

Audio Speech Compressor for Dynamic Microphones

By Phil Salas – AD5X

This audio speech compressor is designed around the Analog Devices SSM2165-1 device. This IC gives a 40 dB compression range and interfaces nicely with typical dynamic microphone elements. I built this for my FT-817 since the FT-817 doesn't have any type of speech processing built-in, and any extra "oomph" helps when you are QRP. And while this circuit is small enough to be built into the microphone or your radio, I decided to build this unit to mount in-line with the microphone cable.

I purchased the SSM2165-1 from Newark Electronics. The unit used here is a DIP device, but these are no longer available. You can now only purchase the SSM2165-1 in the SMD package. You'll need a pc-mount RJ45 jack and some perf-board. For the cable-end that connects to the radio, I just bought a CAT-5 RJ-45 cable and cut off one end and wired it to the board. The connectors, cable, and other parts were purchased from All Electronics and Hosfelt Electronics. When everything was finished, I covered the entire assembly with heat-shrink tubing to make it a little more rugged.

So how does it work? According to my Diamond SX-1000 peak/average power meter, the peaks stay the same (as they should), but the average power increases about 6 dB. On the air reports are that the compressor makes my signal sound louder, and I should "leave it in all the time".

While I built this compressor for my FT-817, it should work fine with any rig using a dynamic microphone element. With the component values shown, the unit has unity gain along with 40 dB compression, so if you want to use this with an electret microphone element, you'll need to provide some input attenuation for this higher output element.



