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# Soyuz Microphones

## SU-013 Small-Diaphragm FET Condenser Mic

*Handmade Russian quality in a versatile pencil condenser*

### REVIEW BY PAUL VNUK JR.

**S**oyuz ("Union") is a Russian microphone company whose products are designed, manufactured, and assembled in the city of Tula. Literally everything in a Soyuz mic is of Russian manufacture, from the metalwork of the milled brass bodies to the capsules, from the Soviet-era military tubes and custom handwound transformers to the handmade wooden boxes and shockmounts.

In April 2015 we reviewed the flagship tube-based SU-017, and two years later in April 2017, it was the FET-based SU-019's turn. After those large-diaphragm models, it's time to look at one of the Soyuz small-diaphragm mics: the SU-013 FET Condenser.

### The mic

Compared to many pencil condensers, the SU-013 is a touch beefier in size and weight. It measures 4.8" in length, is just shy of 1" in diameter, and it weighs just under half a pound. The SU-013 is available in two finishes. One is the standard Soyuz white baked enamel body with brass capsules, found in the large-diaphragm models mentioned above. There is also a textured matte black finish with capsules to match. Each one features a green diamond-shaped enamel badge with Cyrillic lettering. Green is the badge color of Soyuz solid-state mics, while dark blue is reserved for tube models.

Internally the mic features a large custom toroidal transformer which the company hand-winds on a Soviet-era winding machine. It takes up over a quarter of the inside space of the mic and is married to a small circuit board housing the FET electronics.

The stock cardioid capsules are threaded and removable and can be replaced with optional hypercardioid and omni capsules. Each capsule uses a 24mm gold-sputtered membrane with a 20 Hz–20 kHz frequency response, a sensitivity of 20 mV/Pa, 150  $\Omega$  impedance, 143 dB maximum SPL, and an equivalent noise of 16 dBA.



All three capsules are extremely flat and neutral in the mids. On paper the cardioid capsule has a smooth low-end rolloff starting at 60 Hz and down 9 dB at 20 Hz. The omni capsule has only minimal low-end attenuation with a 3 dB drop from 30 to 20 dB. The hypercardioid capsule has the most low-end rolloff; it starts to drop at 80 Hz, although that is tempered by a wide preceding 1 dB rise.

The high-end boost of each capsule is minimal by modern standards. The cardioid capsule starts to rise gently at 3 kHz reaching just over a 1 dB peak around 14 kHz before rolling off. The omni capsule starts its rise at 7 kHz and goes up 2 dB sharply at 14kHz and then drops, and the hypercardioid capsule is similar to the cardioid but rolls off at 10 kHz.

The SU-013 is available with the stock cardioid capsule as a single mic or in stereo pairs, with a screw-on, inline 10 dB pad module and a custom mic clip in a felt-lined artisanal wooden box. Many retailers also offer single and double packages with the optional capsules included. For review I was sent a stereo set of cardioid-equipped bodies in the stock Soyuz colors. The entire kit is a thing of visual beauty and topnotch craftsmanship.

### In use

Holding the mic in your hand, it is instantly apparent how dense and weighty it is. Like its big brothers, this mic is designed to minimize stray resonances thanks to the thick walls of its brass body. At the top end the body is 1/8" thick and the bottom end where the XLR jack is seated it's 1/4" thick. Tapping the mic with a finger or even a metal key yields a

thick metallic thump, rather than a ringing metal ping like many thinner and cheaper mics.

My first use of the SU-013 was on drum overheads. The drummer I was working with was my friend David Blascoe, the drummer for the chart-topping CCM band Citizen Way and a recording engineer himself.

The first thing we both noticed was that these mics offered more level out of the box than the mics we were previously using. Next we noticed that the general signature of the SU-013 is a neutral, non-imposing tonality. Thanks to the minimal top end rise the SU-013 is clear, but in a gentle non-strident way, which gives the mic a very classic sound. Pushing the faders up filled out the sound of the kit, but it still sounded like the kit... and the cymbals did not take our heads off.

Later I did some tests with the SU-013 alongside my pair of trusted 1980s-vintage Neumann KM 84s. When people mention a classic, even and neutral pencil condenser, it is essentially the KM 84 of which they speak. With the 84 as my benchmark, and tracking

multiple passes of a Martin dreadnought acoustic, male lead and backing vocals, tamborine, shakers, and cajon, I found that the two mics were definitely cut from the same cloth. Both offered a nice even presence and a great natural slice of reality, without hype or exaggerated frequencies.

Having said that, I am happy to report some useful differences as well. As suggested by its frequency plot, the SU-013 is a touch more controlled in the low end compared to the KM 84, and its high end is a bit better seated and not as forward. Switching between tracks recorded with both mics, I would say that the recordings with the SU-013 were a touch less congested by comparison.

This is not a clone or replacement for a classic KM 84 in any way, but if I owned a set of the SU-013 mics, I would probably not go out of my way to find the vintage Neumanns. The SU-013 will easily and happily tackle all of the same sources with ease.

The SU-013 offers a very natural off-axis rejection. They also have a sweet proximity effect from 2" or closer, but like most small-diaphragm mics, if

you do plan on using them for voice work, you will need a pop screen. They are prone to explosive P-popping, far worse than on a conventional vocal mic.

## Final thoughts

Beyond their sound, it is their old-world craftsmanship that puts the SU-013 over the top. I am pretty confident that if you buy a pair of these now, they will still be serving you well 50 years from now, just like classic German mics from the 1970s are still going strong today.

They're not cheap, but they are a great investment for any studio. They'll serve the beginner and pro equally well on a wide variety of sources, and do it with class. ➤

*PRICES: single mic with  
cardioid capsule \$599; stereo  
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