

MIPRO ACT-2402

Evaluating a dual-receiver digital wireless system.

by Craig Leerman



The MIPRO ACT-2402 is a dual-receiver digital wireless system that can be accompanied by a wide range of transmitters. Operating in the 2.4 GHz band, the system employs the company's proprietary Frequency Hopping Spread Spectrum technology that helps in eliminating interference, utilizing an adaptive tracking algorithm with four "hopping" frequencies for each channel preset in use. Transmitters use a 18500 lithium battery, with the included MP-80 desktop drop-in charger making re-charging an easy affair.

The system offers 12 preset frequencies and has a bandwidth of 83 MHz. Audio sampling rate is 44.1 kHz at 24 bits with latency under 4 milliseconds. The stated system range is 330 feet.

The True Diversity receiver is housed in a half-rack-space metal chassis, providing two channels in a very compact package. There are two short fixed antennas on the front of the unit. Additional receiver options in the series include the 2412A (dual-channel, 1RU, detachable antennas), 2414A (quad-channel, 1RU, detachable antennas), 2412 (dual-channel, 1RU, fixed antennas), and 2414 (quad-channel, 1RU, fixed antennas). There's also a half-rack single-channel receiver, the 2401, that sports fixed antennas. Optional mounting kits are available to mount a single half-rack receiver in one

rack space or two half-space receivers side by side.

The back of the 2402 receiver offers both XLR and 1/4-inch jacks for each channel, power connection, and a switch that allows mixing both channel outputs into a single output. The front sports an easy-to-read OLED screen, channel select buttons, a rotary encoder for menu selection, sync button, and a power switch. The OLED indicates transmitter battery power, audio signal strength, transmitter output strength (hi/low settable from the menu) transmitter ID code and frequency channel. The menu offers parameter changes for channel, ID code, transmit strength, volume, EQ (flat or Low Cut) and the scanning function. The unit will scan the airwaves for a clear channel and then with the push of the ACT button, will sync the transmitter to the chosen channel.

The MIPRO ACT-2402 dual-receiver joined by ACT-24HC handheld and ACT-24TC belt pack transmitters.

In addition to the ACT-24HC handheld and ACT-24TC belt pack transmitters, also available are the MT-24 plug-in transmitter for guitars and basses and the BC-24T conference microphone base with an XLR connector that can accept a gooseneck podium mic. Also offered are three miniature gooseneck mic transmitters – ET-24, ST-24 and VT-24 – with mounting clips and straps to attach to a wide variety of instruments.

The MP-80 charger has two slots that each can accept either the handheld or belt pack transmitters or a loose 18500 battery. In addition, there are two recesses for 18500 battery storage.

FURTHER DETAILS

The system for this evaluation came with a 24HC handheld and 24TC belt pack transmitter joined by a MU-54L lavalier mic. The handheld unit has a rugged metal 2-part grill system. The outer part is black and has an anti-roll section around the sides to keep the mic from rolling away if placed on its side, while the inside is lined with fabric. Under this detachable part is another grill made of thinner wire that's more closely weaved. Together the two parts do an excellent job of protecting the detachable



Several transmitter options further the system's flexibility.

capsule. When detached, the underside of the capsule reveals a recessed 2-position sensitivity switch that offering 0 dB and -6 dB settings, the latter handy for loud sources. Removing the mounting ring on the transmitter body opens the battery compartment.

On the tail end of the transmitter there's a large on/off switch that can be locked in the "on" position by removing the end cap, turning it 180 degrees, and then replacing the cap. In the reversed position, the cap locks the switch in the on position. This area of the transmitter also includes an ACT sync port as well as the battery charging terminals.

The belt pack has a short (about an inch long) flexible antenna, a top-mounted mute switch that lights up when the pack is unmuted, a large battery level display, a front-mounted recessed power switch, and a battery compartment door. The metal belt clip that can be removed and reinstalled upside down to facilitate placement of the pack in a different orientation. The mic jack is a 4-pin screw-locking type that won't accidentally come unplugged during use.

GETTING ACQUAINTED

It was a simple process to set up the system on my bench in the shop. The transmitters were easy to open to insert the batteries, and it was also cool that the batteries already came with a charge so I could get right to checking out the system.

The receiver's on-screen menu was so easy to navigate that I didn't have to open up the manual to figure out how to scan and find a clear channel. Entering the scan mode, the display shows all 12 channels, showing if they're clear, have some minor traffic, or have major disturbances. I picked a clear channel and grabbed a transmitter to sync. Holding a transmitter's sync window a few inches away from the receiver quickly synced the pair together. While some pro audio folks don't like to use the 2.4 GHz frequency band, this system's frequency hopping spread spectrum technology should put

their minds at ease.

With the receiver linked to a system in the shop, I tried the handheld. It sounded quite good, and I like the fact that the switch can be locked on.

Next up was the belt pack. I connected the lav mic and synced it up easily. The lav sounded fine, but had a bit of cable noise that transmits into the system. It's certainly useable for speech and presentations, and perhaps I'm just used to headworn mics and have forgotten how lavaliers sound in comparison. A nice feature on the pack is a jack on the side that accepts an optional remote mute button, perfect for presenters that need to mute and unmute the mic frequently.

IN THE FIELD

Satisfied that everything was working properly, and that I knew how to change frequencies if needed, it was time to deploy the system on a few gigs. First up was a corporate meeting that my company handles a few times a year. Several people give presentations and a moderator keeps everything on track.

I scanned the airwaves with the built-in scan features and assigned the channels, and then placed the lavalier on the moderator, and with a little channel EQ, got him sounding fine in the PA. He really liked the top-mounted illuminated mute button on the pack. Meanwhile, the handheld served as a floating question and answer mic. The "lock on" switch showed its worth as more than a few folks looked for it, which then creates a bit of chaos as the mic is turned on or off as it's passed around. (I simply muted the mic when it wasn't needed.) The handheld also sounded great, and there were no drop-outs or interference on all day (on either channel).

Next up was another "corporate" where we outfitted a female presenter with the belt pack and lavalier. She really liked the small size and weight of the pack. Because her dress had no pockets or belt, I clipped it to the back of her collar, and she said it was very comfortable. Again the lav captured her voice just fine.



The MP-80 desktop drop-in battery charger.

The system's next stop was a praise band at a church youth service. I had little time to set up and sound check, and it took less than a minute to scan for channels and program the mics. The handheld was supplied to the youth pastor for the sermon portion of the service – "sermon" meaning he spoke for a few minutes in between the band rocking out a few songs. The mic sounded excellent, and he commented on how comfortable it felt in his hand.

After he was done, the handheld was passed to a female vocalist who sang lead on a few upbeat songs. Her voice was very loud in comparison to the pastor, and if we'd done a sound check with her, would have used the -6 dB sensitivity setting on the capsule. However, turning down the input trim kept the mic from clipping, and it sounded very good with her alto voice. In fact, the pastor came over mix position and commented how wonderful she sounded. Again, the performance was rock solid with no interference or dropouts.

I find the MIPRO ACT-2402 system to be a great value for the investment. The sonic quality is first rate, there are plenty of flexible options, and the spread spectrum frequency hopping technology takes the worry out of using the 2.4 GHz band. Having rechargeable batteries can save a lot of money. Note that MIPRO products are distributed in the U.S. by Avlex (avlex.com).

U.S. MSRP: \$580 **LSI**

Senior contributing editor **Craig Leerman** is the owner of Tech Works, a production company with offices in Las Vegas and Reno.