

# Azden's 100LT UHF Wireless Offers 63 Channels and Clear Sound At Short Distances

By Stuart Sweetow

Azden introduced the Event Series 100LT diversity UHF microphone system (\$450 list) at WEVA EXPO 2003, and its unveiling was received with interest and excitement. The system includes a lav mike, a belt-mounted transmitter and a receiver small enough to mount on MiniDV camcorders. The transmitter and receiver each measure a scant 3¾ x 2¼ inches. They have 63 user-selectable channels, operating between 794.500 and 805.250 MHz.

To assess its value for wedding and event work, we conducted an evaluation of a manufacturer-supplied system. In our evaluation, the mike was tested "offline" and also used during an actual Bar Mitzvah shoot. We compared the Azden to the Samson Micro32 UHF diversity system equipped with a Sony ECM 44 mike. Although the list prices may be far apart (as much as \$150), the street price of the Samson (equipped with a lower-cost mike element) is only \$50 more than that of the Azden.

One advantage of the Azden is its 63 channels, nearly twice that of the Samson's 32. With the increasing use of over-the-air DTV transmission in some areas of the country, multi-channel capability may be a big issue for some videographers.

Both units are made of plastic; there is one permanently attached, rigid antenna on the transmitter and two on the receivers. The receiver antennas on the Azden are fixed, while on the Samson they are adjustable, which may clear lines of reception. The transmitter antenna on the Azden is a little more flexible than the one on the Samson, which is quite rigid and a little inconvenient as a result.

The Azden has a mike output level control on the receiver but no headphone volume control. The Samson has level controls on the transmitter and receiver. It also has

battery power and RF level indicators as well as a headphone volume control. The Azden uses 1/8-inch mini plugs for mike input and receiver output; the Samson uses the locking P-3, mini-XLR type connectors.

The Event Series 100LT diversity UHF microphone system from Azden has a list price of \$450. The receiver (at left) is called the 100UPR. The 10BT is a body-pack transmitter.



## Frequency Tests

To evaluate how each mike system handled high-frequency audio transients and clarity, we employed the "Car Key Test." We monitored the audio while jingling a set of keys about a foot from the microphone, gradually moving them to a distance of 10 feet.

WEV has previously noted (see Ed Wardyga's review in WEV 6.4 for more information about testing wireless microphones) that if the reproduced audio sounds more like a bag of potato chips being crushed than keys jingling, the mike system will probably not do a good job with high frequency speech (sibi-

lants) and music. The extreme differences between silent and loud key jingles represents the way the systems' limiters and compressors handle audio attack and decay.

The Azden sounded clearer when the keys were close to the mike. The Samson exhibited some of the bag-of-chips noise. Both systems sounded better once the mikes were moved two feet away from the keys.

For low frequency evaluation, we employed the "Bump Test"—where the fleshy part of a fist is banged against a table upon which the mikes are placed. Monitoring the sound in another room with closed-cup headphones, we listened for any "whoosh" sound accompanying the bump. Both units exhibited only a slight whoosh or hiss, indicating their circuitry was able to adjust fairly well to changes in audio level and the amount of background noise picked up with the bump.

## Limiter, Squelch and RF Tests

The limiter test is great if you like to yell, which we did, into both mikes as we moved from two feet to about six inches from each mike. This tests the ability of the electronics to limit the input volume and prevent distortion. The less effective the limiter, the more distortion. The Azden sounded clear and relatively free from distortion. Through the Samson we heard a small level of distortion.

The squelch circuitry in diversity wireless microphone systems mutes the audio from one antenna when dropouts occur. The diversity system quickly switches to the antenna that receives the strongest signal, and the result is seamless.

For this test we needed a large metal reflecting surface. Since the official WEV Hummer was on the road, we opted for an old Ford minivan. We placed the receivers about one foot from the metal side of the van to see if

there would be any RF reflections. Neither system exhibited dropouts during this test. The Samson does have a squelch control, which the Azden lacks.

We tried introducing RF interference by placing a call on a cell phone positioned near the receivers or transmitters of each mike system. The Azden appeared immune to cell phone interference, but through the Samson we heard a slight high-pitched warbling when the transmitter was close to the cell phone.

### Distance Tests

Lastly, we measured how far we could be between the transmitter and receiver and still receive a clear, consistent signal. The first test was line-of-sight with no obstructions. Both systems were clear up to 100 feet, but the Samson exhibited more noticeable hiss than the Azden.

Next, we asked our presenter to walk and turn away from the camera as he spoke. This probably simulates the most common real-world situation for videographers. The Azden and the Samson gave us consistent audio reproduction up to about 75 feet, although there was more hiss with the Samson.

Then we clipped on both transmitters and walked into different rooms. With walls obstructing the signal, the Azden started dropping out at about 60 feet and the Samson at about 75 feet. However, the Azden had better fidelity and less hiss.

Prior to beginning our video coverage of a client's Bar Mitzvah ceremony, held in a large synagogue, we placed the receiver in the balcony of the sanctuary. We walked and talked on and around the beema (altar area), about 60 feet from the receiver. The sound remained clear and consistent.

Then we moved under the balcony and to the side. With the floor and seats obstructing the signal, the Azden exhibited some companding; the volume would quickly increase and decrease. This is one way diversity mikes avoid dropout, but too much companding interrupts the audio listening experience.

### Conclusions

We were delighted when Azden demonstrated the small and low-cost 100LT at WEVA EXPO. Azden's other UHF diversity systems have incorporated larger receivers—certainly not designed for diminutive MiniDV camcorders.

The receiver unit is rated at better than six hours on a single nine volt battery; we did not exceed that. Options for the system in-

clude the 51XT XLR plug-in transmitter to use with your own hand-held mike or the 41HT integrated hand-held microphone.

When we listened to the sound clarity and relative lack of hiss with the 100LT, we were impressed. The Azden compared quite favorably and sometimes outshone the Samson. Its clarity of sound and relative lack of hiss are remarkable for its price.

On the downside is its 1/8-inch mini-jack on the both the transmitter and receiver. The cables can easily slip out, unless you secure them with adhesive tape. Mini-plugs are not nearly as reliable as the locking P-3 connectors found on the Samson.

Azden uses a 3.5mm "L" or right-angle connector that makes accidental removal more difficult than the standard straight connector, but it still can be an issue. While the Azden's LED does indicate RF reception by changing colors on the receiver, a battery meter would be a welcome addition, as would a level control on the transmitter, and a headphone level control.

Despite these shortcomings, the clarity of the audio, the choice of 63 channels, the diminutive size, and the reasonable price can make the Azden 100LT an excellent value for event videographers. ☺

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### 100UPR SPECIFICATIONS

**Frequency Range:** UHF 63-Channel Selectable (793.750-805.875MHz)  
**Type of Reception:** Antenna Diversity  
**Oscillator:** PLL Synthesized  
**RF Squelch Level:** 16dBV  
**Frequency Response:** 50Hz—15kHz  
**S/N Ratio:** > 70dB "A" Weighted  
**Audio Distortion:** < 1% @ 1kHz  
**Operating Temp:** 0C -50°C (32°F - 122°F)  
**MIC Out (Balanced):** -58dBm @ 600 Ω  
**Monitor Out:** -10dBm (Max) @ 33 Ω  
**MIC Out Connector:** 3.5mm Balanced Mini-Jack  
**Monitor Out Connector:** 3.5mm Stereo Mini-lack  
**Power Requirement:** 1 - 9V Alkaline Battery  
**Battery Life:** 6 - 8 Hours w/Alkaline Battery  
**Dimensions:** 62W x 100H x 22D mm (2.44W x 3.94H x 0.87D inches)  
**Weight:** Approx. 120g (4.23oz) w/Battery