Welcome to AntennaSelect™ Volume 40 – October 2018

Welcome to Volume 40 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:

Update on Antenna Delivery Times:

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We are busy on the shop floor. We have added more staff and additional workflow equipment. So here are the current delivery times for our Antenna Families:

Aluminum Side Mount Antennas - These are 100% fabricated in house. Our usual dock time is 7 to 8 weeks after order. These antennas include both VHF High Band and UHF Slot Antennas. The most unpredictable timing comes after the antenna is fully built. The final testing of the antenna is done outdoors. On rainy, snowy or just plain cold days, final test can be held up by a day or two. We are located in central Maine, so as Winter approaches, there are less test days. However, this would not hold us up for urgent deliveries.

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Steel Pylon Antennas - Steel pylon antennas include top mounted pylon design antennas, such as VHF Slot, UHF Slot, Batwing and Monopole Structures. The pylon manufacturing is done by outside vendors. Typical delivery is 10 to 14 weeks depending on the type and size of the antenna. Once the antenna is designed, the engineering and design is reviewed, certified and sealed by an outside Licensed Professinal Engineer. While the antenna pylon is being fabricated, we are busy at the plant making all the piece parts to finish the antenna. Assembly and testing takes 3 to 4 weeks from when we get the pylon in house. We do have several steel pylon vendors with many decades of experience to work with. They are not impacted by the repack work.

Stainless Steel Antenna Products - These include all of our FM Antenna Product Lines, plus our THV and TLV side mount TV Antennas; (read about the new TLV Low Band VHF Antennas in the next article). Typical dock time is 8 to 9 weeks. Everything is made in house. Also, we love building these antennas in Stainless Steel. The material is very rugged, and has a service life of many decades. There is nothing to rust, and the normal green color coming leaching down from the antenna is eliminated. Also, we provide FM and TV Antennas with up to a 150 M.P.H. wind zone rating.

New! TLV Low Band VHF Antennas

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We have been building up scale-models of our popular FMP, FM antennas for channel 6 applications. We are introducing our newest antenna family, the **TLV**. The **TLV** antennas are omni-directional and circularly-polarized. They are available from channel 2 to 6, and are single channel only models. The **TLV** bays are completely built in stainless steel.

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We build 2 to 6 bay counts of the **TLV** using half-wave spacing. This increases bandwidth and lowers downward RFR at steep depression angles. A 2-bay **TLV** has a gain of 0.69, a 4 bay **TLV** has a gain of 1.30, and the 6 bay **TLV** has a gain of 1.90 - all gain numbers are with full Circular-Polarized performance. The antenna bays are fed with a power divider, with either a 7/16” DIN, 7/8” EIA flange, 1-5/8” EIA flange or 3-1/8” EIA flange.

The bays are half wave spaced. At channel 4, the elements would be spaced 80.3 inches apart. So a two-bay antenna would need a free space of 18-3/4” feet (six feet of free space above and below the array). A 4-bay antenna would need 32-1/8” feet of free space. The individual elements weigh less than 50 pounds.

With an input rating of 3 kW per bay, the **TLV** is perfect for any low band VHF application. The low wind load and weight will allow mounting these antennas to smaller structures. And being half-wave spaced will leave a smaller RFR footprint on the ground. The excellent circular polarization that this antenna provides maximizes the reception possibilities for your viewers. So if you have a low band project coming up, the **TLV** antennas should be your first choice!

FM Translator Antenna - Questions

The article we did on translator antennas brought up some questions. So let's take a look at a few of them.

-Do you charge for a pattern study for the specially spaced antennas?

No - there is no additional charge. The elevation patterns are done with our in-house, well-proven software. Typically we can zoom in on the optimum number of bays, as well as the optimum bay-to-bay spacing needed in just a matter of minutes.

-Can one just buy an off-the-shelf low power antenna and get the same special-spaced elevation pattern results?

Most likely no. First, there are a number of low power FM antennas on the market. You can buy, for example, a 2- or 4-bay antenna. They are usually cut to somewhere near the middle of the FM band. When you go to a multi-bay antenna, the impedance of the bays and length of the feeder cables all come into play. Hooking up a few generic bays may get you a 1.5:1 or more V.S.W.R. Changing the spacing with an untuned antenna could make things better or worse, depending on specifics.

-So here is what we do; Let's say that a 4-bay specially spaced antenna will solve the interference problems at the site. First, the antenna bays are built to the frequency of operation. Then we calculate the length of the feeder cables. They are cut and phase-matched. The antenna bays are mounted to a test pole and testing is done outside. On antennas with more than two bays, we typically use a power divider. That way the impedance of each bay can be kept low - that increases bandwidth. With the array tests, we know that the antenna will perform exactly as designed. When the antenna arrives at your site it is plug and play, saving time and money!

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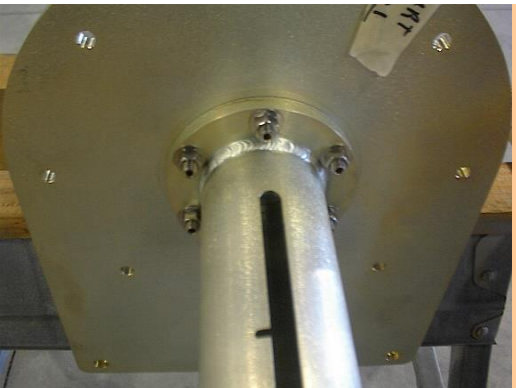
-How are these elevation patterns affected by other antennas on the tower ?

For FM antennas having as much separation as possible from other antennas is the best answer. Let's look at one example. We want to use a 2 bay antenna that is half-wave spaced. We will mount it on an outrigged pole that is two feet off the tower leg. The antenna is on 98.1 MHz - so a half wave is 56-1/2 inches. The outrigged pole is in the Fresnel Zone of the array, so we want that pole to be five feet above the top bay and five feet below the bottom bay. That would need a 14-3/4 foot pole. Now we add in the presence of other antennas. A good rule of thumb is to separate your FM antenna from other antennas by at least 20 feet, (about 2λ), if you have a critical elevation pattern requirement.

The good news is that with ½-λ-spaced, or reduced spaced antennas, there is very little radiation at high depression angles. So with the reduced radiation, there is much less transmitted signal power to interact disadvantageoulsy with nearby antennas. Hence the distortion of the elevation pattern will be kept to a minimum.

We have studied hundreds of sites. Let us know what you are trying to achieve. We will work to come up with a solution that works very well.

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



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