Welcome to AntennaSelect™ Volume 26 – June 2016

Welcome to Volume 26 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, by emailing us at: info@micronetixx.com

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Micronetixx Spectrum Re-Packing Antenna Guide

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We have just released our TV spectrum Re-pack Antenna Guide. This 71-page Guide discusses a number of antenna-related themes. Since a large number of stations may be moving back to VHF, the Guide discusses issues for both low-band VHF as well as high-band VHF. The Guide discusses DTV Antenna Engineering and gives the reader an under-the-radome look at what's inside. (Click the Above Link)

We decided to produce the Guide to assist the DTV Engineering Community plan for and solve problems facing a channel or band move.

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Many of our customers that were involved in conversion to DTV years back have retired. And the knowledge they had about RF has left with them. The next generation of engineers took over a well-tuned machine that works 24/7. The antenna that's 500 or 1000 feet up on the tower has not been seen up close by them in 99% of cases. Since the system worked well, there was little discussion of what is up there and how it works. The Spectrum Re-Pack will be a hectic time for those in the DTV side of Broadcast Engineering. With ATSC 3.0 looking to change DTV broadcasting, planning for the next generation transmission plant is even more important. We hope the Re-Pack Guide will help answer a lot of questions.

You can click the Link below and grab a copy of our Re-Pack Guide: **Micronetixx DTV Spectrum Re-Packing Guide**

While reviewing the Spectrum Re-Pack Guide and and also visiting our website, **www.micronetixxantennas.com**, take a look at our on-line antenna engineering program, AntennaSelect™. AntennaSelect™ was launched in 2010; the first on-line broadcast DTV Antenna Design Tool. The Program lets the user design a DTV Transmitting Antenna from our Engineering Database. Individual elevation and azimuth patterns can be quickly exported to Excel Spreadsheets. Full designs can be saved and exported as PDF files. If the design is not 100% of what is needed, you can e-mail the project to us from the Program and tell us what is needed.

Since RFR is becoming more problematic at many sites, AntennaSelect™ has an RFR plotting program. You can select any elevation pattern from the engineering database. Or if you want to compare a standard antenna to one of our low RFR SFN antennas. Enter your ERP, height above ground and a reflection coefficient. You can look at power density or percentage of MPE. The program can be found at: www.antennaselect.com

Field Suppression Tunnels

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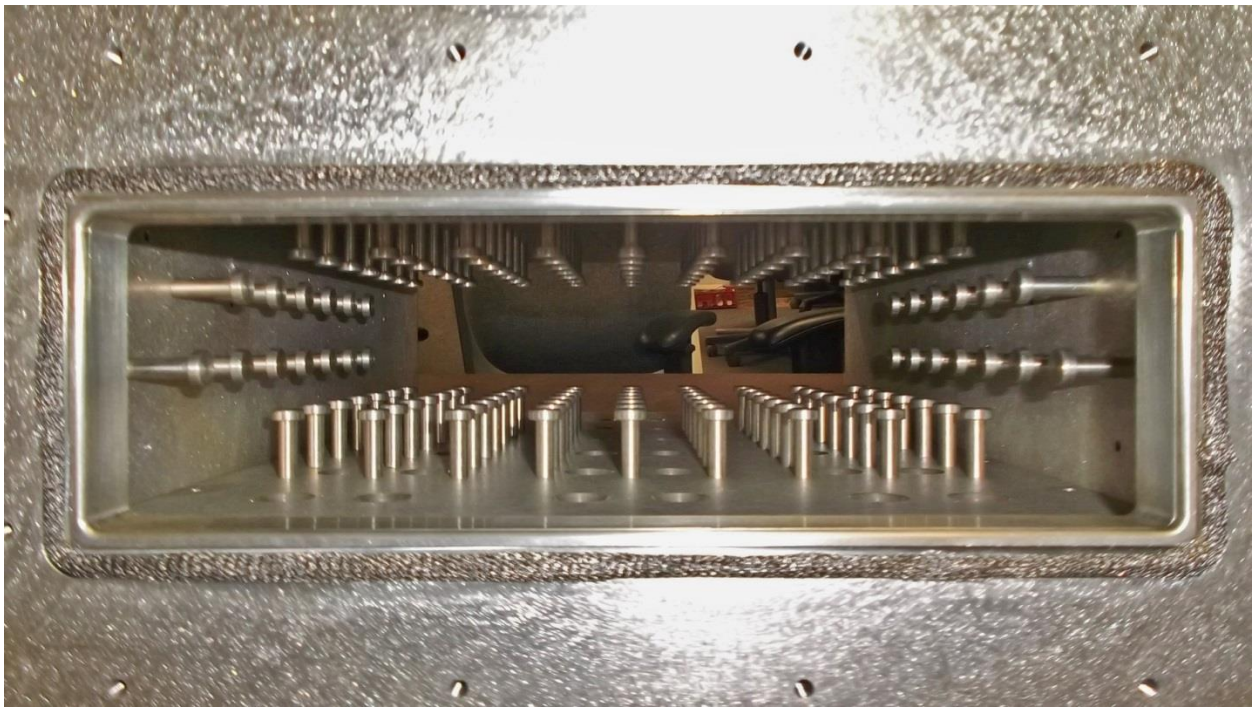
We build a wide range of products for industrial microwave applications as well. Some of the components we build look like something a mad scientist may have created! We will take a look at a recent project and explain how the strange looking component works.

In many industrial heating processes, material or uncured parts are heated to cure them or have moisture removed from them. Placing them in the microwave cavity by hand would be time consuming. So the parts needing to be processed are put on a moving belt that passes through the cell. The power levels in that cell could be as high as 100 kW. So how do you let product enter and exit the cell, while keeping the RF energy inside? Answer: **Field Suppression Cells!**



The small pegs inside the waveguide entrance to the cell act like a choke at microwave frequencies. They are called image-plane monopoles, and are spaced a quarter-wave apart. They are just

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under a quarter wave long and are loaded with a wider section on top to lower the Q of the structures. For this application a 24 kW generator operating at 2.55 GHz is the RF source. The microwave energy coming from the cell is disturbed by the monopoles. Being a quarter wave apart, the amplitude of the energy at each monopole is equal, while the phase is opposite, cancelling the RF energy trying to exit the cell. This suppression tunnel has a measured minimum 40 dB of isolation. Adding more monopoles can increase the isolation to 60 dB or more.

Be on the Lookout for the Next Volume of our AntennaSelect™ Newsletter, in August

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