



# 310 DIVERSITY CAMERA-MOUNT UHF WIRELESS MICROPHONE SYSTEM

*310UDR - 35BT - 35HT - 35XT*



**INSTRUCTION MANUAL**



Thank you for purchasing the Azden 310 Diversity 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 310UDR Diversity Receiver.

### **310LT**

- 1 x 310UDR Diversity Receiver
- 1 x Stereo Mini-Plug to XLR Cable
- 1 x Stereo Mini-Plug to Mini-Plug Cable
- 1 x 35BT Body-Pack Transmitter
- 1 x EX-503L Lavalier Microphone

### **310LH**

- 1 x 310UDR Diversity Receiver
- 1 x Stereo Mini-Plug to 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

### **310HT**

- 1 x 310UDR Diversity Receiver
- 1 x Stereo Mini-Plug to XLR Cable
- 1 x Stereo Mini-Plug to Mini-Plug Cable
- 1 x 35HT Handheld Microphone / Transmitter

### **310LX**

- 1 x 310UDR Diversity Receiver
- 1 x Stereo Mini-Plug to 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

### **310XT**

- 1 x 310UDR Diversity Receiver
- 1 x Stereo Mini-Plug to XLR Cable
- 1 x Stereo Mini-Plug to Mini-Plug Cable
- 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. For 35BT: Connect the EX-503L lavalier microphone to the MIC input on the 35BT.  
For 35XT: Connect your XLR microphone (not included). Turn on phantom power if required.  
For 35HT: Nothing needs to be connected as it is a Microphone / Transmitter in one.
3. Turn on your transmitter. You should see information displayed on the LCD. Be sure to also turn the AUDIO switch to ON.
4. Set the transmission frequency for the transmitter by pressing the Channel UP/DOWN buttons.
5. Turn on the receiver. Using the Channel UP/DOWN buttons, set the frequency displayed in the LCD to match that of the transmitter set previously.
6. 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.

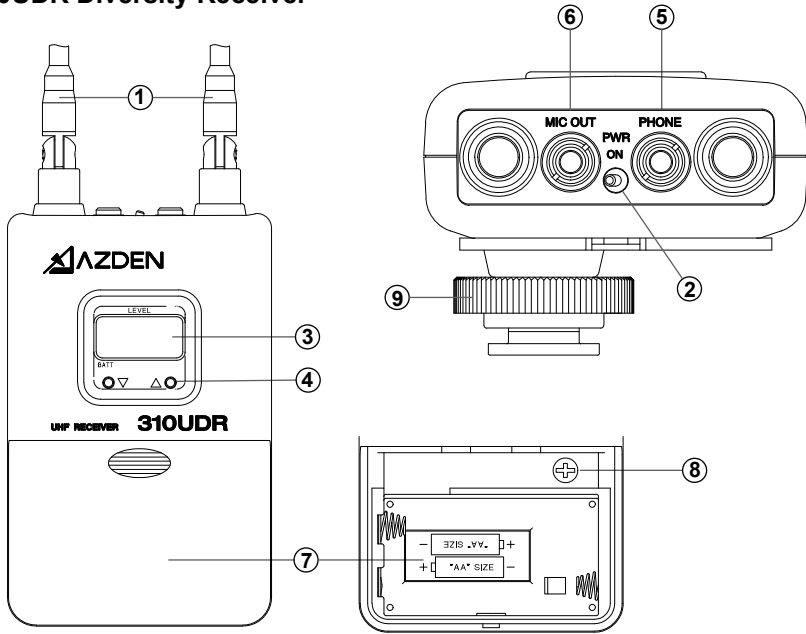
## **Please Note**

*If your system came with more than one transmitter, they cannot be used simultaneously with the same 310UDR receiver. The purpose is to give you the option of using one or the other.*

*When using multiple 310 systems in the same area, set the frequencies for each system to be at least 16 channels apart. (ie: 30-01 and 30-17).*

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

# 310UDR Diversity Receiver



## 1. Antennas

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

## 2. Power Switch

Turns the receiver "ON" or "OFF".

## 3. LCD Display

Multifunctional display shows battery life, signal strength, 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 transmitter to match.

## 5. PHONE Jack

This output allows you to monitor sound and is intended for use with stereo headphones. The jack is a TRS 3.5 mm mini-jack connector.

## 6. MIC OUT Jack

The microphone output is a 3.5 mm TRS mini-jack and should only be connected to microphone inputs. Your 310 kit is supplied with both a mini-to-mini and a mini-to-XLR cable.

For mini-jack microphone inputs: Use the supplied mini-to-mini cable. Plug one end of the cable into the 310UDR Receiver and the other end into the microphone input of the video camera.

For 3-pin XLR inputs: Use the supplied mini-to-XLR cable. Plug the mini-plug end of the cable into the 310UDR Receiver (use the screw-down sleeve to secure it to the receiver) and plug the XLR end into the microphone inputs on the video camera.

## 7. 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.

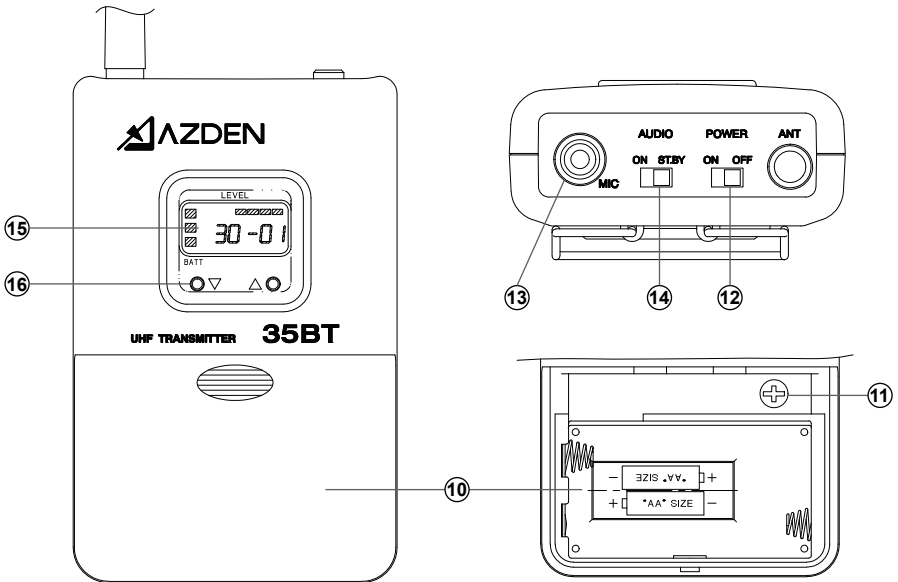
## 8. Headphone Level Adjustment

Turn the dial to adjust headphone audio level. Turn clockwise to increase volume, counter-clockwise to decrease volume.

## 9. 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



## 10. 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.

## 11. 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.

## 12. POWER Switch

Switches the 35BT Transmitter “ON” or “OFF”

## 13. MIC Input Jack

Plug the supplied EX-503L Lavalier Microphone into the MIC input jack. In addition to the EX-503L, other laval and/or headset microphones with 3.5mm mini plug may also be used with the 35BT. This input does provide a plug-in power voltage which is required by the EX-503L to operate.

#### 14. 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.

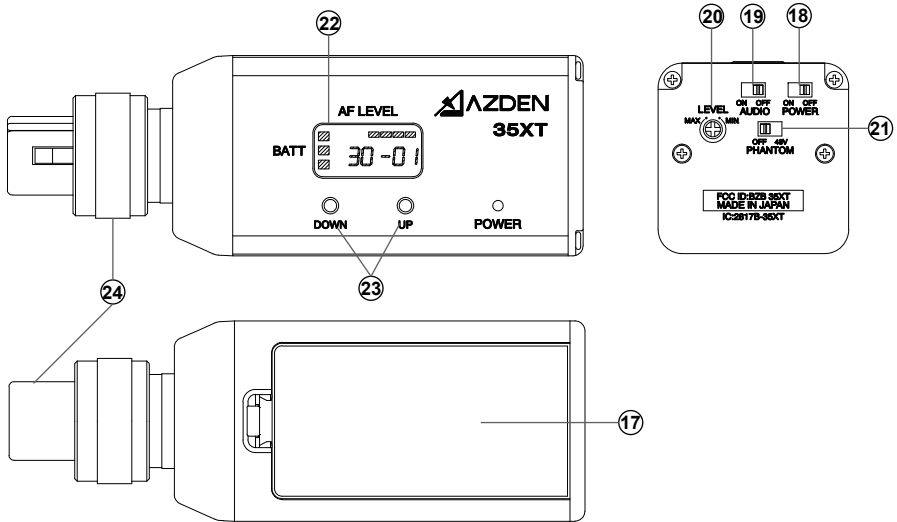
#### 15. LCD Display

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

#### 16. 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



#### 17. 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.

#### 18. POWER Switch

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

#### 19. 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.

#### 20. 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.

## 21. Phantom Power Switch

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

## 22. LCD Display

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

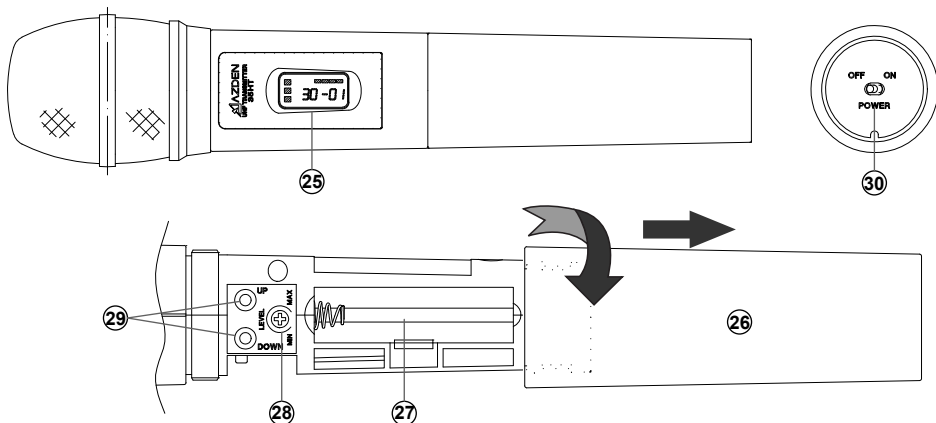
## 23. CHANNEL UP/DOWN Buttons

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

## 24. 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



## 25. LCD Display

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

## 26. Battery Compartment Cover

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

## 27. Battery Compartment

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

## 28. 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.

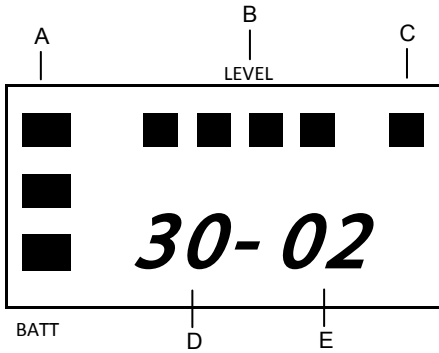
## 29. Channel UP/DOWN buttons

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

## 30. POWER Switch

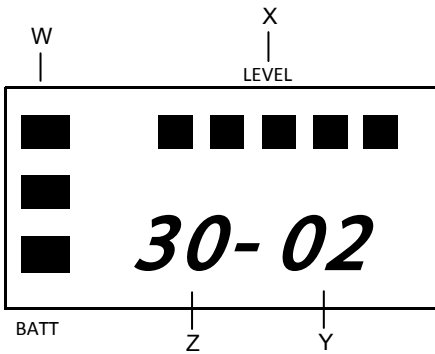
Located on the bottom of the unit, this switch turns the 35HT Transmitter/Microphone “ON” or “OFF”.

## LCD Display Readouts



### 310UDR (RECEIVER)

- A. Battery level indicator: 3 bars = high, 1 bar = low
  - B. Reception level indicator: 4 bars = high, 1 bar = low
  - C. Audio connection indicator. If not lit, this indicates a loss in audio connection at the receiver.
  - D. Receiving frequency "TV Channel" aka Group number: range 30 - 33
  - E. Receiving frequency "Channel" aka Frequency number: range 01 - 47
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### 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

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 310UDR, or inside the battery compartment in the case of the 35HT.

There are two numbers to consider when setting frequencies on the units:

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

There are 4 groups, ranging from 30 - 33, and each group has 47 frequencies to choose from; totaling 188 possible transmission/receiving frequencies.

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

1. If you are using the 35BT, be sure your EX-503L microphone is connected to the mic input. If you are using the 35XT, be sure to plug in your handheld XLR microphone (not included). Install fresh AA alkaline batteries for best performance.
2. Turn on the transmitter. If operating properly, you should see information displayed in the LCD. Be sure to also turn the AUDIO switch on.
3. Select the desired transmission frequency by pressing the Channel Up/Down buttons to change the Group and Frequency numbers displayed in the LCD (ie: 30-01).
4. Make sure the microphone is working by either talking into or tapping the microphone capsule. Observe the audio level indicator in the LCD.

### 310UDR Receiver Setup

1. With a fresh set of AA alkaline batteries installed, turn on the receiver.
2. Make sure the Group and Frequency numbers displayed in the LCD matches what you had set on your transmitter (ie: 30-01). Use the Channel Up/Down buttons to change the number if necessary.
3. Observe the reception level and audio connection indicators on the LCD. Ensure a good connection is made.
4. Check the audio quality: connect headphones to the PHONE jack of the receiver and listen for audio. If any interference noise or drop outs are observed, you may want to select a different transmission/receiving frequency.
5. Connect the appropriate output cable to the "MIC OUT" jack of the receiver, plugging the other end into your camera's microphone input.
6. Check the audio level meters of your camera or recording device (if applicable) to make sure audio is being recorded. Setup is complete and you are ready to record.

### If your system came with two transmitters

Be aware that the receiver is not capable of accepting two wireless signals at the same time. Attempting to use two transmitters simultaneously will result in interference and poor audio quality. The purpose of offering two transmitters in a kit is to give the user options for different shooting scenarios.

### When using two 310 systems simultaneously

The frequencies of each system need to be at least 16 channels apart to avoid interference (ie: 30-01 and 30-17). Refer to the included frequency chart to help you choose the right channels.

## 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 max operating range of the system is approximately 200 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 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

### 310UDR Receiver

Frequency Range:	UHF 188 Frequencies (566.125-589.875 MHz)
Type of Reception:	FM
Oscillator:	PLL Synthesized
RF Squelch Level:	-95 dBm
Frequency Response:	50 Hz – 15 kHz
S/N Ratio:	>84 dB 100% Dev.
Audio Out:	MIC Level – Unbalanced – 3.5 mm Mini-Jack -58 dBm - 600 Ohms @ ±5 kHz deviation -22 dBm - 600 Ohms @ ±40 kHz deviation
Batteries:	2 “AA” Alkaline (2 x 1.5 V) – 5-6 hours runtime 2 “AA” rechargeable Ni-MH (2 x 1.2 V)
Dimensions:	2.48”W x 3.86”H x 1.12”D (63 x 98 x 28.5 mm)
Weight:	Approx. 6.7 oz (190 g) 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:	± 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:	± 40kHz @ 1kHz Modulation, MIC input – 65dBm (dev ± 5kHz)
Batteries:	2 “AA” Alkaline (2 x 1.5V), 6-8 hours runtime 2 “AA” Rechargeable Ni-MH (2 x 1.2V)
Dimensions:	φ1 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.*