

Technical Data Sheet: Antennas Direct 42XG Antenna

Physical Data:

Dimensions: Length = 39 in. Width = 19 in. Height = 15 in.
Weight: 4.0 lbs
Turning Radius: TBD

Electrical Data:

Band: UHF 470 MHz to 806 MHz Channels 14 - 69
Impedance: 75 ohm
Connector: F-Female

Performance Data:

Peak Gain: 14.94 dBi @ 766.7 MHz
VSWR: 4.0 Max 470 MHz to 806 MHz

| Frequency (MHz) | Boresight Gain (dBi) | Azimuth – Half Power Beam Width (deg) | Elevation – Half Power Beam Width (deg) | Front-to-Back @ 180 deg (dB) | IEEE Rear Hemisphere F/B (dB) |
|-----------------|----------------------|---------------------------------------|---|------------------------------|-------------------------------|
| 470 | 9.87 | 52 | 75 | 22.67 | 10.76 |
| 546 | 11.08 | 46 | 65 | 141.19 | 12.88 |
| 622 | 12.51 | 40 | 60 | 27.04 | 17.29 |
| 698 | 13.89 | 34 | 48 | 25.26 | 16.08 |

Table 1: 42XG Performance Data for USA UHF 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.*

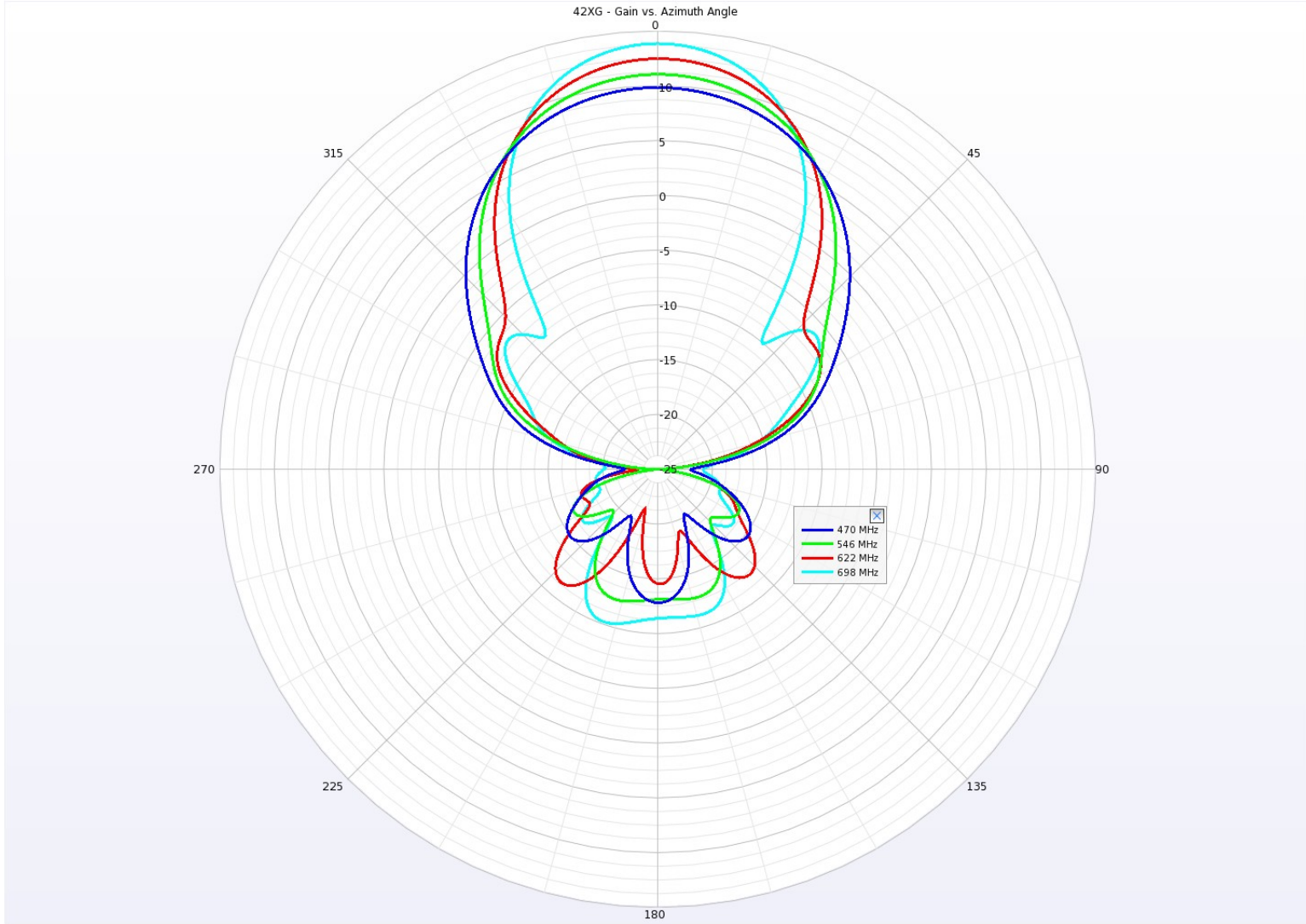


Illustration 1: 42XG - Gain vs Azimuth Angle

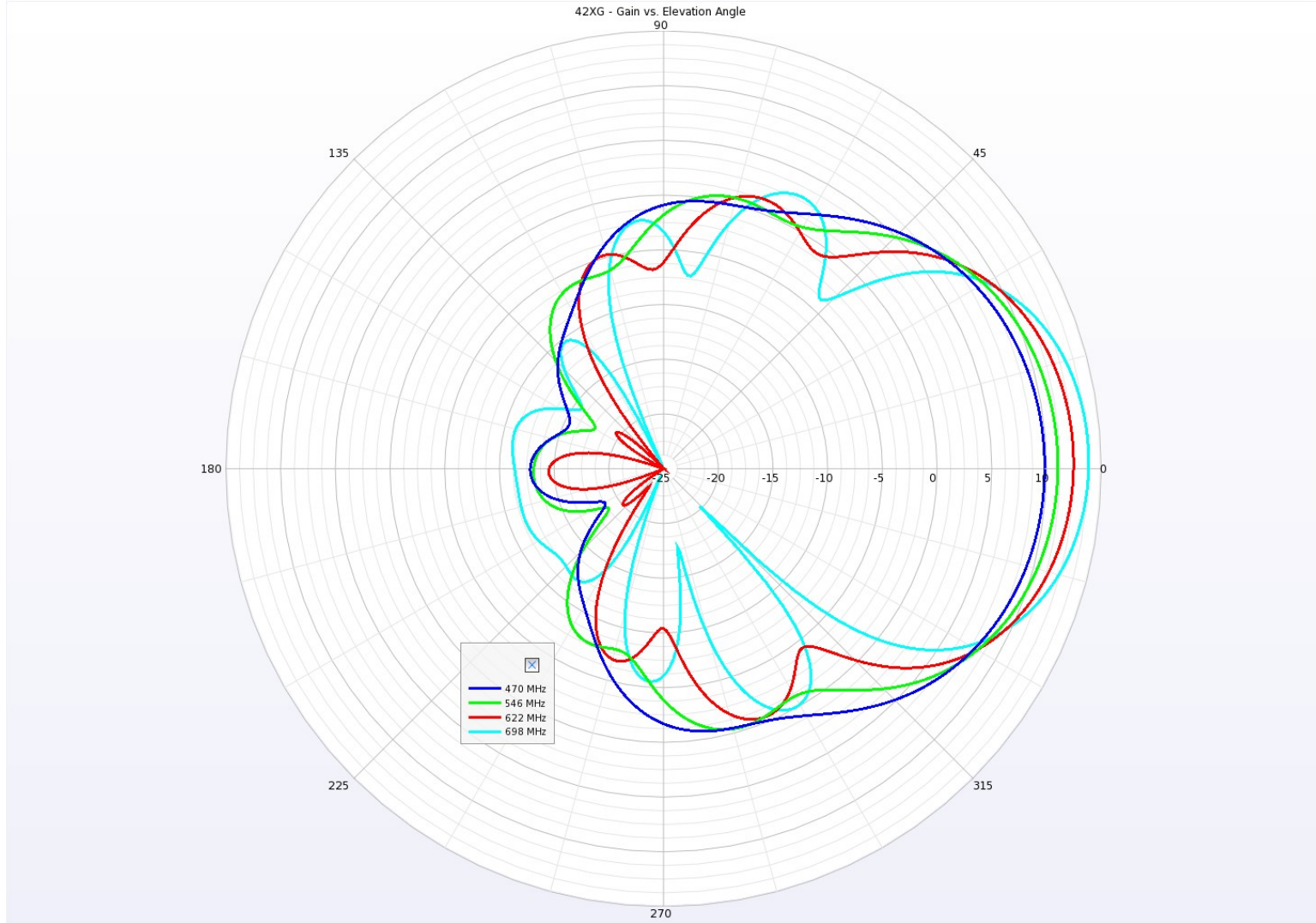


Illustration 2: 42XG - Gain vs Elevation Angle.

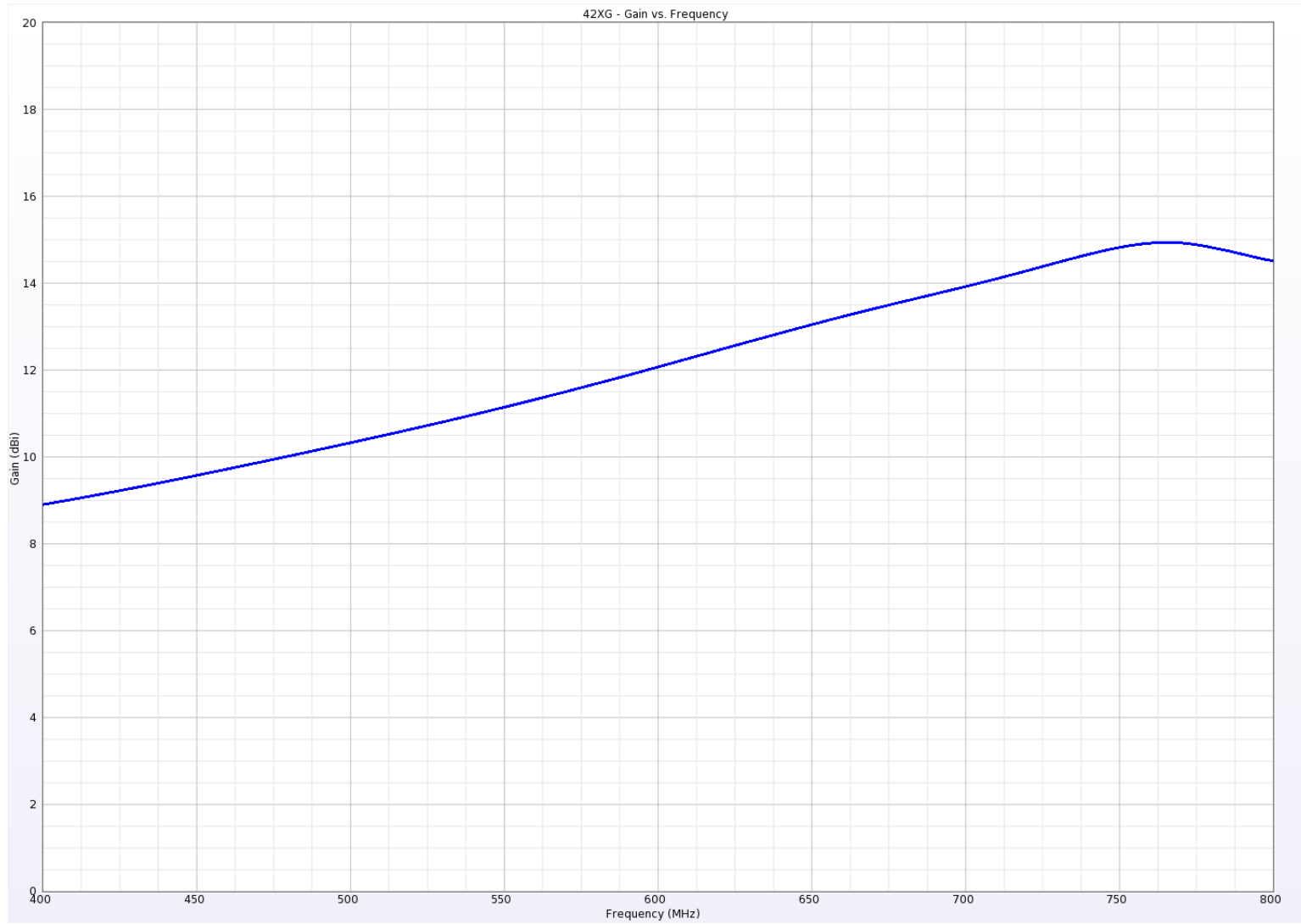


Illustration 3: 42XG - Gain vs. Frequency.



Illustration 4: 42XG - Computed VSWR vs. Frequency. No balun. 300 ohm line reference.

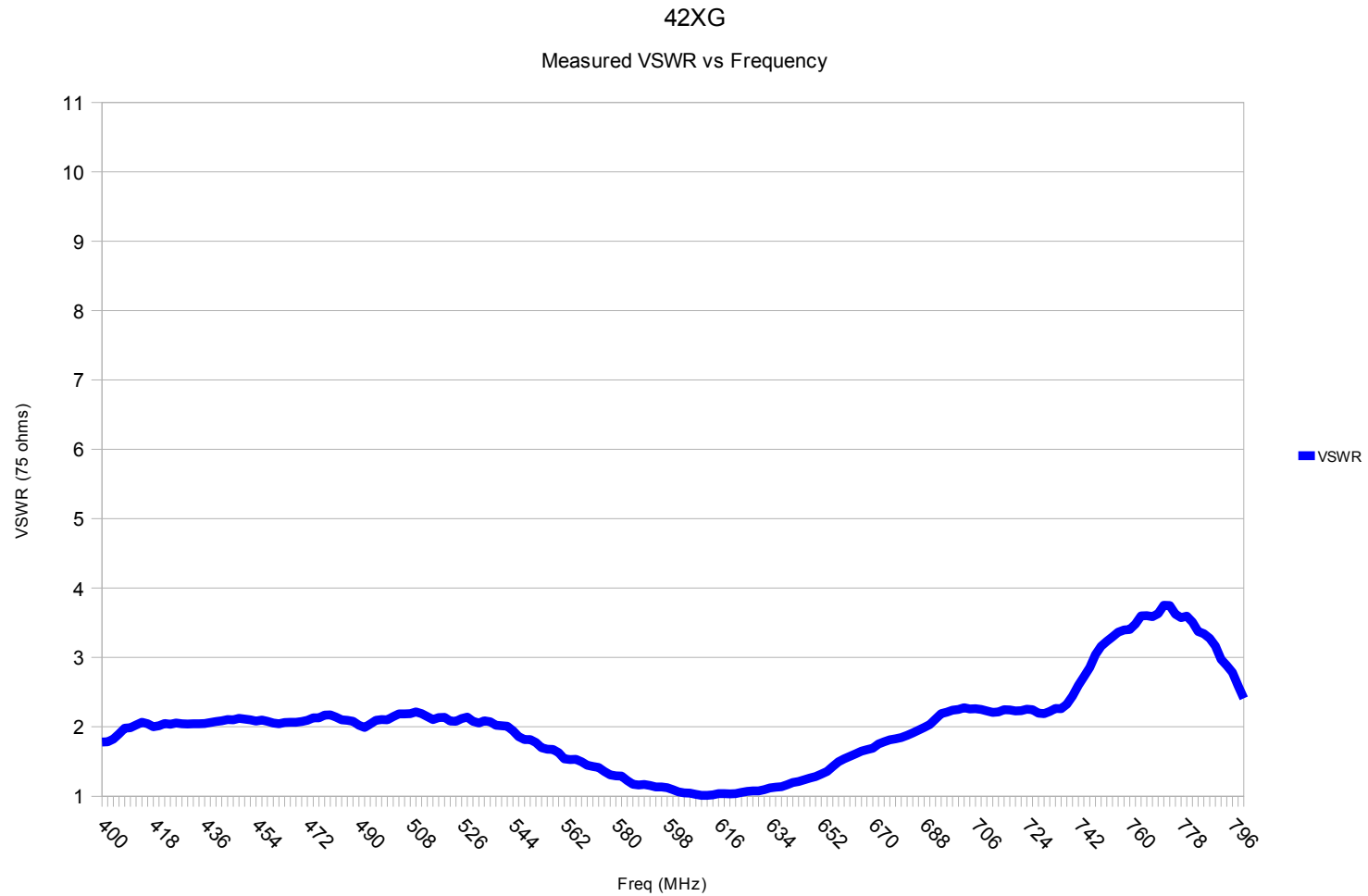


Illustration 5: 42XG - VSWR (relative to 75 ohms) vs frequency measured with HP/Agilent 8510C. Antenna on 10 ft mast above dry concrete.