



# 330 DUAL-CHANNEL CAMERA-MOUNT UHF WIRELESS MICROPHONE SYSTEM

*330UPR - 35BT - 35HT - 35XT*



**INSTRUCTION MANUAL**



Thank you for purchasing the Azden 330 Dual-Channel Wireless Microphone system. The components included with your system will vary depending on the system configuration you purchased. Below are the possible system configurations available with the 330UPR Dual-Channel Receiver.

### **330LT**

- 1 x 330UPR Dual-Channel Receiver
- 1 x Stereo Mini-Plug to Dual XLR Cable
- 1 x Stereo Mini-Plug to Mini-Plug Cable
- 2 x 35BT Body-Pack Transmitter
- 2 x EX-503L Lavalier Microphone

### **330LH**

- 1 x 330UPR Dual-Channel Receiver
- 1 x Stereo Mini-Plug to Dual XLR Cable
- 1 x Stereo Mini-Plug to Mini-Plug Cable
- 1 x 35BT Body-pack Transmitter
- 1 x EX-503L Lavalier Microphone
- 1 x 35HT Handheld Microphone / Transmitter

### **330LX**

- 1 x 330UPR Dual-Channel Receiver
- 1 x Stereo Mini-Plug to Dual XLR Cable
- 1 x Stereo Mini-Plug to Mini-Plug Cable
- 1 x 35BT Body-Pack Transmitter
- 1 x EX-503L Lavalier Microphone
- 1 x 35XT XLR Plug-in Transmitter

### **CAUTION**

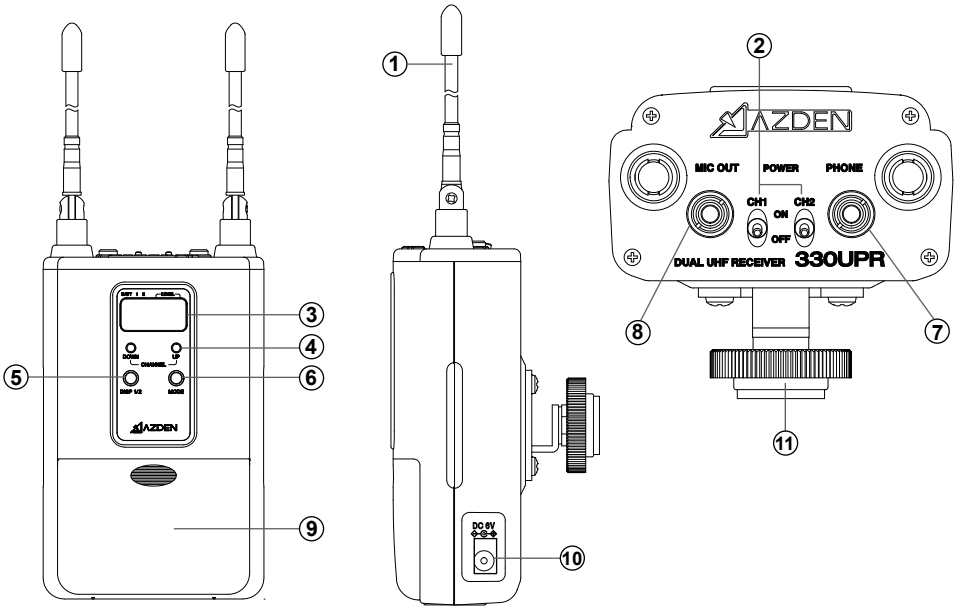
- Do not use batteries other than the ones specified in this manual. Do not mix fresh battery with used battery.
- When installing batteries, make sure the battery polarity is correct as marked inside the battery compartment.
- Remove the batteries before long-term storage of the transmitters or receiver.
- Do not submerge any of the components in water.

### **Quick Start Guide**

1. Install new AA alkaline batteries into the receiver and transmitters.
2. Connect the EX-503L lavalier microphone(s) to the MIC input on the 35BT(s).
3. Turn on your transmitters. You should see information displayed on the LCD. Be sure to also turn the AUDIO switch to ON.
4. Set the transmission frequency for each transmitter by pressing the Channel Up/Down buttons. Each transmitter will need to be set to a different frequency in order to run them at the same time without interference. **Keep the group number the same (1st two digits) and separate the frequency numbers (2nd two digits) by at least 16.**
5. Turn on both channels of the receiver. You can toggle the information for each channel by pressing the DISP 1/2 button located below the LCD.
6. Set the group and frequency numbers on each channel of the receiver to match those set previously on the transmitters.
7. The receiver should now be connected to the transmitters. To check, you can connect headphones to the PHONE jack of the receiver and listen for audio.

*For a more detailed description of component controls, functions and setup, please continue reading this manual.*

# 330UPR Dual-Channel Receiver



## 1. Antennas

For the best reception, the antennas should be pointed in an upward position.

## 2. Power Switch for each Channel

There are separate power switches for Channel 1 and 2.

## 3. Universal LCD Display for Ch. 1 and 2

Multifunctional display shows battery life, signal strength, channel selection and frequency selection. Refer to "LCD Display Readouts" in this manual for further details.

## 4. CHANNEL UP/DOWN Buttons

To change the Group/Frequency number of each channel, use a small, pointy object to press the UP or DOWN button until the desired number is shown on the LCD Display. Keep the button pressed down to fast forward the channel numbers. Once the desired Group/Frequency numbers are selected on the receiver, set the transmitters to match.

## 5. DISP 1 / 2 Button

Press to switch the LCD Display between Channels 1 and 2.

## 6. LCD Display MODE Switching Button

Press to switch the LCD Display to show either the Group and Frequency numbers or the actual frequency in MHz being used on each channel.

## 7. PHONE Jack

This output allows you to monitor sound and is intended for use with headphones. If a stereo headphone is used, Ch. 1 will be heard on the left and Ch. 2 on the right.

## 8. MIC OUT Jack

The microphone output is a 3.5 mm TRS mini-jack and should only be connected to microphone inputs. Your 330 kit is supplied with both a mini-to-mini and a mini-to-dual XLR cable.

For mini-jack microphone inputs: Use the supplied mini-to-mini cable. Plug one end of the cable into the 330UPR Receiver and the other end into the microphone input of the video camera. Note: by

design, the audio from each channel is output discretely, so that you will get audio from channel 1 on the left side, and audio from channel two on the right side. This makes separate editing in post production of each speaking person possible.

For 3-pin XLR inputs: Use the supplied mini-to-dual XLR cable. Plug the mini-plug end of the cable into the 330UPR Receiver (use the screw-down sleeve to secure it to the receiver) and plug the XLR ends into the microphone inputs on the video camera. Ch. 1 is on the "Tip" and Ch. 2 on the "Ring".

## 9. Battery Compartment

Remove the battery compartment lid by sliding it down. Install two fresh alkaline "AA" batteries. Make sure the battery polarity is correct as marked inside the battery compartment. Alkaline batteries will perform best, but Azden's 1HR-3U rechargeable Ni-MH batteries may also be used.

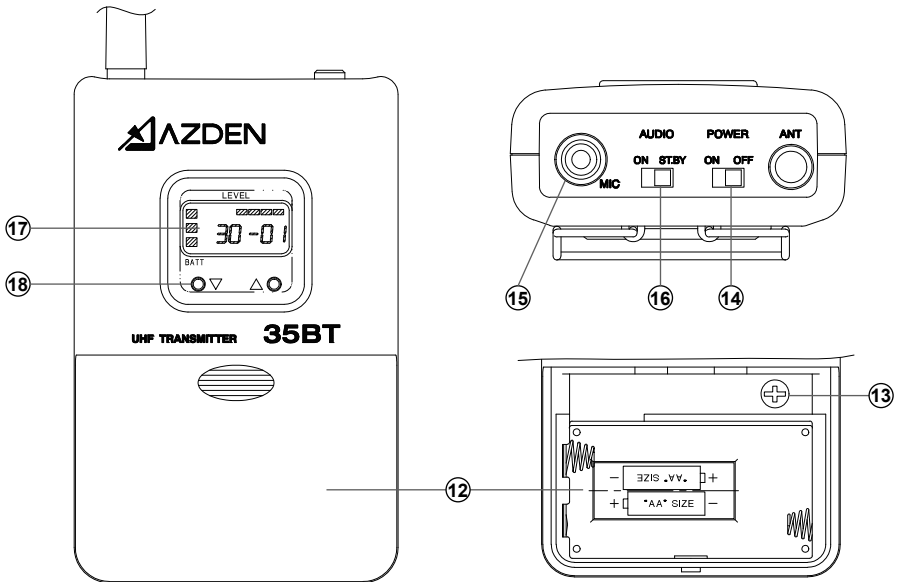
## 10. DC 6 Volt Input

An optional AC power adaptor/battery charger for Azden's 1HR-3U rechargeable Ni-MH batteries is available for the 330UPR. Azden's part number for this unit is BC-29. Contact Azden or an Azden dealer for more information.

## 11. Shoe Mount Assembly

First loosen the thumb wheel by turning it counter-clockwise. Slide the square foot of the shoe mount assembly into your camera's shoe mount slot. Secure into place by tightening the thumbwheel by turning it clockwise until snug. Do not over tighten.

## 35BT Body-Pack Transmitter



## 12. Battery Compartment

Remove the battery compartment lid by sliding it down. Install two fresh alkaline "AA" batteries. Make sure the battery polarity is correct as marked inside the battery compartment.

## 13. MIC input Level Control

Located inside the battery compartment, this control enables you to adjust the input level of the microphone. Using the supplied tool, also found inside the battery compartment, turn the dial clockwise to increase, or counterclockwise to decrease the input level.

## 14. POWER Switch

Switches the 35BT Transmitter "ON" or "OFF"

## 15. MIC Input Jack

Plug the supplied EX-503L Lavalier Microphone into the MIC input jack. In addition to the EX-503L, other lapel and/or headset microphones with 3.5mm mini plug may also be used with the 35BT.

## 16. AUDIO Switch

It is best to set the AUDIO switch to “STBY” (standby) prior to first turning the POWER switch “ON”. When you are ready to begin transmitting, turn the AUDIO switch ON. The STBY position acts as a mute function that maintains the RF signal but turns off the audio.

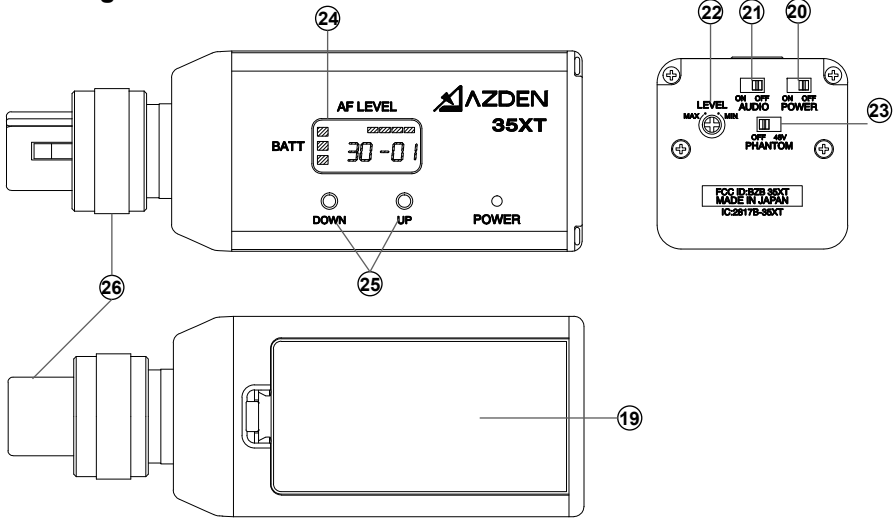
## 17. LCD Display

Multifunction display shows battery life, audio level and frequency selection. Refer to “LCD Display Readouts” in this manual for further details.

## 18. CHANNEL UP/DOWN Buttons

Press the UP and DOWN buttons to change the transmission frequency. Group/Frequency numbers are shown on the LCD. Keep the button pressed down to fast forward through numbers. Once the desired Group/Frequency numbers are selected on the transmitter, set the receiver to match. This functions the same on 35XT and 35HT transmitters if they are included with your kit.

## 35XT Plug-in Transmitter



## 19. Battery Compartment

Open the battery compartment lid by pushing down on the tab and lifting it up. Install two fresh alkaline “AA” batteries. Make sure the battery polarity is correct as marked inside the battery compartment.

## 20. POWER Switch

Turns the 35XT Transmitter “ON” or “OFF”.

## 21. AUDIO Switch

It is best to set the AUDIO switch to “STBY” prior to first turning the POWER switch “ON”. When you are ready to begin transmitting, turn the AUDIO switch ON. The STBY position acts as a mute function that maintains the RF signal but turns off the audio.

## 22. MIC Input LEVEL Control

This enables you to adjust the input level of the connected microphone. Using the supplied tool, turn the dial clockwise to increase, or counterclockwise to decrease the input level.

### 23. Phantom Power Switch

Flip this switch to “48V” to turn on phantom power. Use only for microphones that require phantom power.

### 24. LCD Display

Multifunctional display shows battery life, audio level and frequency selection. Refer to “LCD Display Readouts” in this manual for further details.

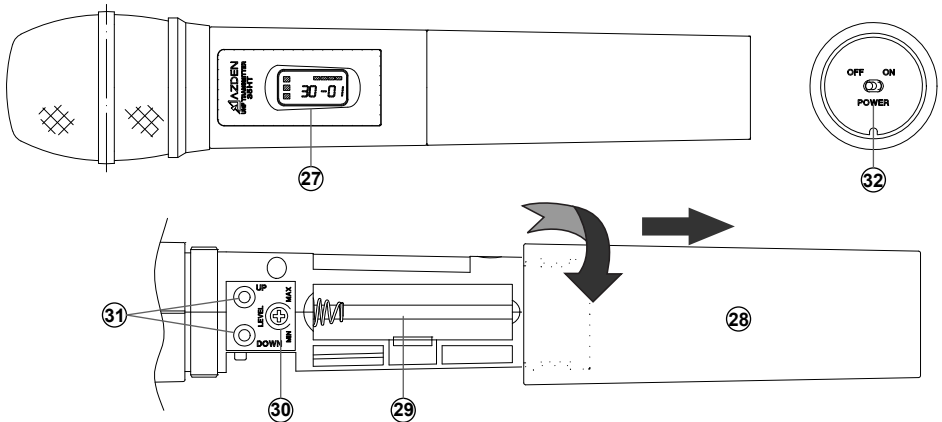
### 25. CHANNEL UP/DOWN Buttons

Press the UP and DOWN buttons to change the transmission frequency. Group/Frequency numbers are shown on the LCD.

### 26. MIC Connector/Locking Ring

This 3-pin female XLR connector is the microphone input. Any low impedance microphone with a corresponding male connector may be plugged here. Once the microphone is plugged into the 35XT, the locking ring should be rotated clockwise until snug. To remove the microphone, first rotate the locking ring counterclockwise and then pull the microphone away while pressing the XLR release.

## 35HT Handheld Microphone/Transmitter



### 27. LCD Display

Multifunctional display shows battery life, audio level and frequency selection. Refer to “LCD Display Readouts” in this manual for further details.

### 28. Battery Compartment Cover

Remove the battery compartment cover by twisting it counterclockwise and sliding it down.

### 29. Battery Compartment

Install two fresh alkaline “AA” batteries. Make sure the battery polarity is correct as “AA” marked inside the battery compartment.

### 30. MIC LEVEL control

This enables you to adjust the audio level of the microphone. Using the supplied tool, turn the dial clockwise to increase, or counterclockwise to decrease the audio level.

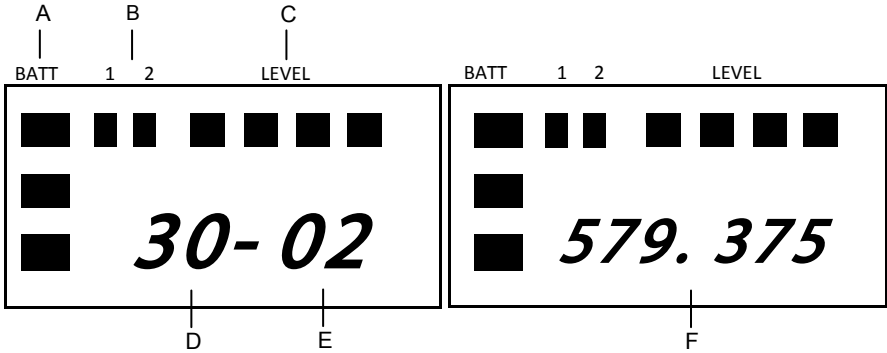
### 31. Channel UP/DOWN buttons

Press the UP and DOWN buttons to change the transmission frequency. Group/Frequency numbers are shown on the LCD.

### 32. POWER Switch

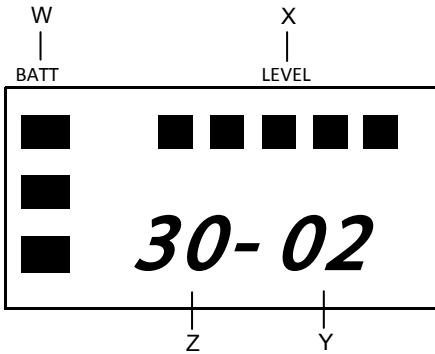
Located on the bottom of the unit, this switch turns the 35HT Transmitter/Microphone “ON” or “OFF”.

## LCD Display Readouts



### 330UPR (RECEIVER)

- A. Battery level indicator: 3 bars = high, 1 bar = low
  - B. Channel view indicator: bar under #1 or #2 indicates which channel you are viewing
  - C. Reception level indicator: 4 bars = high, 1 bar = low
  - D. Receiving frequency "TV Channel" aka Group number: range 30 - 33
  - E. Receiving frequency "Channel" aka Frequency number: range 01 - 47
  - F. Actual frequency in MHz. Push MODE button to see this displayed.
- 



### 35BT/XT/ HT (TRANSMITTERS)

- Z. Transmission frequency "TV Channel" aka Group number: range 30 - 33
- Y. Transmission frequency "Channel" aka Frequency number: range 01 - 47
- X. Audio input level indicator: 5 bars = high, 1 bar = low
- W. Battery level indicator: 3 bars = high, 1 bar = low



## Detailed Set Up Instructions

In order to successfully use two transmitters simultaneously with the 330UPR dual-channel receiver, each transmitter must use a different frequency. Furthermore, it is important that these frequencies are set far enough apart so that bleed-through interference does not occur.

When setting frequencies, we recommend the LCD view mode be in “TV Channel Mode” (XX-XX) and not in the “MHz Mode.”

The frequency of each unit may be changed by pressing the Up and Down channel buttons located under the LCD in the case of the 35BT, 35XT and 330UPR, or inside the battery compartment in the case of the 35HT.

There are two numbers to consider when setting frequencies in “TV Channel Mode”:

- The first two digits are the Group number
- The second two digits are the Frequency number

When selecting frequencies, for best results, both transmitters should be set to the same Group number, but the Frequency numbers should be separated by at least 16 (equal to 2 MHz apart).

### Transmitters Setup (35BT, 35XT, 35HT)

1. Turn on both transmitters. You should see information displayed on the LCD. Be sure to also turn the AUDIO switch on.
2. Select your first transmitter, and change the Group and Frequency numbers in the LCD to the desired setting (ie: 30-01). Use the Channel Up/Down buttons to change the number if necessary.
3. Select your second transmitter, and set the second Group and Frequency numbers. **Remember: the Group should be the same as your first transmitter, and the Frequency number should be higher or lower by a factor of 16 (ie: 30-17).**

### 330UPR Receiver Setup

1. Turn on both CH 1 and CH 2 on the receiver. (Each channel has its own power switch.)
2. Make sure the Group and Frequency numbers in the LCD matches that of your first transmitter (ie: 30-01). Use the Channel Up/Down buttons to change the number if necessary.
3. Press the DISP 1/2 button to toggle the LCD view over to CH 2.
4. Make sure the Group and Frequency numbers in the LCD matches that of your second transmitter (ie: 30-17). Use the Channel Up/Down buttons to change the number if necessary.
5. Setup is complete and your receiver should be receiving audio from the transmitters. To check, you can connect headphones to the PHONE jack of the receiver and listen for audio.

### Proximity Considerations

Being a wireless system, the 330 series was designed to be used from a distance. For best performance while using two transmitters, it's recommended they are both kept at least 8 feet away from the receiver. This will prevent bleed-through interference between the transmitters. The distance from one transmitter to the other, however, will not affect performance.

## Avoiding Interference and Drop Outs

- Interference from other electro-magnetic sources in the environment is always a risk with any wireless radio technology. When using the system in a new location, always listen with headphones and observe the quality of the audio for a few minutes before you start filming. If you notice any interference noise, it will probably be best to change your transmission frequencies. Continue to monitor audio while filming if possible.
- The reliable operating range of the system is approximately 8 – 100 feet. The risk of getting drop outs in the audio signal increases as you extend beyond this range. Keeping line-of-sight between the transmitters and the receiver will help to avoid drop outs, especially at long distances.
- Avoid turning the transmitter antennas horizontal with the ground, a.k.a “planing.” This is potentially an issue to be aware of with the 35XT and 35HT, which are designed to be held in a vertical position, but could inadvertently be turned horizontal. The transmission antennas put out their strongest signal when vertical to the ground. The signal will become weaker if the transmitter is turned to be horizontal, thus increasing the likelihood of drop outs, especially at longer distances.



## SPECIFICATIONS

### 330UPR Receiver

Frequency Range:	UHF 188 Selectable Frequencies (566.125-589.875MHz)
Type of Reception:	FM
Oscillator:	PLL Synthesized
RF Squelch Level:	-95 dBm
Frequency Response:	50Hz – 15kHz
S/N Ratio:	>57dB ( $\pm$ 5kHz) "A" Weighted
Audio Out:	MIC Level – Unbalanced – 3.5mm Mini Jack -64 dBm – 600 ohms @ $\pm$ 5kHz deviation -28 dBm – 600 ohms @ $\pm$ 40kHz deviation
Batteries:	2 "AA" Alkaline (2 x 1.5V), 6-8 hours runtime 2 "AA" Rechargeable Ni-MH (2 x 1.2V)
External Power:	6VDC @ 0.5A
Dimensions:	2 7/8" x 4 7/16" x 1 5/8" (73 x 113 x 40.5mm)
Weight:	Approx. 10oz (290g) w/ batteries

### 35BT Body-Pack Transmitter

Frequency Range:	UHF 188 Selectable Frequencies (566.125-589.875MHz)
Oscillator:	PLL Synthesized
RF Power:	25mW
Frequency Response:	50Hz – 15kHz
Max Deviation:	$\pm$ 40kHz @ 1kHz Modulation, MIC input – 11dBm
Batteries:	2 "AA" Alkaline (2 x 1.5V), 6-8 hours runtime 2 "AA" Rechargeable Ni-MH (2 x 1.2V)
Dimensions:	2 1/2" x 3 15/16" x 1 1/16" (64 x 100 x 27mm)
Weight:	Approx. 6oz (170g) w/ batteries

### 35XT Plug-in Transmitter

Frequency Range:	UHF 188 Selectable Frequencies (566.125-589.875MHz)
Antenna:	Internal
Max Input Level:	-16dBm
RF Power:	25mW
Input Impedance:	25k ohms
Audio Adjust Range:	-65dBm to 46dBm
Batteries:	2 "AA" Alkaline (2 x 1.5V), 6-8 hours runtime 2 "AA" Rechargeable Ni-MH (2 x 1.2V)
Dimensions:	1 9/16" x 1 9/16" x 4 1/2" (40 x 40 x 114mm)
Weight:	Approx. 6.4oz (180g) w/ batteries

### 35HT Handheld Microphone/Transmitter

Frequency Range:	UHF 188 Selectable Frequencies (566.125-589.875MHz)
Oscillator:	PLL Synthesized
RF Power:	25mW
Frequency Response:	50Hz – 15kHz
Max Deviation:	$\pm$ 40kHz @ 1kHz Modulation, MIC input – 65dBm (dev $\pm$ 5kHz)
Batteries:	2 "AA" Alkaline (2 x 1.5V), 6-8 hours runtime 2 "AA" Rechargeable Ni-MH (2 x 1.2V)
Dimensions:	$\phi$ 1 7/8" x 9 9/16"L (48 x 234.5mm)
Weight:	Approx. 9.6oz (270g) w/ batteries

*Due to constant improvements, specifications are subject to change without notice.*