Welcome to AntennaSelect™ Volume 49 – April 2020

Welcome to Volume 49 of our newsletter, AntennaSelect™. Every two months we will be giving you an "under the radome" look at antenna and RF technology. If there are subjects you would like to see covered, please let us know what you would like to see by emailing us at: info@micronetixx.com

In this issue:

DTV Over-The-Air Reception: –Part 2

MICRONETIXX COMMUNICATIONS

Part 2: –In Part 2 we will discuss the design concepts for a common type of UHF receiving antenna. The Yagi or corner reflector yagi designs are the most common, and were built by every major antenna manufacturer. So let's take a look at some of the design basics:

We will start out with a simple corner reflector antenna. The active element is the dipole structure "driven element". The antenna was first developed in 1938 by famed antenna engineer John Kraus. Depending on the reflector size and angle, plus how closely together the reflector elements are placed, a gain of about 10 dB is not uncommon.

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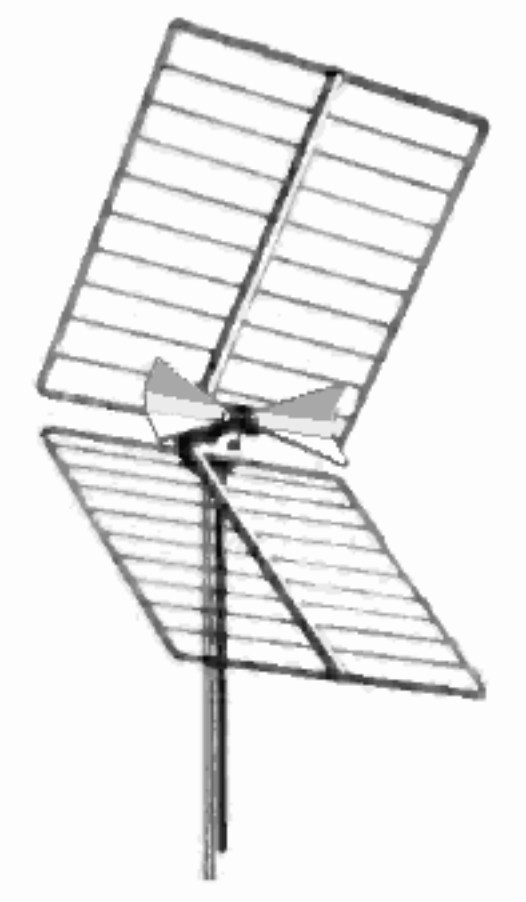


Here is a picture of a typical off the shelf UHF corner reflector antenna from the 1960's. The driven element is a "bow tie diploe", which is quite broadband. Quite often this antenna was added to an existing VHF antenna as UHF stations became available in a given market. The antenna is uni-directional, linearly-polarized and had an average gain of 10 dB. The length of the driven element is dimensioned at a half wavelength at the lowest frequency of interest, which would have been channel 14. The antenna maintains a failly good match even at 1.5 times channel 14's frequency; slightly higher than 700 MHz.

The antenna design is useful from 100 MHz to the low GHz range. At higher frequencies the reflector is often a solid plane, or close-spaced screen. The driven element can be as simple as two rods or a folded bow tie dipole like the one pictured. Impedance is adjusted by varying the feed point positions on the dipole. The driven element is balance-fed so each side is active, so the output is balanced. (This is perfect for diving twin lead lines.)

What if you wanted a higher gain antenna? The most common method is to use dipole elements in front of the antenna. Depending on the number of dipole elements used, the forward gain would increase by 1 to 3 dB at the peak of the antenna's frequency response. In the next (and 50th) issue of AntennaSelect we will take a look at several of these designs

COVID 19 Production Updates

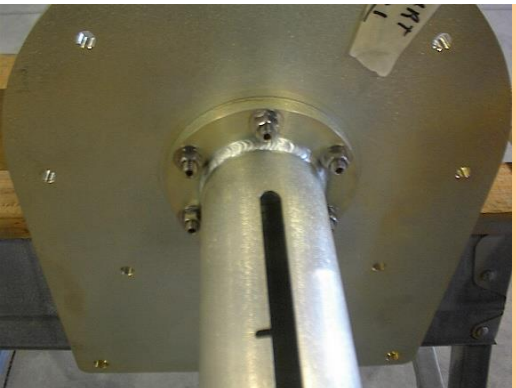
Micronetixx is an essential business per government guidelines. In addition to a great line of TV and FM broadcast antennas, we design and build antenna systems for the Department of Defense. All planned programs are on a normal schedule. The resources used in these activities are shared with product lines for broadcast as well as high power microwave for processing and sterilization.

Our manufacturing division reports that raw material used in production of our products is in good supply. We use a number of sources from whom to purchase quality raw materials.

We practice social distancing on our production floor. Many of the processes only use one staff member at a time. Most of the machine stations are 10 feet or more away from each other. On activities like final test for antennas, these often involve several staff members. The testing is done outside of the building.

As of now we are on a normal schedule. Being in central Maine, the number of Covid 19 cases remains low. As always, our staff members are working to build the best antenna systems possible.

Be on the lookout for the next volume of AntennaSelect coming out in June



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