38'22.2"	470-476, 476-482	14, 15
Cleveland, OH <sup>2</sup>	41°29'51.2"	81°49'49.5"	470-476, 476-482	14, 15
Dallas/Fort Worth, TX	32°47'09.5"	96°47'38.0"	482-488	16
Detroit, MI <sup>3</sup>	42°19'48.1"	83°02'56.7"	476-482, 482-488	15, 16
Houston, TX	29°45'26.8"	95°21'37.8"	488-494	17
Los Angeles, CA <sup>4</sup>	34°03'15.0"	118°14'31.3"	470-476, 482-488, 506-512	14, 16, 20
Miami, FL	25°46'38.4"	80°11'31.2"	470-476	14
New York, NY/ NE NJ	40°45'06.4"	73°59'37.5"	470-476, 476-482, 482-488	14, 15, 16
Philadelphia, PA	39°56'58.4"	75°09'19.6"	500-506, 506-512	19, 20
Pittsburgh, PA	40°26'19.2"	79°59'59.2"	470-476, 494-500	14, 18
San Francisco/ Oakland, CA	37°46'38.7"	122°24'43.9"	482-488, 488-494	16, 17
Washington, DC/MD/VA	38°53'51.4"	77°00'31.9"	488-494, 494-500	17, 18

<sup>1</sup> In the Chicago, IL, urbanized area, channel 15 frequencies may be used for paging operations in addition to low power base/mobile usages, where applicable protection requirements for ultrahigh frequency television stations are met.

<sup>2</sup> Channels 14 and 15 are not available in Cleveland, OH, until further order from the Commission.

<sup>3</sup> Channels 15 and 16 are not available in Detroit, MI, until further order from the Commission.

<sup>4</sup> Channel 16 is available in Los Angeles, CA, for use by eligibles in the Public Safety Radio Po

C-Band Scan Plan (541.500 – 566.375 MHz)

Table with 10 columns (Scan - 1 to Scan - 9) and 16 rows of frequency data for C-Band Scan Plan.

F-Band Scan Plan (840.125 – 864.900 MHz)\*

Table with 10 columns (Scan - 1 to Scan - 9) and 16 rows of frequency data for F-Band Scan Plan.

\* When operating in the deregulated frequency range (863.000–864.900 MHz) in countries following the R&TTE directive, transmitter power must be set to "LOW" (10 mW)

D-Band Scan Plan (655.500 – 680.375 MHz)

Table with 10 columns (Scan - 1 to Scan - 9) and 16 rows of frequency data for D-Band Scan Plan.

G-Band Scan Plan (721.500 – 746.375 MHz)

Table with 10 columns (Scan - 1 to Scan - 9) and 16 rows of frequency data for G-Band Scan Plan.

E-Band Scan Plan (795.500 – 820.000 MHz)

Table with 10 columns (Scan - 1 to Scan - 9) and 16 rows of frequency data for E-Band Scan Plan.

I-Band Scan Plan (482.000 – 507.000 MHz)

Table with 10 columns (Scan - 1 to Scan - 9) and 16 rows of frequency data for I-Band Scan Plan.

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## Warranty

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### U.S. Two-Year Limited Warranty

This product and selected Audio-Technica brand products purchased in the U.S.A. from an authorized Audio-Technica (A.T.U.S.) dealer are warranted for two years from date of purchase by A.T.U.S. to be free of defects in materials and workmanship. To identify those products, go to [www.audio-technica.com/usawarranties](http://www.audio-technica.com/usawarranties). In event of a defect, End-User's exclusive remedy is at A.T.U.S.' election, the cost of repair, refund of the purchase price in the form of credit or cash, or replacement of the product. The product must be delivered to A.T.U.S. or an Authorized Service Center, prepaid, together with the sales slip or other proof of purchase date. This warranty excludes defects due to normal wear, abuse, shipping damage, or failure to use product in accordance with instructions. This warranty is void in the event of unauthorized repair or modification, or removal or defacing of the product labeling.

For U.S. service return instructions and procedure please go to:  
[www.audio-technica.com/returninstructions](http://www.audio-technica.com/returninstructions).

A.T.U.S.' warranty is to the End User only. Except for A.T.U.S.' said express warranty, A.T.U.S. MAKES NO WARRANTIES, EXPRESS OR IMPLIED, WITH RESPECT TO THE PRODUCTS. A.T.U.S. SPECIFICALLY MAKES NO WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

Except to the extent precluded by applicable state law, A.T.U.S. IS NOT LIABLE FOR CONSEQUENTIAL, INCIDENTAL, DIRECT OR SPECIAL DAMAGES ARISING, DIRECTLY OR INDIRECTLY, IN RESPECT OF SUCH PRODUCTS OR USE OR FAILURE THEREOF, WHETHER BASED ON BREACH OF WARRANTY, NEGLIGENCE, STRICT LIABILITY, TORT OR OTHERWISE.

This warranty gives you specific legal rights, and you may have other rights which vary from state to state.

Outside the U.S.A., please contact your local dealer for warranty details.

Audio-Technica U.S., Inc.  
1221 Commerce Drive  
Stow, Ohio 44224

### UK and EU/Europe Disclaimer

Audio-Technica operates a policy of continuous development. Audio-Technica reserves the right to make changes and improvements to any of the products described in this document without prior notice.

Under no circumstances shall Audio-Technica be responsible for any loss of data or income or any special, incidental, consequential or indirect damages howsoever caused.

The contents of this document are provided "as is". Except as required by applicable law, no warranties of any kind, either express or implied, including, but not limited to, the implied warranties of merchantability and fitness for a particular purpose, are made in relation to the accuracy, reliability or contents of this document. Audio-Technica reserves the right to revise this document or withdraw it at any time without prior notice.

The availability of particular products may vary by country. Please check with the distributor for your territory. In some countries there may be restrictions in using this equipment. Please check with your local radio frequency authorities.

### Two-Years Limited Warranty

Audio-Technica microphones and accessories purchased in the UK and EU / Europe are guaranteed for two years from date of purchase by Audio-Technica Ltd. to be free of defects in materials and workmanship. In the 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 the faulty product is delivered to Audio-Technica Ltd., prepaid, together with the proof of purchase.

Prior approval from Audio-Technica Ltd. is required for return. This warranty excludes defects due to normal wear, abuse, shipping damage, or failure to use product in accordance with instructions. This warranty is void in the event of unauthorized repair or modification.

For return approval and shipping information, contact the Service Department, Audio-Technica Ltd. Tel: +44 (0)113 277 1441.

Outside the U.K, please contact your local dealer for warranty details.



## DECLARATION of CONFORMITY

We, **Audio-Technica Ltd.** of the below address, hereby declare, at our sole responsibility, that the following product conforms to the Essential Requirements of the Radio and Telecommunications Terminal Equipment Directive 1999/5/EC in accordance with the tests conducted to the appropriate requirements of the relevant standards, as listed herewith.

**Product:** UHF Wireless Microphone Transmitters  
UHF Wireless Microphone Receiver

**Model/ Type Number:** Transmitters: ATW-T341b / ATW-T371b / ATW-T310b  
Receiver: ATW-R3100b

**Directive and Standards used:** Radio EN 300 422-2 V1.2.2: 2008-03  
EN 300 422-1 V1.3.2: 2008-03  
EMC EN 301 489-1 V1.8.1: 2008-04  
EN 301 489-9 V1.4.1: 2007-11  
LVD EN 60065: 2002+A1: 2006  
EMF EN 62311: 2008 (for Transmitters)  
EN 50731: 2002 (for Receiver)

**Year of affixing CE marking:** 2009

Signature:

Name:

Adrian Rooke

Position:

Managing Director

Date:

15 December 2009

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**English**  
**Disposal of Old Electrical & Electronic Equipment (Applicable in European countries with separate collection systems)**  
 This symbol on the product or on its packaging indicates that this product shall not be treated as household waste. Instead it shall be handed over to the applicable collection point for the recycling of electrical and electronic equipment. By ensuring this product is disposed of correctly, you will help prevent potential negative consequences for the environment and human health, which could otherwise be caused by inappropriate waste handling of this product. The recycling of materials will help to conserve natural resources. For more detailed information about recycling of this product, please contact your local city office, your household waste disposal service or the shop where you purchased the product.

**Deutsch**  
**Deutsche Entsorgung von gebrauchten elektrischen und elektronischen Geräten (Anzuwenden in den europäischen Ländern mit einem separaten Sammelsystem für diese Geräte)**  
 Das Symbol auf dem Produkt oder seiner Verpackung weist darauf hin, dass dieses Produkt nicht als normaler Haushaltsabfall zu behandeln ist, sondern an einer Annahmestelle für das Recycling von elektrischen und elektronischen Geräten abgegeben werden muss. Durch Ihren Beitrag zum korrekten Entsorgen dieses Produkts schützen Sie die Umwelt und die Gesundheit Ihrer Mitmenschen. Umwelt und Gesundheit werden durch falsches Entsorgen gefährdet. Materialrecycling hilft den Verbrauch von Rohstoffen zu verringern. Weitere Informationen über das Recycling dieses Produkts erhalten Sie von Ihrer Gemeinde, den kommunalen Entsorgungsbetrieben oder dem Geschäft, in dem Sie das Produkt gekauft haben.

**Français**  
**Traitement des appareils électriques et électroniques en fin de vie (Applicable dans les pays européens disposant de systèmes de collecte sélective)**  
 Ce symbole, apposé sur le produit ou sur son emballage, indique que ce produit ne doit pas être traité avec les déchets ménagers. Il doit être remis à un point de collecte approprié pour le recyclage des équipements électriques et électroniques. En s'assurant que ce produit est bien mis au rebut de manière appropriée, vous aiderez à prévenir les conséquences négatives potentielles pour l'environnement et la santé humaine. Le recyclage des matériaux aidera à conserver les ressources naturelles. Pour toute information supplémentaire au sujet du recyclage de ce produit, vous pouvez contacter votre municipalité, votre déchèterie ou le magasin où vous avez acheté le produit.

**Español**  
**Tratamiento de los equipos eléctricos y electrónicos al final de su vida útil (Aplicable en países europeos con sistemas de recogida selectiva de residuos)**  
 Este símbolo en su equipo o su embalaje indica que el presente producto no puede ser tratado como residuos domésticos normales, sino que deben entregarse en el correspondiente punto de recogida de equipos eléctricos y electrónicos. Asegurándose de que este producto es desechado correctamente, Usted está ayudando a prevenir las consecuencias negativas para el medio ambiente y la salud humana que podrían derivarse de la incorrecta manipulación de este producto. El reciclaje de materiales ayuda a conservar los recursos naturales. Para recibir información detallada sobre el reciclaje de este producto, por favor, contacte con su ayuntamiento, su punto de recogida más cercano o el distribuidor donde adquirió el producto.

**Português**  
**Tratamento de Equipamentos Eléctricos e Electrónicos no final de sua vida útil (Aplicável em países Europeus com sistemas de recolha independentes)**  
 Este símbolo no produto ou na sua embalagem indica que este não deve ser tratado como residuo doméstico. Ao invés, será colocado no ponto de recolha destinado à reciclagem de equipamento eléctrico e electrónico. Assegurando-se que este produto é despojado correctamente, você irá prevenir potenciais consequências negativas para o meio ambiente bem como para a saúde humana, que de outra forma poderiam ocorrer pela manipulação imprópria deste produto. A reciclagem dos materiais contribuirá para a conservação dos recursos naturais. Para obter mais informação detalhada sobre a reciclagem deste produto, por favor contacte o município/autoridade onde reside, os serviços de recolha de resíduos da sua área ou a loja onde o produto foi adquirido.

**Italiano**  
**Trattamento del dispositivo elettrico od elettronico (Applicabile in tutti i paesi dell'Unione Europea che utilizzano un sistema di raccolta differenziata)**  
 Questo simbolo sul prodotto o sulla confezione indica che il prodotto non deve essere riposto in un punto di raccolta adatto a rifiuti domestici. Deve invece essere trattato nel punto di raccolta appropriato per il riciclo di apparecchi elettrici ed elettronici. Assicurandosi che questo prodotto sia smaltito correttamente, contribuirà a prevenire potenziali conseguenze negative per l'ambiente e per la salute che potrebbero altrimenti essere causate da uno smaltimento inadeguato. Il riciclaggio dei materiali aiuta a conservare le risorse naturali. Per informazioni più dettagliate circa il riciclaggio di questo prodotto, potete contattare il vostro ufficio comunale, il servizio locale di smaltimento rifiuti oppure il negozio dove l'avete acquistato.

**Nederlands**  
**Verwijdering van oude Elektrische en Elektronische Apparaten (Toepasbaar in de Europese landen met gescheiden afvalstelselen)**  
 Het symbool op het product of op de verpakking wijst erop dat dit product niet als huishoudafval mag worden behandeld. Het moet echter naar een plaats worden gebracht waar elektrische en elektronische apparatuur wordt gerecycled. Als u ervoor zorgt dat dit product op de correcte manier wordt verwijderd, voorkomt u voor mens en milieu negatieve gevolgen die zich zouden kunnen voordoen in geval van verkeerde afvalhandeling. De recycling van materialen draagt bij tot het vrijwaren van natuurlijke bronnen. Voor meer details in verband met het recyclen van dit product, neemt u het best contact op met de gemeentelijke instantie, het bedrijf of de dienst belast met de verwijdering van huishoudelijke afval of de winkel waar u het product hebt gekocht.

**Dansk**  
**Håndtering af udtjente elektrisk og elektronisk udstyr (Gælder for europæiske lande med separate indsamlingssystemer)**  
 Dette symbol på produktet eller emballagen angiver, at produktet ikke må behandles som husholdningsaffald. Det skal i stedet indleveres på en deponeringsplads specielt indrettet til modtagelse og genbrug af elektrisk og elektronisk udstyr. Ved at sikre, at produktet bortskaffes korrekt, forebyrdes de eventuelle negative miljø- og sundhedskadelige påvirkninger, som en ukorrekt affaldshåndtering af produktet kan forårsage. Genbrug af materialer til mindre til at bevare naturens ressourcer. Yderligere information om genbrug af dette produkt kan fås hos myndighederne, det lokale renovationselskab eller i butikken, hvor produktet blev købt.

**Svenska**  
**Omhändertagande av gamla elektriska och elektroniska produkter (användbara i europeiska länder med separata insamlingsystem)**  
 Symbolen på produkten eller emballaget anger att produkten inte får hanteras som hushållsavfall. Den skall i stället lämnas in på uppamsamlingsplats för återvinning av el- och elektronikkomponenter. Genom att säkerställa att produkten hanteras på rätt sätt bidrar du till att förebygga eventuella negativa miljö- och hälsoeffekter som kan uppstå om produkten kasseras som vanligt avfall. Återvinning av material hjälper till att bibehålla naturens resurser. För ytterligare upplysningar om återvinning bör du kontakta lokala myndigheter eller sophämningsstjänst eller affären där du köpte varan.

**Język polski**  
**Pozbywanie się zużytego sprzętu (Stosowane w krajach europejskich posiadających system selektywnej zbiórki odpadów)**  
 Takie oznaczenie na produkcie lub jego opakowaniu wskazuje, że produkt nie może być traktowany jako odpad komunalny lecz powinien się go dostarczyć do odpowiedniego punktu zbiórki sprzętu elektrycznego i elektronicznego w celu recyklingu. Zapewniając prawidłową dyspozycję dotyczącą produktu, zapobiega się jego negatywnemu działaniu na środowisko oraz zdrowie ludzi, jakie mogłyby wystąpić w przypadku niekwalifikowanego pozbywania. Recykling materiałów pomoże w ochronie bogactw naturalnych. W celu uzyskania bardziej szczegółowych informacji na temat recyklingu tego produktu, należy skontaktować się z urzędem miejskim, ze służbami oczyszczania miasta lub z sklepem, w którym ten produkt został zakupiony.

**Русский**  
**Утилизация электрического и электронного оборудования (применяется в странах, где действует система раздельного сбора отходов)**  
 Данный знак на устройстве или его упаковке обозначает, что данное устройство нельзя утилизировать вместе с прочими бытовыми отходами. Оно следует сдать в соответствующий приемный пункт переработки электрического и электронного оборудования. Неправильная утилизация данного изделия может привести к потенциально негативным влияниям на окружающую среду и здоровье людей. Поэтому для предотвращения подобных последствий необходимо соблюдать специальные требования по утилизации этого изделия. Переработка данных материалов поможет сохранить природные ресурсы. Для получения более подробной информации о переработке этого изделия обратитесь в местные органы городского управления, службу сбора бытовых отходов или в магазин, где было приобретено изделие.

**Suomi**  
**Käytöstä poistettujen sähkö- ja elektroniikkalaitteiden hävitys (Euroopan maiden keräysjärjestelmät)**  
 Symboli, joka on merkitty tuotteen tai sen pakkaukseen, osoittaa, että tätä tuotetta ei saa käsitellä talousjätteenä. Tuote on sen sijaan luovutettava sopivaan sähkö- ja elektroniikkalaitteiden keräyskeskukseen hoidettavaksi. Tämän tuotteen asianmukainen hävitys on välttämätöntä auttaakseen estämään sen mahdolliset ympäristön ja terveyden haittavaikutukset, joita voi aiheutua muusta tapauksesta tämän epäasianmukaista jättekäsittelyä. Materiaalien kierrätyksellä säästetään luonnonvaroja. Tarkempaa tietoa tämän tuotteen kierrättämisestä saa paikallisesta kuntamusiosta.

\*本製品の回収マークは「電機電子機器の回収システム」におけるマークです。  
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 이 설명은 유럽 연합 국가의 회수 시스템을 위한 안내입니다



本标志适用于在中国销售的电子产品，依据2005年2月28日公布的《电子信息产品污染控制管理办法》以及GB/T 17624-2006《电子信息产品污染控制标识规范》，表示该产品在使用过程可再利用，对生态环境的保护作用。数字表示该产品符合RoHS指令的要求，从制造日起符合RoHS指令的要求。产品符合RoHS指令要求，对环境的影响较小。产品符合RoHS指令要求，对环境的影响较小。产品符合RoHS指令要求，对环境的影响较小。产品符合RoHS指令要求，对环境的影响较小。

**产品中所含有毒有害物质或元素的名称及含量**

部件名称 (大体分类)	有毒有害物质或元素					
	铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (CrVI)	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
机体(金属部件)	×	○	○	○	○	○
实装基板/电气部件	×	○	○	○	○	○
锡线类	×	○	○	○	○	○

备注  
 ○: 表示该有毒有害物质在该部件所有均质材料中的含量均在SJ/T 11363 2006标准规定的限量要求以下。  
 ×: 表示该有毒有害物质至少在该部件的某一均质材料中的含量超出SJ/T 11363-2006标准规定的限量要求。  
 因为在当代技术下还没有可替代的物质。



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**English**

This explanation is a guidance concerned with the environmental laws and regulations of the People's Republic of China. The printed information as well as the list of contained materials conform with the standard values established by the related laws and regulations of the People's Republic of China, and does not apply to other Restrictions of Hazardous Substances including Europe's RoHS directive.

**Deutsch**

Diese Erklärung ist eine Anleitung, die sich mit den Umweltgesetzen und -regelungen der Volksrepublik China befasst. Die gedruckten Informationen, sowie die Liste der enthaltenen Materialien stimmen mit den Vorgaben überein, die durch die nachfolgenden Gesetze und Regelungen der Volksrepublik China eingeführt wurden, üben sie. Sie treffen nicht auf andere umweltbezogene Regelungen inklusive der Europäischen RoHS-Richtlinie zu.

**Français**

Ceci est un guide concernant les lois et l'ensemble des réglementations de la République populaire de Chine sur l'environnement. Les informations ci-dessous ainsi que la liste des produits spécifiques sont conformes aux normes établies par les lois et les règlements en vigueur en République populaire de Chine, et ne s'appliquent pas aux autres restrictions sur les substances dangereuses ni à la directive RoHS de l'Union Européenne.

**Español**

Esta explicación es un consejo con respecto a las leyes medioambientales y regulaciones de la República Popular China. La información impresa así como la lista de materiales contenidos están conformes con los valores estándar establecidos por las leyes y regulaciones relacionadas de la República Popular China, y no se aplica a otras Restricciones de Sustancias Peligrosas incluyendo la directiva RoHS de Europa.

**Português**

Esta explicação é uma orientação relacionada com leis e regulamentações ambientais da República Popular da China. As informações impressas, bem como a lista dos materiais incluídos, são os valores padrão estabelecidos pelas leis e regulamentações da República Popular da China e não se aplica a outras restrições relacionadas com substâncias perigosas, incluindo a diretiva RoHS europeia.

**Italiano**

Questa spiegazione è una guida relativa alle leggi ed ai regolamenti ambientali della Repubblica Popolare Cinese. Le informazioni stampate, nonché la lista dei materiali contenuti, sono conformi ai valori standard stabiliti dalle relative leggi e regolamentazioni della Repubblica Popolare Cinese, e non sono applicabili ad altre Restriczioni di Sostanze Nocive, inclusa la direttiva Europea RoHS.

**Nederlands**

Diese uitleg is een advies met betrekking tot de milieu wetten en regelgeving van de Volksrepubliek China. Zowel de gedrukte informatie als de inhoudelijke lijst van materialen beantwoorden aan de standaard waarden tot stand gekomen door de van toepassing zijnde wetten en regels van de Volksrepubliek China en gelden niet voor andere beperkingen van riskante substanties inclusief de Europese RoHS richtlijn.

**Dansk**

Denne forklaring er en vejledning omhandlede Folkerepublikken Kinas miljøretlige love og bestemmelser. Både de trykte oplysninger og de indholdte materialer er i overensstemmelse med standardværdierne, som er blevet etableret af Folkerepublikken Kinas relevante love og bestemmelser, og gælder ikke andre restriktioner for farlige stoffer inklusiv Europæisk RoHS direktiv.

**Svenska**

Den här förklaringen är en vägledning gällande kinesiska miljölagar, informationen och materiallistan överensstämmer med standardvärdena i de kinesiska miljölagarna, och tillämpas inte av andra restriktioner för farliga ämnen, såsom den europeiska RoHS-direktivet.

**Język polski**

Wyjaśnienie to jest poradnik, dotyczący praw ochrony środowiska i regulacji Chińskiej Republiki Ludowej. Wydrukowana informacja jak również lista zawartych materiałów potwierdzają zgodność z standardowymi wartościami, ustalonymi przez właściwe prawa i regulacje Chińskiej Republiki Ludowej, a nie mogą być one stosowane do restrikcji o niebezpiecznych substancjach, kładące do dyspozycji UE o RoHS.

**Русский**

Это объяснение является руководством, связанным с экологическими законами и постановлениями Народной Республики Китай. Печатаемая информация, также как список содержащихся материалов, соответствует стандартным значениям, установленным соответствующими законами и постановлениями Народной Республики Китай и не применяется к другим ограничениям Опасных Вещей, включая директиву Европа RoHS.

**Suomi**

Tämä selitys on Kiinan kansantasaavallan ympäristölaeille ja asetuksille liittyvä ohje. Painetut tiedot samoin kuin sisällyttävät materiaalien lista noudattavat standardivaroja, jotka on määritelty Kiinan kansantasaavallan vastaavissa laeissa ja asetuksissa ei-täällä joiden mukaisiin vaatimuksiin aiemmin rajoitettiin asetuskäytäntöön mukaan luettua Euroopan RoHS-direktiiviä.

**한국어**

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**日本語**

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