

## 00753-2035-003x Test Report

This document contains the measured data for the 00753-2035-003x antennas. The measurements were taken in PCTEL's high quality near field antenna range test facility (NFR) and verified using the tapered far field antenna range. The data in this report comes from the NFR and is saved for future inquiry. The antenna was mounted to the sensor housing for all the measurements in order to improve the usefulness of the data.

The first plot in this report shows the VSWR (voltage to standing wave ratio) as a function of frequency. It indicates how much energy is transmitted versus how much energy is reflected. This measurement was taken using a calibrated Agilent HP8753D network analyzer.

The next plot shows the gain as a function of frequency. The gain values are achieved by measuring a known gain standard in the same configuration as the antenna under test in the NFR antenna range. The measured data for the two antennas is then compared and analyzed by the antenna range computer software. After the analysis is complete, the software computes the gain values.

The three plots following the gain versus frequency curve show the radiation patterns of the antenna at different frequencies. The frequencies chosen for these plots are the low, middle, and high points of the frequency range that the antenna was designed for. The radiation patterns shown are the elevation pattern (XZ plane), azimuth pattern (XY plane or the horizon cut), and a full three dimensional radiation pattern at the center frequency band.

If there are any questions regarding the data in this report or if more detail is needed, please feel free to contact me.

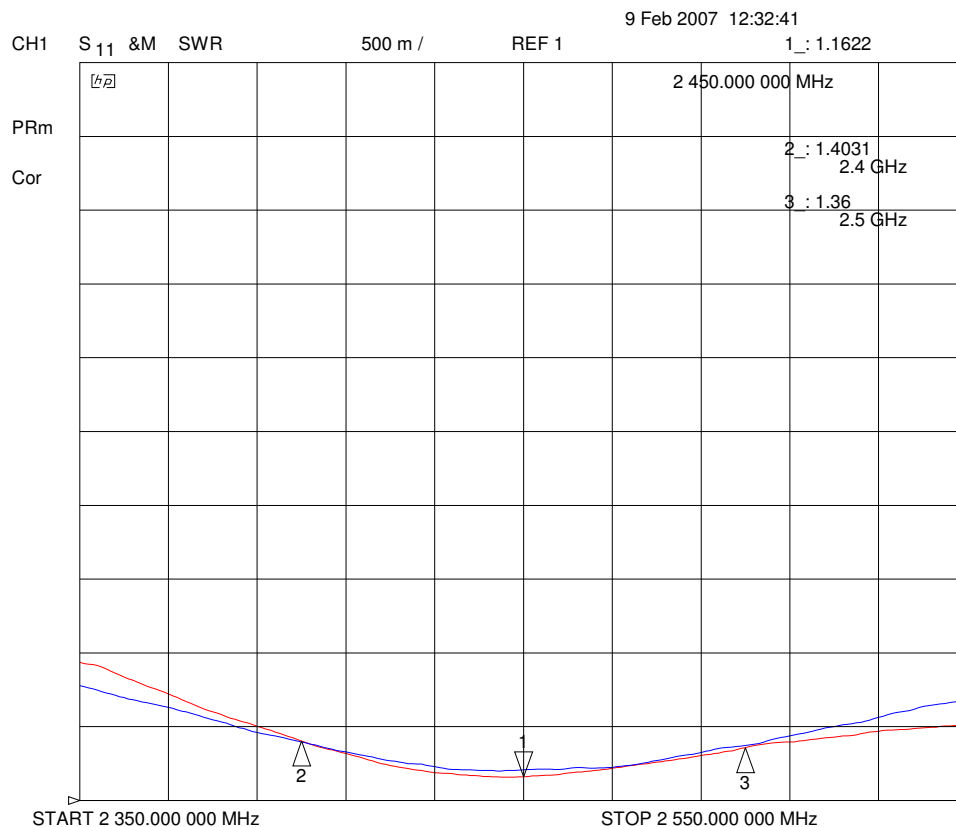
George J. Olague  
Engineering

PCTEL Antenna Products Group, Inc.  
471 Brighton Drive  
Bloomington, IL 60108-3102

Brands: MAXRAD - Antenna Specialists - Micro Pulse

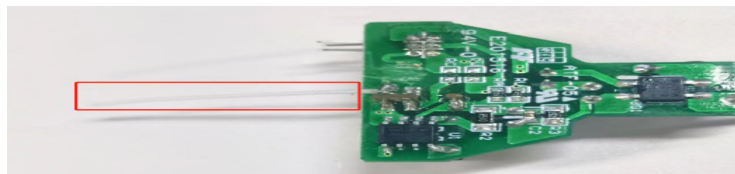
1-630-233-8037, Direct Line  
1-630-372-6800, Main Office  
1-630-233-8095, Fax  
[george.olague@pctel.com](mailto:george.olague@pctel.com)



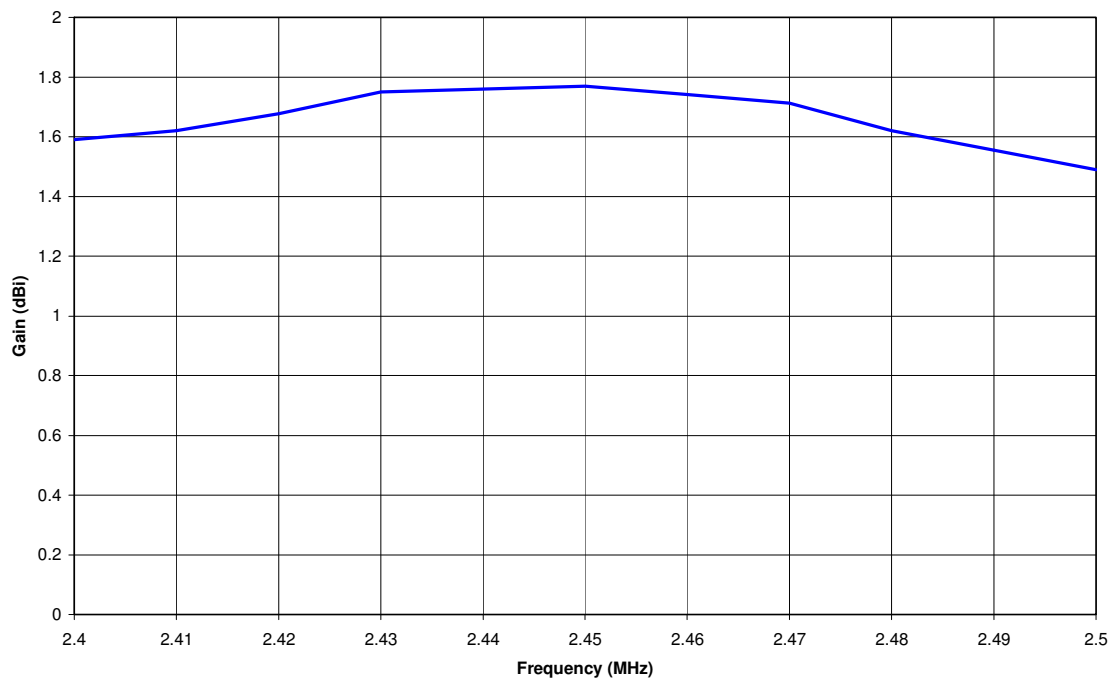


## VSWR vs Frequency

This plots shows that the VSWR response of the antennas tested were within the specified range which is  $<1.5:1$ . It shows that the maximum response of these antennas was 1.4:1 which indicates that 97.2% of the power from the radio is transmitted and only 2.8% of the power is reflected.



00753-2035-003x Omnidirectional Antennas - Gain vs Frequency



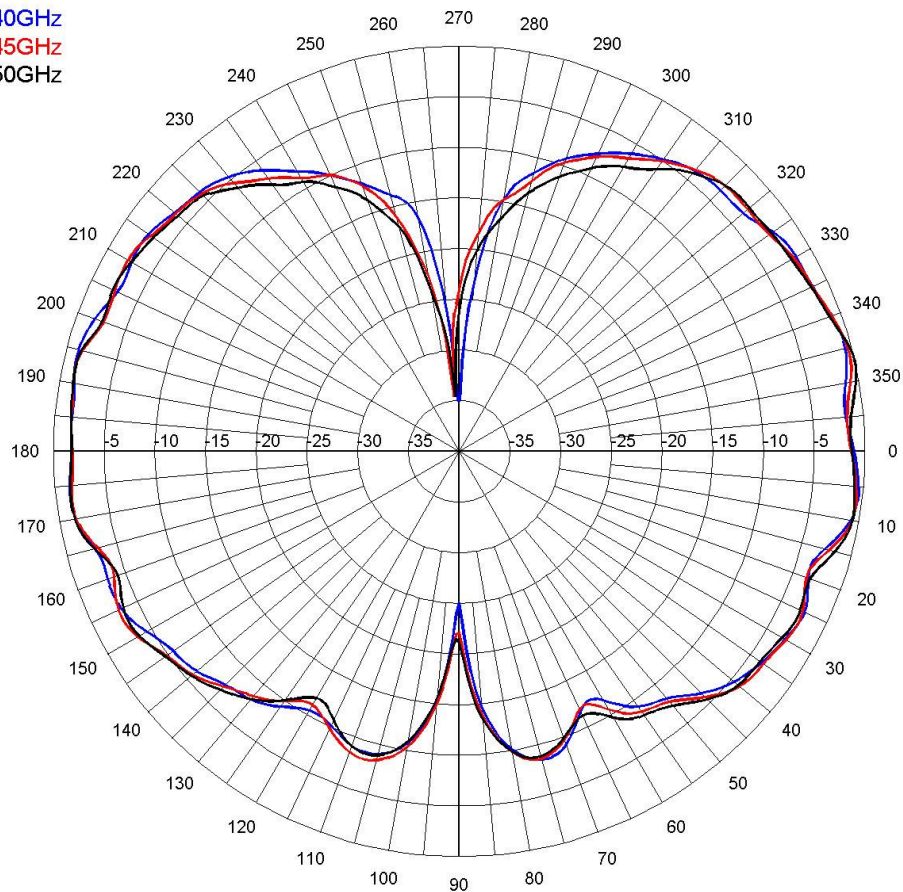
This plot shows the computed gain values when compared to the known gain standard.

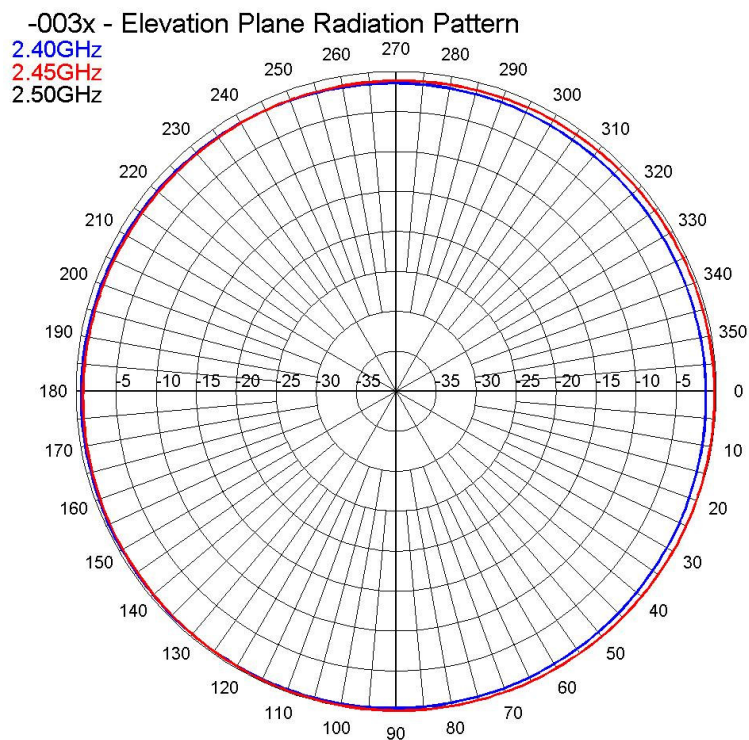
-003x - Elevation Plane Radiation Pattern

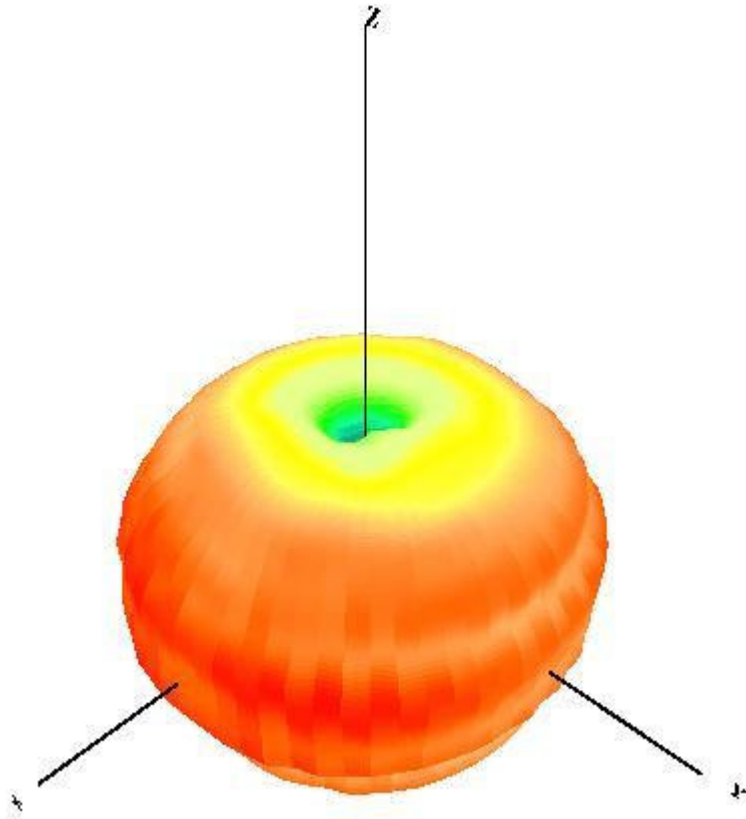
2.40GHz

2.45GHz

2.50GHz







This plot shows the full 3D radiation characteristics of the antenna. The antenna is aligned vertically with the Z axis with the phase center of the antenna at the origin.