



F2 Labs
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ANTENNA MEASUREMENTS

Manufacturer: Chandler Systems, Inc.
710 Orange Street
Ashland, Ohio 44805 USA

Applicant: Same as Above

Antenna: Chandler Custom PCB Trace Antenna

Testing Commenced: 2025-02-03

Testing Ended: 2025-02-03

Note: Test report reflects antenna measurements to support
FCC ID: SWP-EVB-034-C.

Evaluation Conducted by:

Erik Tobin, EMC Engineer

Report Reviewed by:

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1 ADMINISTRATIVE INFORMATION

1.1 Measurement Location:

F2 Labs in Middlefield, Ohio. Site description and attenuation data are on file with the FCC's Sampling and Measurement Branch at the FCC Laboratory in Columbia, MD.

1.2 Measurement Procedure:

All measurements were performed according to ANSI C63.10 and recommended FCC procedure of measurement.

1.3 Document History

Document Number	Description	Issue Date	Approved By
F2P33844-05E	First Issue	2025-02-05	K. Littell



2 EUT INFORMATION AND DATA

2.1 Equipment Under Test:

Antenna: Chandler Custom PCB Trace Antenna

Monopole, -4.35dBi Gain

Note: The gain was determined using the method stated in ANSI C63.10:

$$P(\text{dBm}) = E(\text{dBuV/m}) + 20\text{LOG}(d) - G - 104.77$$

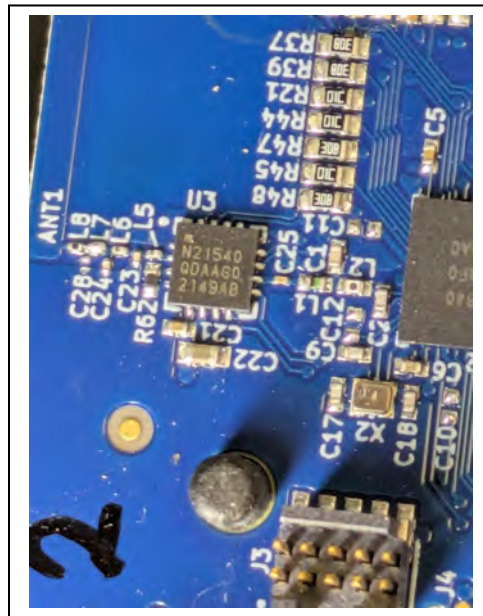
$$\text{Radiated power} - \text{Conducted power} = \text{Gain (dBi)}$$

Highest Radiated Field Strength was 106.5 dBuV/m

20LOG(distance) is 9.5 with a 3-meter distance.

Conducted Power in dBm was 15.65dBm

- $G = E(\text{dBuV/m}) + 20\text{LOG}(3\text{meter distance}) - 104.7 - P(\text{dBm})$
- $G = 106.5\text{dBuV/m Max Field Strength} + 9.5 (20\text{LOG}(3)) - 104.7 - 15.65\text{dBm conducted power} = -4.35\text{dBi}$



2.2 Accessories:

Device	Manufacturer	Model Number	Serial Number
Legacy View Valve FCC ID: SWP-EVB-034	Chandler Systems, Inc.	EVB-034-C	1

**3 LIST OF MEASUREMENT INSTRUMENTATION**

Equipment Type	Asset Number	Manufacturer	Model	Serial Number	Calibration Due Date
Shielded Chamber	CL166-E	Albatross Projects	B83117-DF435-T261	US140023	2025-03-31
Temp/Hum. Recorder	CL232	Extech	445814	01	2025-05-19
Receiver	CL151	Rohde & Schwarz	ESU40	100319	2025-04-09
Horn Antenna	CL098	Emco	3115	9809-5580	2026-01-21
Pre-Amplifier	CL153	Agilent	83006-69007	MY57280115	2025-12-04
Software:	EMC 32, Version 8.53.0		Software Verified: 2025-02-03		



4 MEASUREMENTS

Test Date(s):	2025-02-03	Test Engineer:	E. Tobin
Relative Humidity:	21%	Air Temperature:	33.0°C

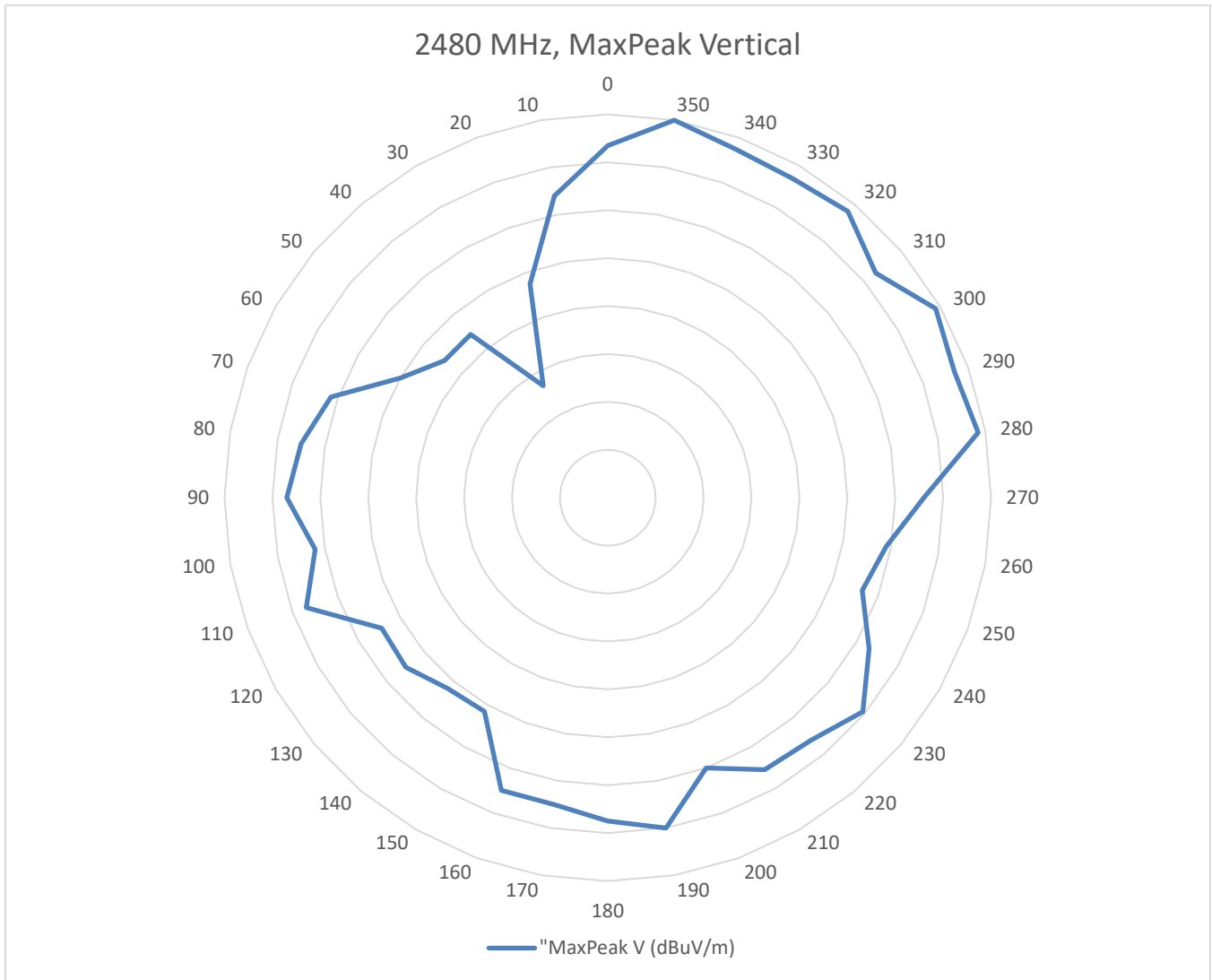
Note: Data presented is 2Mbps modulation, 2480 MHz, determined to be worst case.

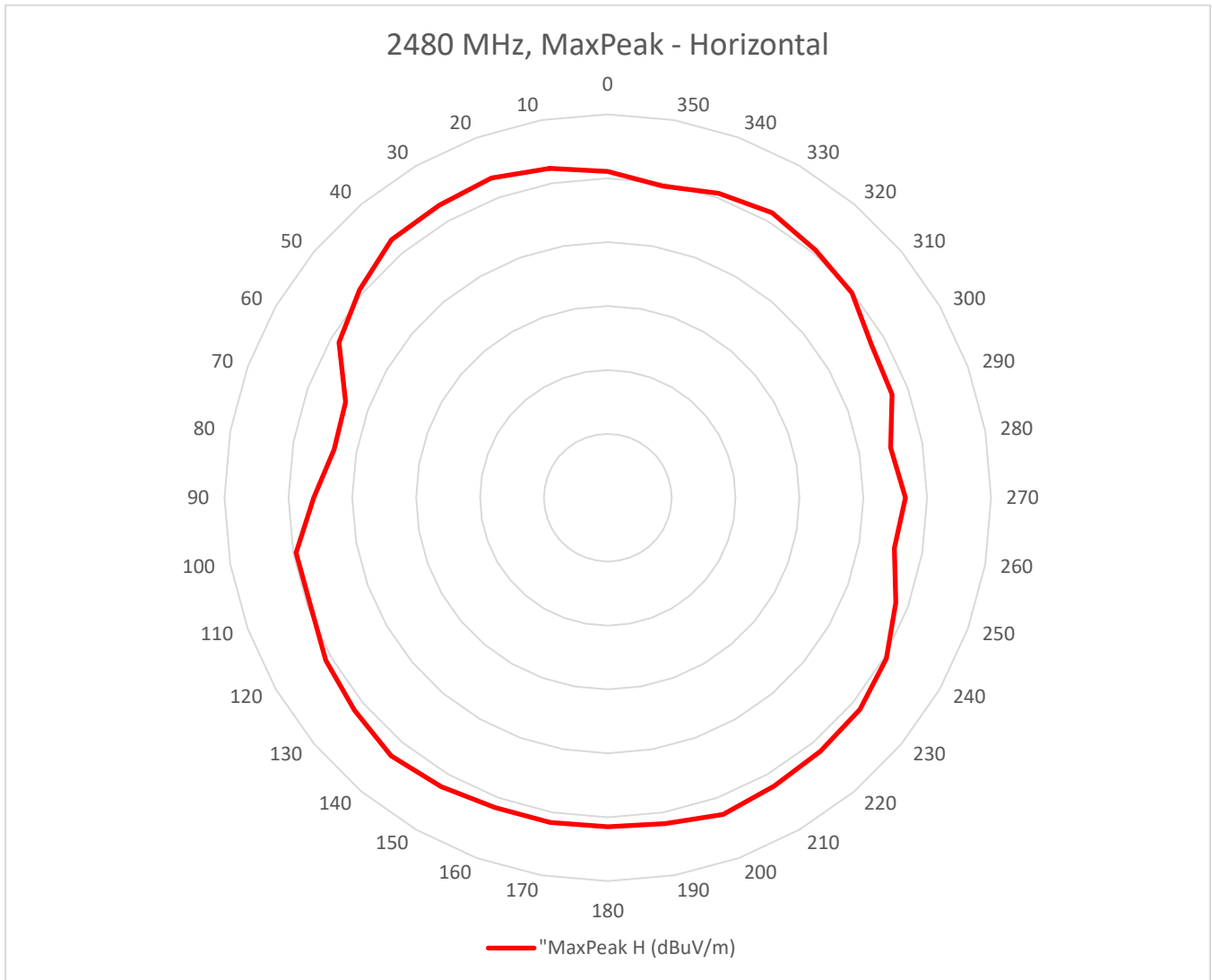
Vertical

Frequency (MHz)	Azimuth (deg)	MaxPeak (dB μ V/m)	Delta
2480.000000	0	102.7	1.3
2480.000000	350	104	0
2480.000000	340	103.5	0.5
2480.000000	330	103.4	0.6
2480.000000	320	103.6	0.4
2480.000000	310	102.6	1.4
2480.000000	300	103.8	0.2
2480.000000	290	103.4	0.6
2480.000000	280	103.7	0.3
2480.000000	270	101.2	2.8
2480.000000	260	99.8	4.2
2480.000000	250	99.3	4.7
2480.000000	240	100.6	3.4
2480.000000	230	101.9	2.1
2480.000000	220	101.2	2.8
2480.000000	210	101.1	2.9
2480.000000	200	100	4
2480.000000	190	102	2
2480.000000	180	101.5	2.5
2480.000000	170	101	3
2480.000000	160	101	3
2480.000000	150	98.3	5.7
2480.000000	140	98.4	5.6
2480.000000	130	99	5
2480.000000	120	98.9	5.1
2480.000000	110	101.4	2.6
2480.000000	100	100.4	3.6
2480.000000	90	101.4	2.6
2480.000000	80	101	3
2480.000000	70	100.3	3.7
2480.000000	60	98	6
2480.000000	50	96.9	7.1
2480.000000	40	96.9	7.1
2480.000000	30	93.4	10.6
2480.000000	20	97.5	6.5
2480.000000	10	100.8	3.2

Horizontal

Frequency (MHz)	Azimuth (deg)	MaxPeak (dB μ V/m)	Delta
2480.000000	0	102.1	4.4
2480.000000	350	99.1	7.4
2480.000000	340	101.4	5.1
2480.000000	330	103.0	3.5
2480.000000	320	101.2	5.3
2480.000000	310	99.8	6.7
2480.000000	300	95.4	11.1
2480.000000	290	94.7	11.8
2480.000000	280	89.9	16.6
2480.000000	270	93.2	13.3
2480.000000	260	91.1	15.4
2480.000000	250	96.0	10.5
2480.000000	240	100.7	5.8
2480.000000	230	103.1	3.4
2480.000000	220	103.6	2.9
2480.000000	210	104.2	2.3
2480.000000	200	105.5	1
2480.000000	190	103.6	2.9
2480.000000	180	103.0	3.5
2480.000000	170	103.2	3.3
2480.000000	160	103.2	3.3
2480.000000	150	104.4	2.1
2480.000000	140	105.5	1
2480.000000	130	103.5	3
2480.000000	120	101.9	4.6
2480.000000	110	99.0	7.5
2480.000000	100	99.1	7.4
2480.000000	90	92.1	14.4
2480.000000	80	87.0	19.5
2480.000000	70	87.4	19.1
2480.000000	60	97.2	9.3
2480.000000	50	101.4	5.1
2480.000000	40	105.4	1.1
2480.000000	30	105.7	0.8
2480.000000	20	106.5	0
2480.000000	10	104.7	1.8







5 EUT SETUP PHOTOGRAPH(S)

Radiated Measurement Test Setup

