

First Look!

The Comet CAA-500 HF/VHF/UHF Antenna Analyzer

By CQ VHF Staff



The NCG Company made a big splash at this year's Dayton Hamvention® with the new CAA-500 HF/VHF/UHF Antenna Analyzer.

At this year's Dayton Hamvention®, the NCG Company booth drew quite a crowd as representatives displayed a prototype of the new Comet CAA-500 HF/VHF/UHF Antenna Analyzer. The staff of *CQ VHF* has now had the opportunity to have some "hands-on" time with this handy station accessory, and we're bringing you the highlights in this edition of *CQ VHF*.

Feature Highlights

The CAA-500 has several unique features that it provides to the owner. The first is the frequency coverage, which includes the 50 MHz, 70 MHz (in Europe), 144 MHz, 222 MHz, and 430 MHz amateur bands. The frequency coverage is divided into seven bands, and coverage is continuous except for a small gap between about 259.8 MHz and 282.5 MHz, of no consequence for amateur radio use.

Another new feature in this analyzer is the provision of dual analog meters, with precision needles for accurate measurements. One meter displays the SWR, while the other displays impedance (in ohms); this pairing of meters thus allows the user to determine the resonant frequency of an antenna system more easily than if only one parameter was displayed.

The third major feature is the provision of two antenna connection jacks: one jack, used below 300 MHz, is "UHF" (a.k.a. "SO-239") receptacle, while the other, used above 300 MHz, is a "Type N" jack that provides better maintenance of a 50-ohm impedance at the higher frequencies. The unused jack is automatically switched out when the frequency selection is performed by the user.

The CAA-500 is powered by six 1.5V "AA" cells, and it also has an "External DC" jack on the side of the case; DC voltages between 8V and 16V (250 mA minimum) will power the CAA-500 (a DC cable is supplied). Most users will just run it off of batteries, of course.

First Impressions

The first thing that comes to mind when picking up the CAA-500 is "quality." It has a solid, somewhat heavy feel to it, and the actions of the switches and controls remind one of high-grade laboratory test equipment. This unit feels built to last!

The digital frequency display is bright, and the cross-needle metering is very easy to read with excellent clarity.

The documentation supplied with the CAA-500 covers many aspects of field operation of the analyzer, including advice on coaxial-cable lengths, common-mode current problems, and



The Comet CAA-500's bright frequency display and precision metering make SWR analysis in the field simple and quick.



CAA500_top: The CAA-500 utilizes a high-quality "Type N" connector above 300 MHz, to ensure accuracy of SWR measurements relative to 50 Ohms in the UHF range.

other helpful tips that display an appreciation of questions that hams might have while using this product. Nice job, Comet!

Using the CAA-500

Operation of the CAA-500 couldn't be simpler. Just install the batteries, connect your antenna to the appropriate coaxial jack, set the frequency range using the seven-position rotary switch, and then use your thumb to set the CAA-500 onto the frequency of interest. The two meter needles move smoothly as the frequency is adjusted, and if all goes well you'll see a 1:1 SWR and a 50-ohm impedance on the frequency on which you *want* resonance to occur. If not, a simple sweep of the frequency range via the thumb-wheel control will give you a quick indication of where your antenna system's resonant, allowing you to make corrective adjustments. While the CAA-500 does not have separate display of the resistive and reactive components of impedance, it does tell you the essentials:

- (A) What is the SWR?
- (B) If the SWR isn't 1:1, is the impedance higher or lower than 50 ohms?

This information is all the data most users require, and the ease of operation of the CAA-500 is a real plus in the field.

We tried the CAA-500 on several antennas on Field Day, including HF dipoles and beams, VHF Yagis, and a 435-MHz Moxon Rectangle that turned out to have a broken connection on the driven element. The CAA-500 performed flawlessly in all cases, and it was a simple and intuitive device that clearly was well designed.

Summary

The Comet CAA-500 is a high-quality, well-conceived standing-wave analyzer that has wider frequency coverage than other such devices in the marketplace. The inclusion of the 222-MHz band is a real benefit to U.S. VHF operators, who have not had access to a handheld antenna analyzer for that band up to now. The CAA-500 may well be the ideal tool for your future antenna projects!

The manufacturer's suggested retail price for the Comet CAA-500 is \$449.00, and more information may be obtained from NCG Company, 15036 Sierra Bonita Lane, Chino, CA 91710 (<http://www.cometantenna.com>).



The Comet CAA-500 may get a workout on your next Field Day adventure, or some of the forthcoming VHF/UHF contests!