

Mipro ACT-727 System



A mic system with
high audio quality,
simple operation,
and an outstanding
visual display.

BY JOHN MCJUNKIN

Once upon a time, wireless microphones were noisy, distorted, and unreliable. They were susceptible to interference from various sources of RF energy including CB, police and fire departments, aviation two-way radios, and other wireless mics. Most of these early issues have been ironed out (only to be replaced with bureaucratic confusion over bandwidth allocation). Given this history, manufacturers of wireless systems prioritize features that aid in simplicity of operation.

To this end, Taiwan's Mipro has developed a proprietary technology known as automatic channel targeting (ACT), which uses infrared technology to automatically synchronize frequency between transmitter and receiver. The company's latest offering to leverage this technology is the ACT 700 series, which includes the ACT-717, ACT-727, and ACT-747 receivers, and the ACT-7T and ACT-7H transmitters. For this review, I evaluated an ACT-727 receiver and both of the transmitters, and I discovered they were truly impressive and easy to use.

I unpacked the box from Mipro to find a 727 receiver, a 7T bodypack transmitter, and a 7H handheld transmitter with a MU-79 condenser capsule. The 727 I evaluated has two receivers built-in. (Mipro's 717 has one, and the 747 has four.) For my initial test, I plugged the receiver into the console in my studio and established a signal path so I could hear the handheld microphone. I attached the receiver's two antennae as well. The entire setup process took a couple of minutes. The system's user manual specifies the process for synchronizing transmitter and receiver via Mipro's ACT system. This process couldn't be any easier. I pressed the ACT button on the first receiver's front panel and positioned the handheld mic/transmitter a little less than 1ft. away from the receiver with its infrared port aimed toward it. Within a few seconds, the receiver had acquired the infrared signal from the transmitter and shifted its reception frequency to match that of the transmitter. The receiver's display indicated a lock, and its

level meter indicated that it was capturing a signal. I brought up the fader associated with it to hear how it sounded—initially with just my own voice.

I started out with a perfectly flat EQ, presuming that I'd need to sculpt that curve a bit. I discovered, however, that the raw signal from the mic with no boost or cut was nicely balanced across the spectrum. For spoken word applications, the mic presents the speaker's voice clearly and with a high degree of intelligibility—owing largely to a bump in the high end of the mic's frequency response curve. I tested this with my own voice and with other adult male and female voices. The high-frequency bump may cause the user to spend a bit more time wringing out monitors, but the increased intelligibility makes it worthwhile. The transient response is very good with the MU-79 capsule, but I can't speak to the MU-39 dynamic capsule.

Next, I tested the range of the transmitter/receiver pair, and I discovered that Mipro's published range of 100 meters is an honest assessment. I did get some noise bursts with the mic at extended physical distances, but the signal remained otherwise clear. I next connected a third-party lavalier mic to the 7T bodypack transmitter. (Mipro did not include a lavalier mic with the evaluation system.) Again, I found the quality of the signal to be very high. With both transmitters, the noise floor was negligible, and I could hear no audible distortion. The frequency synchronization process for the bodypack transmitter was identical to that of the handheld. Both transmitters use readily available AA batteries, which is a specification that has become an absolute requirement for me personally. I don't want to struggle to find proprietary batteries or bother with recharging systems. Mipro is smart in powering these transmitters with batteries that are available at convenience stores at 3 a.m.

Beyond my studio, I also tested both transmitters at a public gathering where I was able to test both male and female voices, spoken word, and singing. Having established that both transmitters simply provide a solid signal that accurately conveys the content delivered by the microphone attached to them, I turned my focus to the MU-79 capsule that ships by default with the 7H. This mic sounded great with singing, male and female voices alike. It doesn't favor one gender over another, and it nicely represents the spectrum of singing ranges from bass to soprano. There is a nice "air" created by the high-frequency bump in the capsule's response curve. That same bump also helps the mic cut through the clutter in a mix with minimal equalization. I was very pleased with the performance of both transmitters and the MU-79 capsule in terms of fidelity.

One minor issue that bears mention is the size and construction of the 7H transmitter. It is substantially larger in diameter than some other handheld mics on the market. It requires an especially large clip—and Mipro makes one. It wasn't a deal-breaker for the vocalists with whom I tested it, but they would have preferred a somewhat smaller diameter. The bigger issue here is the surface of the handheld transmitter. It's burnished metal, which increases the risk of dropping the mic, compared with the higher friction exhibited by a rubberized surface. Again, this is not a deal-breaker, but I've been known to raise this same concern with microphones from numerous manufacturers. It would not be a difficult fix, and any time the incidence of dropped mics can be reduced, it's a good thing.

The front and rear panels of the receiver are very straightforward and simple, with easily navigated controls featuring a clever data entry knob that is also a pushbutton. I had no difficulty dialing up group, channel, and frequency settings, not to mention the nicety of naming transmitters. The ACT-727 can be computer-controlled via Mipro's proprietary networking protocol, and the parameters for setting this up are also adjusted from the front panel, as are the receiver's squelch, and lock/unlock functions. Another standout feature of the ACT series receivers is the vacuum fluorescent display (VFD), which is a beautiful, high-contrast display that very clearly expresses information about

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the system in vivid colors, including the battery strength in the transmitter being received. I've never seen a better display from any other manufacturer. I examined the display under several lighting scenarios, and there were none that could render the display difficult to view.

In summary, I found the system to exhibit high audio quality, simple operation, and an outstanding visual display. There are micro-tweaks I'd like to see, such as the lack of a rubberized surface, but I would definitely use this system personally. **SVC**

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PRODUCT SUMMARY

- **Company:** Mipro
www.mipro.com.tw
- **Product:** ACT-727 receiver and ACT-7T and ACT-7H transmitters
- **Pros:** High-quality audio; exceptional visual display; simple operation.
- **Cons:** Handheld has slippery burnished metal case.
- **Applications:** Live sound wireless microphone applications.
- **Price:** \$700 (ACT-727); \$350 (ACT-7H); \$280 (ACT-7T)

SPECIFICATIONS

- **Frequency range:** UHF 620MHz-934MHz
- **Bandwidth:** 24MHz
- **Stability:** $\pm 0.005\%$ (-10°C to 50°C)
- **Sensitivity:** 6dB μ V, at S/N >80dB, 40kHz deviation
- **Maximum deviation range:** $\pm 68\text{kHz}$, with level limiting
- **Signal-to-noise ratio:** >105dB(A-weighted)
- **Total harmonic distortion:** <0.5% @ 1kHz
- **Frequency response:** 50Hz to 18kHz $\pm 3\text{dB}$, with high-pass filter
- **Maximum output level:**
Unbalanced: +10dBV/0dBV/-6dB;
Balanced: +16dBV/0dBV/-6dBV