

Product Review

HybridDX Antenna for 160 – 6 Meters

Reviewed by Norm Fusaro, W3IZ
w3iz@arrl.org

The HybridDX is a 135-foot doublet configured to fit into a smaller space. I wouldn't say it is a revolutionary design, but it does take a different approach to the idea of compressing a full-sized dipole into a tight space. The assembled HybridDX is 79 feet long and designed to work on 160 through 6 meters with an antenna tuner.

The manufacturer designed the bare copper radiating wire to be suspended from a supplied catenary line of heavy-duty dacron/polyester rope. The kit includes large and small spreaders that you attach to the support rope using cable ties (see Figure 13). After attaching the spreaders to the catenary line, you then thread the light-gauge solid antenna wire through the lower portion of the spreaders. In this configuration, the manufacturer claims to have an advantage over a typical doublet antenna.

Assembly

The HybridDX antenna is a kit. Assembly was rather easy. The main rope is clearly marked with colored tape at the intervals where you attach the spreaders. The red and white markers show the location of where large or small spreaders get attached to the rope. The instructions say to remove the tape before tightening the cable ties. I believe paint markings would have eliminated the tedious process of removing the tape, but there is no doubt that the premeasured markers made assembly a breeze. I had the entire antenna together in about an hour and a half.

Bottom Line

The HybridDX antenna is a 79-foot alternative to the typical 135-foot center-fed multiband dipole for operation on 160 through 6 meters.

The instructions suggest laying the antenna on the ground at the place where the antenna is going to be installed, or suspending it at shoulder height between two supports. I chose the latter because it put the work in front of me and eliminated the need for bending down. The instructions are very detailed and easy to follow. They suggest visiting the website for a diagram of the assembled antenna. It would have been nice if they had included a diagram on the back of the instruction sheet, so I would not have had to refer to the small picture on my phone. As this review wrapped up, Quicksilver Radio told us that an illustration is now included with antennas that are currently shipping.

The instructions offer a standard configuration and a configuration for maximum performance. Minimum suggested antenna height is 35 feet. The standard configuration lets the ends of the radiating wires dangle. These ends are almost 28 feet long, and you will have to use weights or some rope to keep the stiff wire straight and vertical.

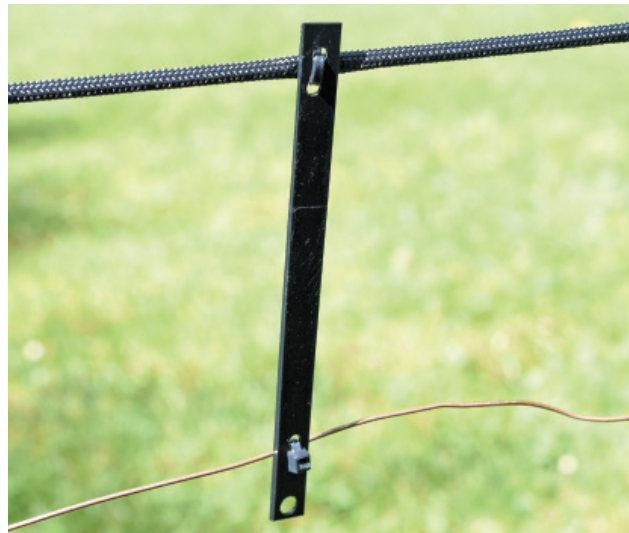


Figure 13 — Sturdy $\frac{3}{8}$ -inch UV-resistant dacron/polyester rope supports the #18 AWG solid antenna wire. The wire is quite stiff, and it takes some experimentation to get it to look like the photo at www.hybriddx.com.

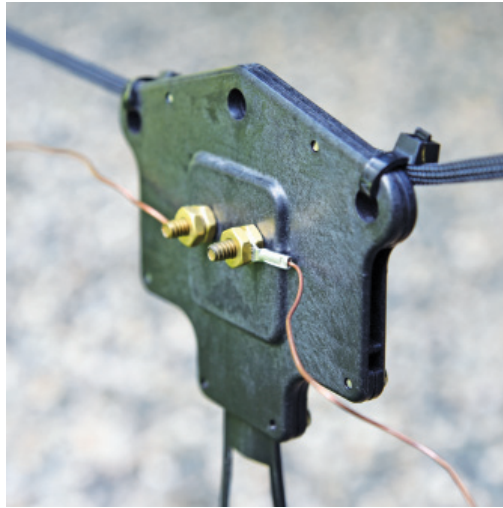


Figure 14 — The center insulator and 75-foot, 450 Ω feed line are preassembled.

The maximum performance configuration uses plastic clips and nylon fishing line to bring the end back under the element to form “precisely calculated loops created by the wire and fishing line.” I configured the antenna for maximum performance not so much for the performance, but to get the ends off the ground. Again, it may take a little work to get the loops to stay in the shape shown in the drawing online.

The design of the antenna is for those with limited space, and many hams in that situation also lack supports of any great height. I was able to get the antenna up just over 40 feet above the ground, which prevented the loops from catching anyone by the neck.

The HybridDX antenna includes a 75-foot piece of 450 Ω window line preassembled to a center insulator (see Figure 14). Unlike some doublet designs, such as G5RV, the length of the parallel feed line is not important with the HybridDX antenna design, so you may



trim or add to the feed line as needed to fit your installation. I was able to use the feed line as supplied.

Tuner Required

Antenna systems of this design require an antenna tuning unit (ATU). Most ATUs built inside transceivers do not have enough range to match the broad range of impedances presented by this antenna system, so an external unit is required. In addition to being able to match impedance over a wide range, the antenna tuning unit used must also have a balanced output connection, otherwise an external balun will be needed so that the unbalanced-to-balanced transition is present. If your tuner is not designed for use with balanced feed lines, the instructions recommend connecting the supplied 450 Ω feed line to a 1:1 current balun, and then connecting to the antenna tuner with less than 20 feet of high-quality coaxial cable.

For this review, I used an SGC-239 automatic antenna coupler located outside on a table in the garden as far as the twin-lead from the antenna would reach, and then I used RG-8X coax to connect the tuner to the radio inside the house. After clearing the memories in the auto tuner, I was able to achieve SWR readings of less than 1.5:1 on all amateur bands from 160 through 10 meters. (The tuner does not cover 6 meters.)

Making Contacts

On-air performance was what I expected from the doublet antenna when used with my 100 W transceiver. I was able to make contacts on 40- and 80-meter SSB, and I even contacted some European stations on 20-meter CW. Having an automatic antenna coupler made band changes quick and easy.

I changed tuners to the ubiquitous MFJ-941 manual antenna tuner. Changing bands was easy by tuning for maximum receiver noise before making final adjustments while transmitting.

Bottom Line

Time will tell if the HybridDX antenna materials will withstand wind, snow, and ice, but for this test, everything stayed up. I can't say if the HybridDX worked any better or worse than the doublet that I normally use at my site, but if you have a tight space and two tall-enough supports, the HybridDX could be a solution to your antenna needs. Support is available online from a Facebook group at www.facebook.com/groups/HybridDXantenna.

Available from Quicksilver Radio, www.qsradio.com. More information is available from www.hybridDX.com. Price: \$119.73.