

Technical Data Sheet: Antennas Direct FM3 Antenna

Physical Data:

Dimensions: Length = 47 in.. Width = 109 in.
Weight: 5.5 lbs
Turning Radius: 43 in.

Electrical Data:

Band: FM 88 MHz to 108 MHz
Impedance: 75 ohm
Connector: F-Female

Performance Data:

Peak Gain: 8.88 dBi @ 106 MHz
VSWR: 3.0 Max 88 to 108 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)
88	6.04	72	75	1.73	5.13
98	6.32	68	65	14.79	5.92
108	8.29	54	60	3.98	3.98

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.*

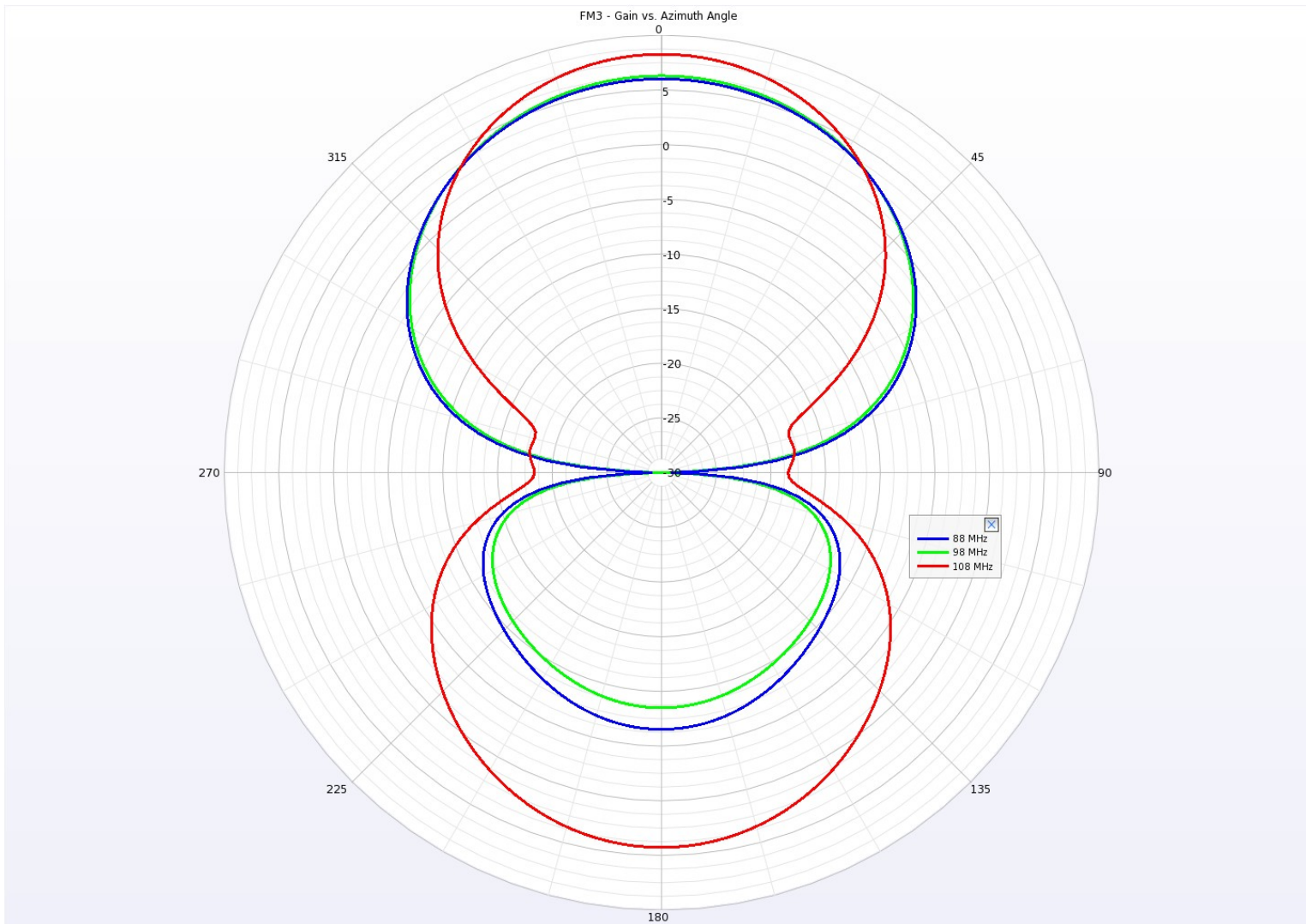


Illustration 1: FM3 - Gain versus Azimuth Angle.

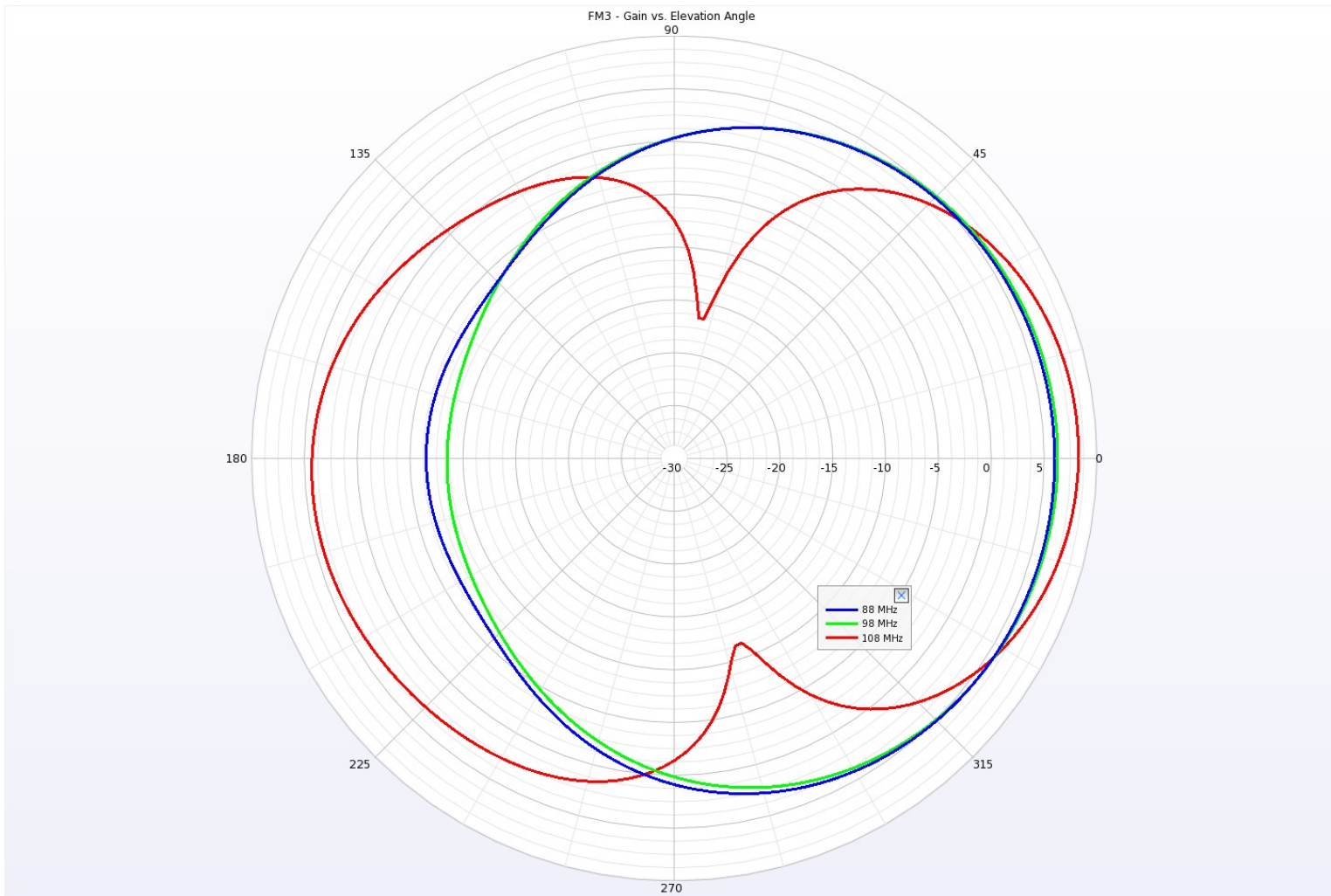


Illustration 2: FM3 - Gain vs. Elevation Angle.



Illustration 3: FM3 - Gain vs. Frequency.

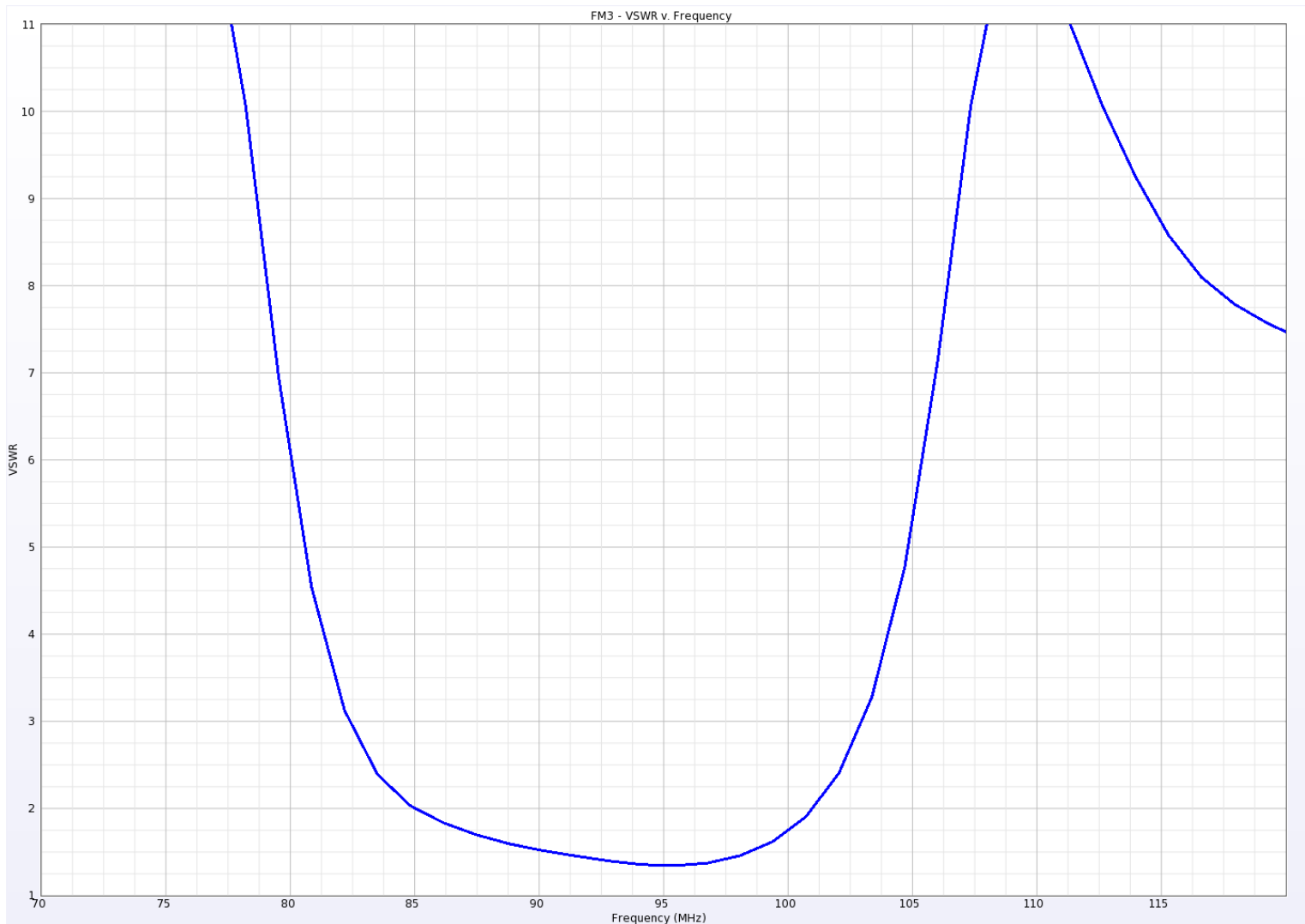


Illustration 4: FM3 - Computed VSWR vs. Frequency. No balun. 300 ohm reference.

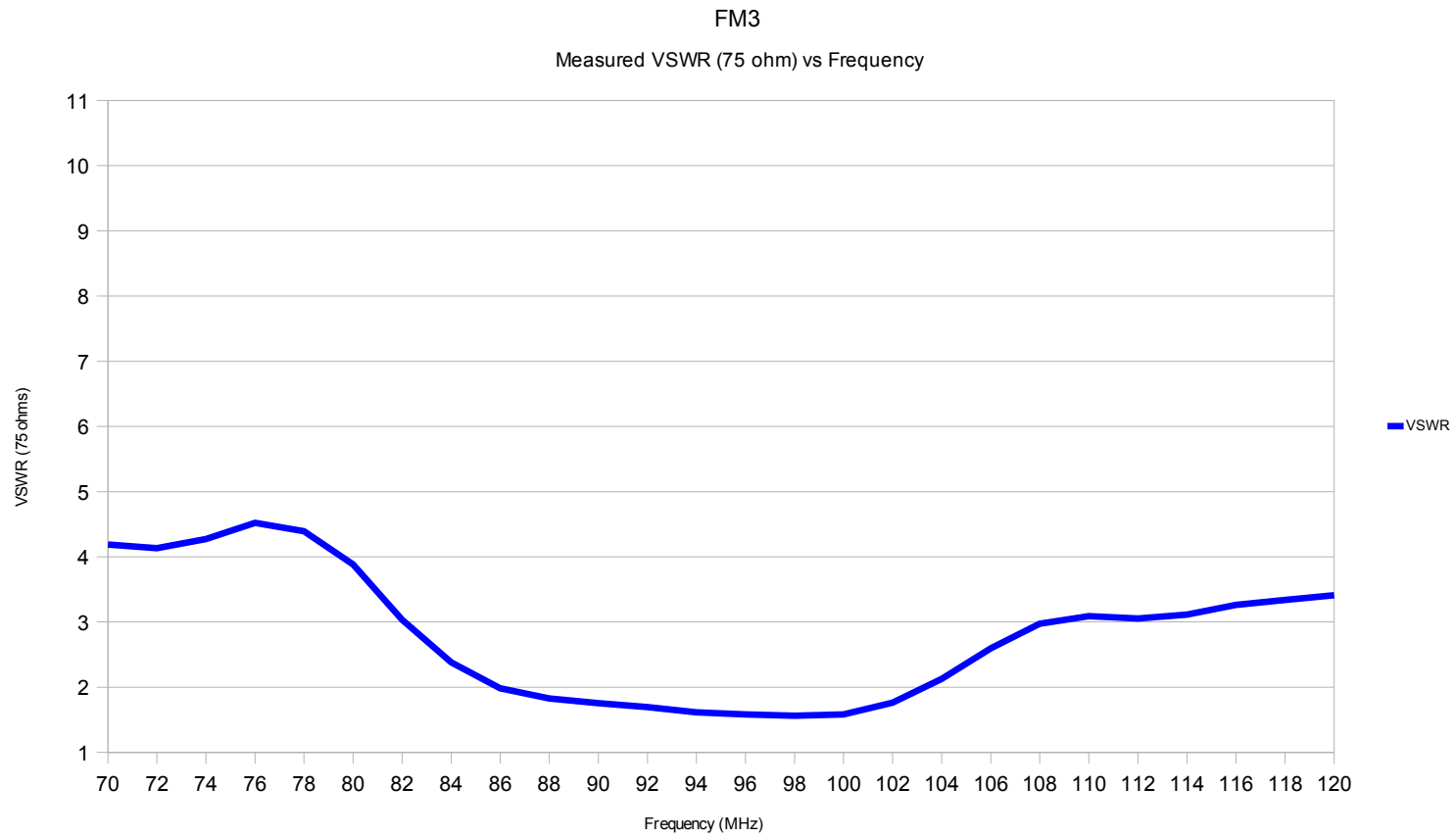


Illustration 5: FM3 - VSWR (relative to 75 ohms) vs frequency measured with HP/Agilent 8510C. Antenna on 10 ft mast above dry concrete.