



Arnolds Court, Arnolds Farm Lane, Brentwood, Essex, CM13 1UT, UK

Antenna Polar Plotting

Customer Name	Sound Devices LLC
Job Number	14941-2
Equipment Name	Astral HH
Model No	28297
Serial No	AA0425009000
Date of initial assessment	12 th February 2025

Section 1 – Overall assessment

Purpose of test

To assess the radiation pattern and antenna gain of the EUT.

Method

- Below 1GHz frequencies
 - o The antenna was tested in a semi anechoic chamber. The EUT was positioned on a turntable 1.5m high and the measuring antenna was placed at a distance of 3 metres. The EUTs antenna was assessed with the measuring antenna both vertically and horizontally polarised. See photos in section 3.5 of this report for EUT position. A substitution was performed at the test frequencies to enable corrections to be applied to the measured values. A substitution measurement was made at the following frequencies: 470.1 MHz, 530 MHz, 600 MHz, 800 MHz and 902 MHz.
- Above 1GHz frequencies
 - o The antenna was tested in a semi anechoic chamber. The EUT was positioned on a turntable 1.5m high and the measuring antenna was placed at a distance of 3 metres. The EUTs antenna was assessed with the measuring antenna vertically and horizontally polarised. See photos in section 3.5 of this report for EUT position. A substitution was performed at the test frequencies to enable corrections to be applied to the measured values. A substitution measurement was made at the following frequencies: 1154 MHz, 1240 MHz, 1524.9 MHz, 2400.6 MHz, 2441 MHz and 2481.6 MHz.

The following conditions were applied: -

- The EUT power level was set by the applicant. A power measurement was made prior to each plot.
- The turntable was always rotated from 0 to 360 degrees clockwise.
- Above 1 GHz the measuring antenna was at a fixed height of 1.5m, level with the centre of the EUT.
- Below 1 GHz the measurement antenna was scanned from 1-4m.
- The resultant antenna gain is referenced to dBd below 1 GHz and dBi above 1 GHz.

Testing Recommendation

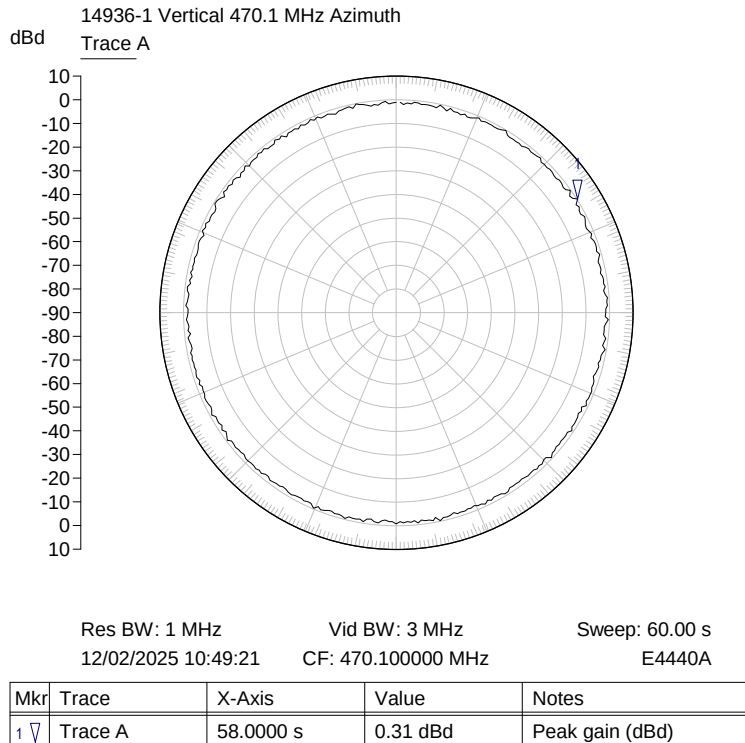
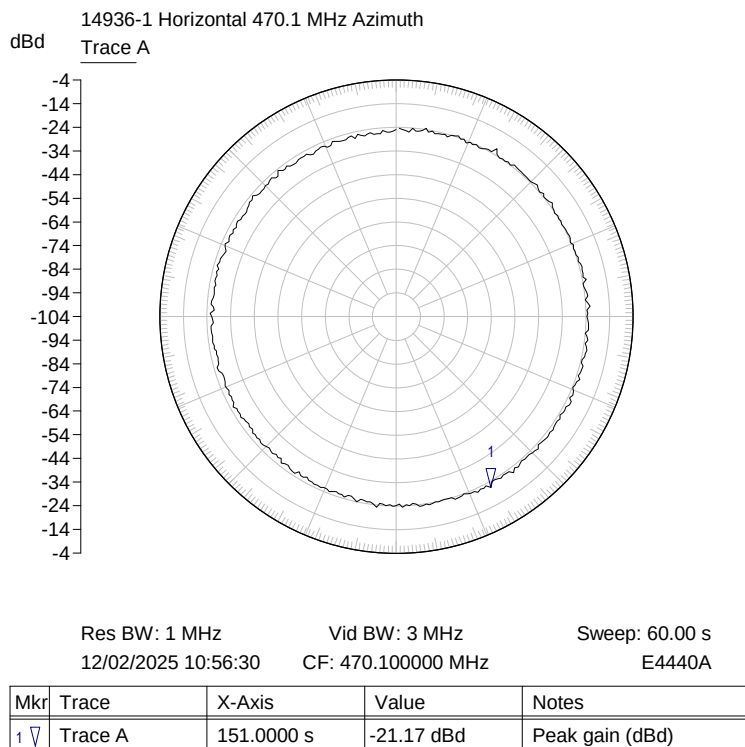
Testing was for informative purpose only and for applicant to analyse results and decide how they want to proceed. Please contact KEC Brentwood if further testing is required.

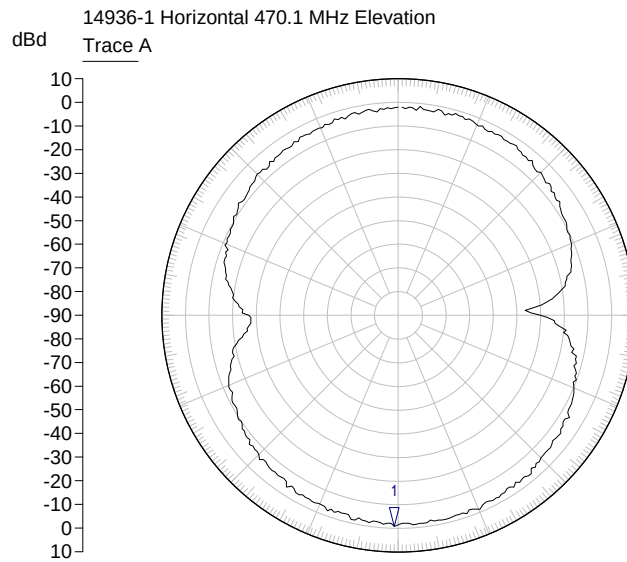
Section 2 – Summary of performed tests

Test	Result
Antenna polar plotting	Test performed

Section 3 – Plots

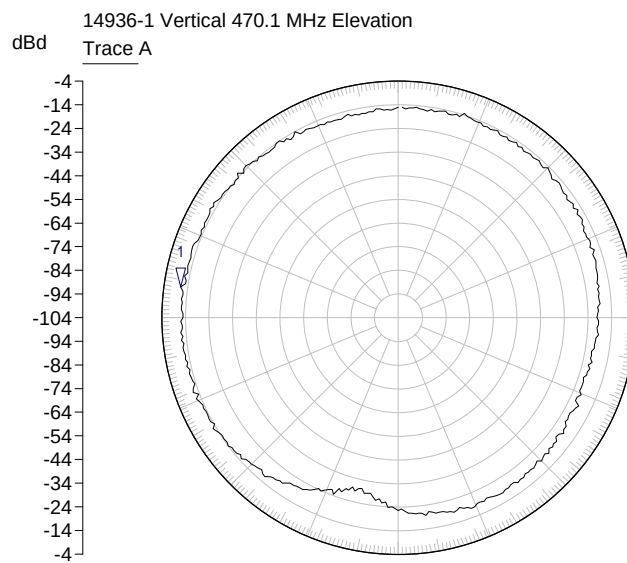
3.1 Polar Plots





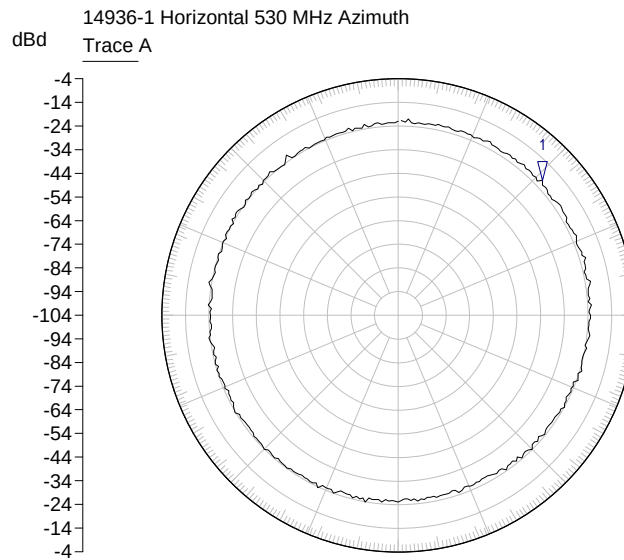
Res BW: 1 MHz Vid BW: 3 MHz Sweep: 60.00 s
12/02/2025 11:08:17 CF: 470.100000 MHz E4440A

Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	181.0000 s	-0.67 dBd	Peak gain (dBd)



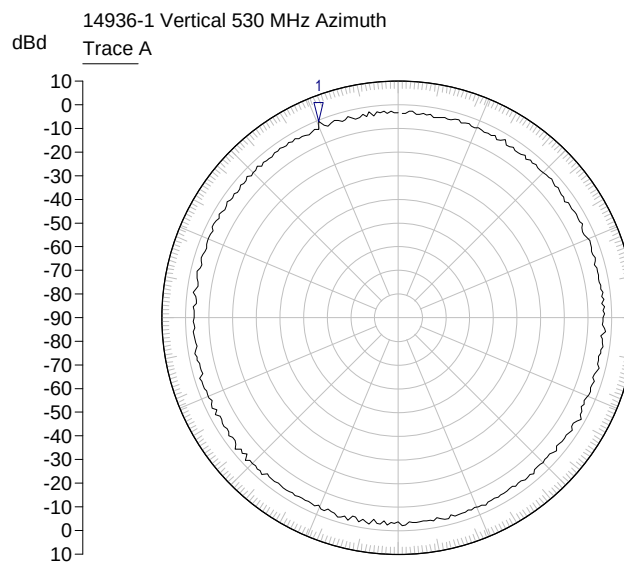
Res BW: 1 MHz Vid BW: 3 MHz Sweep: 60.00 s
12/02/2025 11:11:59 CF: 470.100000 MHz E4440A

Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	278.0000 s	-11.06 dBd	Peak gain (dBd)



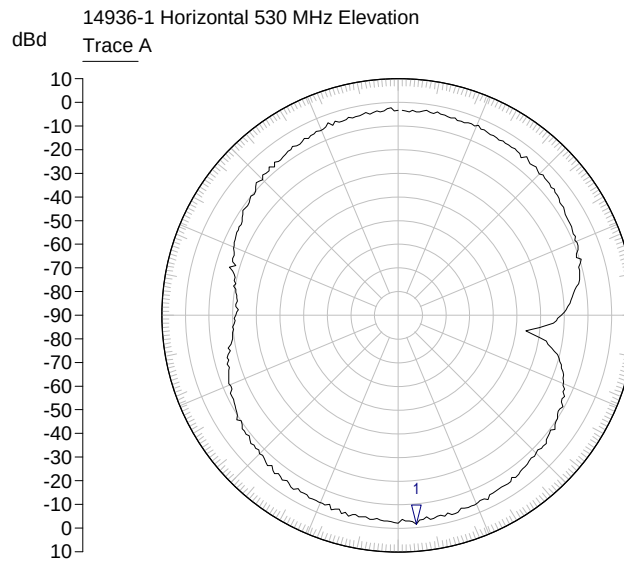
Res BW: 1 MHz Vid BW: 3 MHz Sweep: 60.00 s
12/02/2025 11:45:12 CF: 530.000000 MHz E4440A

Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	47.0000 s	-20.40 dBd	Peak gain (dBd)



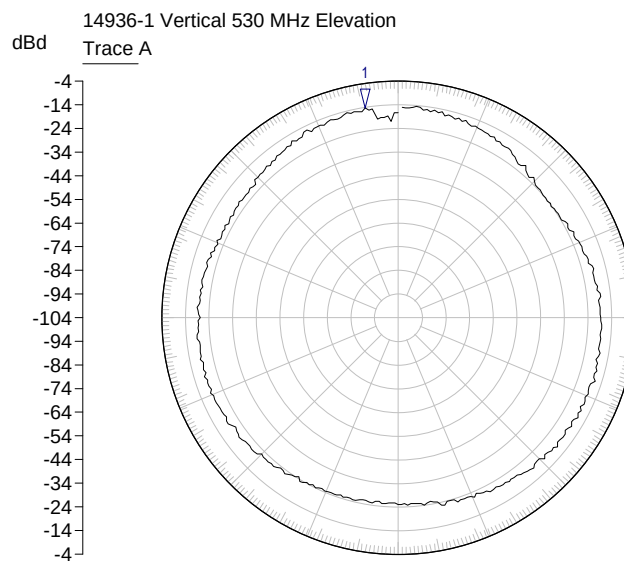
Res BW: 1 MHz Vid BW: 3 MHz Sweep: 60.00 s
12/02/2025 11:31:27 CF: 530.000000 MHz E4440A

Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	338.0000 s	-0.56 dBd	Peak gain (dBd)



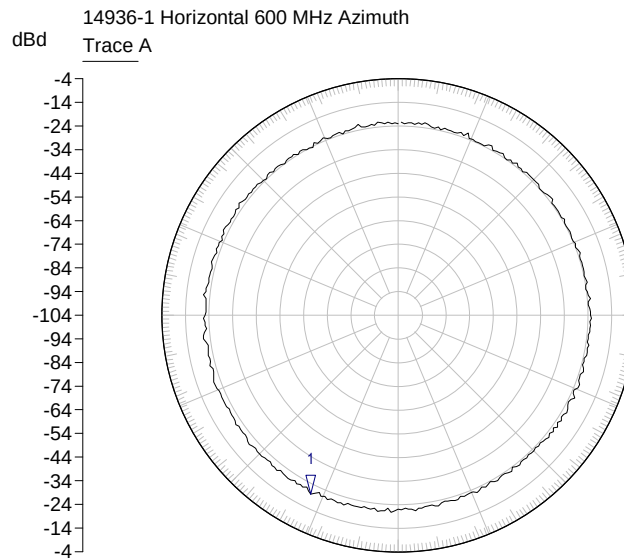
Res BW: 1 MHz Vid BW: 3 MHz Sweep: 60.00 s
12/02/2025 11:41:22 CF: 530.000000 MHz E4440A

Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	175.0000 s	-1.16 dBd	Peak gain (dBd)



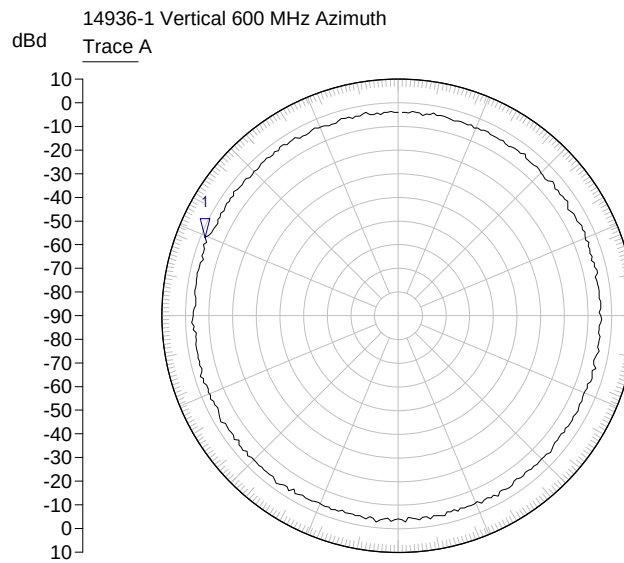
Res BW: 1 MHz Vid BW: 3 MHz Sweep: 60.00 s
12/02/2025 11:36:03 CF: 530.000000 MHz E4440A

Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	351.0000 s	-14.28 dBd	Peak gain (dBd)



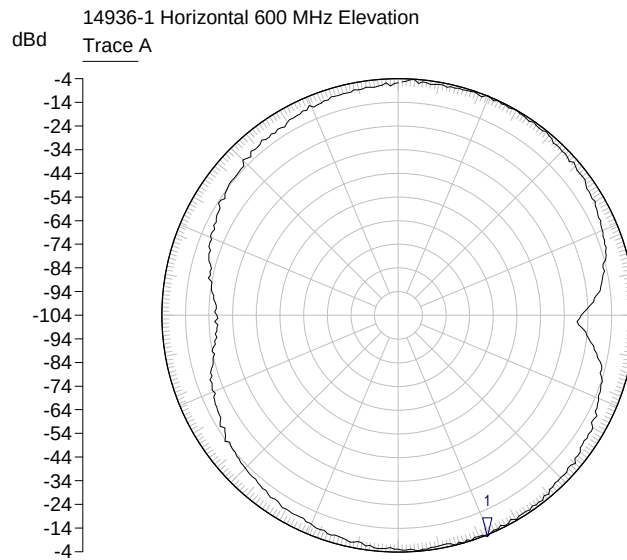
Res BW: 1 MHz Vid BW: 3 MHz Sweep: 60.00 s
12/02/2025 11:54:10 CF: 600.000000 MHz E4440A

Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	206.0000 s	-19.90 dBd	Peak gain (dBd)



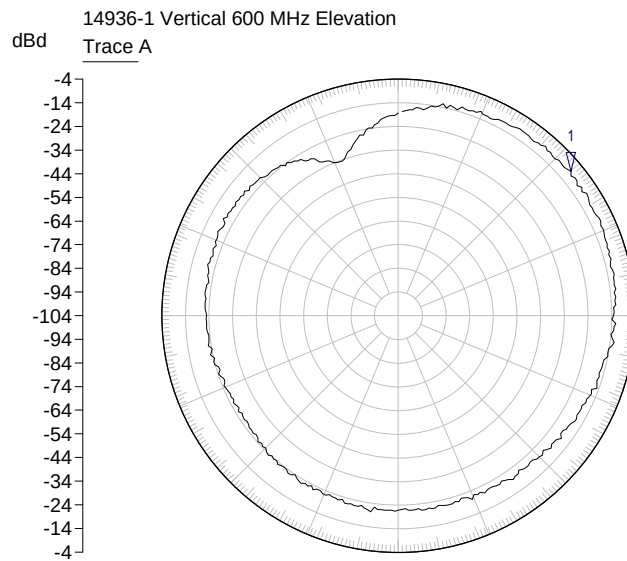
Res BW: 1 MHz Vid BW: 3 MHz Sweep: 60.00 s
12/02/2025 12:07:39 CF: 600.000000 MHz E4440A

Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	292.0000 s	-1.87 dBd	Peak gain (dBd)



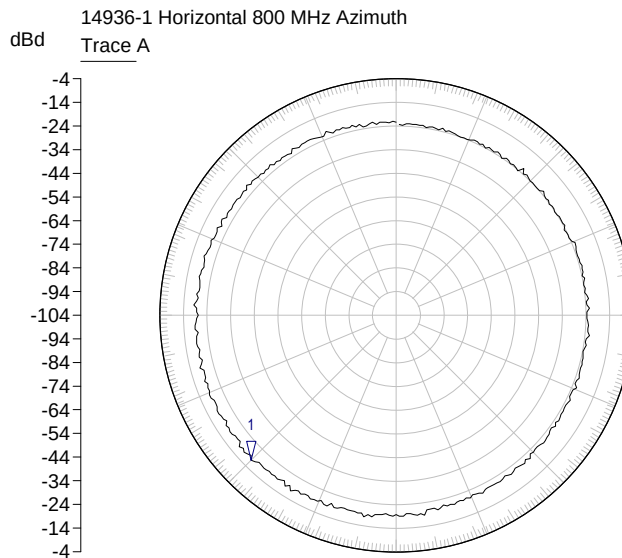
Res BW: 1 MHz Vid BW: 3 MHz Sweep: 60.00 s
12/02/2025 11:58:29 CF: 600.000000 MHz E4440A

Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	158.0000 s	-3.03 dBd	Peak gain (dBd)



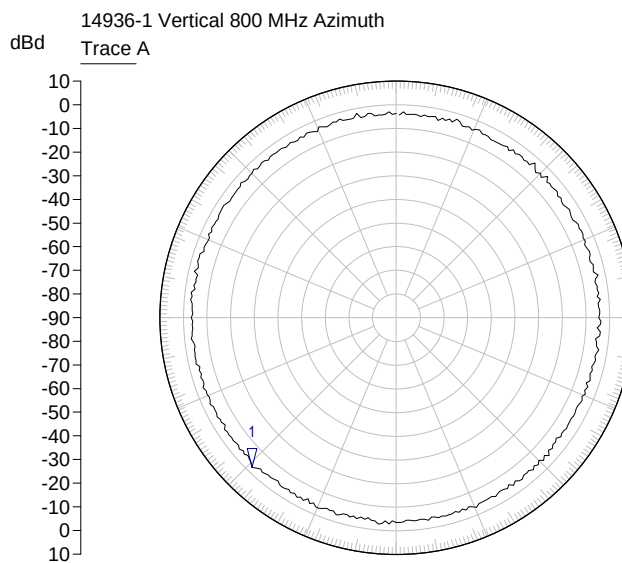
Res BW: 1 MHz Vid BW: 3 MHz Sweep: 60.00 s
12/02/2025 12:02:26 CF: 600.000000 MHz E4440A

Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	50.0000 s	-8.85 dBd	Peak gain (dBd)



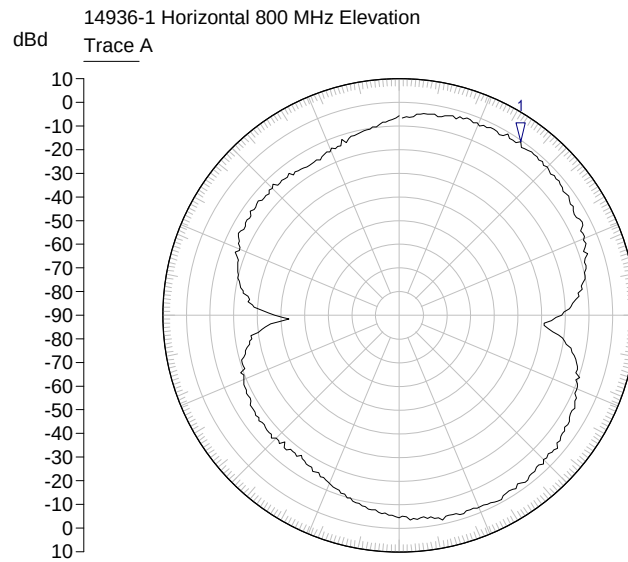
Res BW: 1 MHz Vid BW: 3 MHz Sweep: 60.00 s
12/02/2025 13:23:46 CF: 800.000000 MHz E4440A

Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	225.0000 s	-17.08 dBd	Peak gain (dBd)



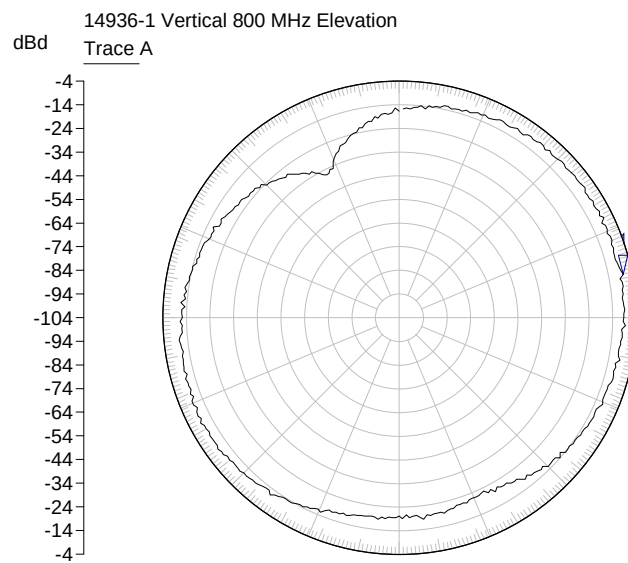
Res BW: 1 MHz Vid BW: 3 MHz Sweep: 60.00 s
12/02/2025 13:10:57 CF: 800.000000 MHz E4440A

Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	224.0000 s	-1.96 dBd	Peak gain (dBd)



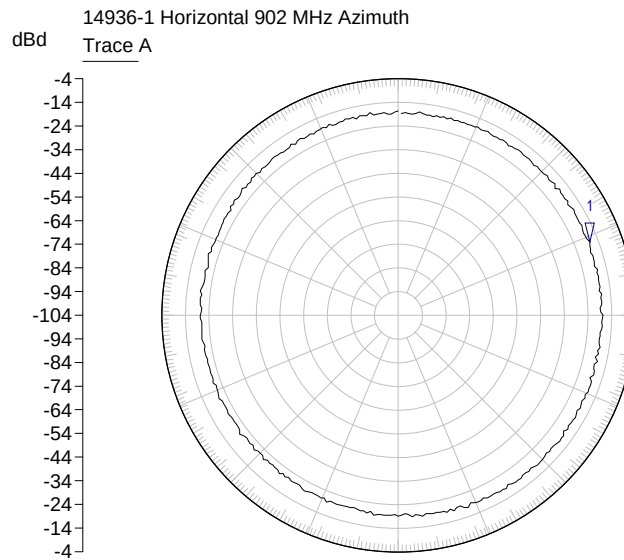
Res BW: 1 MHz Vid BW: 3 MHz Sweep: 60.00 s
12/02/2025 13:20:00 CF: 800.000000 MHz E4440A

Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	35.0000 s	-0.36 dBd	Peak gain (dBd)



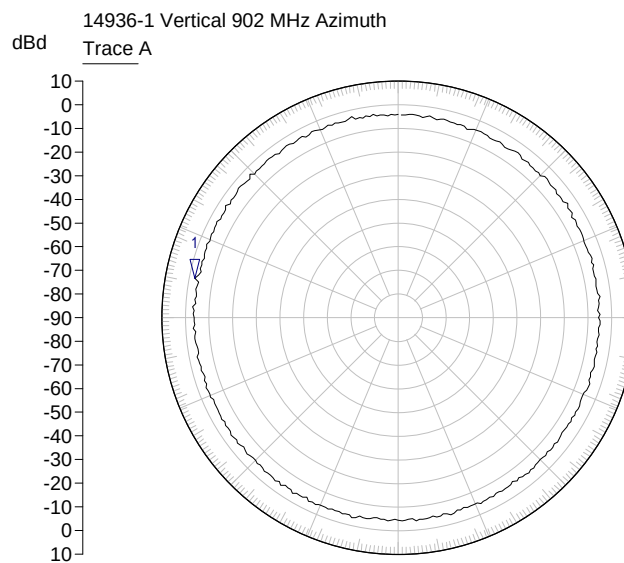
Res BW: 1 MHz Vid BW: 3 MHz Sweep: 60.00 s
12/02/2025 13:16:12 CF: 800.000000 MHz E4440A

Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	79.0000 s	-7.49 dBd	Peak gain (dBd)



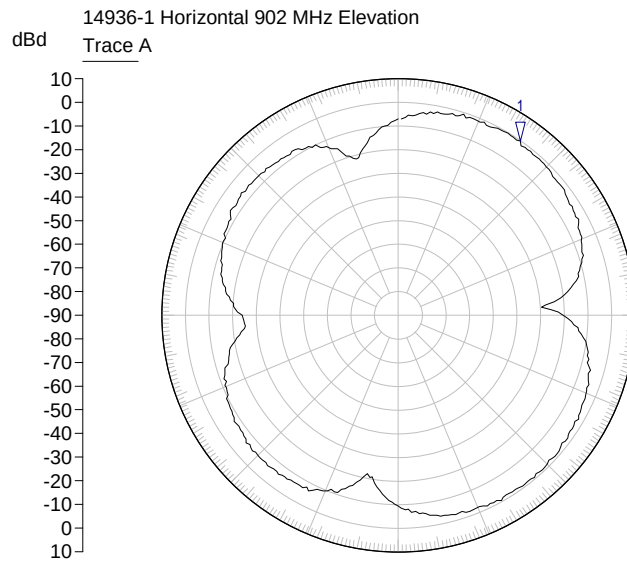
Res BW: 1 MHz Vid BW: 3 MHz Sweep: 60.00 s
12/02/2025 13:31:53 CF: 902.000000 MHz E4440A

Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	69.0000 s	-17.20 dBd	Peak gain (dBd)



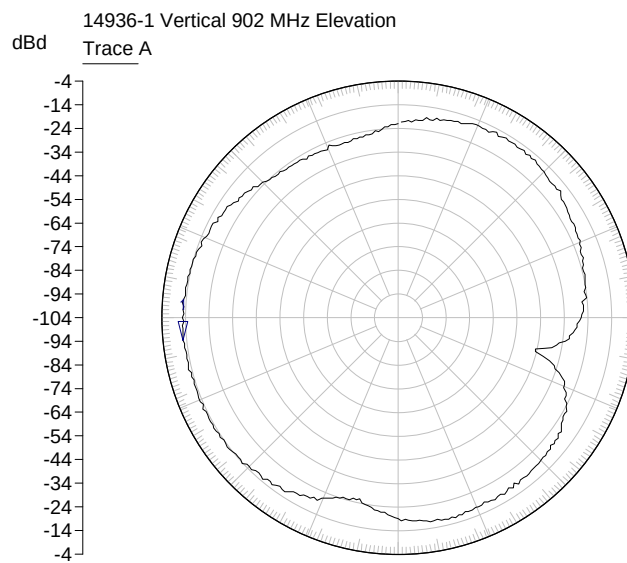
Res BW: 1 MHz Vid BW: 3 MHz Sweep: 60.00 s
12/02/2025 13:45:48 CF: 902.000000 MHz E4440A

Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	281.0000 s	-2.48 dBd	Peak gain (dBd)



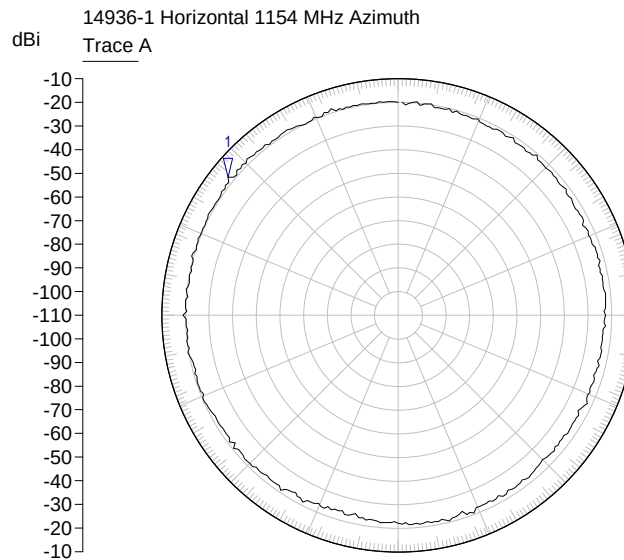
Res BW: 1 MHz Vid BW: 3 MHz Sweep: 60.00 s
12/02/2025 13:35:54 CF: 902.000000 MHz E4440A

Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	35.0000 s	-0.04 dBd	Peak gain (dBd)



Res BW: 1 MHz Vid BW: 3 MHz Sweep: 60.00 s
12/02/2025 13:39:43 CF: 902.000000 MHz E4440A

Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	264.0000 s	-12.37 dBd	Peak gain (dBd)

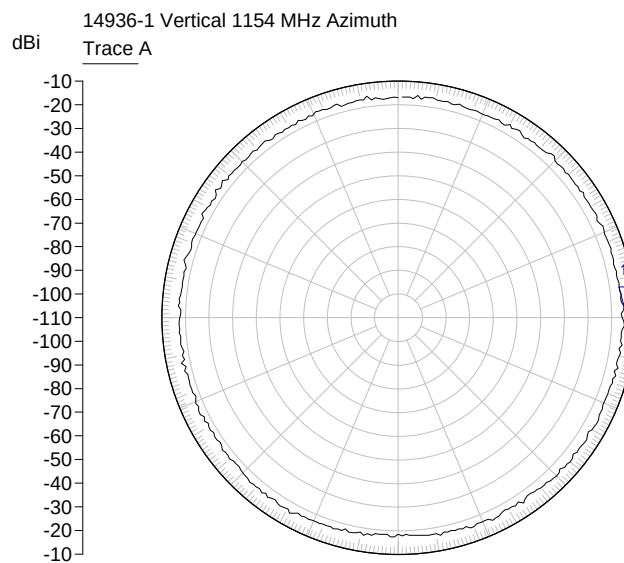


Res BW: 1 MHz
12/02/2025 14:21:30

Vid BW: 3 MHz
CF: 1.154000 GHz

Sweep: 60.00 s
E4440A

Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	309.0000 s	-17.43 dBi	Peak gain (dBi)

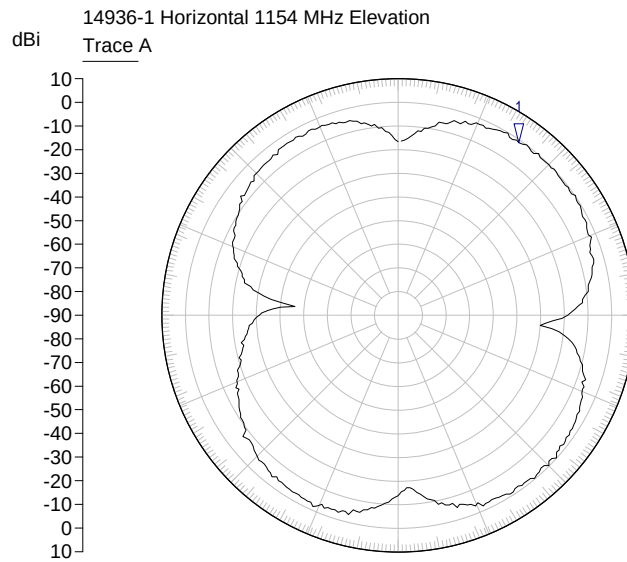


Res BW: 1 MHz
12/02/2025 14:23:50

Vid BW: 3 MHz
CF: 1.154000 GHz

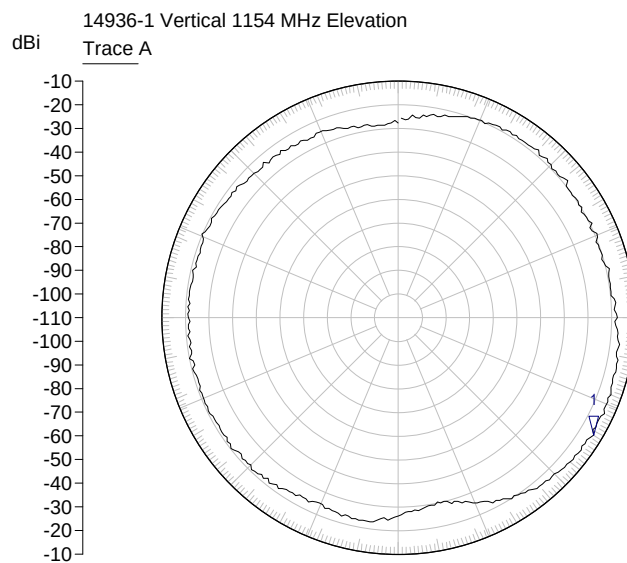
Sweep: 60.00 s
E4440A

Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	87.0000 s	-14.37 dBi	Peak gain (dBi)



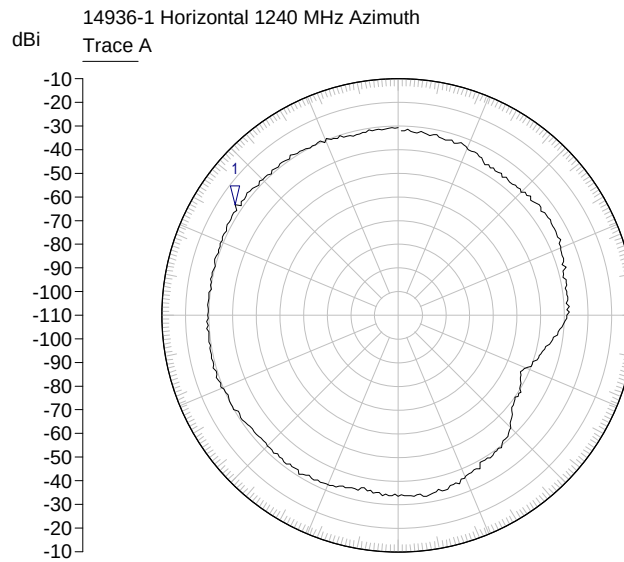
Res BW: 1 MHz Vid BW: 3 MHz Sweep: 60.00 s
12/02/2025 14:34:16 CF: 1.154000 GHz E4440A

Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	35.0000 s	-1.05 dBi	Peak gain (dBi)



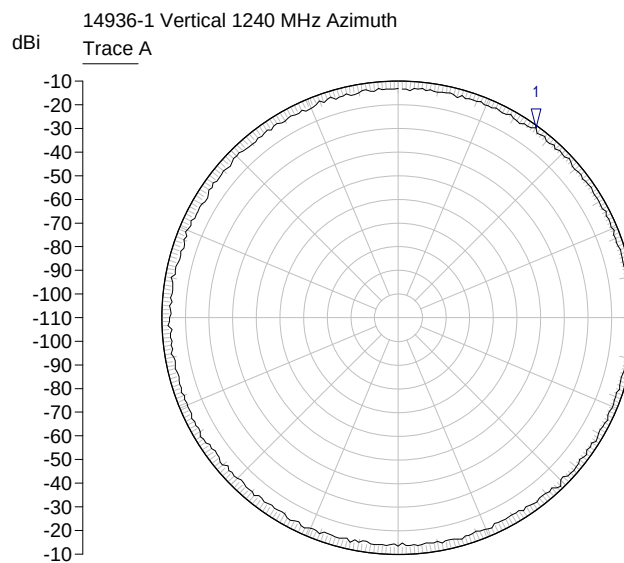
Res BW: 1 MHz Vid BW: 3 MHz Sweep: 60.00 s
12/02/2025 14:31:53 CF: 1.154000 GHz E4440A

Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	121.0000 s	-13.51 dBi	Peak gain (dBi)



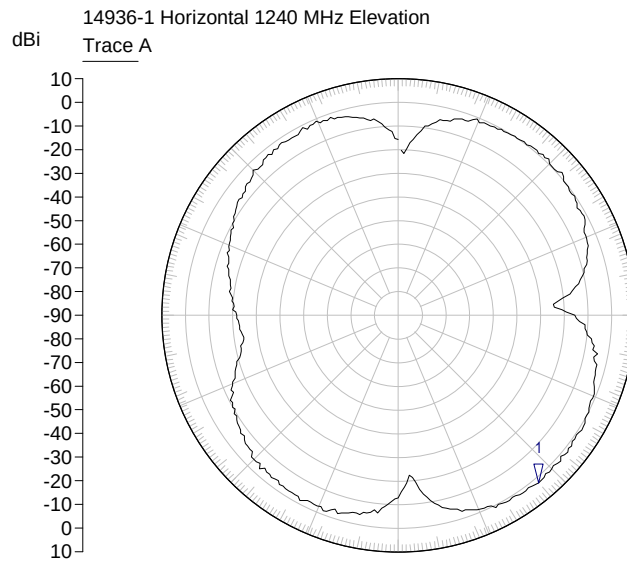
Res BW: 1 MHz Vid BW: 3 MHz Sweep: 60.00 s
12/02/2025 14:52:30 CF: 1.240000 GHz E4440A

Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	304.0000 s	-26.69 dBi	Peak gain (dBi)



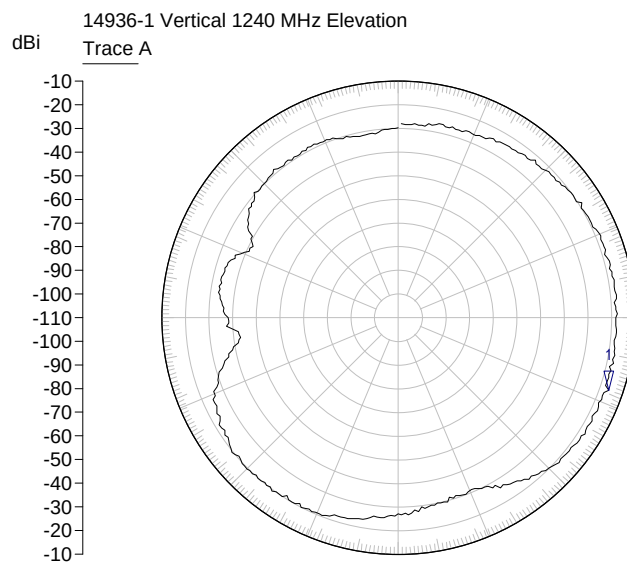
Res BW: 1 MHz Vid BW: 3 MHz Sweep: 60.00 s
12/02/2025 14:50:29 CF: 1.240000 GHz E4440A

Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	36.0000 s	-10.63 dBi	Peak gain (dBi)



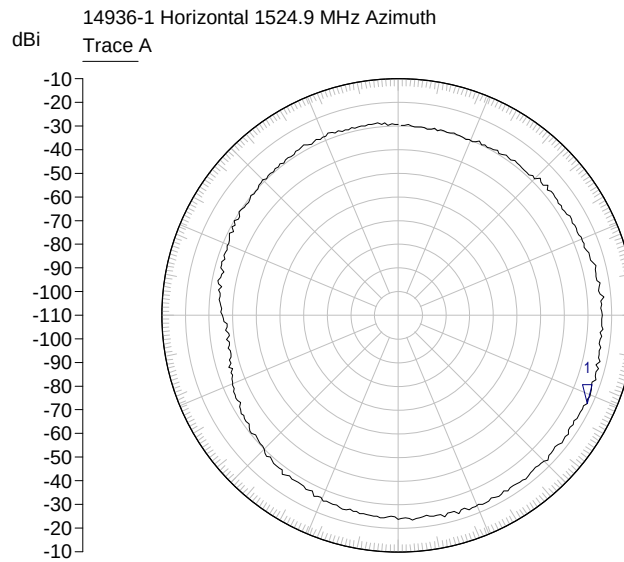
Res BW: 1 MHz Vid BW: 3 MHz Sweep: 60.00 s
12/02/2025 14:44:58 CF: 1.240000 GHz E4440A

Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	140.0000 s	2.54 dBi	Peak gain (dBi)



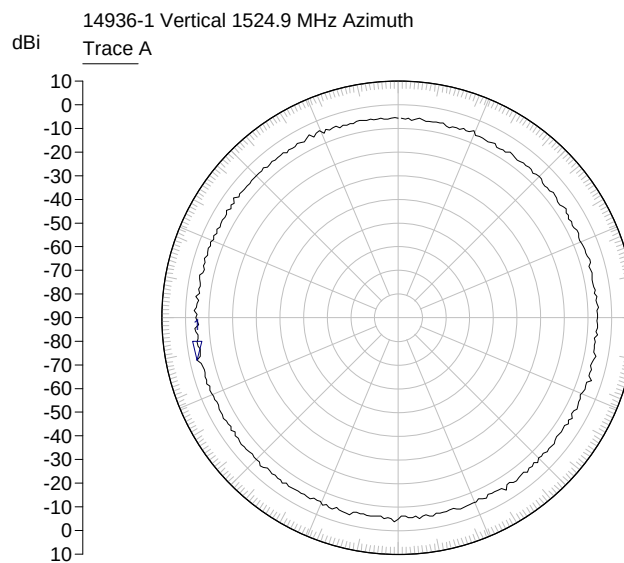
Res BW: 1 MHz Vid BW: 3 MHz Sweep: 60.00 s
12/02/2025 14:47:20 CF: 1.240000 GHz E4440A

Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	109.0000 s	-15.76 dBi	Peak gain (dBi)



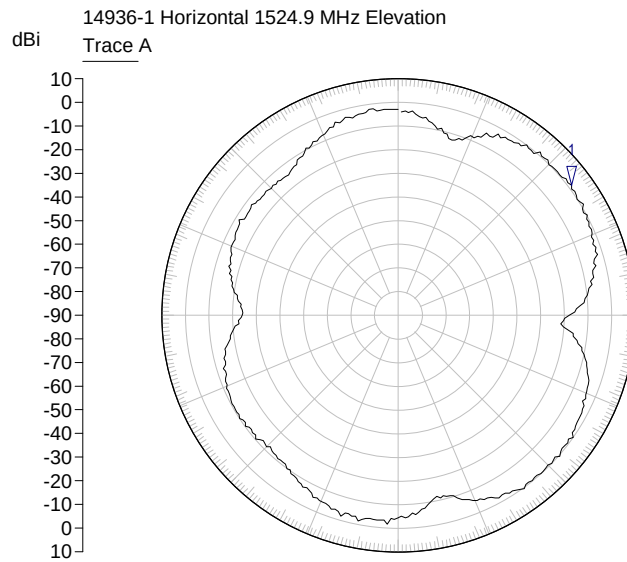
Res BW: 1 MHz Vid BW: 3 MHz Sweep: 60.00 s
12/02/2025 14:58:33 CF: 1.524900 GHz E4440A

Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	115.0000 s	-21.74 dBi	Peak gain (dBi)



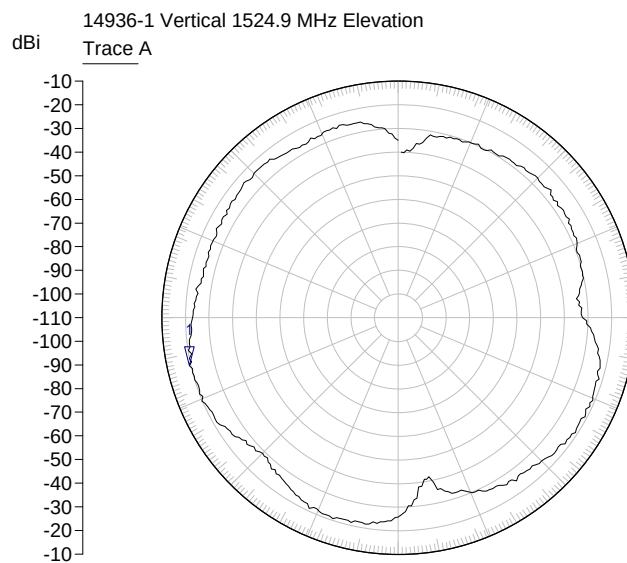
Res BW: 1 MHz Vid BW: 3 MHz Sweep: 60.00 s
12/02/2025 15:03:45 CF: 1.524900 GHz E4440A

Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	258.0000 s	-3.21 dBi	Peak gain (dBi)



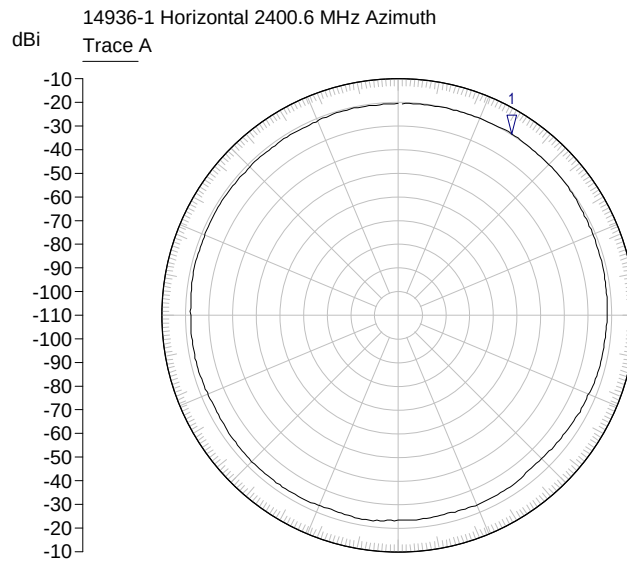
Res BW: 1 MHz Vid BW: 3 MHz Sweep: 60.00 s
12/02/2025 15:07:43 CF: 1.524900 GHz E4440A

Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	53.0000 s	1.64 dBi	Peak gain (dBi)



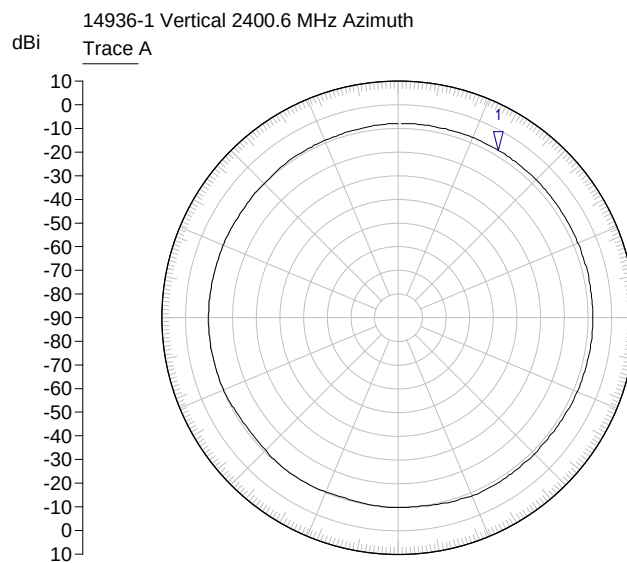
Res BW: 1 MHz Vid BW: 3 MHz Sweep: 60.00 s
12/02/2025 15:05:54 CF: 1.524900 GHz E4440A

Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	257.0000 s	-19.18 dBi	Peak gain (dBi)



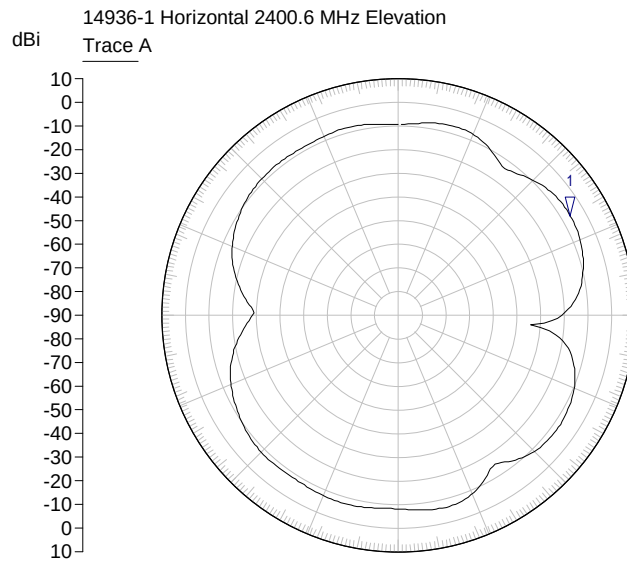
Res BW: 1 MHz Vid BW: 3 MHz Sweep: 60.00 s
12/02/2025 15:19:56 CF: 2.400600 GHz E4440A

Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	32.0000 s	-19.45 dBi	Peak gain (dBi)



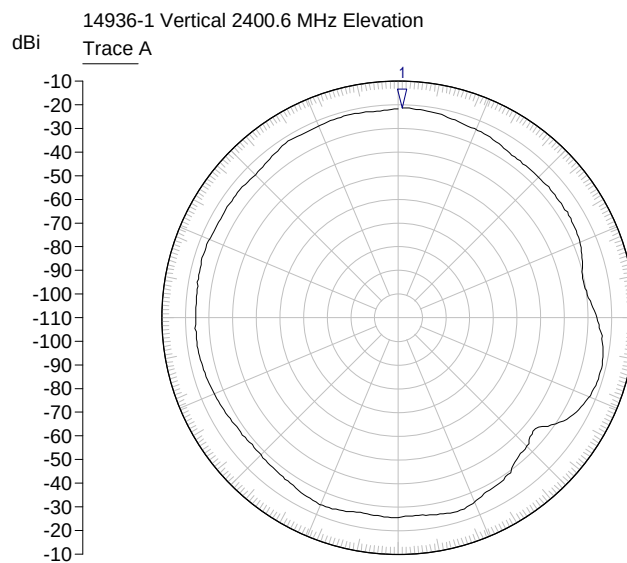
Res BW: 1 MHz Vid BW: 3 MHz Sweep: 60.00 s
12/02/2025 15:17:41 CF: 2.400600 GHz E4440A

Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	31.0000 s	-7.49 dBi	Peak gain (dBi)



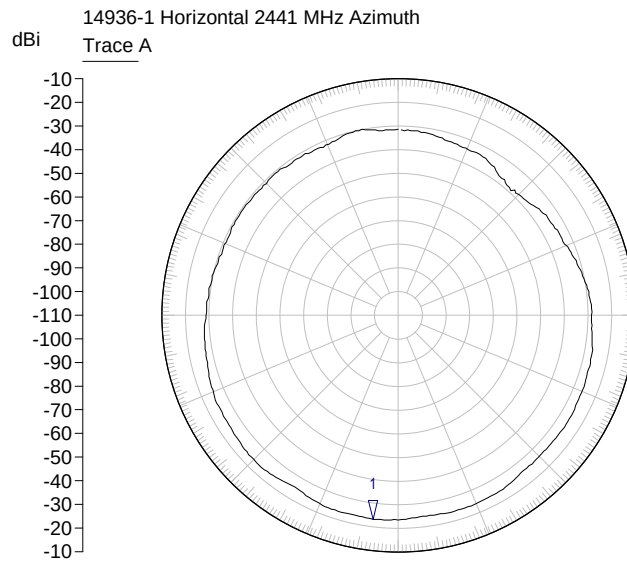
Res BW: 1 MHz Vid BW: 3 MHz Sweep: 60.00 s
12/02/2025 15:12:31 CF: 2.400600 GHz E4440A

Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	60.0000 s	-5.90 dBi	Peak gain (dBi)



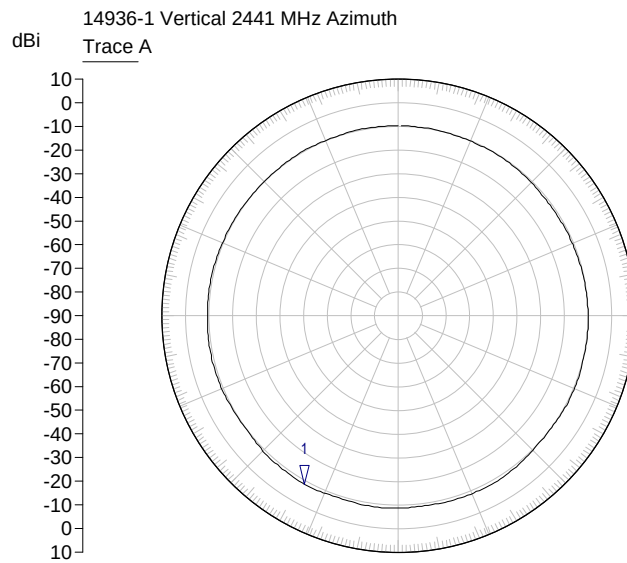
Res BW: 1 MHz Vid BW: 3 MHz Sweep: 60.00 s
12/02/2025 15:14:58 CF: 2.400600 GHz E4440A

Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	1.0000 s	-21.26 dBi	Peak gain (dBi)



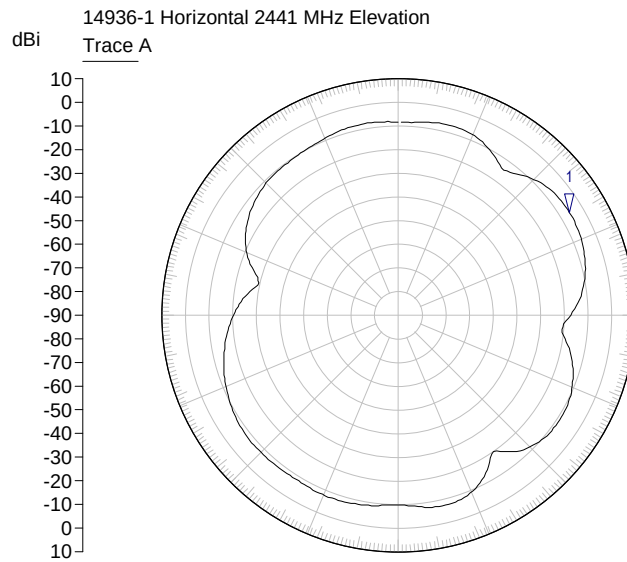
Res BW: 1 MHz Vid BW: 3 MHz Sweep: 60.00 s
12/02/2025 15:46:33 CF: 2.441000 GHz E4440A

Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	187.0000 s	-23.10 dBi	Peak gain (dBi)



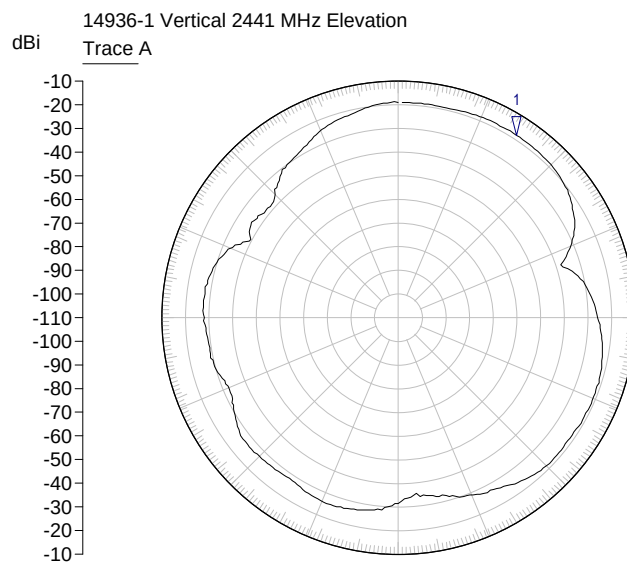
Res BW: 1 MHz Vid BW: 3 MHz Sweep: 60.00 s
12/02/2025 15:44:32 CF: 2.441000 GHz E4440A

Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	209.0000 s	-8.38 dBi	Peak gain (dBi)



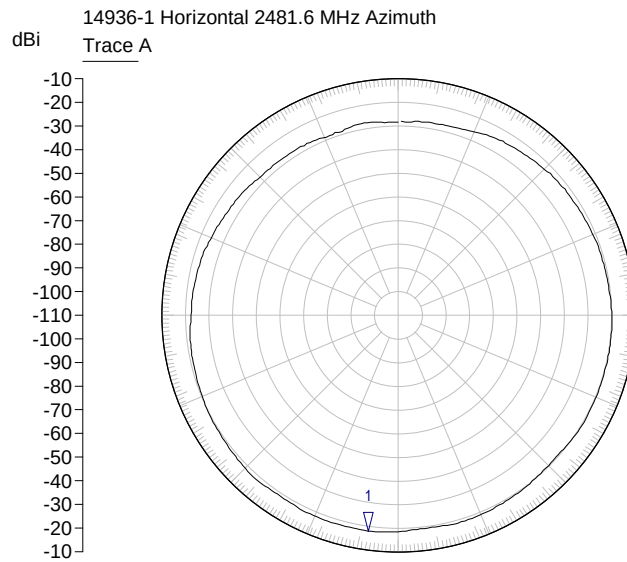
Res BW: 1 MHz Vid BW: 3 MHz Sweep: 60.00 s
12/02/2025 15:40:27 CF: 2.441000 GHz E4440A

Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	59.0000 s	-5.54 dBi	Peak gain (dBi)



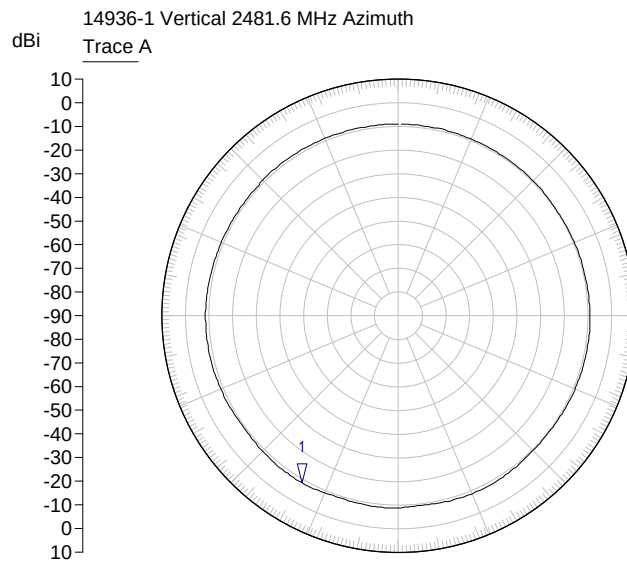
Res BW: 1 MHz Vid BW: 3 MHz Sweep: 60.00 s
12/02/2025 15:42:36 CF: 2.441000 GHz E4440A

Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	33.0000 s	-18.02 dBi	Peak gain (dBi)



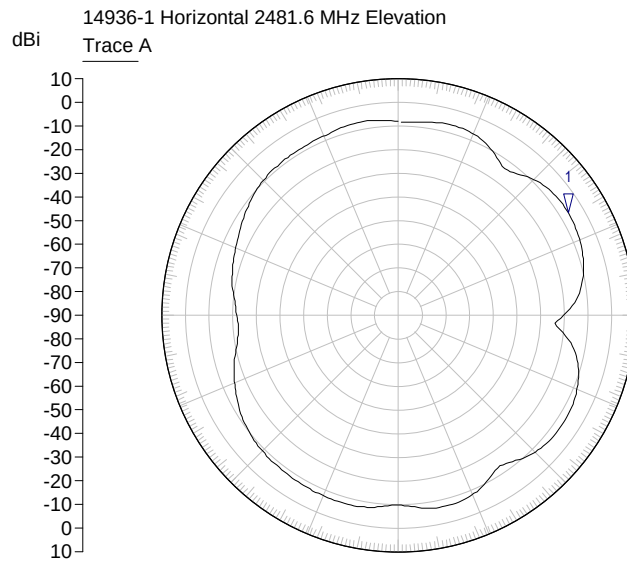
Res BW: 1 MHz Vid BW: 3 MHz Sweep: 60.00 s
12/02/2025 15:56:40 CF: 2.481600 GHz E4440A

Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	188.0000 s	-17.85 dBi	Peak gain (dBi)



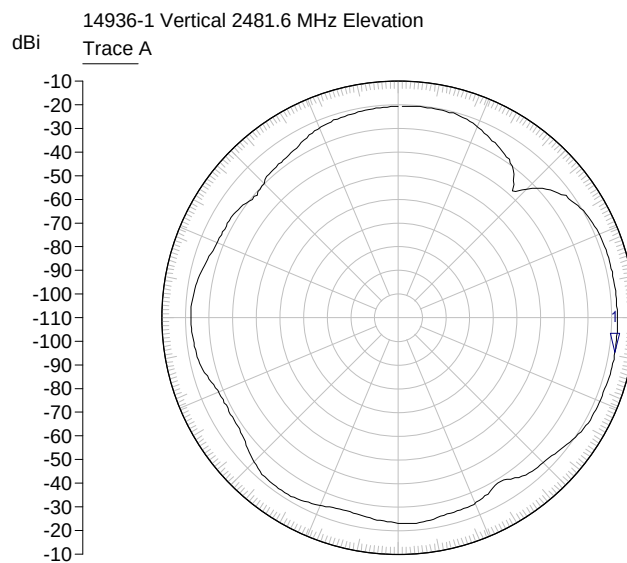
Res BW: 1 MHz Vid BW: 3 MHz Sweep: 60.00 s
12/02/2025 15:54:27 CF: 2.481600 GHz E4440A

Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	210.0000 s	-8.41 dBi	Peak gain (dBi)



Res BW: 1 MHz Vid BW: 3 MHz Sweep: 60.00 s
12/02/2025 15:50:35 CF: 2.481600 GHz E4440A

Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	59.0000 s	-6.04 dBi	Peak gain (dBi)



Res BW: 1 MHz Vid BW: 3 MHz Sweep: 60.00 s
12/02/2025 15:52:35 CF: 2.481600 GHz E4440A

Mkr	Trace	X-Axis	Value	Notes
1 ▽	Trace A	99.0000 s	-17.06 dBi	Peak gain (dBi)