

Technical Data Sheet: Antennas Direct DB4E Antenna

Physical Data:

Dimensions: Width = 23 in. Height = 37.5 in. Depth = 7 in.
 Weight: TBD
 Turning Radius: 11.5 in.

Electrical Data:

Design Pass Band: UHF 470 MHz to 698 MHz Channels 14 – 51
 Impedance: 75 ohm
 Connector: F-Female

Performance Data:

Peak Gain: 14.3 dBi @ 698 MHz
 VSWR: 3.0 Max 470 MHz to 698 MHz

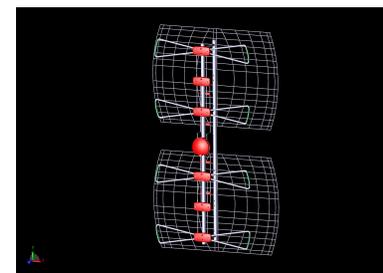


Illustration 1: DB4E

Frequency (MHz)	Boresight Gain (dBi)	Azimuth – Half Power Beam Width (deg)	Elevation – Half Power Beam Width (deg)	IEEE Rear Hemisphere F/B (dB)
470	11.68	60	30	15.18
546	12.59	55.7	24.5	16.79
622	13.78	47.5	24	17.78
698	14.36	42.1	21.5	17.05

Notes:

1. Unless stated otherwise, all performance data computed using Remcom, Inc. X-FDTD simulator.
2. Assumptions: PEC, free space, PCB balun included, 75 ohm reference.
3. Gain is specified dBi (isotropic) per IEEE definition. 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.

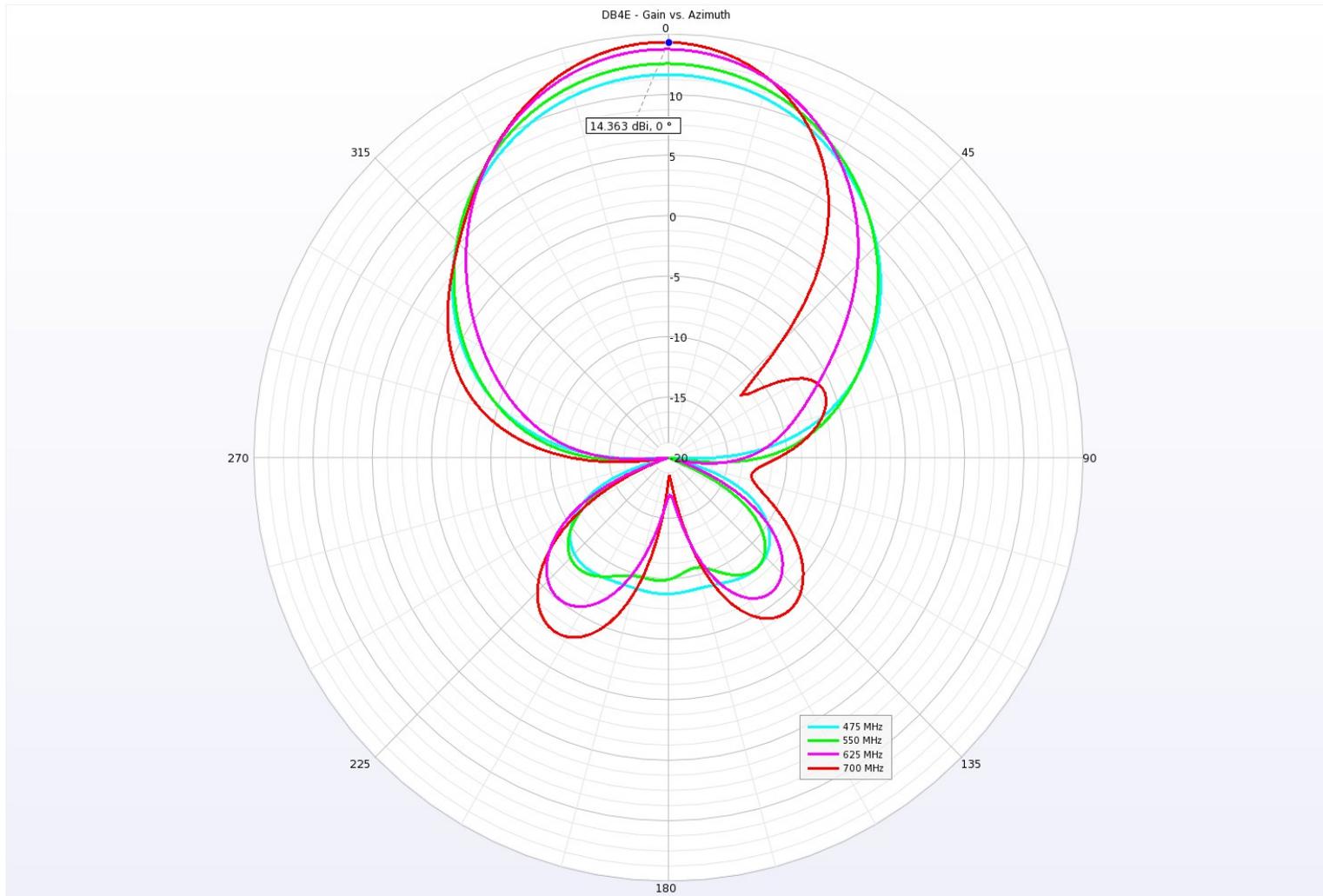


Illustration 2: DB4E - Gain versus Azimuth Angle.

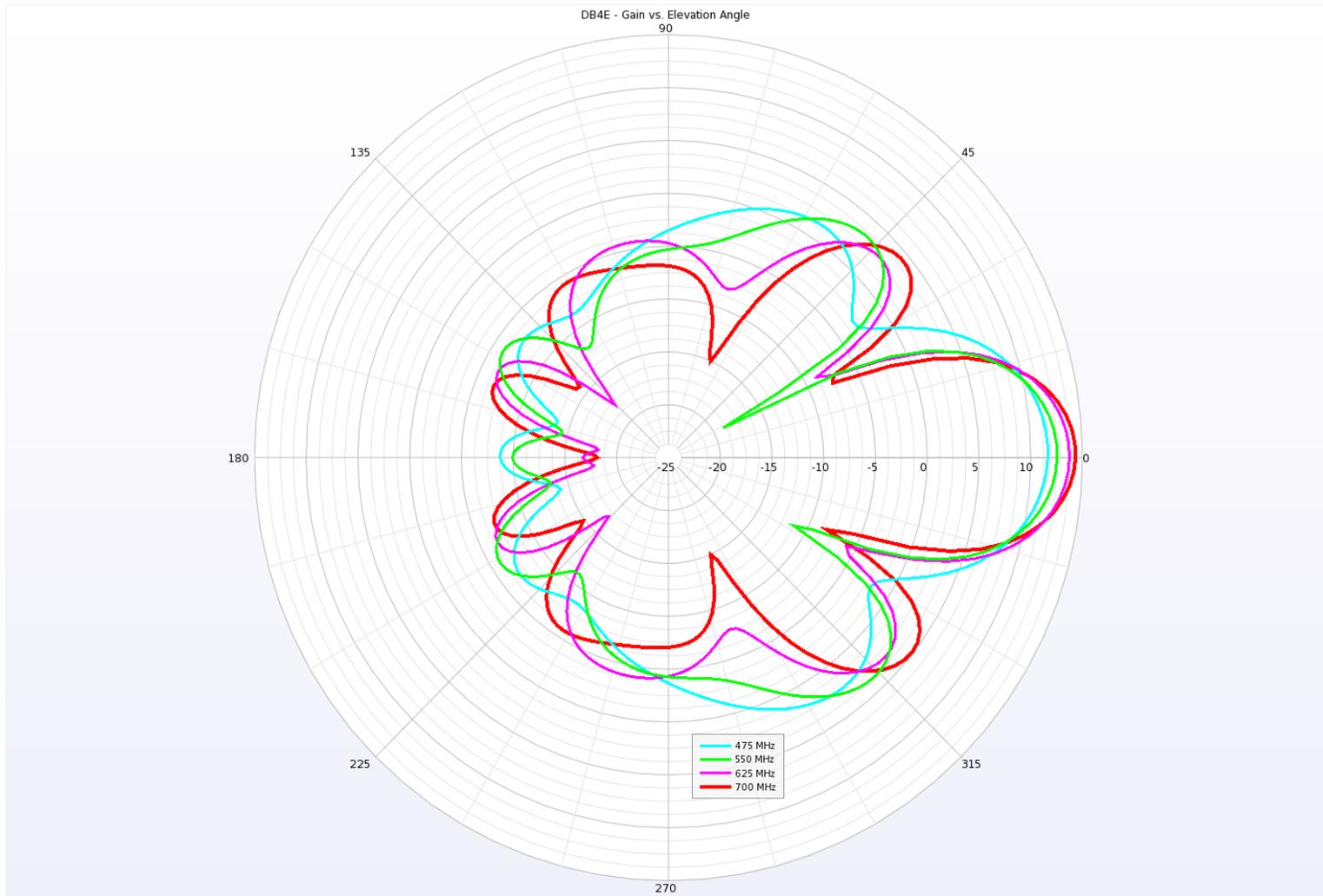


Illustration 3: DB4E - Gain versus Elevation Angle.

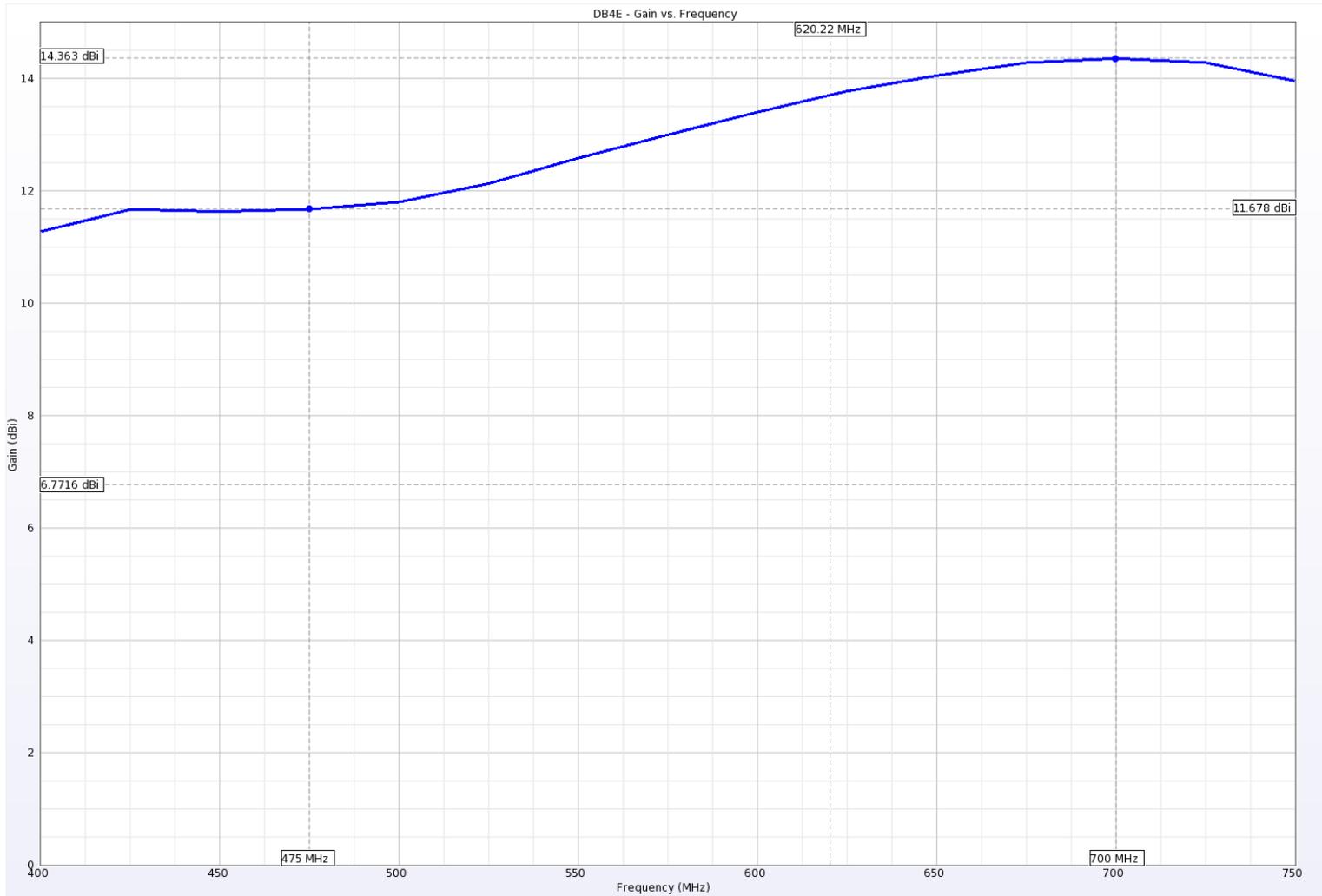


Illustration 4: DB4E - Boresight Gain versus Frequency.

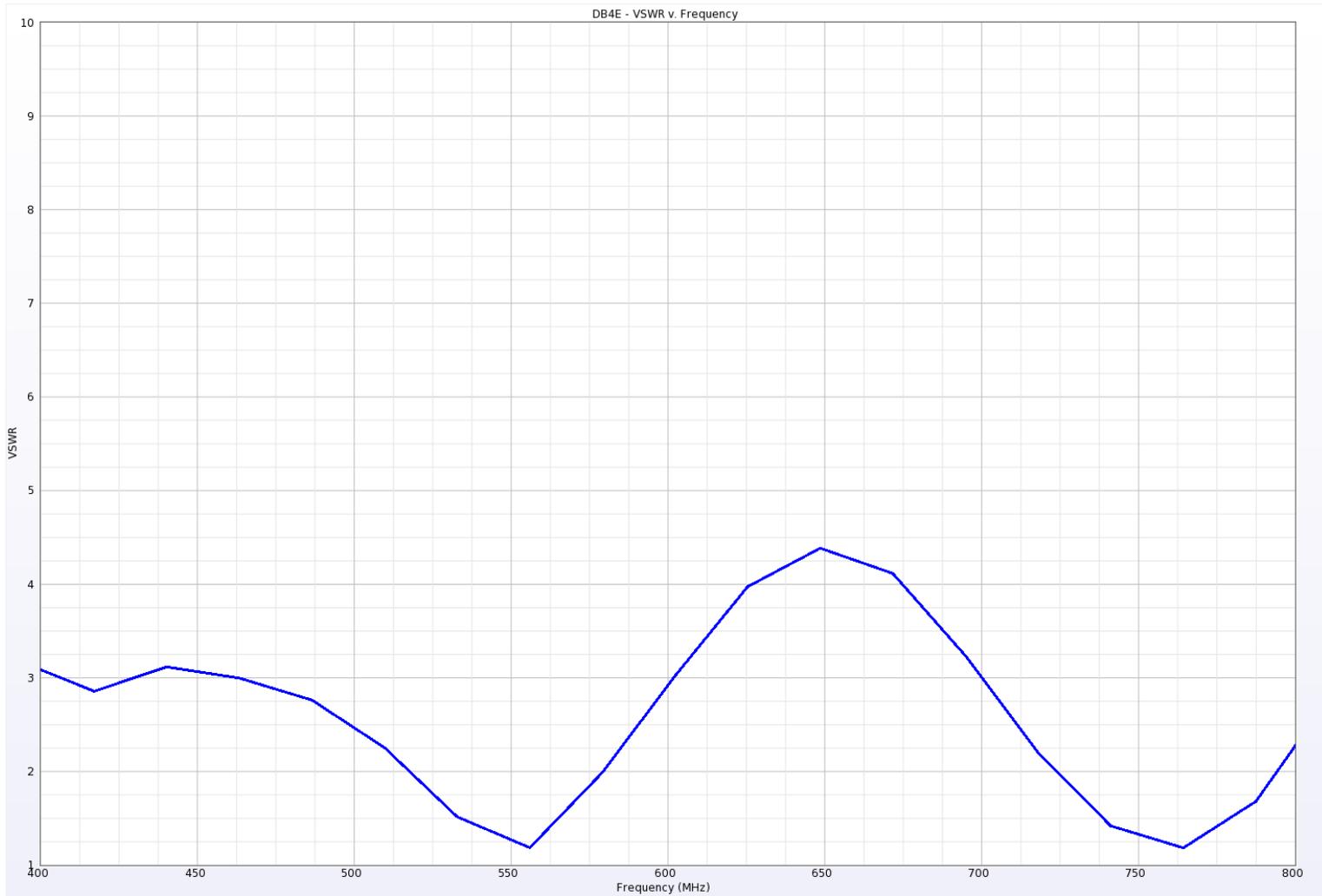


Illustration 5: DB4E - Computed VSWR versus Frequency. PCB balun included. 75 ohm reference. Measured better, see next plot.

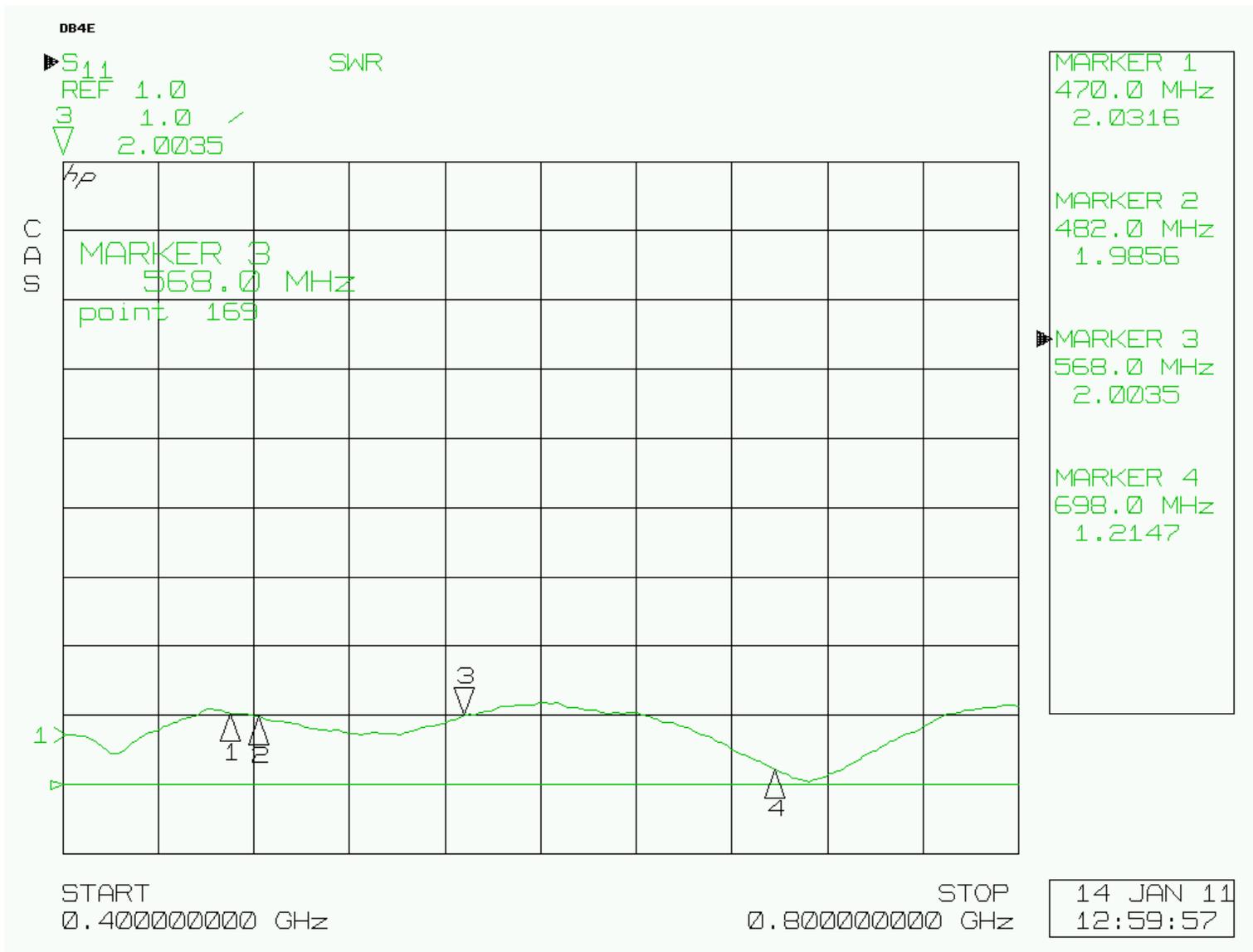


Illustration 6: DB4E - VSWR versus Frequency measured outdoors with HP8510C VNA.