

## ICE Model 475-3 AC Line Filter

This review process didn't begin in the usual way. Normally, we identify an item that we think might be of interest to you, then purchase the item and put it to the test. The catalyst for this "Short Takes" review, however, was a problem that cropped up in my home station.

I had just upgraded my station computer with a new power supply. The older 350 W model wasn't handling the strain of all the goodies I was adding to the machine, so I decided to install a shiny new 500 W supply. The new power supply worked wonderfully. Mission accomplished—or so I thought.

Settling in for an afternoon of hamming, I switched on my transceiver and selected the 17 meter band. To my astonishment, I was greeted with a blast of noise. As I tuned across the band, the obnoxious roar remained continuous at S6 signal levels. My rig had been effectively rendered deaf as a post.

I selected 15 meters and discovered the same howl throughout the band. Could it be the computer? It hadn't troubled me before, but there was always the first time. I shut down the PC and the noise vanished. Ah-hah!

Following textbook RFI hunting procedures, I rebooted the PC and began disconnecting its rat's nest of cables, one by one. Even after I removed the last cable, however, the noise remained unabated. Either I had a signal on the computer's ac line from the power supply, or the interference was somehow leaking from the computer case itself. I suspected the new power supply.

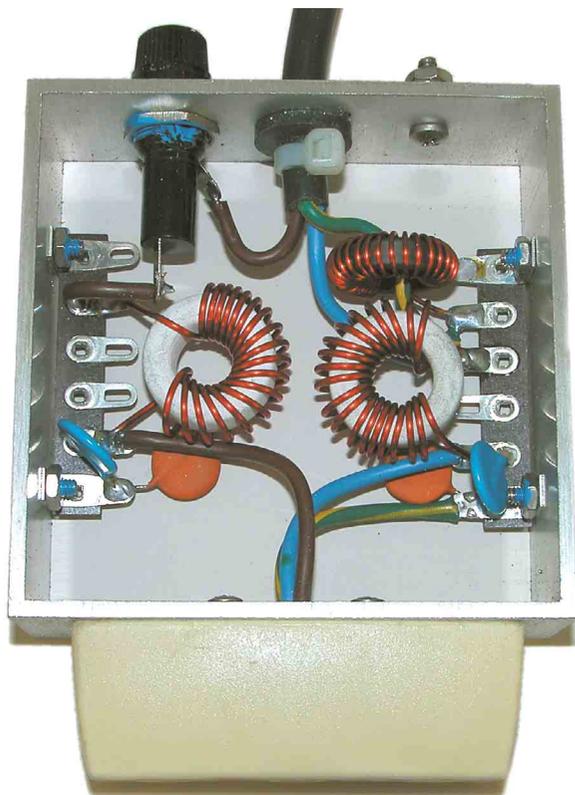


Figure 1—An inside view of the ICE 475-3 ac line filter.



Figure 2—My transceiver display before applying the ICE 475-3 (A) and after (B). Notice that the S-meter display has dropped from S6 to S1.

### To the ARRL Lab for Help

The next day I sought the help of Mike Gruber, W1MG, in the ARRL Laboratory. Mike is the Lab's electromagnetic compatibility (EMC) and radio frequency interference (RFI) specialist.

He listened to my tale of woe, and then reached into a large desk drawer. "Take this home and try it," Mike said as he handed me a metal box with a dangling ac power cord. It was the International Communication Engineers model 475-3 ac line filter.

### The Model 475-3

The ICE 475-3 filter is not a complicated device. It is simply designed to provide inductive isolation, overvoltage control, capacitive decoupling and interference control of both common mode and differential mode signals. Figure 1 shows the interior view.

The 475-3 is specified to handle up to 25 A, so it is adequate for most ham applications. Forty amp models are available as well. The 475-3 is relatively compact at 4 inches square. It includes a 6 foot molded line cord and three 3-wire outlets.

### The Results

I plugged the 475-3 into the wall outlet and plugged my computer's ac power cord into the 475-3. My transceiver was tuned to a quiet frequency on 17 meters and a gentle hiss issued from the speaker. It was the decisive moment.

Holding my breath, I pushed the POWER button on the PC. The fans revved. The PC speaker beeped as the motherboard began booting up. I turned to the transceiver and heard ... nothing. The S meter was still indicating S0 to S1 and the gentle hiss was still gentle. Hallelujah! Figure 2 shows the actual before and after results on 17 meters.

I switched to 15 meters—still quiet. I switched through every band from 80 through 70 cm and was rewarded with the sweet sound of RFI silence. The continuous roar had been vanquished.

### Conclusion

The ICE 475-3 is not inexpensive, but the performance value is considerable. This rugged filter is extremely well designed and manufactured. It may not be a cure-all in every case, but my results were dramatic.

*Manufacturer: Industrial Communication Engineers, Ltd, PO Box 18495, Indianapolis, IN 46218-0495; tel 317-545-5412; [www.iceradioproducts.com](http://www.iceradioproducts.com). \$66.*

