

Technical Data Sheet: Antennas Direct C5 Antenna

Physical Data:

Dimensions: Length = 29 in. Width = 23 in. Height = 11.5 in.

Weight: TBD lbs.

Turning Radius: 18 in.

Electrical Data:

Band: High VHF 174 to 216 MHz Channels 7 - 13

Impedance: 75 ohm

Connector: F-Female

Performance Data:

Peak Gain: 7.63 dBi @ 190 MHz MHz

VSWR: 3.0 Max 174 to 216 MHz



Illustration 1: C5

Frequency (MHz)	Boresight Gain (dBi)	Azimuth – Half		Elevation – Half		IEEE Rear	
		Power Beam Width (deg)	Power Beam Width (deg)	Power Beam Width (deg)	Power Beam Width (deg)	Front-to-Back @ 180 deg (dB)	Hemisphere F/B (dB)
174	6.97	68	75	5.17	5.17	5.17	5.17
195	7.3	70	65	10.8	10.8	10.8	10.8
216	7.6	70	60	14.6	14.6	14.6	9.6

Table 1: C5 Performance Data for USA High VHF DTV Band.

Notes:

1. Unless stated otherwise, all performance data computed using Remcom, Inc. X-FDTD 7.0 simulator.
2. Assumptions: PEC, free space, no balun. 300 Ohm transmission line reference.
3. Gain is specified dBi (isotropic) per IEEE definition. Balun and mismatch losses not included.
4. There are two common meanings for Front-to-Back Ratio (F/B). One specifies ratio as measured 180 degrees opposite boresight. The other, used by IEEE specifies the ratio of boresight gain to maximum gain in rear hemisphere. The IEEE definition is the most conservative. IEEE F/B values shown here are computed based on azimuth and elevation cuts provided in this document.

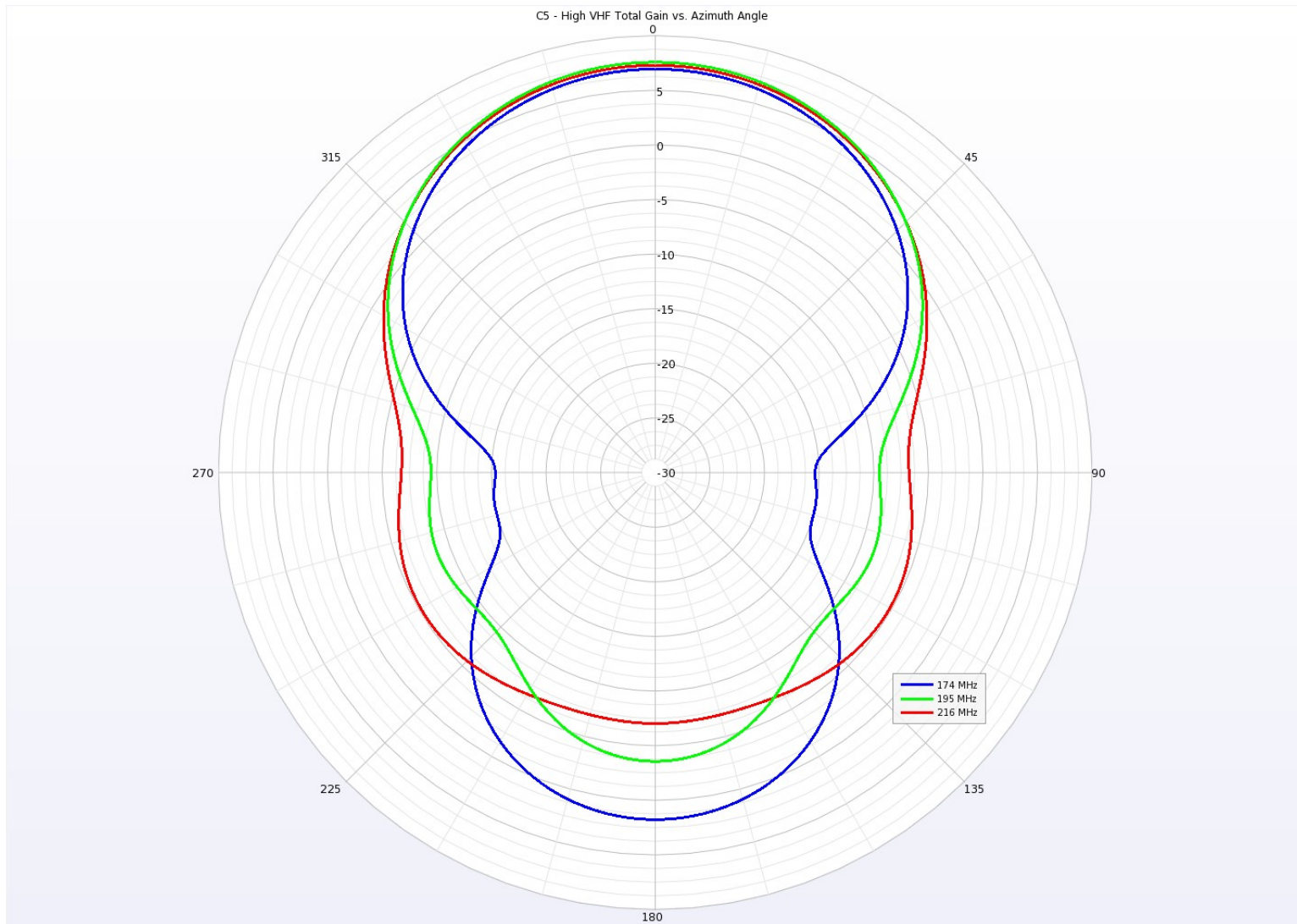


Illustration 2: C5 - High VHF Total Gain versus Azimuth Angle.

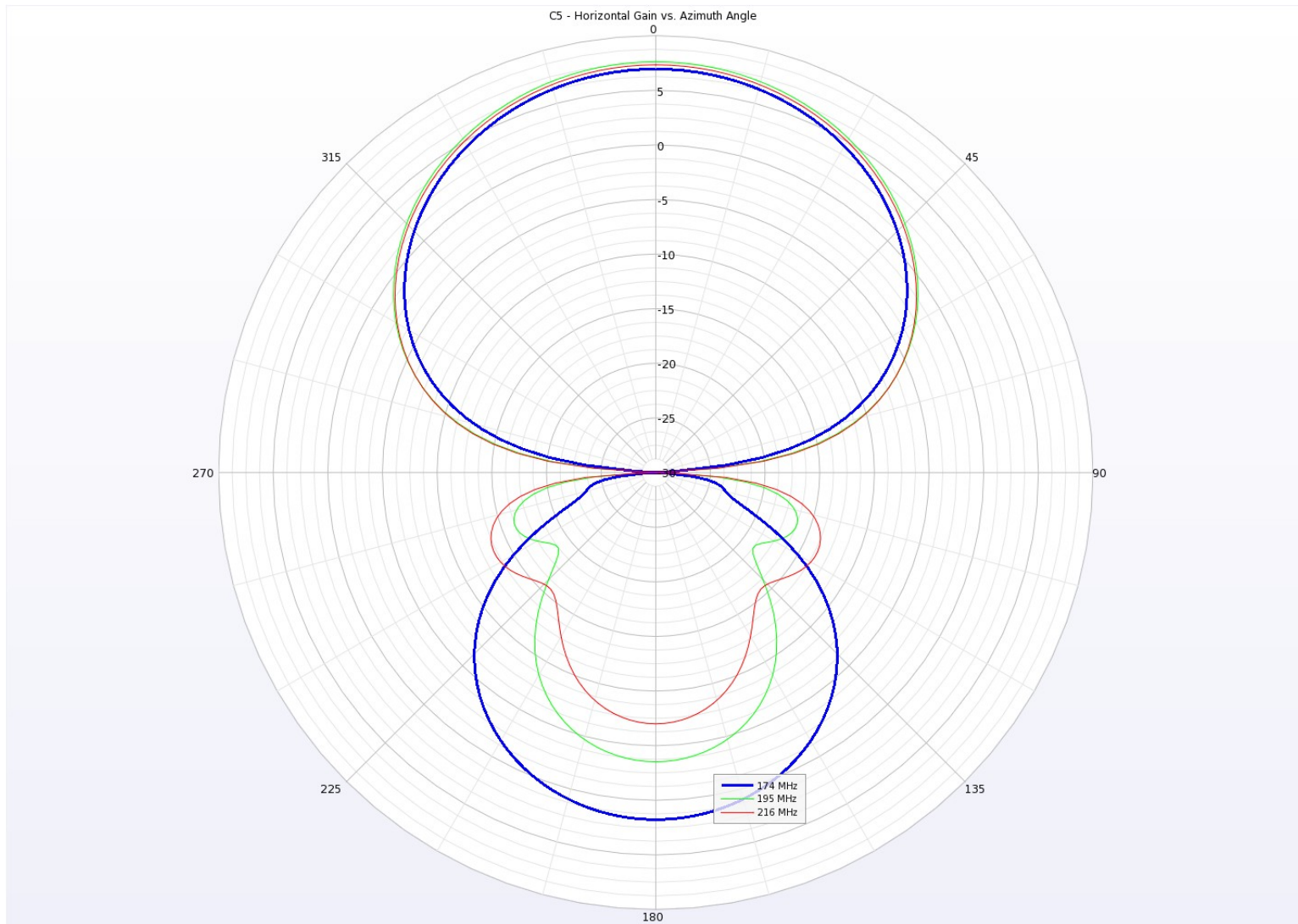


Illustration 3: C5 High VHF Horizontal Gain versus Azimuth Angle. Note: Side lobes lower than total gain of previous plot.

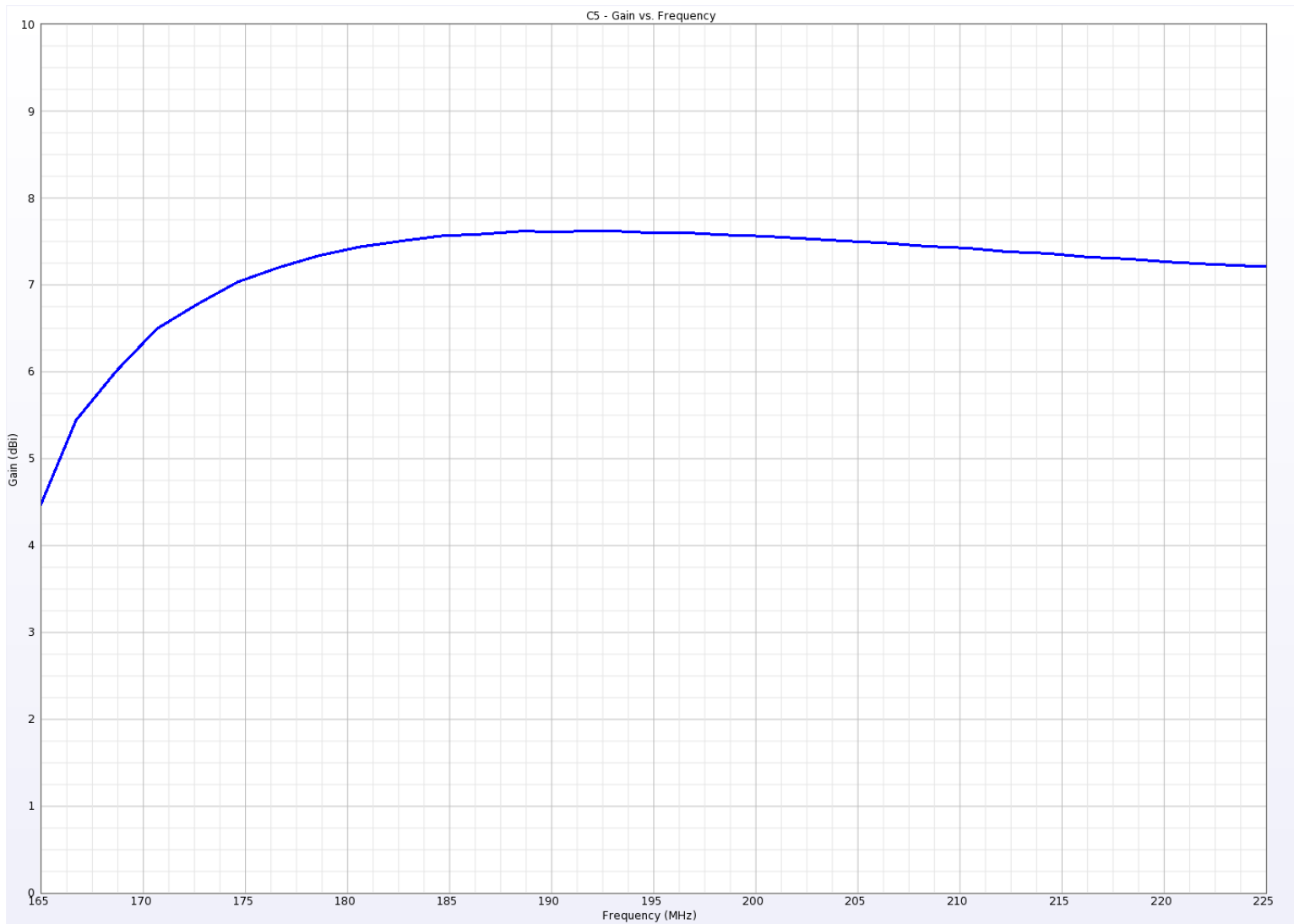


Illustration 4: C5 - Boresight Total Gain versus Frequency.

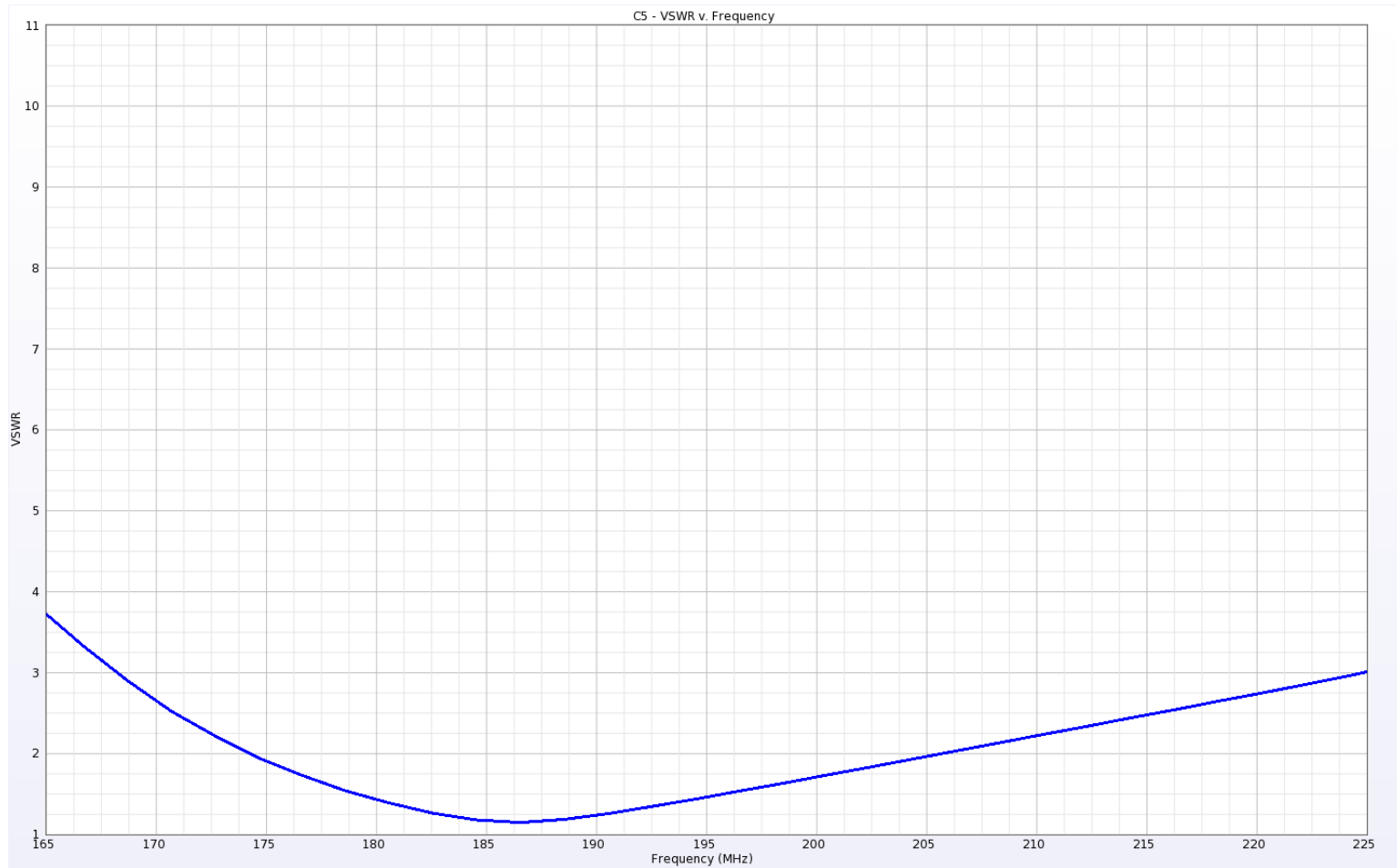


Illustration 5: C5 – Computed VSWR versus Frequency. Balun neglected. Assume 300 ohm line impedance.

C5
Measured VSWR versus Frequency

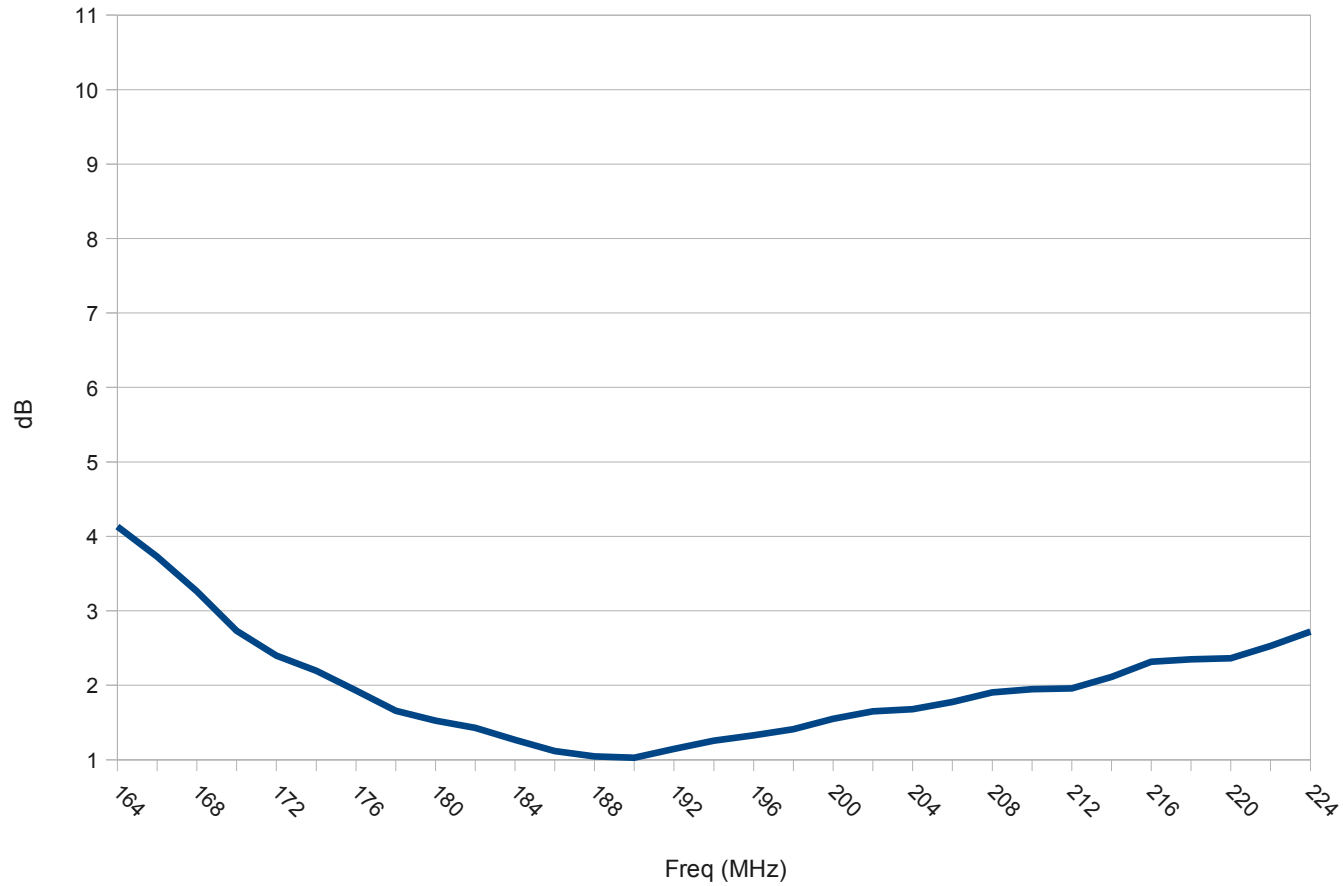


Illustration 6: C5 - VSWR versus Frequency measured using HP/Agilent 8510C VNA with antenna 10 ft above dry concrete.

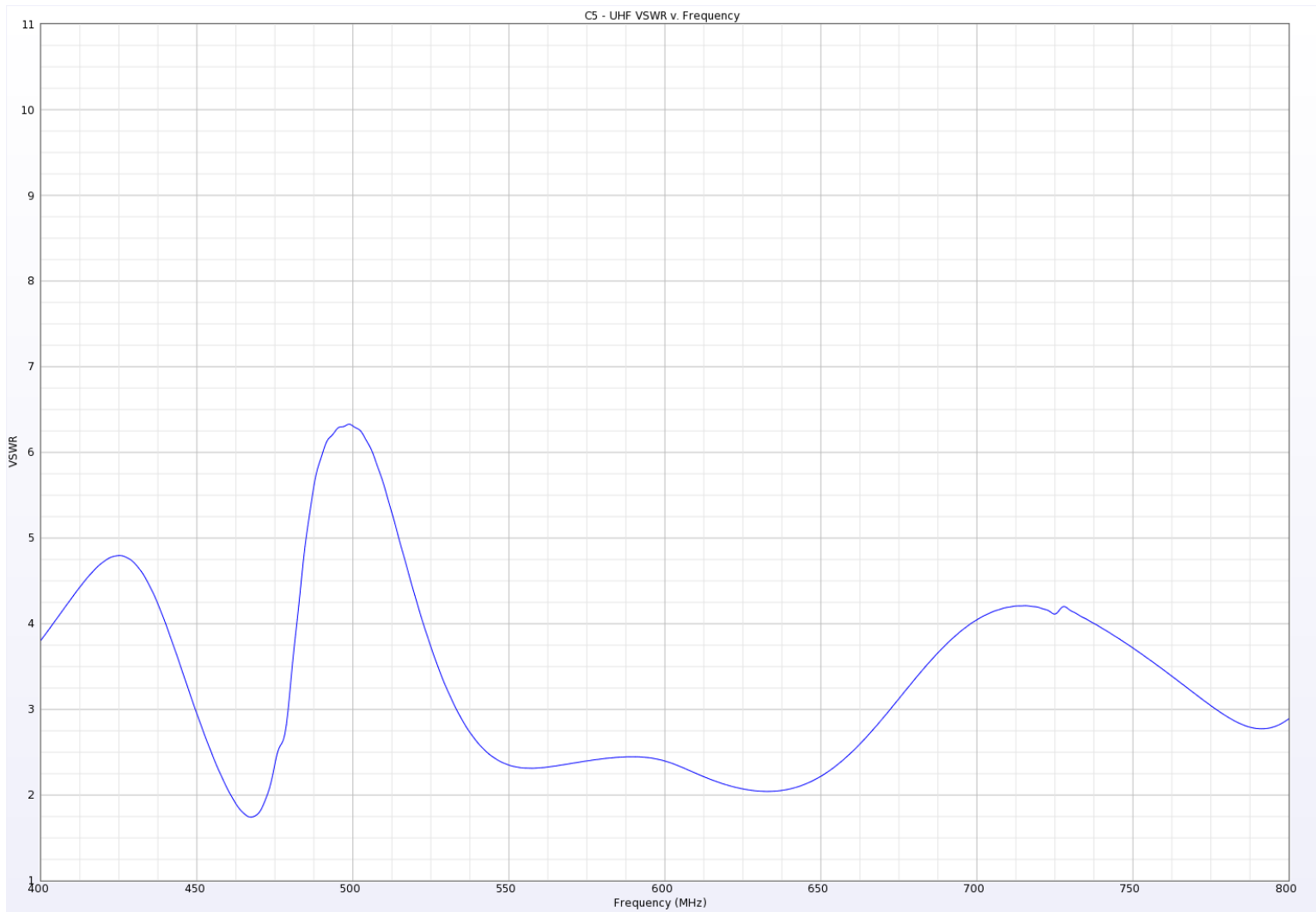


Illustration 7: C5 - Computed UHF VSWR versus Frequency. This is out of band response for this antenna.

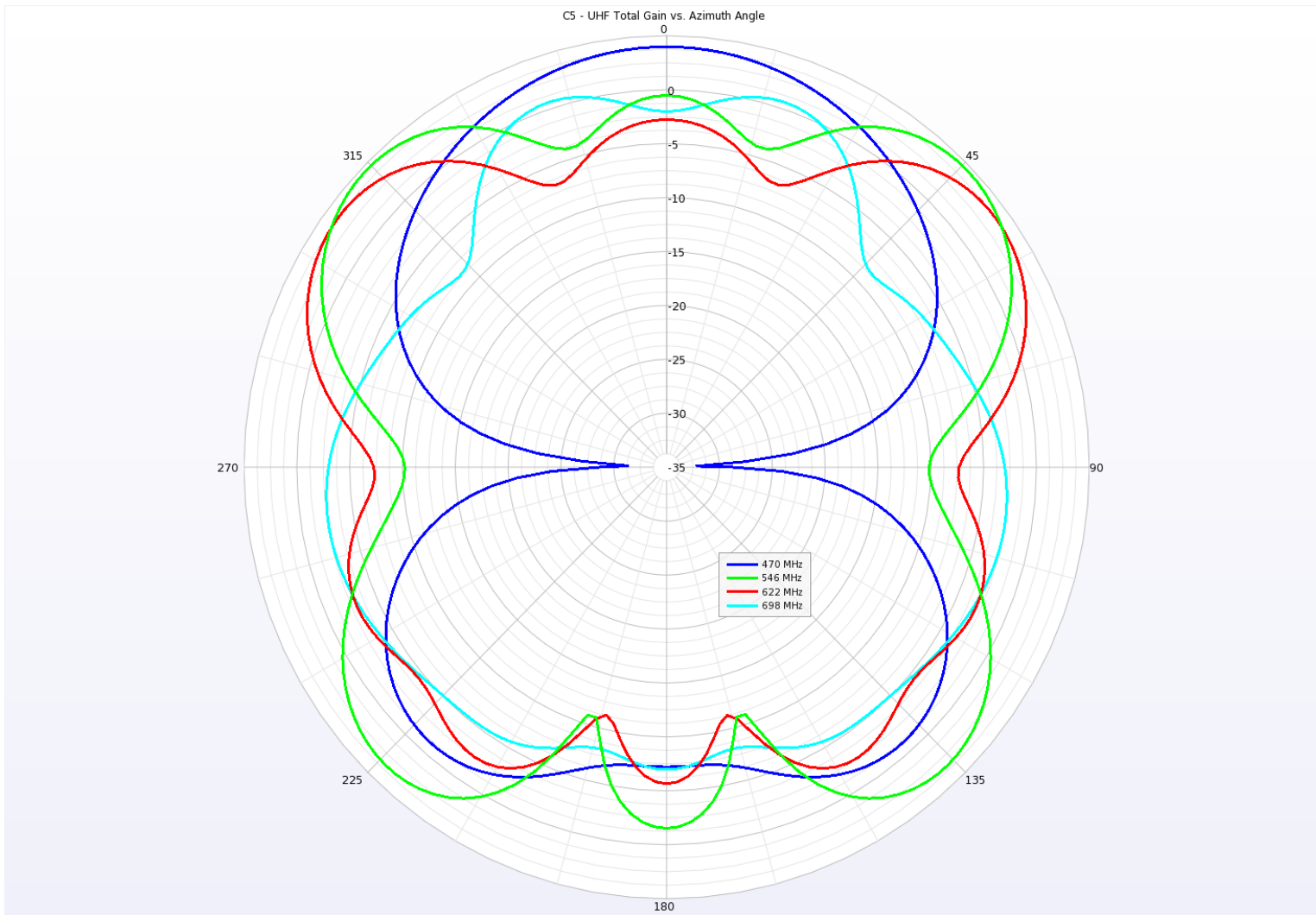


Illustration 8: C5 - UHF gain versus azimuth. Out of band response.