Model AT-80 Wireless User Guide . . . . . .

UHF Wireless Microphone System

ATNY INTERNATIONAL INC.
Address: 6005 7th Ave Brooklyn, NY 11220
TEL: 1-866-828-6886
www.atnypro.com

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INTRODUCTION

Thank you for choosing the wireless system, we know you will be very pleased with its performance and features. The wireless system is a professional 2-channel UHF PLL wireless system which offers the clearest, most natural sound available in wireless today. The wireless system delivers eight discrete channels on selected frequency bands for interference-free performance in any application or locale. It also features ATNY proprietary companding and low noise circuit for an industry best 105dB dynamic range.

USING THIS MANUAL

This booklet provides information regarding the use of the wireless systems: wireless microphone receiver, Handheld microphone transmitter and the bodypack microphone transmitter. It includes a description of features and a step-by-step guide to operation of the unit. This manual should answer any questions you may have about the operation and servicing of your wireless system.

System Features

Wireless Receiver

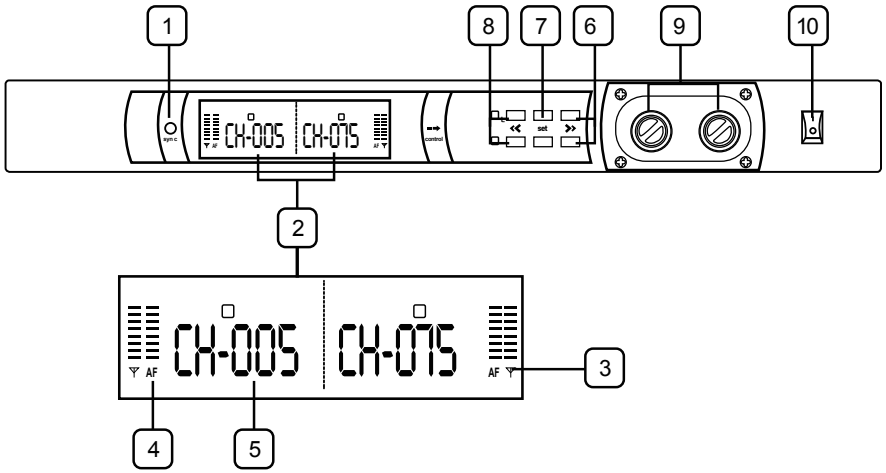
- Unsurpassed state-of-the-art PLL UHF performance with 105dB dynamic range and operation up to 500 feet line-of sight
- Two complete and independent wireless receivers with 100 user-selectable UHF frequencies for simultaneous operation of two transmitters
- AUTO-SCAN for easily locating clear channels and Auto-Sync Channel IR download feature which sends selected Channel information to transmitter via IR sender for easy frequency synchronization
- Sophisticated IF filtering for simultaneous operation of multiple systems in the same location
- Front panel touch control buttons and user-friendly LCD configuration menus
- Front panel backlit LCD display indicates selected Channel, RF signal strength meter; Audio Output Volume level; Separate audio LED bar graph display providing instantaneous audio level status easily seen from a distance
- Back panel Balanced XLR Mic level and Unbalanced ¼" SUM Line level audio output jacks, squelch control, RF BNC connectors for dual removable ½ wave antennas, and DC power input jack supply
- Externally powered (adapter included)
- Rugged all-metal housing— 1U rack mountable with supplied rack ears
- Works with any two combinations of available instrument, handheld and lavalier UHF transmitters

Handheld/Bodypack Microphone Transmitter

- Choice of transmitters: HT or BT, all with 100 easily selectable channels: manually with up/down buttons on units or via IR Sync download of selected channel for easy synchronization with receiver
- HT Handheld transmitter features a sleek, durable all-metal housing; power Off/On switch; internal antenna system; and superior neodymium cartridge for clear, powerful audio, maximum feedback rejection, and minimal handling noise
- BT bodypack transmitter (choice of three versions: LT, LT/HM, or GT) features road worthy all-metal case; power Off/On switch; flexible external antenna rod; and mini locking connector for lapel (LT), Headmic (LT/HM), or instrument (GT) applications
- HT and BT transmitters feature LCD displays indicating selected Channel, and Battery level status; and operation with two AA batteries (alkaline or rechargeable NiMH) for longest reliable, economical battery life

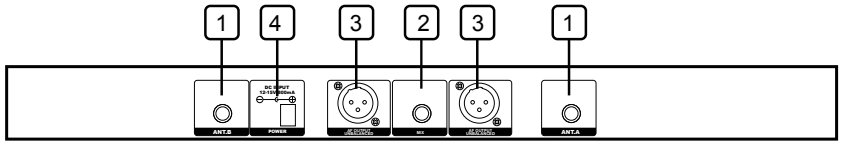
Quick User Controls Guide

Receiver: Back View



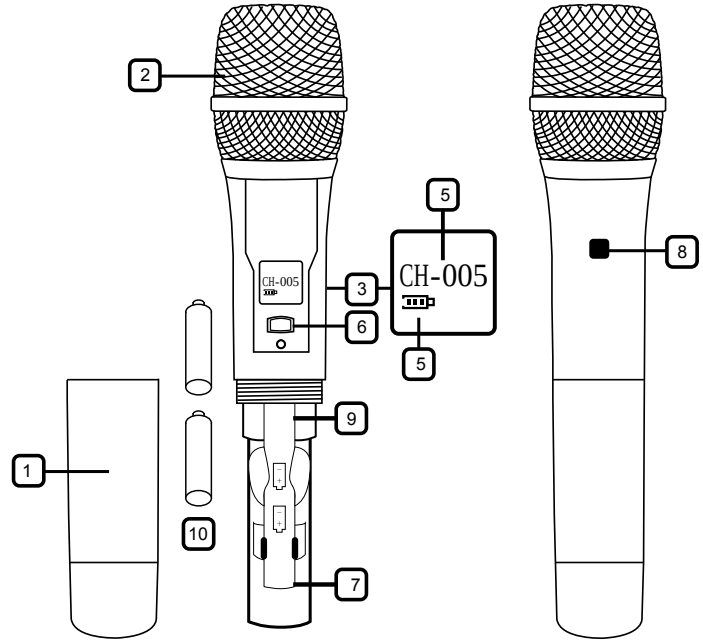
1. IR Infrared LED transmitter window for linking the RX to the TX for frequency download
2. LCD DISPLAYS For indication of frequency, AF/RF signal strength indica tor 1-8 bars, and Battery meter indica tor 1-3 bars
3. RF SIGNAL METER Indicates received signalstrength level from 1-8 bars, (full 8 bars shows strongest incoming RF signal)
4. AF SIGNAL METER Indicates received signalstrength level from 1-8 bars, (full 8 bars shows strongest output AF signal)
5. FREQUENCY Indicates selected frequency
6. DOWN BUTTON To change the receiver channel down by one step at a time, lock/unlock the setting(hold 5 seconds)
7. SET BUTTON To scroll through the LCD menu and set the selected program/function
8. UP BUTTON To change the receiver channel down by one step at a time, start the sync function
9. VOLUME LEVEL KONB To change the receiver LINE output VOL level
10. POWER BUTTON Press for one second to turn both receivers ON-OFF

Receiver: Back View



1. RF CONNECTORS A/B Antenna jacks for RF reception
2. UNBALANCED AUDIO OUT Volume Level audio output for one receiver—adjustable LINE level
3. BALANCED MIC OUT Audio output connection for each receiver—fixed mic level, not adjustable
4. DC INPUT JACK For using supplied external DC adapter to power the receivers

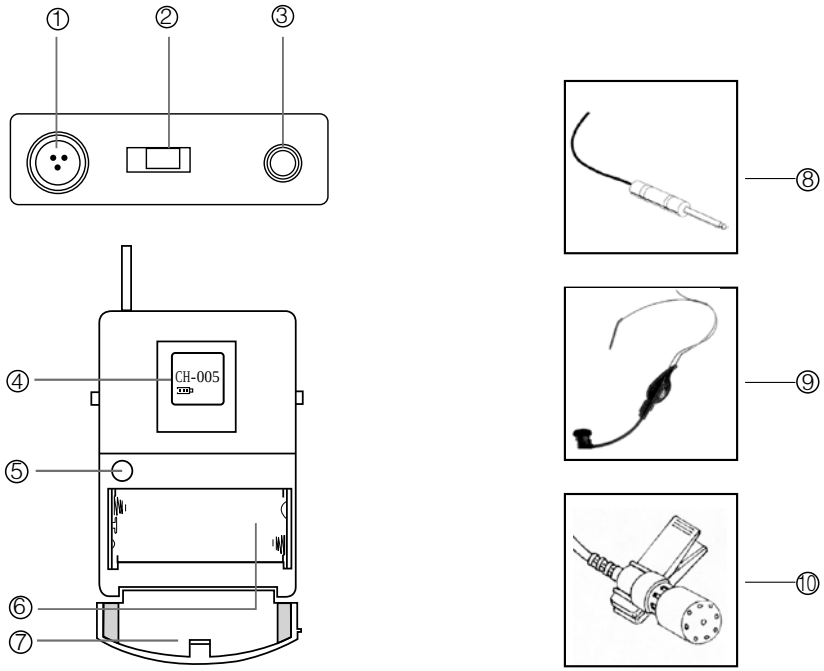
Quick User Controls Guide



1. BATTERY COVER Unscrew to insert two AA alkaline batteries
2. MIC BALL Windscreen/dust cover
3. LCD DISPLAY For indication of channel, battery mete
4. CHANNEL Indicates selected channel
5. BATTERY METER Indicates battery status (3 bars=100%, 1 bar=33.3%). Change batteries when flashing
6. POWER ON/OFF SWITCH Press power switch to turn ON-OFF
7. INTERNAL ANTENNA Built-in antenna
8. IR RECEPTOR SENSOR/WINDOW Infrared LED sensor for linking the TX to the RX during IR frequency download.
9. BATTERY COMPARTMENT
10. TWO AA ALKALINE BATTERIES

Quick User Controls Guide

Bodypack Transmitter



1. Audio input socket(3pin), can be connected to various kind of lavalier microphone or head-set microphone.
2. Power switch: turn on/off the transmitter power supply.
3. Transmit antenna.
4. LCD screen.
5. Infrared frequency window
6. Cell box, for 2 x 1.5V battery
7. Battery cover
8. **INSTRUMENT CORD GT** cable—connects instrument's audio output to TX input jack
9. **HEADMIC** Headworn microphone (choice of models)—connects to transmitter input jack
10. **LAVALIER MIC** Lavalier (lapel) microphone (choice of models)—connects to transmitter input jack

System Operation

Receiver

OPERATION MENU OF LCD

1. Key functions and operations

1. Press the middle button "SET" can select menu and confirm your Settings
2. Press "▲" "▼" button to select or adjust the current menu, and then "SET" key set to store your settings.
3.Long press "▲" "▼" key to select frequency and channel quickly

2.LCD display

A.Infrared frequency

Press the "SET" button when the LCD display "IR-TX",2-3 seconds later, transmitting the infrared frequency to the transmitter.

B. Getting into the operating menu

Display

► Press the SET button to get into the standard display into the operating menu. 2–3 seconds later, CHANNL or FRE QU appears.

► Press the ▲/▼ button to adjust the setting. By briefly pressing the ▲/▼ buttons, the display jumps either forwards or backw-ards to the next settin continuously. (Illustration: To display whi-ch menu depend on the previous SET status.)

► Press the SET button to store the setting, orthe screen flashing after 2-3 seconds indicating that the settings are not available, the transmitter still work at previous setting.

CHANNEL DISPLAY

► Press the SET button and select the CHANNEL mode. This menu shows the current channel.

► Press the ▲/▼ button can change the channel, If you hold down a button, the display cycles continuously. The "fast search" function allows you to get fast and easily to your desired setting. The new setting flashes on the display until it is stored, or the transmitter will work at the previous channel.

► **FREQUENT DISPLAY**

Press the SET button and select the FRE QU mode. This menu shows the current frequency.

► Press the ▲/▼ button can change the frequency, If you hold down a button, the display cycles continuously, The "fastsearch"function allows you to get fast and easily to your desired setting. The new setting flashes on the display until it to stored, or the tran-smitter will work at the previous frequency.

Volume

Adjust the volume knobs the add or reduce the volume level.

Note: Do not mount the receiver on a rack directly above an amplifier or other source of high heat. This could degrade the performance of. Always ensure adequate airflow and heat dissipation in any rack configuration.

Installing Antennas

Install antennas by connecting the two **Antennas** included with your system onto the two **RF Connectors** located on the back of the receiver. The two antennas must be installed. The optimal positions of the antennas are 45° from the receiver and 90° from each other. For maximum range, it is always best to maintain a line-of-sight (no obstructions) between the receiver antennas and the transmitter at all times whenever possible.

Powering the Receivers

To power the receivers, plug the supplied AC/DC **Power Supply** adapter into the **DC Input Jack** on the back of the receivers, then plug the adapter into an AC outlet.

Note: Any 12-16VDC power source with 800mA minimum capacity can also be used. To turn on, press down the **Power Button** The **LCD Display** will light up. To turn off, press the Power button up. The LCD will display "OFF" then the backlight will turn off indicating the receivers are off.

Connect either the ¼" **Unbalanced SUM Line Out** or ¼" each **Unbalanced Line Out** or each **XLR Balanced Mic Outs** to your mixing board, effect, or amplifier inputs (See Connecting the Audio Outputs section).

Connecting the Audio Outputs

The receiver has one **Unbalanced Audio SUM Out** adjustable line level audio output and two **Balanced XLR Mic Out** fixed level jacks and each works independently per channel. The Unbalanced Audio Out is controlled **by volume knobs**. For unbalanced output, plug a ¼" mono (Tip/Sleeve) audio cable into the Unbalanced Audio Out jack and plug the other end into your mixing board or amplifier. When using the instrument transmitter system, connect the Unbalanced Audio SUM Out directly to your instrument amp or preamp. At maximum receiver volume setting, as indicated by the Volume display, the system output is approximately +4dB higher than a direct cord-to-amp connection.

Note: Both receivers' output will be mixed together as per the individual receivers' volume settings controlled **by volume knobs**. If separate signals are required for each instrument then the XLR outputs must be used, however, note they are not line level or adjustable. The SUM out is best utilized for switching between separate transmitters during performance with only one audio signal
at a time fed to the instrument amplifier. For balanced output, plug an audio cable with an XLR connector into the XLR Balanced Mic Out socket for each receiver and plug the other end into your mixing board or amplifier inputs accordingly As when making any connection, make sure the amplifier or mixing board volume is at the
minimum level before plugging in the receiver to avoid possible sound system damage.

Your receiver is now operational and ready to use. Once you have completed the above steps, proceed to the following instructions for the handheld or instrument transmitter.

Note: Only one transmitter can be used with one receiver. It is not possible to use two transmitters on the same frequency and mix the output of these transmitters into one wireless receiver. However, as this is a two receiver unit, two transmitters on separate frequencies can be utilized, one with each receiver.

Handheld Microphone Transmitter

Setting up the Transmitter
The requires two AA size batteries to operate. To install the batteries onto the battery compartment, unscrew the **Battery Compartment Cover** by turning counterclockwise until loose and slide down
the cover, exposing the **Battery Compartment** . Insert two fresh AA batteries according to the correct polarity as indicated on the transmitter body. Screw the battery cover back onto the microphone, making sure it is securely tightened. Fresh alkaline batteries can provide up to 8-10 hours of operation, but in order to ensure optimal performance it is recommended that the batteries be replaced after 6-8 hours of use or as indicated to be necessary by the flashing **Battery "BATT" Meter Icon**.

Powering the Transmitter On/Off
To turn on the transmitter, slide the **Power On/Off Switch** to the "ON" position. The LCD backlight will light up, indicating the unit is now on. After ten seconds the backlight will automatically turn off to conserve battery life. The **Channel and Battery Meter** indicator icons stay on for normal operation.
As many of the LCD battery levels should stay lit as possible, as they indicate usable battery strength. As the batteries weaken, fewer of the level indicators will stay lit until only one bar shows, which will then flash to warn that the batteries are now too low and should be replaced as soon as possible with fresh ones.

To preserve battery life, turn the transmitter off when not in use. To turn the transmitter off, slide the power on/off switch to the "OFF" position. The LCD will display "OFF," no LCD or backlight is lit up and the unit will be off.

At Power Off the transmitter will store the last settings entered and re-display them at the next power on where it can be reprogrammed to any new frequency at the first time of use or anytime later.

Programming the Transmitter to the Selected channel
The transmitter can be programmed to the same channel as selected for the receiver, either via automatic synchronization using the IR Sync function or manually on the transmitter itself.

IR Sync Programming:
Use the wireless **IR LED Receptor Sensor** to download pre-programmed channel from the receiver. Start programming by holding the IR LED Receptor about 6-12" from the receiver's **IR LED Window** , then press the **IR Sync Button** on the receiver to be used, the IR LED will light up red and stay for about five seconds. This indicates IR transmission is in progress and IR data is transferring during this period. Upon successful data transfer (usually in about three seconds) the IR LED stops and the transmitter's backlight will light up and the transmitter will transmit a radio signal on the same frequency as the receiver. The Signal Strength on the receiver's LCD display will then light up, indicating that the IR link is completed.

Note: If procedure is not done correctly during the five seconds of active data transfer, the receiver and the transmitter do not link and transmitter's previous programmed channel remains unchanged.
The IR link is infrared light and thus works best when this data transfer is accomplished in a light-shielded or darker environment. It may not be successful in a brightly lit area. If the transfer fails, repeat the procedure in a darker location or somehow shield the link from outside light to successfully program the transmitter with the pre-programmed group and channel info from the receiver.

Operating the Handheld Transmitter
During normal operation with the unit powered ON, the transmitter power level can be changed by sliding the On/Off switch to the "ON" position and the microphone is now ready to use. The receiver's **RF Signal Meter** should now be on, indicating a received signal from the transmitter. Adjust the volume of the receiver per Connecting the Audio Output section above.

Note: Avoid acoustic feedback (howling or screeching) by taking care in selecting PA volume, transmitter location and speaker placement.

The RF Signal meter on the receiver's LCD display should be "ON" in normal operation.

Bodypack Transmitter

Setting up the Transmitter
The BT bodypack requires two AA size batteries to operate. To install the batteries into the battery compartment, lift the Battery Compartment Door by grabbing the two spring-loaded locking tabs and pull out, exposing the Battery Compartment. Insert two fresh AA batteries according to the correct polarity as indicated on the transmitter body. Close the battery cover, ensuring the cover is snapped shut. Fresh alkaline batteries can last provide up to 8-10 hours of operation, but in order to ensure optimum performance it is recommended that the batteries be replaced after 6-8 hours of use or as indicated necessary by the flashing **Battery Meter "BATT" Icon**.

Connecting Input Audio Source
Use the Audio Input 3 pin 三 locking mini jack for connecting the audio input cord from lapel mic (LT), Headmic (LT/HM), or instrument (GT), depending on which version transmitter is being used. Secure the connection to the cable by lining up the slot of the mini connector and turning the ring to securely lock in.

Powering the Transmitter On/Off
To turn on the transmitter, slide the **Power Off/On Switch** . The LCD backlight will light up. The unit is now on. After ten seconds the backlight will automatically turn off. The **Channel**) and **Battery Meter** remain on in normal operation.

As many of the LCD battery levels should stay lit as possible, indicating usable battery strength. As the batteries weaken, fewer of the level indicators stay lit until only one bar shows, which will then flash to warn that the batteries are now too low andshould be replaced as soon as possible. To preserve battery life, turn the transmitter off when not in use. To turn the transmitter off, slide the Off/On switch and then "OFF". The LCD will display "OFF", no LCD or backlight is lit up and the unit will be off. At Power Off the transmitter will store the last settings entered and re-display
them at the next power on where it can be reprogrammed to any new Channel or Volume level at the first time of use or anytime later. The factory default setting for Volume 0dB is same for all transmitters. These settings are optimal for most applications.

Programming the Transmitter to the Selected Channel
The transmitter can be programmed to the same channel as selected for the receiver, either via automatic synchronization using the IR Sync function or manually on the transmitter itself.

IR Sync Programming:
Use the wireless **IR LED Receptor Sensor** to download pre-programmed frequency from the receiver. Start programming by holding the IR LED Receptor about 6-12" from the receiver's **IR LED Window** , then press the **IR Sync Button** on the receiver to be used, the IR LED will light up red and stay for about five seconds. This indicates IR transmission is in progress and IR data is transferring during this period. Upon successful data transfer (usually in about three seconds) the IR LED stops and the transmitter's backlight will light up and the transmitter will transmit a radio signal on the same frequency as the receiver. The Signal Strength on the receiver's LCD display will then light up, indicating that the IR link is completed.

Note: If procedure is not done correctly during the five seconds of active data transfer, the receiver and the transmitter do not link and transmitter's previous programmed channel remains unchanged.
The IR link is infrared light and thus works best when this data transfer is accomplished in a light-shielded or darker environment. It may not be successful in a brightly lit area. If the transfer fails, repeat the procedure in a darker location or somehow shield the link from outside light to successfully program the transmitter with the pre-programmed group and channel info from the receiver.

Specifications

SYSTEM OVERALL SPECIFICATIONS

Operating Frequency Range	614.00-698.00 MHz according to the final product
Freq. Synthesized	(100 channels switchable) 250 kHz/step
PLL System Frequency Stability	<0.005%
Frequency Response	30Hz-18kHz +/-3dB
Dynamic Range	105dB
Harmonic Distortion	<0.5%
Modulation	FM (F3E) +/-25kHz normal, +/-75kHz max
Operating Range	40m typical

RECEIVER SPECIFICATIONS

Receiver System	Dual conversion Super Heterodyne
Selectivity	60dB, normal +/-75kHz offset
Image Rejection	-70dB, minimum
Sensitivity	-107dBm, norma
Spurious Rejection	65dB, normal
Mute Threshold	-65dBm to -95dBm (adjustable)
Controls	UP/DOWN selects, SET, IR Sync, Power ON/OFF buttons
LCD Display	Dual backlight LCD panels indicating selected Frequency, Received RF levels
AF/PEAK LED Display	8-segment LED tree indicating received audio levels from transmitter
Audio Output Level	Unbalanced output: LINE Level output adjustable Balanced output: MIC level output fixed
Output Impedance	Balanced and unbalanced: 600 Ω
Power Requirement	12-16VDC/0.8A
Antennas	Dual TNC right angle
Housing Construction	Metal

HANDHELD TRANSMITTER SPECIFICATIONS

RF Output Power	+10dBm
Harmonic and Spurious Emission	-50dBc normal
Audio Input Levels	24mV for +/- 25 KHz deviation
Impedance	0.6 kΩ
Controls	Power ON/OFF
LCD Display	Channel Battery Levels
Antenna Type	Integral
Battery Type	2 x AA alkaline batteries operation
Battery Life	8-10 hours typical
Housing Construction	Metal

Specifications subject to change at any time without prior notice for purposes of product improvement

BODYPACK TRANSMITTER SPECIFICATIONS

Harmonic and Spurious Emission	-50dBc normal
Audio Input Levels	(Lapel/Lavaliere—LT)/ (Headmic LT/HM)/ (Instrument—GT)
Input Impedance	5kΩ (Lav Mic), 500 kΩ (Instr.)
Controls	Power OFF/ON
Input Connector	Mini 3 pins with locking nut
LCD Display	Channels Battery Levels
Antenna Type	External fixed
Battery Type	2 x AA alkaline batteries operation
Battery Life	8-10 Hours typical

Cautions and Troubleshooting

Feedback

Avoid acoustic feedback (howling or screeching) by taking care in selecting PA volume, transmitter location and speaker placement. Please also note the pickup pattern characteristics of the microphone selected. Unidirectional mics are more resistant to feedback. However, they pick up sound sources best that are directly in front of the mic. Also mics that are farther from the sound source require more acoustic gain and thus are also more prone to feed back than close-source mics such as handheld.

No or Low Audio

If you are not getting audio through the system, carefully re-check all setups. Especially note that the receiver and transmitter must be set to operate on the same RF channel. The receiver's Unbalanced Line Level Out is adjustable so make sure the Volume is set properly. RF Interference and Finding Open Channels If you encounter slight receiving interference when the transmitter is far from the receiver (from other than an operating TV station on the same frequency), If receiving interference on a selected channel with the transmitter off, you must reprogram the receiver and transmitter to a different channel.

See: Selecting the Receiver Volume Level / Channel Programming the HT/BT to the Selected Channel

To reprogram, you must first find an open channel. To do this, follow the operating procedure outlined in Selecting the Receiver Volume Level / Channel. With the associated transmitter off, scroll through the groups/channels to find one that shows no received signal on the receiver's RF Signal Meter (no bars). Also, there must be no bars either on each of the three immediately adjacent channels both above and below the selected channel for optimum interference-free operation (i.e. in a field of seven adjacent channel total—with the channel used in the middle). If operating multiple Series systems simultaneously, repeat this procedure with every new channel being selected, with previously tuned systems all on, both transmitters and receivers.

Please note that wireless frequencies are shared with other radio services. According to FCC 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 or change frequencies. The above statement is valid only for use in the U.S.A.

Note: More bars in the Received Signal icon indicate good signal strength in operation with the transmitter on, but more than 1 bar showing with the transmitter off also indicates the presence of likely RF interfering signals at that location. If this happens, select a different channel. One bar or less is ideal for interference-free operation.