



## The bhi "Noise Away" Amplified Noise Elimination Module

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Every serious DX enthusiast knows that many rare DXCC entities will be only heard very close to their receiver's noise floor. Even with the best modern transceivers, receiving extremely weak signals can be problematic with the propagation conditions we presently endure at the bottom of the sunspot cycle. For all their excellent interference reducing tools, even high-end radios still suffer from a rather elevated noise floor due to "IF hiss." For these radios, and particularly for many older radios, something more is needed.

### Introducing the ANEM

Bhi Ltd, a manufacturer in the United Kingdom specializing in DSP (digital signal processing) audio filters, has announced an impressive new tool to improve intelligibility of weak signals. They call it the Amplified Noise Elimination Module, or simply ANEM.

Originally, bhi developed the NESIO-2 DSP noise canceling speaker 5 years ago, and sold it in the US as the GAP "HEARIT" speaker. Then they offered their DSP products in the form of circuit boards that you had to mount within speaker consoles. They still manufacture those products (and more), but with the ANEM they've introduced a standalone plug-and-play alternative. The ANEM is a compact module, measuring only 4" x 2.5" x 1.5 inches. Installation is straightforward: just attach cables to the proper audio ports, provide 12 to 18 V dc and you are ready to go. Bhi even includes cables to expedite the installation.

According to bhi's specs, the ANEM is capable of 9 to 35 dB noise reduction over a 50 Hz to 4.3 kHz audio bandwidth. The apparent reduction to your ear will be at least 3 to 4 dB, depending upon the selected noise reduction level and your particular transceiver. Amazingly, this noise reduction is achieved without diminishing the quality of the received audio!

To be perfectly clear about the nature of how DSP is implemented in the ANEM, I should point out that this unit is not a noise blanker. It will not remove electrical impulse noise from

lightning, automobile ignition systems or electric fences. You will have to use your various noise-blanker adjustments for that, assuming your rig is equipped with such a device.

The ANEM installs between your radio (using the external speaker jack, for instance) and a suitable loudspeaker. The module ANEM contains a 2.5-W amplifier that does an excellent job of driving most communications speaker systems. In fact, it is able to easily drive two 8-Ω speakers in parallel. Not only does the processed audio appear distortion free, but the ANEM has a very good AGC system, working well over a rather large range of input voltages, effectively avoiding overload from very strong signals. This aspect of the ANEM is far superior to older DSP technology.

### How Well Does It Work?

Although my comments may be purely subjective, I have to say that the noise-reduction performance of the ANEM was impressive. The ANEM made S0 signals sound like they were S4 or 5. I was never able to work the very weak signals without headphones,



but with the ANEM installed, even S0 signals were easily heard. The signal-to-noise ratio improved significantly, and this in turn provided greater listening comfort and less fatigue.

Using the ANEM with my Yaesu Mark V transceiver resulted in a much better listening experience. It was so quiet, I could actually hear phase distortion on some very weak signals. Multipath echoes could be heard along with the famous "arctic flutter," even on S0 signals.

I experimented with various RF gain settings while the ANEM was active and found that I could adjust the gain to higher levels without significantly increasing the noise floor. That was never possible before I took possession of the ANEM. If intermod is not a problem for your system, leaving the RF gain fully clockwise may work well for you.

The improvement in my Mark V second receiver was dramatic with ANEM installed. This dual-conversion receiver is far noisier than the main receiver. Here the noise reduction was discernibly greater than the main receiver by several dB.

I also noted that when transmitting, even while running the RF amplifier at full legal output, no speaker talkback was heard. Likewise, no RF distortion was detected during transmit audio monitoring.

The operation of the unit is very convenient. There are two small pushbutton controls: BYPASS/POWER (on/off) and FUNCTION. An orange LED glows to indicate when the unit has been turned on without noise reduction selected (the bypass mode). It switches to green as you choose your noise-reduction level.

Even when the unit is on with noise reduction bypassed, the AF amplifier is still in the circuit and operating. This allows you to do some dramatic back-and-forth comparisons as you switch ANEM's DSP processing on and off.

Depressing and holding the FUNCTION button causes the ANEM to step through each of its eight levels of noise reduction, which are signaled audibly by an internal sounder; one beep for level one, two beeps for level two, etc (I found that levels 5 and 6 were best for me). The LED will flash green with each beep.

There are no DIP switches to select, so operation couldn't be simpler.

The ANEM is a terrific accessory device for any transceiver. I've found that it has made a great improvement in my overall operating enjoyment!

Manufactured by bhi Ltd, PO Box 318, Burgess Hill, West Sussex, RH15 9NR United Kingdom. Suggested list price \$179. Available in the US from GAP Antenna Products (as GAP's "Hear It" brand) at [www.gapantenna.com](http://www.gapantenna.com); tel 772-571-9922.

