



## Maldol HVU-8 Base-Station Antenna

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The Maldol HVU-8 is an unusual creature. It looks like a vertical ground-plane antenna, especially with its complement of radial elements at the base. The inductively loaded “radials” and “radiators” share a common feed line. Thanks to the element design and configuration, the result is an antenna that boasts the ability to operate on 80, 40, 20, 15, 10, 6 and 2 meters, as well as 70 cm, without taking up a great deal of real estate. The HVU-8 is about 9 feet tall and its width from tip to tip of the longest radiators is approximately 5 feet. It is rated at 150 W continuous power.

The challenge with a limited-space antenna of this type is to incorporate multiband operation without grossly sacrificing efficiency. The HVU-8 attempts to wring as much efficiency as it can from its design by making the 2:1 SWR bandwidths quite narrow. On 80 through 6 meters, the specified bandwidths are:

3.5 MHz	± 11 kHz
7 MHz	± 25 kHz
14 MHz	± 26 kHz
21 MHz	± 67 kHz
28 MHz	± 130 kHz
50 MHz	± 660 kHz

On 80 and 40 meters, the HVU-8 covers only 3.5 to 3.575 and 7 to 7.10 MHz, respectively. If you plan to use the HVU-8 on these bands, plan to operate CW or digital.

Although the HVU-8 is advertised as a “base-station” antenna, you can also use it in temporary applications. For this review, I set up an HVU-8 in a portable tripod mount.

### Installation and Tuning

You begin the installation by clamping a short support pipe to the mast. The main body of the HVU-8 fits into this support pipe and is held in place with several screws. Next, you screw on the various elements to either the top or bottom of the main body as instructed. I'd strongly recommend eye protection during installation. Total assembly time in my test was 15 minutes.

I approached the tuning phase with some trepidation. The HVU-8 instructions warn you to be patient, which is like a doctor telling you, “This may sting a little.” I used an antenna analyzer to tune the HVU-8 and that turned out to be a wise decision. The analyzer allowed me to easily sweep through the bands and determine where the antenna was resonant. If you don't own an antenna analyzer, buy one, pester your club into buying one or chip in with some ham friends and purchase one to share. You don't need an analyzer to tune the HVU-8, but it makes the process *much* easier.

When I did my first sweep through the bands, I was surprised to find that the HVU-8 was resonant either within the bands, or just outside. With the help of analyzer, it took about 30 minutes to tweak the antenna. This involved loosening Allen-head screws that held the radial and radiator whips in place, moving the whips ever so slightly and then tightening the nuts once again. Part of the time was also consumed by having to climb a stepladder to reach the upper elements, move the ladder, take measurements, replace the ladder and so on.



The Maldol HVU-8 in a temporary test installation.

This could be a serious hassle if you install the HVU-8 on a pitched roof.

### How Well Did It Work?

A number of contacts revealed that the HVU-8 performed essentially like a mobile antenna. As you'd expect, performance was mediocre on 80 and 40 meters and improved as I moved to higher bands. On 15 through 6 meters, it was comparable to a low wire dipole. Two meter and 70-cm performance seemed to be similar to a ground plane or J-pole.

The strength of the HVU-8 is that it offers multiband capability to hams with very little room to erect antennas. The weaknesses are its limited bandwidths and difficult tuning, but that's the trade-off for preserving as much efficiency as possible.

**Manufacturer:** Hokushin Industry Company, Chiba City, Japan. **Distributed in the US by** NCG Companies, 1275 North Grove St, Anaheim, CA 92806; tel 714-630-4541. Available from various Amateur Radio dealers. Suggested list price: \$349.95.

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