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# Alpha Delta DX-EE Four Band Dipole Antenna

I'm personally fond of non-resonant HF antennas that I load with my trusty antenna tuners, but sometimes you want an antenna that simply *works* without the additional hassle and expense of adding a tuner in the line. In other words, you want an antenna that allows you to just attach a length of coax and go.

The Alpha Delta DX-EE is such an antenna. It is resonant on four bands and much shorter than you might expect — an attractive feature for hams with limited space.

The DX-EE consists of three wire dipoles in parallel. The top wire, which serves as the 40/20-meter radiator, is the longest at 40 feet. That's about 26 feet short of a half wavelength for 40 meters, but the DX-EE reduces the length by using inductive loading on both legs. This compromise works, although it also narrows the 40 meter SWR bandwidth considerably.

The remaining dipoles are full-size half wavelengths on 15 meters and 10 meters. They are separated from each other by plastic insulators.

### Assembling the DX-EE

The DX-EE arrives in a clear plastic bag with the tops of the dipole insulators attached to the 40/20 meter wire. All three wires are secured to a rugged center insulator. Alpha Delta also thoughtfully includes two 12-foot lengths of Dacron rope.

Your task is to thread the 15 and 10 meter wires through the correct holes in the insulators, keeping the wires reasonably taut as you do so. At first I attempted to accomplish this by simply standing in my yard and juggling the wires, but it quickly became obvious this approach was way too clumsy. My solution was to string the 40/15 meter dipole between two supports at a height of about five feet. With the wire pulled tight, I was able to just walk along the antenna and slide the 15 and 10 meter wires through the insulators, making adjustments as necessary to keep them straight.

The finished antenna does not have to look like a typical parallel dipole drawing with



The center section of the DX-EE at a height of 25 feet.



The DX-EE uses inductive loading on the 40/20 meter wires to reduce the overall length to just 40 feet.

impossibly straight lines. Instead, the idea is to arrange the wires so that they are separated and supported. When I was satisfied with my handiwork, I twisted short lengths of wire at the tops and bottoms of each insulator to prevent them from shifting in the breeze. Alpha Delta provides wire for this purpose.

### Time to Test

After hauling the antenna to a height of 25 feet and sweeping it with an antenna analyzer, I was pleased to discover that the dipoles were all resonant in the lower portions of the bands. As a CW and digital operator, that suited me just fine. Of course, you can easily tweak the wire lengths to move the resonant points higher.

On 40 meters the 2:1 SWR bandwidth extended from 7.000 to 7.080 MHz with the lowest SWR being 1.7:1. On 20 meters the bandwidth was more generous, ranging from 14.000 to 14.228 MHz with the lowest SWR at 1.6:1. The results on 15 meters were similar to 40 meters with a range of 21.000 to 21.100 MHz. Ten meters was the broadest of all with a 2:1 SWR bandwidth extending from 28.000 all the way to 28.400 MHz with the lowest dip at 1.2:1.

I was reviewing the DX-EE on the weekend of the CQ World Wide RTTY contest, so I decided to put it to the test while running just 5 W. The antenna performed quite well despite the relatively low height. In fact, it often "out played" my 43-foot vertical, especially on the higher bands. Unlike the vertical, however, I didn't have to cycle a remote antenna tuner every time I changed bands.

The DX-EE is strongly built and I have a feeling that it would hold up well against the elements in a permanent installation. That said, with an assembly time of less than 30 minutes the DX-EE is also an attractive option for portable use.

*Manufacturer: Alpha Delta Communications; [www.alphadeltacom.com](http://www.alphadeltacom.com); tel 888-302-8777 (orders only); \$140.*