TEST REPORT

Report Number: 106081003MPK-001
Project Number: G106081003
Issue Date: March 31, 2025

Testing performed on the
Wireless Charger Transmitter
Model Tested: TR-1000-AC-ST

to

FCC Part 15 Subpart C (15.249)
RSS-210 Issue 10

for
Wibotic, Inc.

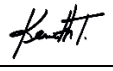
Test Performed by:	**Test Authorized by:**
Intertek Testing Services	WiBotic, Inc.
1365 Adams Court	9706 4th Avenue NE, Suite 403
Menlo Park, CA 94025 USA	Seattle, WA 98115 USA

Prepared by: _____ **Date:** March 31, 2025
Kenneth Tutor

Reviewed by: _____ **Date:** March 31, 2025
Minh Ly

Report No. 106081003MPK-001	
Equipment Under Test:	Wireless Charger Transmitter
Trade Name:	Wibotic
Model Number:	TR-1000-AC-ST
Applicant:	Wibotic, Inc.
Contact:	Patrick Vilbrandt
Address:	Wibotic, Inc. 9706 4th Ave NE, Suite 403. Seattle, WA 98115
Country:	USA
Tel. Number:	(614) 330-7193
Email:	patrick.vilbrandt@wibotic.com
Applicable Regulation:	FCC Part 15 Subpart C (15.249) RSS-210 Issue 10
Date of Test:	February 12, 2025 to February 20, 2025

We attest to the accuracy of this report:



Kenneth Tutor
Project Engineer

Minh Ly
EMC Team Leader

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1.0 Summary of Tests

TEST	REFERENCE FCC Part 15C	REFERENCE IC RSS-210/ RSS-Gen	RESULT
Field Strength of Fundamental	15.249(a)	B.10(a) RSS-210	Complies
Field Strength of Harmonics	15.249(a)	B.10(a) RSS-210	Complies
Radiated Emissions outside the band	15.249(d)	B.10(b) RSS-210	Complies
Occupied Bandwidth	15.215(c)	6.7 RSS-Gen	Complies
Line Conducted Emissions	15.207	8.8 RSS-Gen	Complies
Antenna requirement	15.203	6.8 RSS-Gen	Complies (Unique Coupling)

EUT receive date: February 12, 2025
EUT receive condition: The EUT was received in good condition with no apparent damage. As declared by the Applicant it is identical to the production units.
Test start date: February 12, 2025
Test completion date: February 20, 2025

2.0 General Description

2.1 Product Description

Wibotic, Inc. supplied the following description of the EUT:

The TR1000-AC-ST is a Wireless Charger Transmitter with maximum charging power of 1000W.

For more information, refer to the following product specifications, declared by the manufacturer.

Overview of the EUT	
Applicant name & address:	Wibotic, Inc. 9706 4th Ave NE, Suite 403. Seattle, WA 98115 USA
Contact info / Email:	Patrick Vilbrandt / patrick.vilbrandt@wibotic.com
Model:	TR-1000-AC-ST
Field Strength	91.3 dB(μV/m)
Antenna(s) & Gain	External Antenna, -0.2 dB gain
Frequency Range:	2433.0 – 2481.65 MHz
Type of modulation/data rate:	GFSK / 250kbps

Variant Models:

The following variant models were not tested as part of this evaluation but have been identified by the manufacturer as being electrically identical models, and only different in firmware. Intertek does not make any claims of compliance for samples or variants which were not tested.

None.

2.2 Related Submittal(s) Grants

None

3.0 System Test Configuration

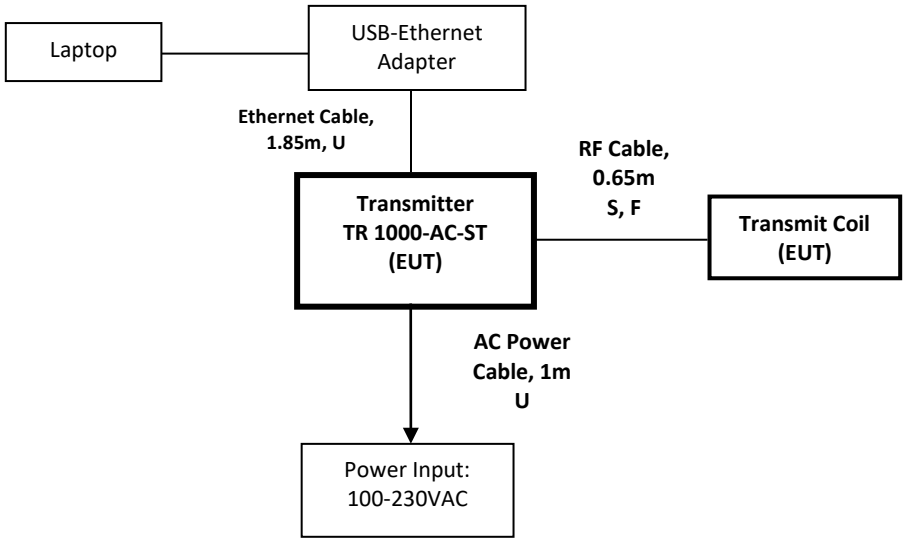
3.1 Equipment and description

Equipment Under Test			
Type	**Model #**	**Quantity**	**S/N**
Transmitter Unit	TR-1000-AC-ST	1	2410300018
Transmit Coil	TC-200-1000-SL	1	130-000067

Support Equipment			
Type	**Manufacture**	**Quantity**	**P/N**
Laptop	Lenovo	1	PF-4M8TX5

3.2 Block Diagram of Test Setup

The diagram shown below details the interconnection of the EUT and support equipment. For specific layout, refer to the test configuration photograph in the relevant section of this report.



S = Shielded	**F** = With Ferrite
U = Unshielded	**m** = Length in Meters

3.3 Justification

For radiated emission measurements the EUT is placed on a non-conductive table. This report covers the 2.4GHz radio only.

3.4 Software Exercise Program

EUT was programmed to continuously transmit.

3.5 Mode of Operation during test

The EUT was configured to continuously transmit at low/mid/high channel.

During transmitter testing, the transmitter was setup to transmit continuously using the maximum RF power setting.

Per manufacture, the power setting of 15 was used as maximum power.

3.6 Modifications required for Compliance

The following ferrites were added to bring the EUT into compliance:
Two ferrites (Manufacture: Fair-Rite Products Corp, P/N: 0431164181) was installed on Transmit Coil Cable.

3.7 Additions, deviations and exclusions from standards

No additions, deviations or exclusion have been made from standard.

4.0 Test Environment for Emissions Testing

4.1 Test Facility

The test facility is located at 1365 Adams Court, Menlo Park, California. The test site is a 10-meter semi-anechoic chamber. The site meets the characteristics of CISPR 16-1 and ANSI C63.4: 2014. For measurements, a remotely controlled flush-mount metal-top turntable is used to rotate the EUT a full 360 degrees. A remote-controlled non-conductive antenna mast is used to scan the antenna height from one to four meters.

The A2LA certificate number for this site is 1755-01.

4.2 Test Methodology

Radiated tests were performed at an antenna to EUT distance of 10 meters, unless stated otherwise in this test report. All other measurements were made in accordance with the procedures in part 2 of CFR 47, ANSI C63.10: 2013 & RSS-GEN Issue 5.

4.3 Test Equipment

Table 4-1 contains a list of the test equipment used during the testing.

Table 4-1 List of Test Equipment

Equipment	Manufacturer	Model/Type	Asset No.	Calibration	Cal Due
Passive Loop Antenna	ETS Lindgren	6512	ITS 01573	12	12/02/2025
EMI Receiver	Rohde & Schwarz	ESU	ITS 00961	12	04/26/2025
BI-Log Antenna	Teseq	CBL6111D	ITS 01058	12	12/05/2025
Pre-amplifier	Sonoma	310N	ITS 02025	12	01/20/2026
Horn Antenna	ETS Lindgren	3117PA	ITS 01325	12	12/09/2025
18-40GHz Preamp	uComp Nordic	MCNA-50	ITS 01799	12	03/20/2025
Pyramidal Horn	EMCO	3160-09	ITS 00571	#	#
LISN	Teseq	NNB 51	000666	12	05/25/2025

Software Utilized:

Name	Manufacturer	Version
BAT-EMC	NEXIO	3.20.0.23

4.5 Measurement Uncertainty

Compliance with the limits was based on the results of the measurements and doesn't take into account the measurement uncertainty.

Estimated Measurement Uncertainty

Measurement	Expanded Uncertainty (k=2)		
	0.15 MHz – 1 GHz	1 GHz – 2.5 GHz	> 2.5 GHz
RF Power and Power Density – antenna conducted	-	0.7 dB	-
Unwanted emissions - antenna conducted	1.1 dB	1.3 dB	1.9 dB
Bandwidth – antenna conducted	-	30 Hz	-

Measurement	Expanded Uncertainty (k=2)			
	0.15 MHz – 30MHz	30 – 200 MHz	200 MHz – 1 GHz	1 GHz – 18 GHz
Radiated emissions	-	4.7	4.6	5.1 dB
AC mains conducted emissions	2.1 dB	-	-	-

5.0 Measurement Results

5.1 Field Strength of Fundamental and Radiated Emissions Outside the band

5.1.1 Requirements

§15.249(a) The Field Strength of emissions at a distance of 3 meters shall not exceed the following levels:
94 dB(μV/m) for fundamental frequency,
54 dB(μV/m) for harmonics.
Emissions radiated outside of the specified frequency band, except for harmonics, shall be attenuated by at least 50 dB below the level of fundamental or to the general radiated emission limits in 15.209, whichever is the lesser attenuation.

§15.209 Radiated emission limits; general requirements.

Frequency (MHz)	Field strength (microvolts/meter)	Measurement distance (meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

5.1.2 Procedure
Radiated emission measurements were performed from 9 kHz to 25 GHz according to the procedure described in ANSI C63.10: 2013. Spectrum Analyzer Resolution Bandwidth is 200Hz or greater for frequencies 9kHz to 30MHz, 100 kHz or greater for frequencies 30 MHz to 1000 MHz, 1 MHz for frequencies above 1000 MHz. Above 1000 MHz Peak and Average measurements were performed.

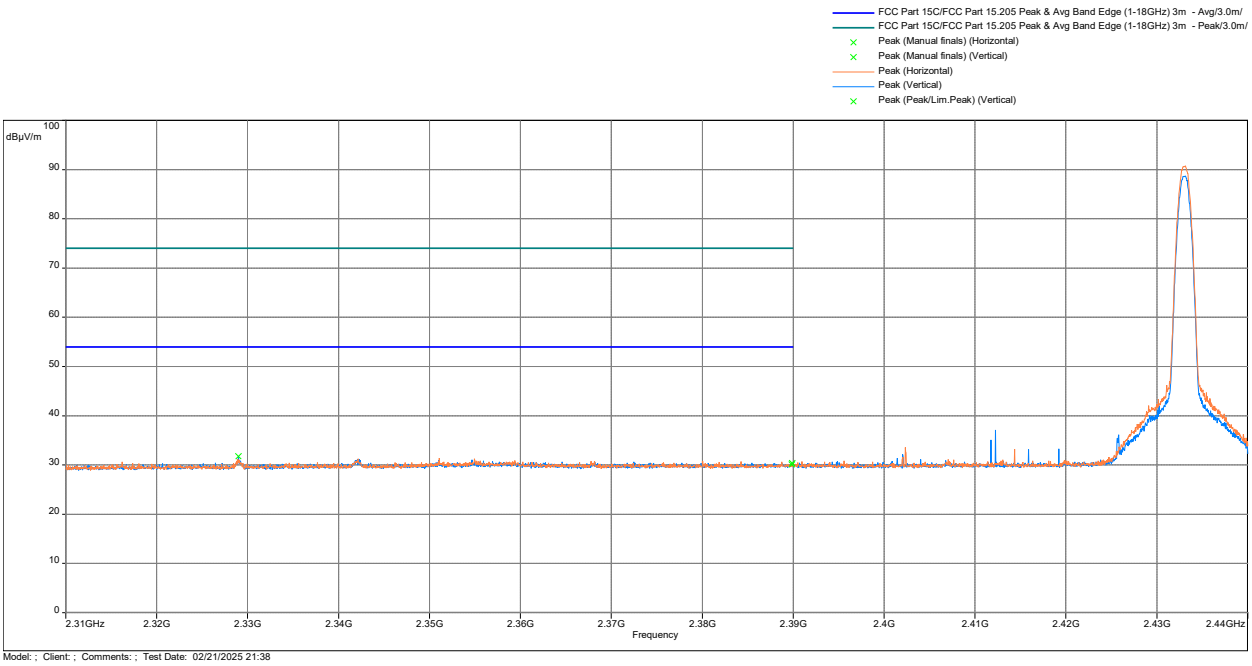
The EUT is placed on a plastic turntable that is 80 cm in height for below 1000MHz and 1.5m in height for above 1GHz. If the EUT attaches to peripherals, they are connected and operational (as typical as possible). During testing, all cables were manipulated to produce worst-case emissions. The signal is maximized through rotation. The antenna height and polarization are varied during the search for maximum signal level. The antenna height is varied from 1 to 4 meters. Radiated emissions are taken at 3 meters for frequencies above 1 GHz and at 10 meters for frequencies below 1 GHz.

Measurements made from 1 GHz to 18GHz had a 2.4-2.5GHz notch filter in place. A preamp was used from 30MHz to 26GHz. All measurements were made with a Peak Detector and compared to QP limits for 30MHz – 1GHz and Average limits for 1GHz – 26GHz.

Radiated measurements were performed on both horizontal and vertical orientation of the EUT. Data is presented with the worst-case configuration (the configuration which resulted in the highest emission levels).
Correlation measurements were performed below 30MHz between 10m ALSE and Open Field site according to FCC KDB 414788 D01 Radiated Test Site v01r01 section 2. All readings were within the acceptable tolerance.

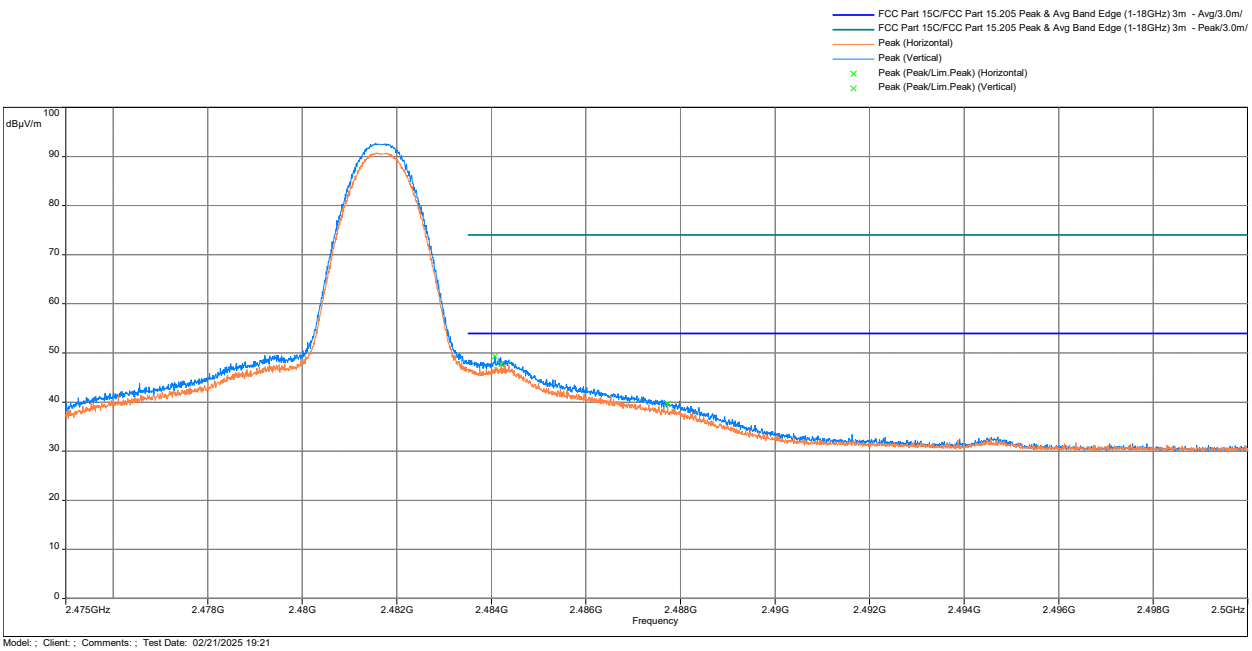
5.1.3 Test Result

Field strength of fundamental – Low Channel Tx
Out-of-Band Spurious Emissions at the Band Edge
Peak vs Peak & Average Limit



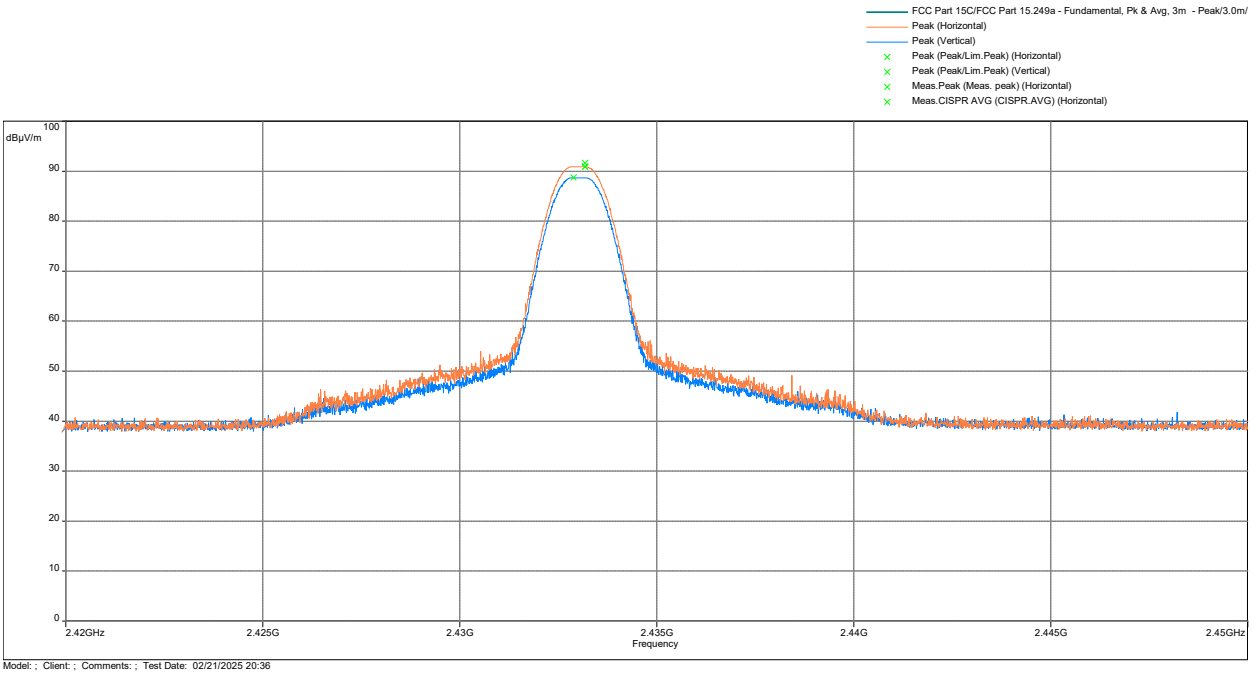
Frequency (MHz)	Peak (dBµV/m)	Ave Limit (dBµV/m)	Margin (dB)	Angle (°)	Height (m)	Polarity	Raw (dBuV)	Correction (dB)
2390.0	30.05	54.0	-23.95	146.5	1.5	Vertical	40.64	-10.59
2390.0	30.37	54.0	-23.63	100.0	3.5	Horizontal	40.96	-10.59

Field strength of fundamental – High Channel Tx
Out-of-Band Spurious Emissions at the Band Edge
Peak vs Peak & Average Limit



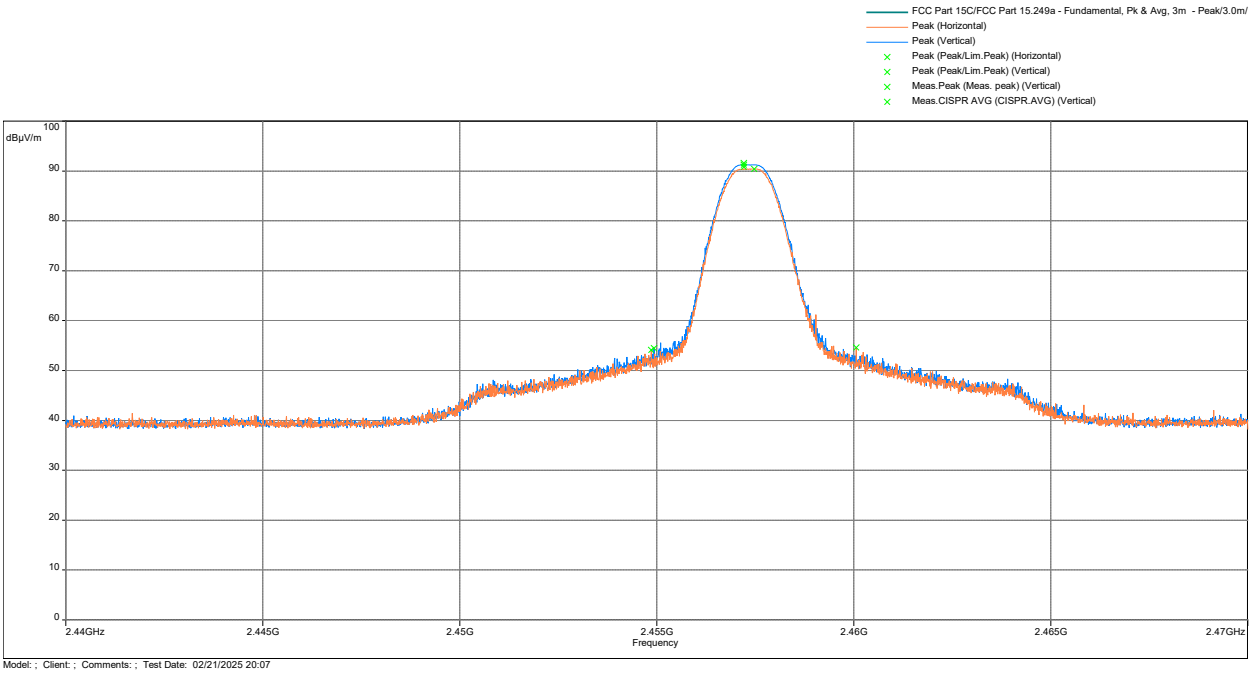
Frequency (MHz)	Peak (dBµV/m)	Ave Limit (dBµV/m)	Margin (dB)	Angle (°)	Height (m)	Polarity	Raw (dBuV)	Correction (dB)
2484.1	49.34	54.0	-4.66	148.5	2.5	Vertical	59.43	-10.09
2483.5	47.74	54.0	-6.26	87.8	1.5	Vertical	57.83	-10.09

Field strength of fundamental – Low Channel Tx



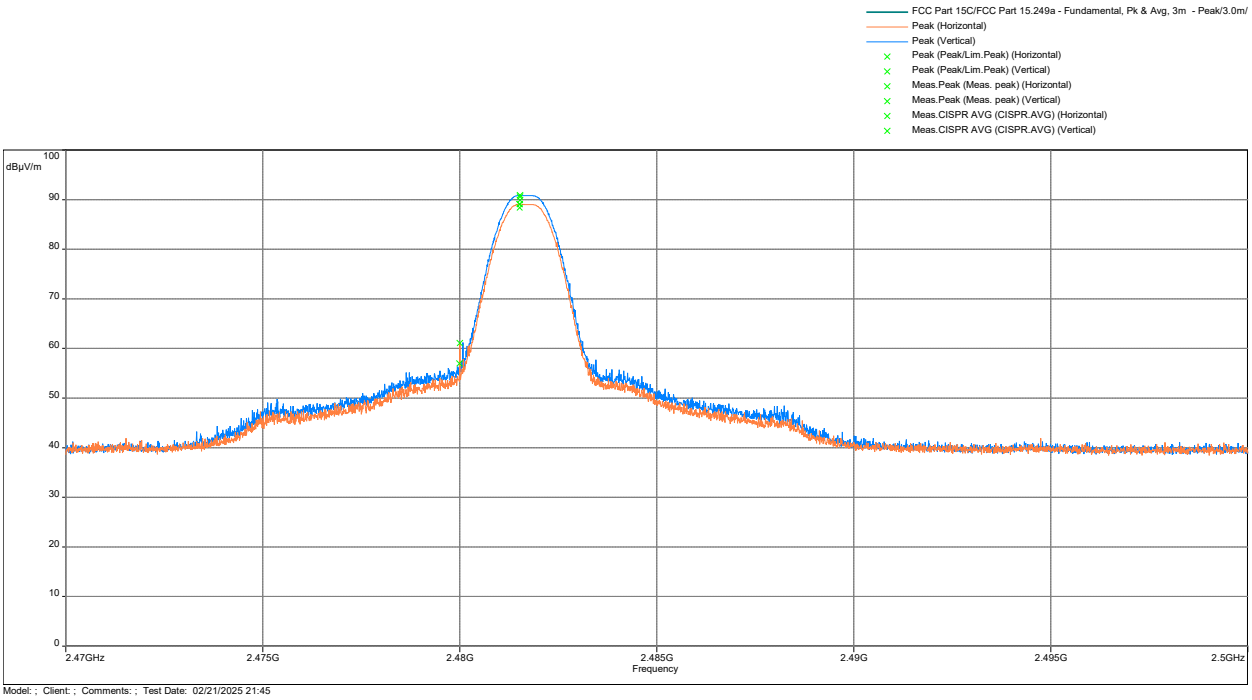
Model: ; Client: ; Comments: ; Test Date: 02/21/2025 20:36

Field strength of fundamental – Mid Channel Tx



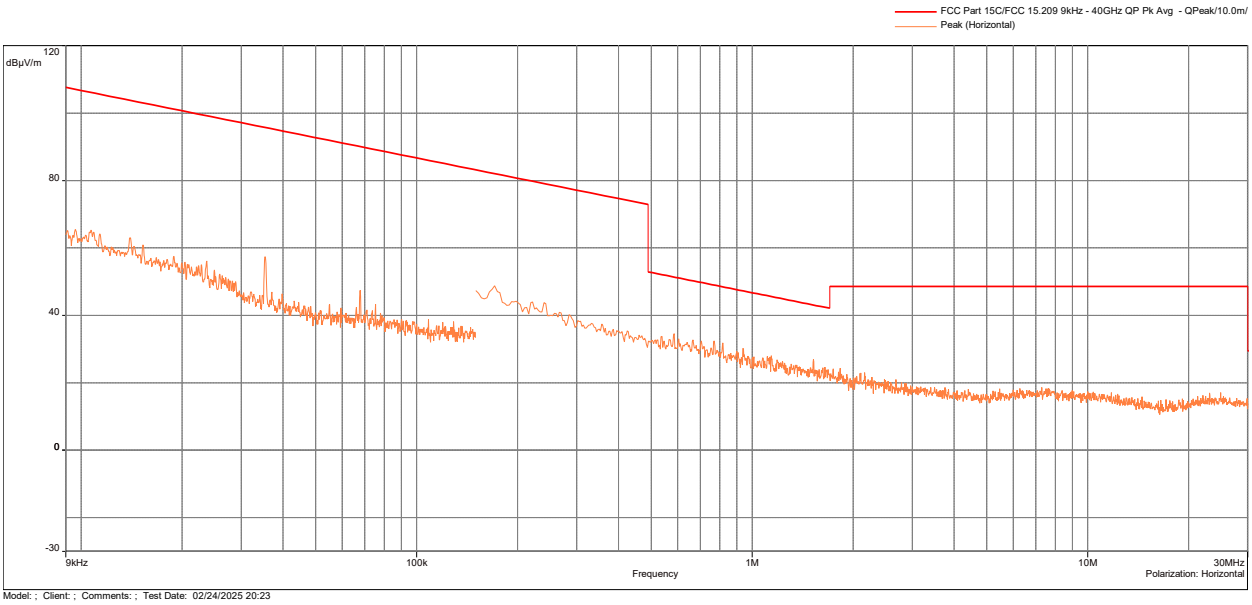
Model: ; Client: ; Comments: ; Test Date: 02/21/2025 20:07

Field strength of fundamental – High Channel Tx

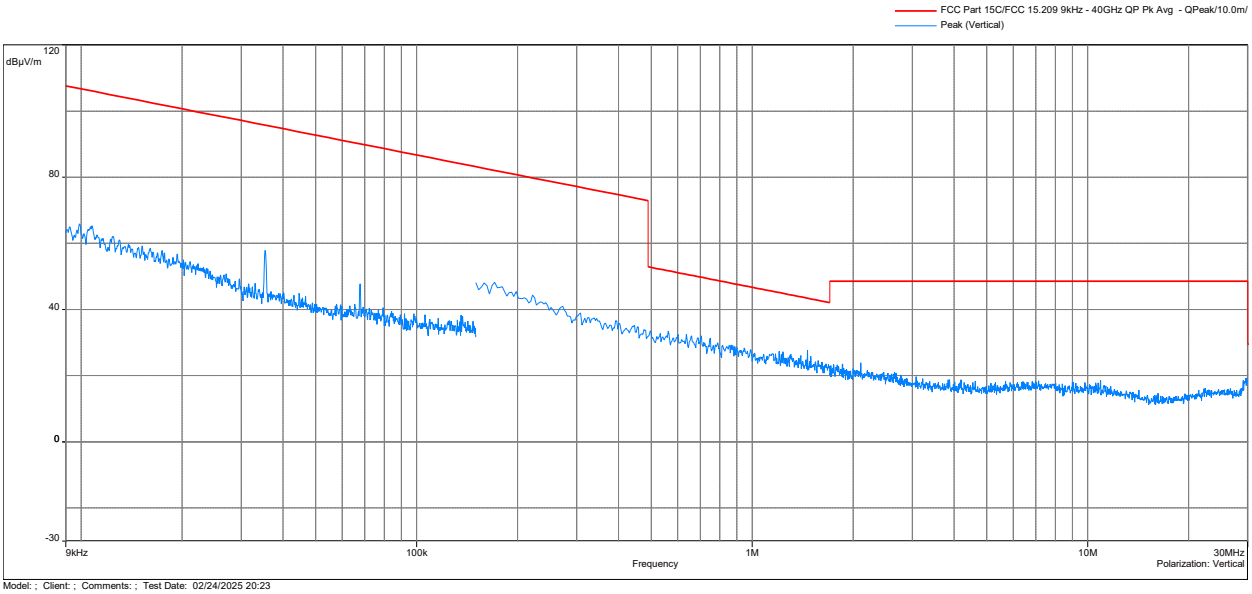


Test Data Summary – Radiated Field Strength Measurement				
Frequency (MHz)	**Fundamental Field Strength dB(µV/m)**	**Limit dB(µV/m)**	**Margin (dB)**	**Results**
2433.00	91.3	94.0	-2.7	Pass
2457.32	90.8	94.0	-3.2	Pass
2481.65	90.9	94.0	-3.1	Pass

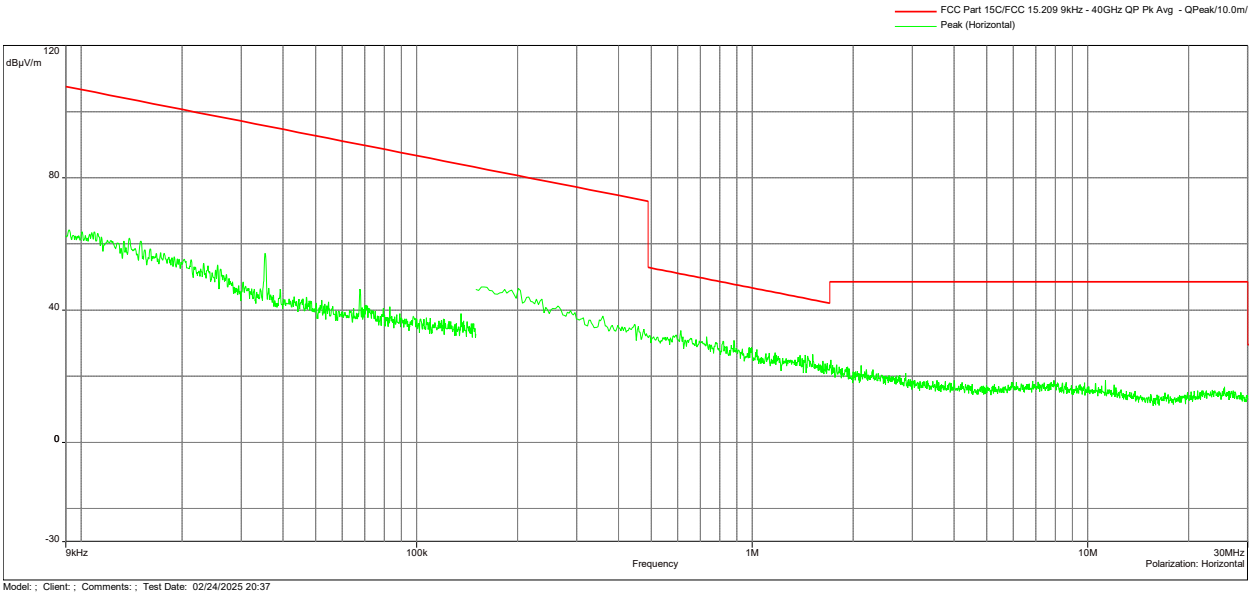
15.209 Radiated Spurious Emissions from 9 kHz to 30MHz, Parallel Antenna / X-Axis
Low Channel Tx



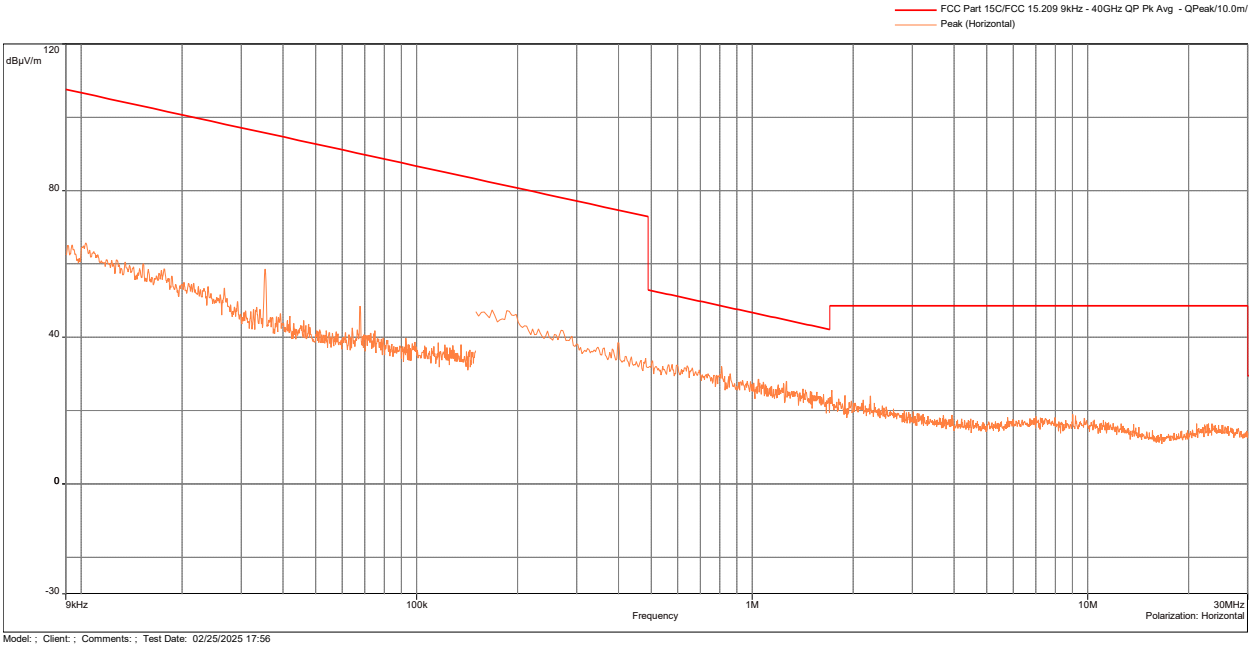
15.209 Radiated Spurious Emissions from 9 kHz to 30MHz, Perpendicular Antenna / Y-Axis
Low Channel Tx



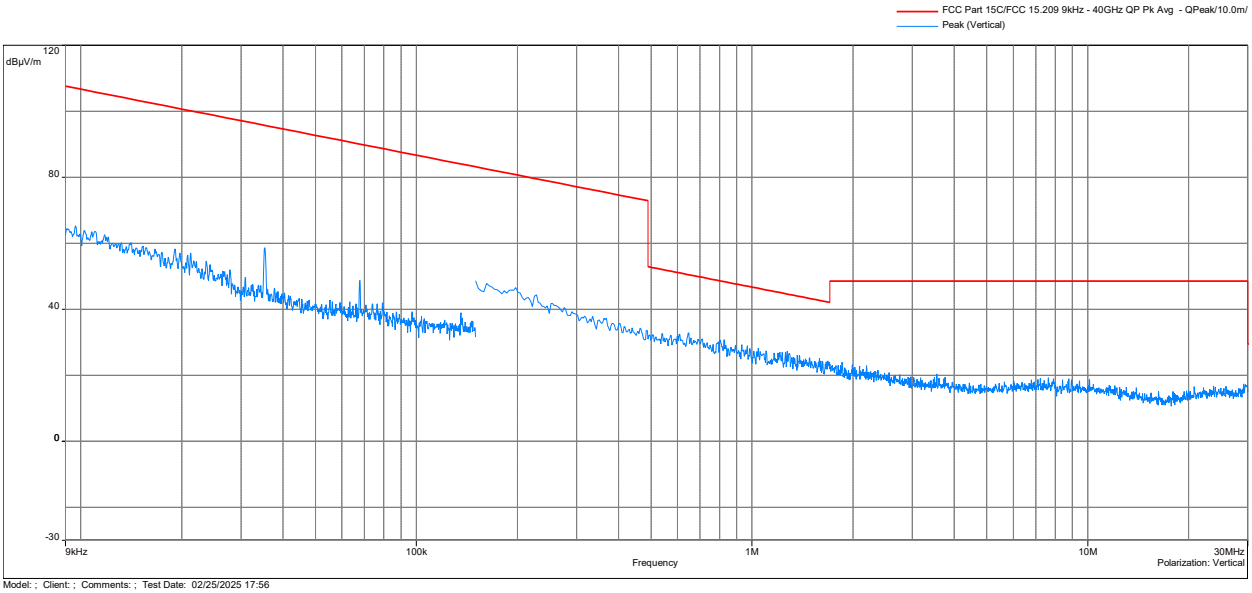
15.209 Radiated Spurious Emissions from 9 kHz to 30MHz, Horizontal Antenna / Z-Axis
Low Channel Tx



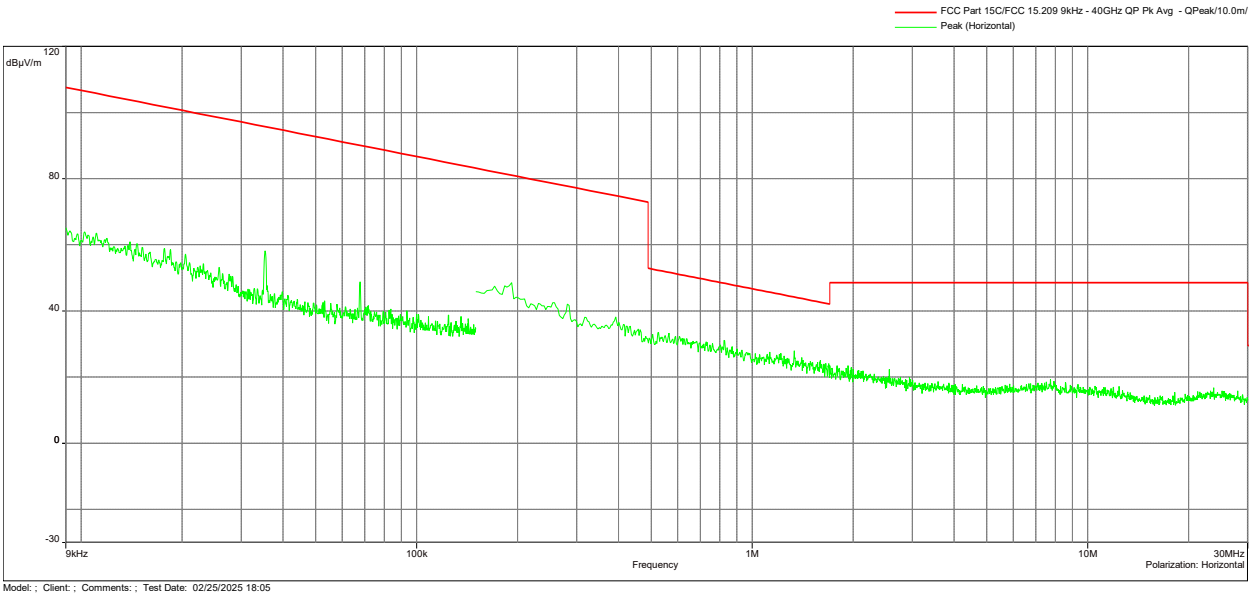
15.209 Radiated Spurious Emissions from 9 kHz to 30MHz, Parallel Antenna / X-Axis
Mid Channel Tx



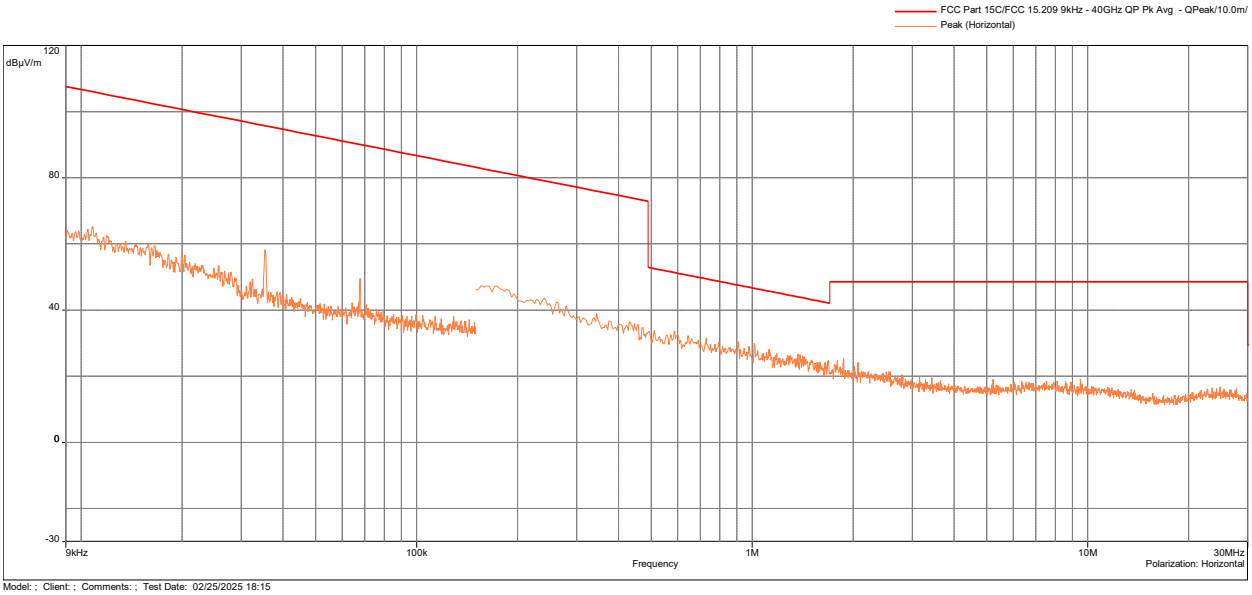
15.209 Radiated Spurious Emissions from 9 kHz to 30MHz, Perpendicular Antenna / Y-Axis
Mid Channel Tx



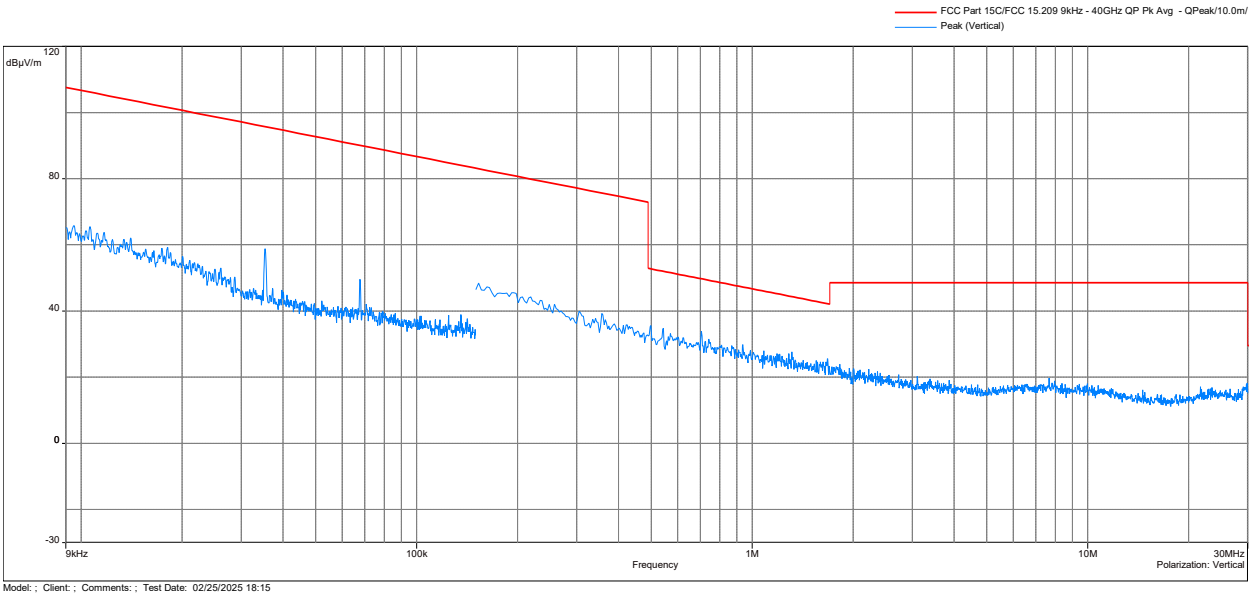
15.209 Radiated Spurious Emissions from 9 kHz to 30MHz, Horizontal Antenna / Z-Axis
Mid Channel Tx



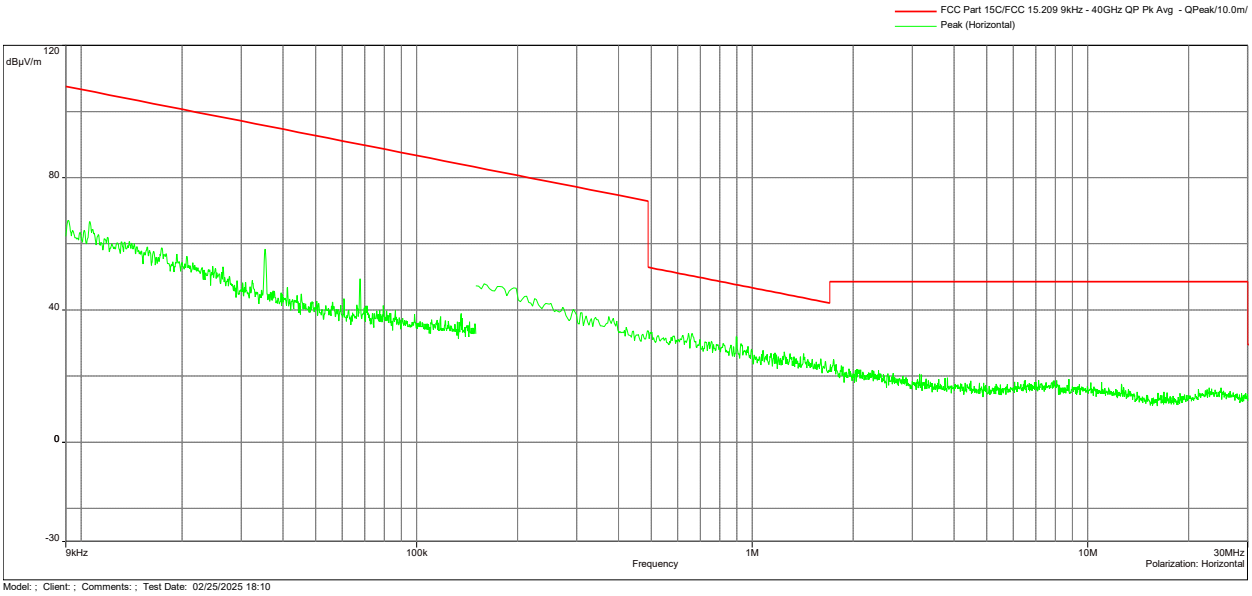
15.209 Radiated Spurious Emissions from 9 kHz to 30MHz, Parallel Antenna / X-Axis
High Channel Tx



15.209 Radiated Spurious Emissions from 9 kHz to 30MHz, Perpendicular Antenna / Y-Axis
High Channel Tx



15.209 Radiated Spurious Emissions from 9 kHz to 30MHz, Horizontal Antenna / Z-Axis
High Channel Tx



15.209 Radiated Spurious Emissions from 30 MHz to 1000 MHz
Low Channel Tx

Frequency (MHz)	FS@10m (dBµV/m)	Limit@10m (dB(uV/m))	Margin (dB)	Azimuth (deg)	Height (m)	Polarity	RA (dBuV)	Correction (dB)
33.298	25.45	29.5	-4.05	205.0	1.0	Vertical	35.79	-10.34
31.908	25.27	29.5	-4.23	122.5	1.0	Vertical	35.01	-9.74
37.792	24.91	29.5	-4.59	113.3	1.0	Vertical	37.38	-12.47
50.241	24.55	29.5	-4.95	173.8	4.0	Vertical	43.30	-18.75
118.723	27.89	33.0	-5.11	136.8	4.0	Horizontal	43.16	-15.27
750.031	29.83	35.5	-5.67	108.5	2.0	Vertical	32.09	-2.26

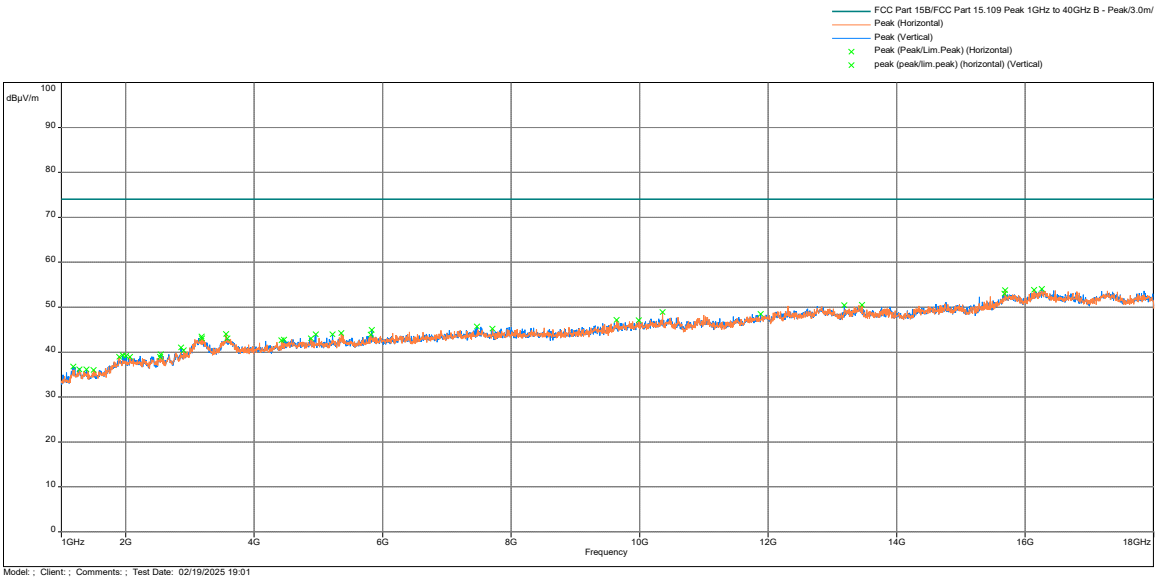
15.209 Radiated Spurious Emissions from 30 MHz to 1000 MHz
Mid Channel Tx

Frequency (MHz)	FS@10m (dBµV/m)	Limit@10m (dB(uV/m))	Margin (dB)	Azimuth (deg)	Height (m)	Polarity	RA (dBuV)	Correction (dB)
32.313	28.54	29.5	-0.96	134.0	3.3	Vertical	38.30	-9.92
50.047	26.73	29.5	-2.77	151.3	1.0	Vertical	45.40	-18.67
40.444	25.6	29.5	-3.90	81.0	1.0	Vertical	39.47	-13.87
750.031	30.07	35.5	-5.43	99.8	2.0	Vertical	32.33	-2.26
48.139	23.93	29.5	-5.57	160.0	1.0	Vertical	41.76	-17.83
37.866	22.15	29.5	-7.35	157.0	3.5	Vertical	34.71	-12.51

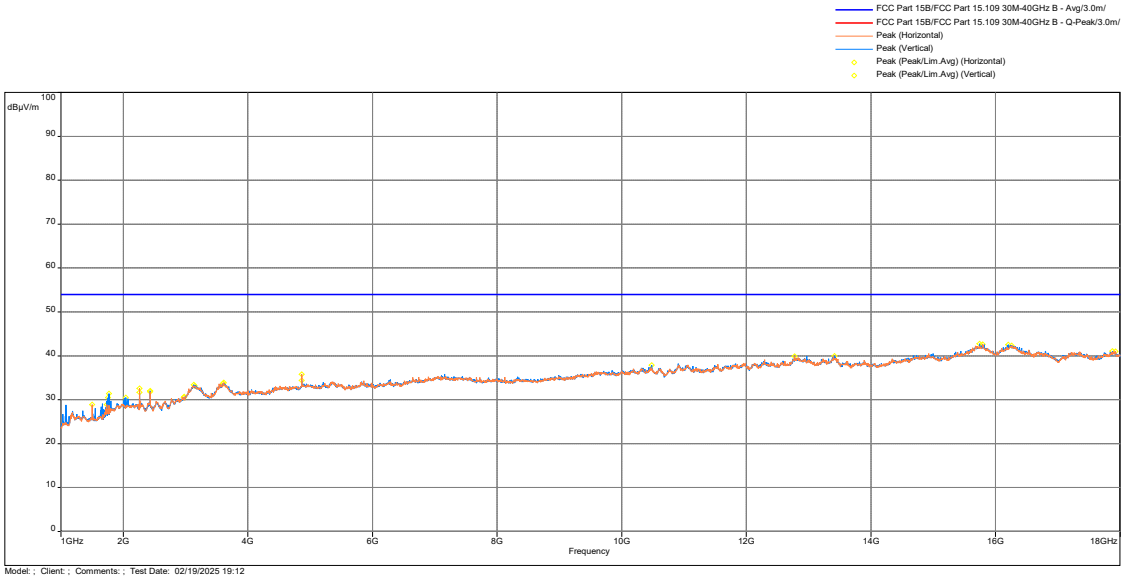
15.209 Radiated Spurious Emissions from 30 MHz to 1000 MHz
High Channel Tx

Frequency (MHz)	FS@10m (dBµV/m)	Limit@10m (dB(uV/m))	Margin (dB)	Azimuth (deg)	Height (m)	Polarity	RA (dBuV)	Correction (dB)
33.524	25.21	29.5	-4.29	140.8	1.0	Vertical	35.65	-10.44
37.728	24.91	29.5	-4.59	111.3	1.0	Vertical	37.34	-12.43
119.919	28.15	33.0	-4.85	138.8	4.0	Horizontal	43.35	-15.20
50.435	24.45	29.5	-5.05	119.5	4.0	Vertical	43.28	-18.83
750.031	29.56	35.5	-5.94	100.3	2.0	Vertical	31.82	-2.26
99.969	17.57	33.0	-15.43	148.3	4.0	Horizontal	34.48	-16.91

15.209 Radiated Spurious Emissions from 1GHz to 18GHz - Peak
Low Channel Tx

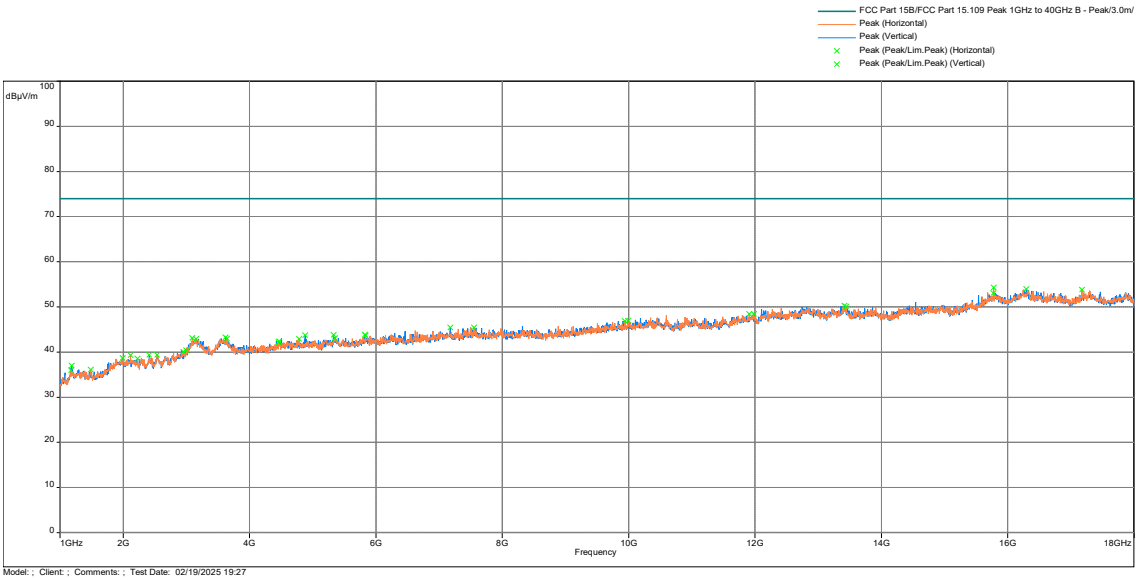


15.209 Radiated Spurious Emissions from 1GHz to 18GHz - Average
Low Channel Tx

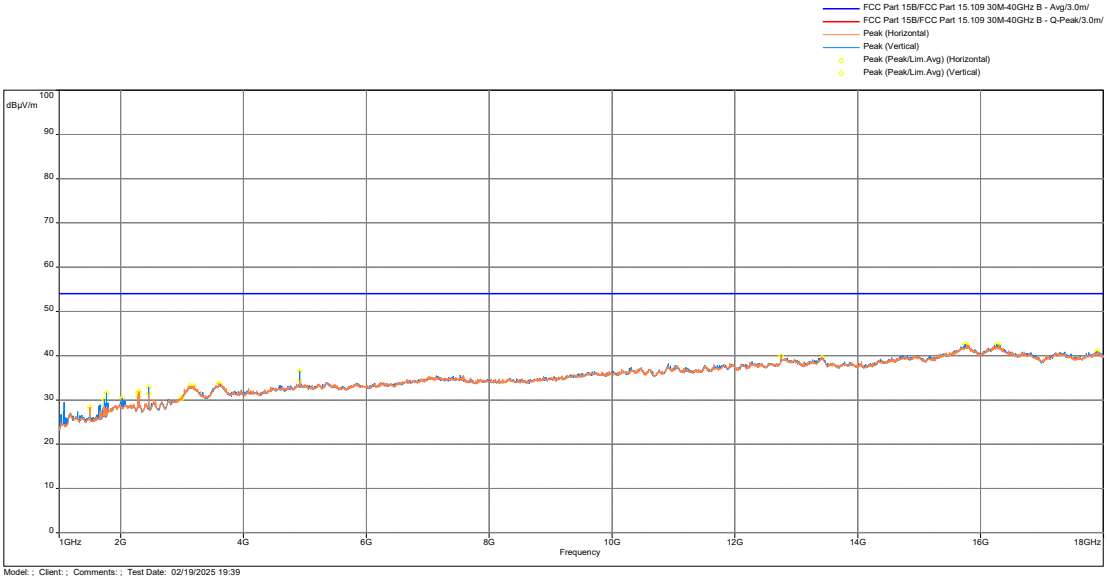


Frequency (MHz)	Ave@3m (dBµV/m)	Limit Ave@3m (dBµV/m)	Margin (dB)	Height (m)	Angle (°)	Polarity	Correction (dB)
15742.400	42.75	54.0	-11.25	1.5	59.3	Vertical	8.73
15790.000	42.61	54.0	-11.39	2.5	233.5	Horizontal	9.05
16203.667	42.54	54.0	-11.46	2.5	168.8	Vertical	9.62
16256.367	42.38	54.0	-11.62	2.5	80.3	Horizontal	9.82

15.209 Radiated Spurious Emissions from 1GHz to 18GHz - Peak
Mid Channel Tx

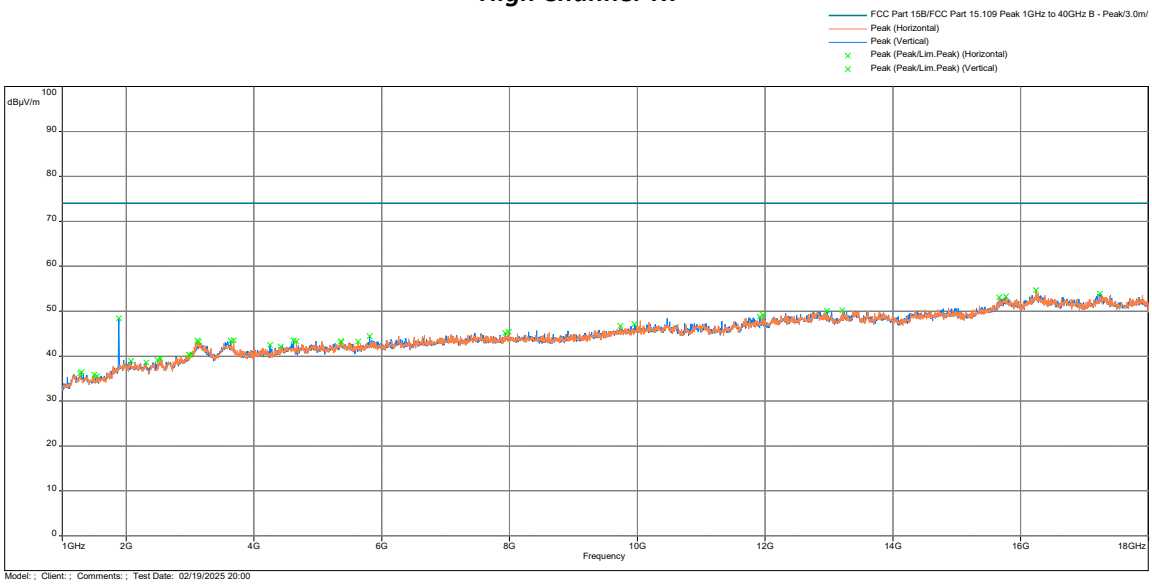


15.209 Radiated Spurious Emissions from 1GHz to 18GHz - Average
Mid Channel Tx

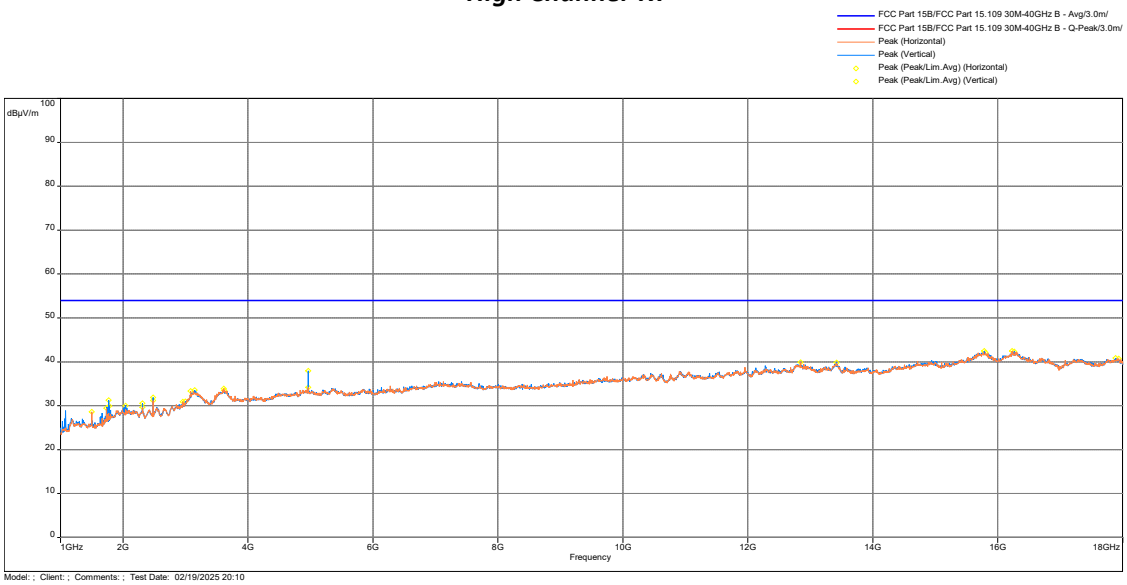


Frequency (MHz)	Ave@3m (dBµV/m)	Limit Ave@3m (dBµV/m)	Margin (dB)	Height (m)	Angle (°)	Polarity	Correction (dB)
15747.500	42.66	54.0	-11.34	1.5	38.3	Vertical	8.76
16265.433	42.60	54.0	-11.40	2.5	19.5	Vertical	9.86
15776.967	42.52	54.0	-11.48	3.5	2.8	Horizontal	8.95
16296.033	42.48	54.0	-11.52	2.5	318.3	Horizontal	10.00

15.209 Radiated Spurious Emissions from 1GHz to 18GHz - Peak
High Channel Tx

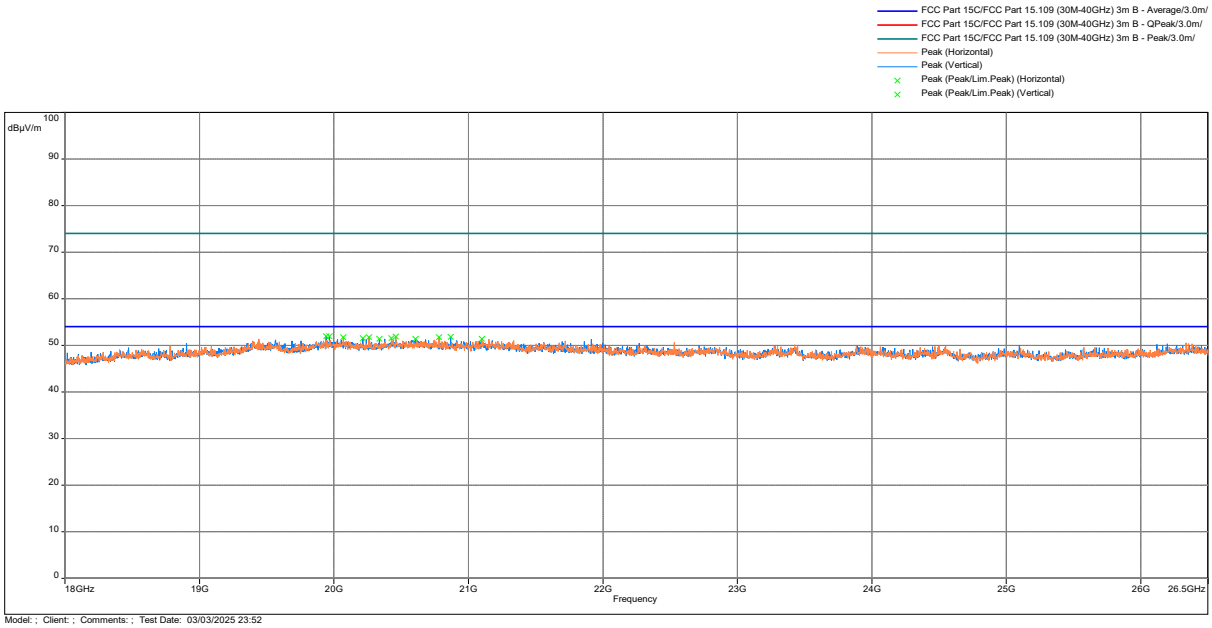


15.209 Radiated Spurious Emissions from 1GHz to 18GHz - Average
High Channel Tx



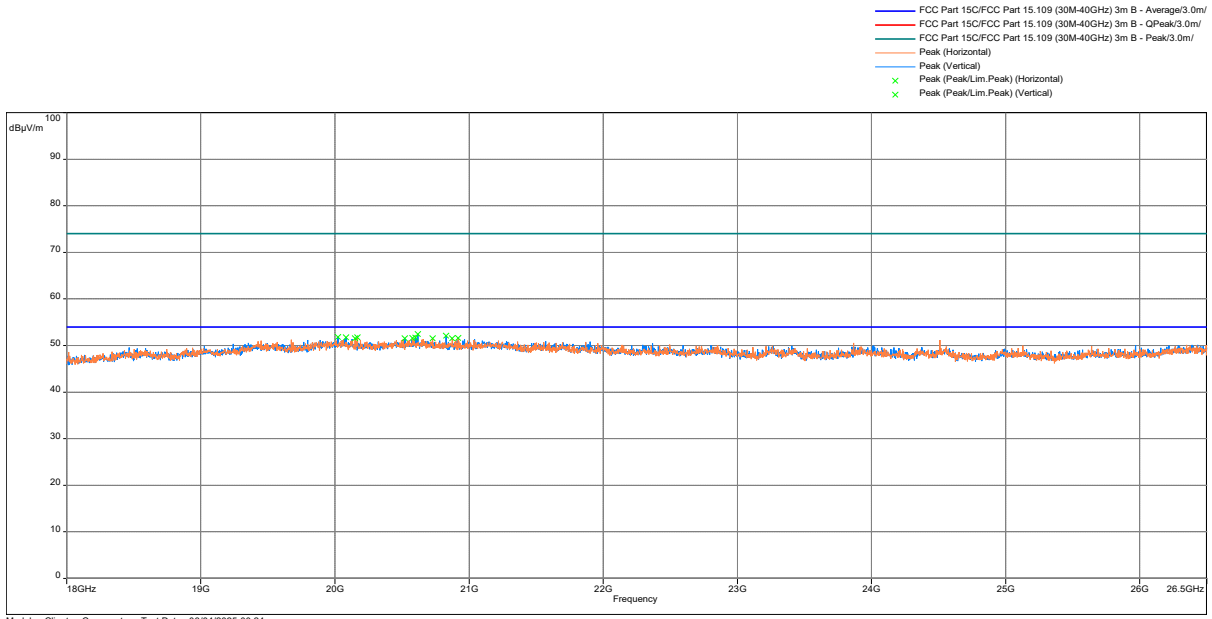
Frequency (MHz)	Ave@3m (dBµV/m)	Limit Ave@3m (dBµV/m)	Margin (dB)	Height (m)	Angle (°)	Comment	Correction (dB)
15782.633	42.51	54.0	-11.49	2.5	320.5	Vertical	8.99
16229.733	42.47	54.0	-11.53	2.5	59.0	Horizontal	9.72
16264.867	42.37	54.0	-11.63	1.5	15.5	Vertical	9.86
15803.600	42.14	54.0	-11.86	2.5	274.8	Horizontal	9.09

15.209 Radiated Spurious Emissions from 18GHz to 26GHz – Peak vs Peak/Average Limit
Low Channel Tx



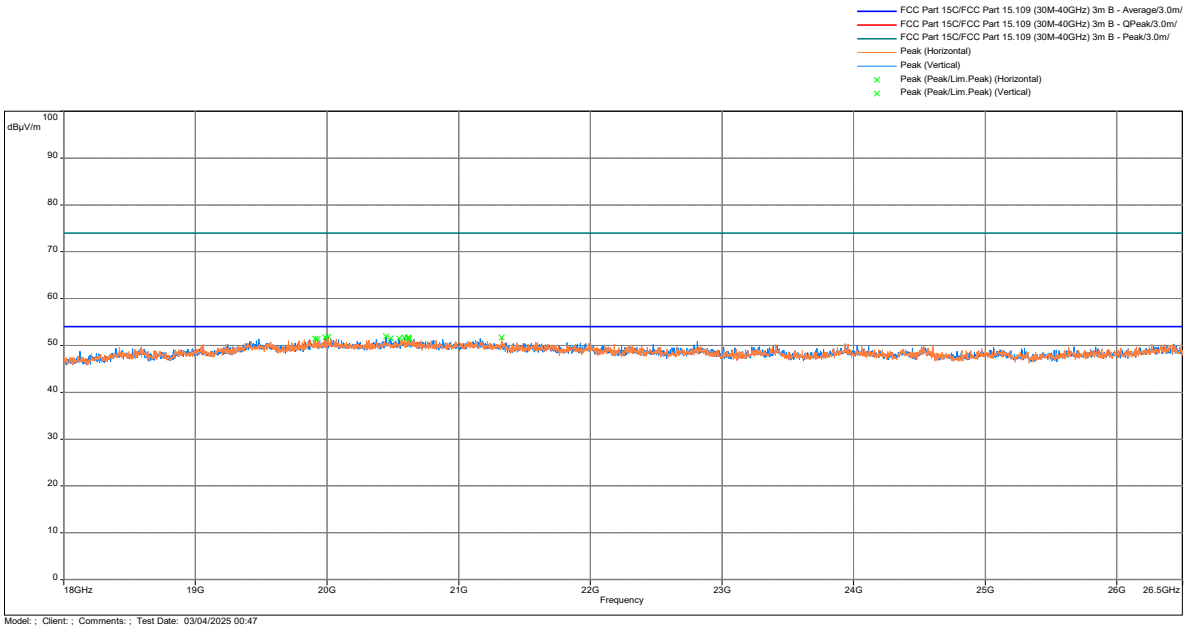
Model: ; Client: ; Comments: ; Test Date: 03/03/2025 23:52

15.209 Radiated Spurious Emissions from 18GHz to 26GHz – Peak vs Peak/Average Limit
Mid Channel Tx



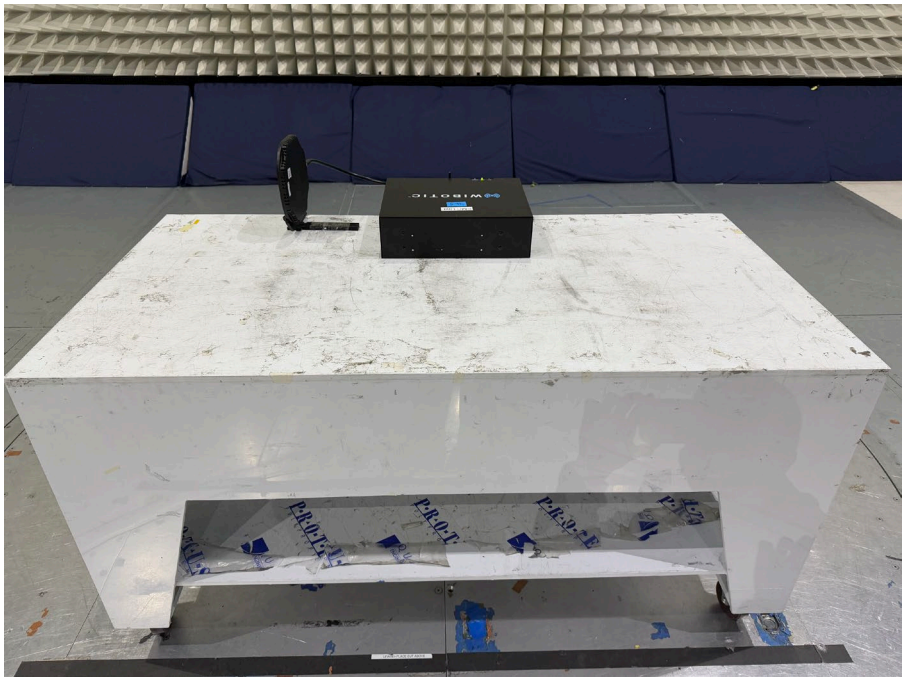
Model: ; Client: ; Comments: ; Test Date: 03/04/2025 00:24

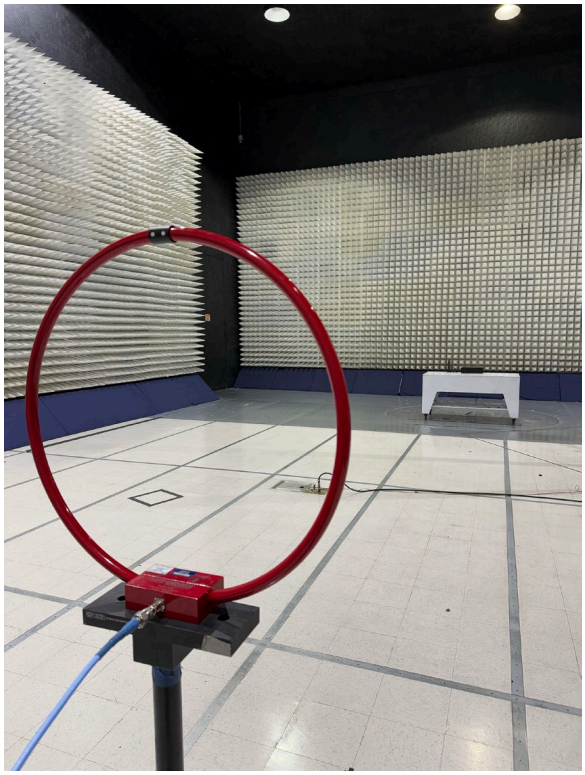
15.209 Radiated Spurious Emissions from 18GHz to 26GHz – Peak vs Peak/Average Limit
High Channel Tx

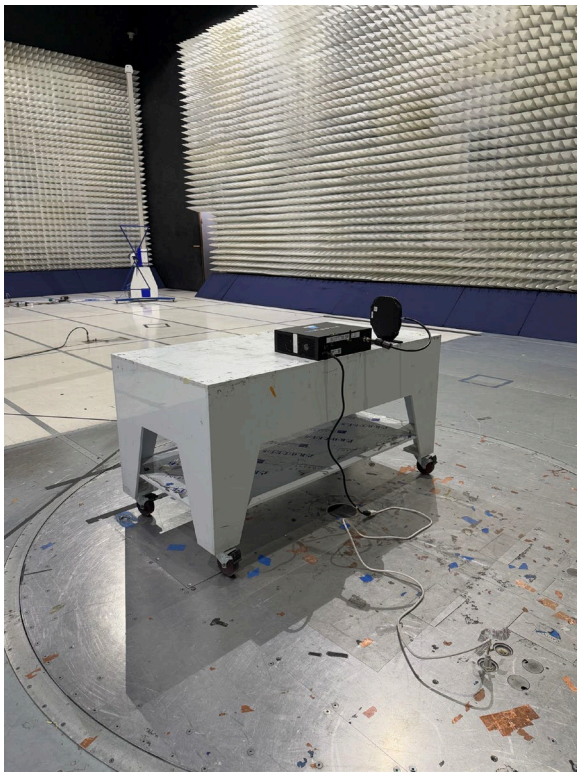


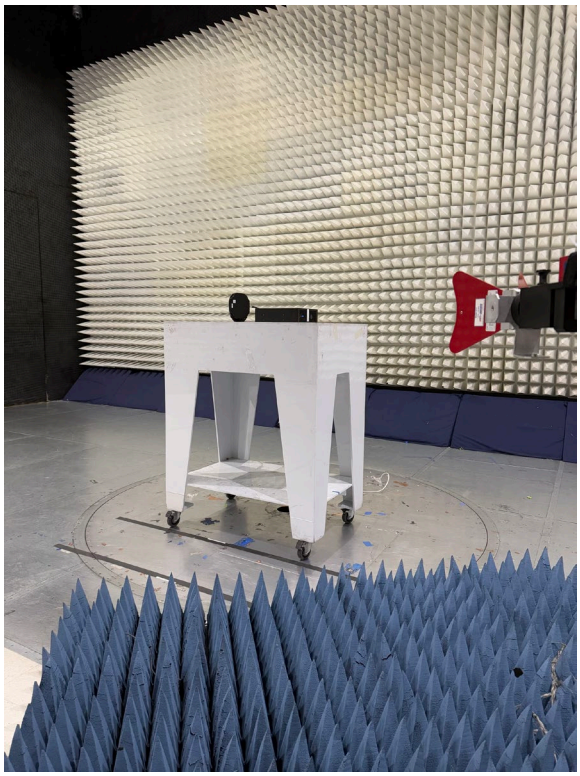
Results	Complies

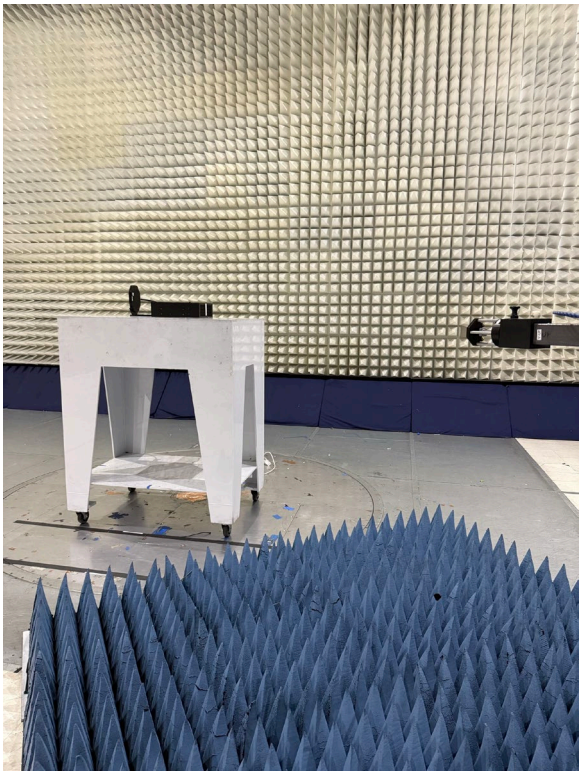
5.1.4 Test Configuration Photographs











5.2 Occupied Bandwidth

5.2.1 Requirement

§15.215(c) Intentional radiators operating under the alternative provisions to the general emission limits, as contained in §§ 15.217 through 15.257 and in subpart E of this part, must be designed to ensure that the 20 dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is operated.

5.3.2 Procedure

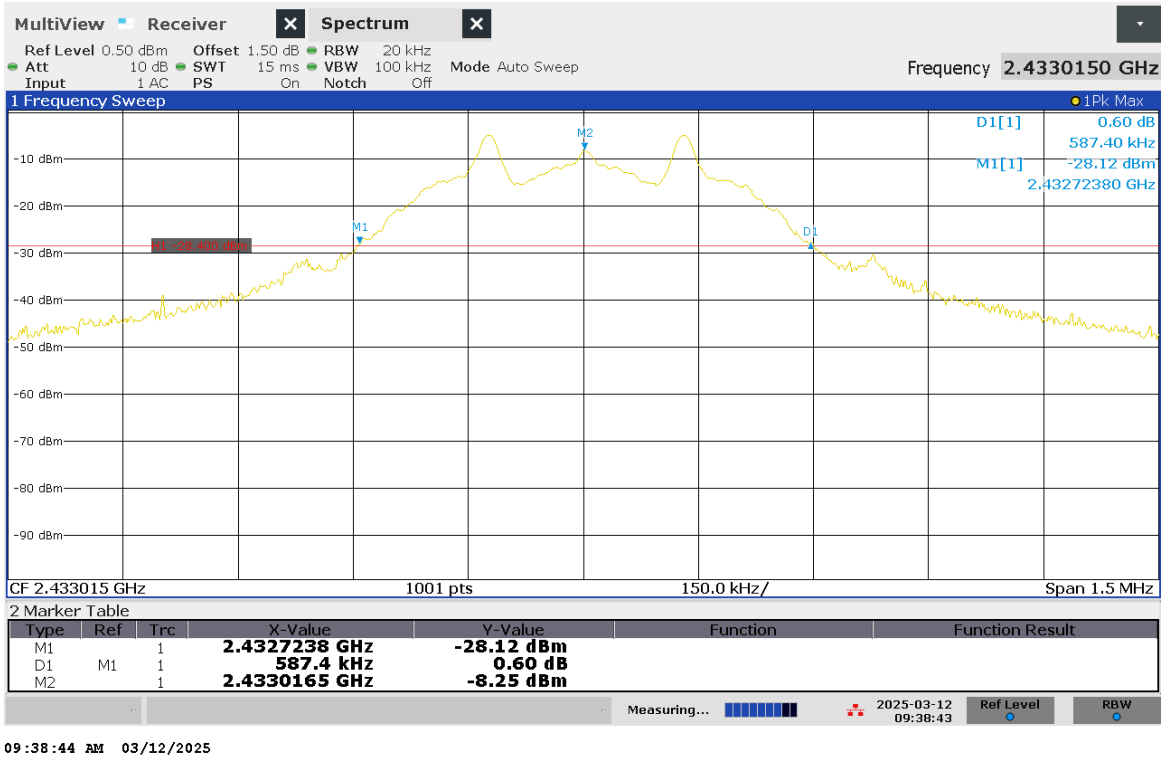
The antenna port of the EUT was connected to the input of a spectrum analyzer (SA). For each RF output channel investigated, the spectrum analyzer center frequency was set to the channel carrier. A PEAK output reading was taken, a DISPLAY line was drawn 20 dB lower than PEAK level. The 20 dB bandwidth was determined from where the channel output spectrum intersected the marker delta.

The Occupied bandwidth was measured using the build-in spectrum analyzer facility for 99% power bandwidth measurement.

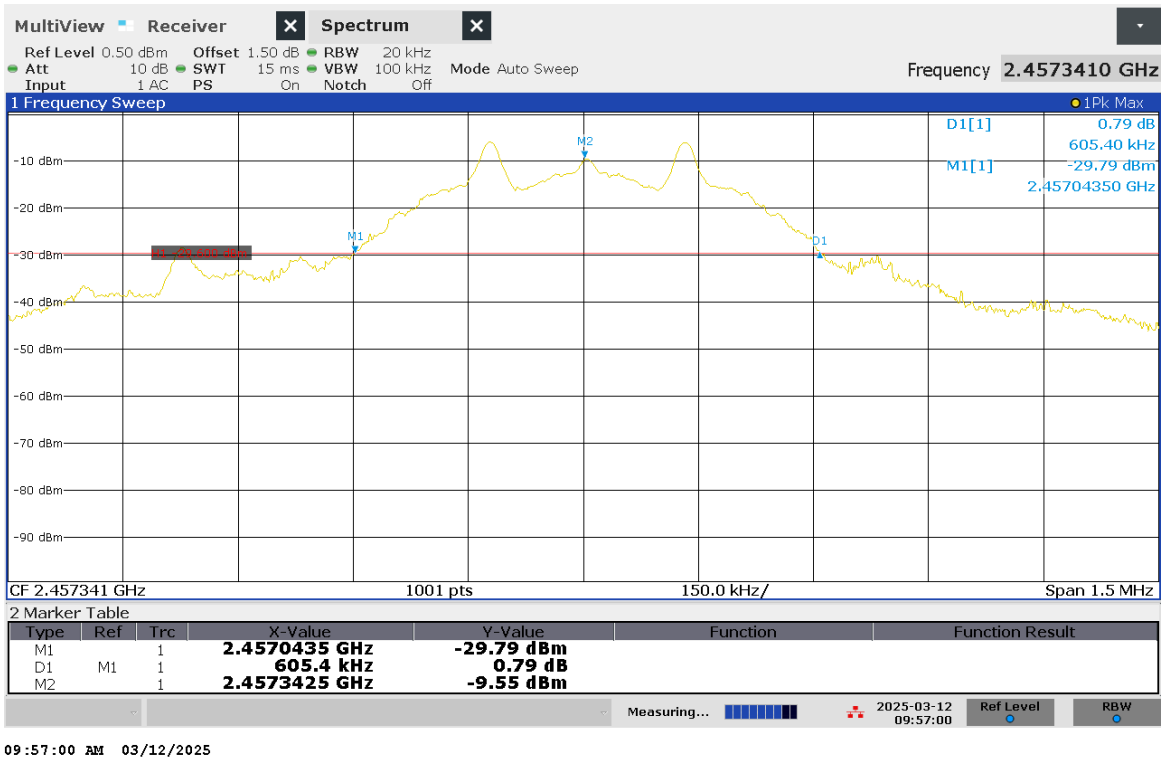
5.3.3 Test Result

Frequency (MHz)	20-dB bandwidth kHz	Occupied bandwidth, RSS-GEN, kHz	Plot
2433.0	587.4	--	1.1
	--	533.9	1.4
2457.3	605.4	--	1.2
	--	625.1	1.5
2481.6	587.4	--	1.3
	--	539.6	1.6

Plot 1. 1

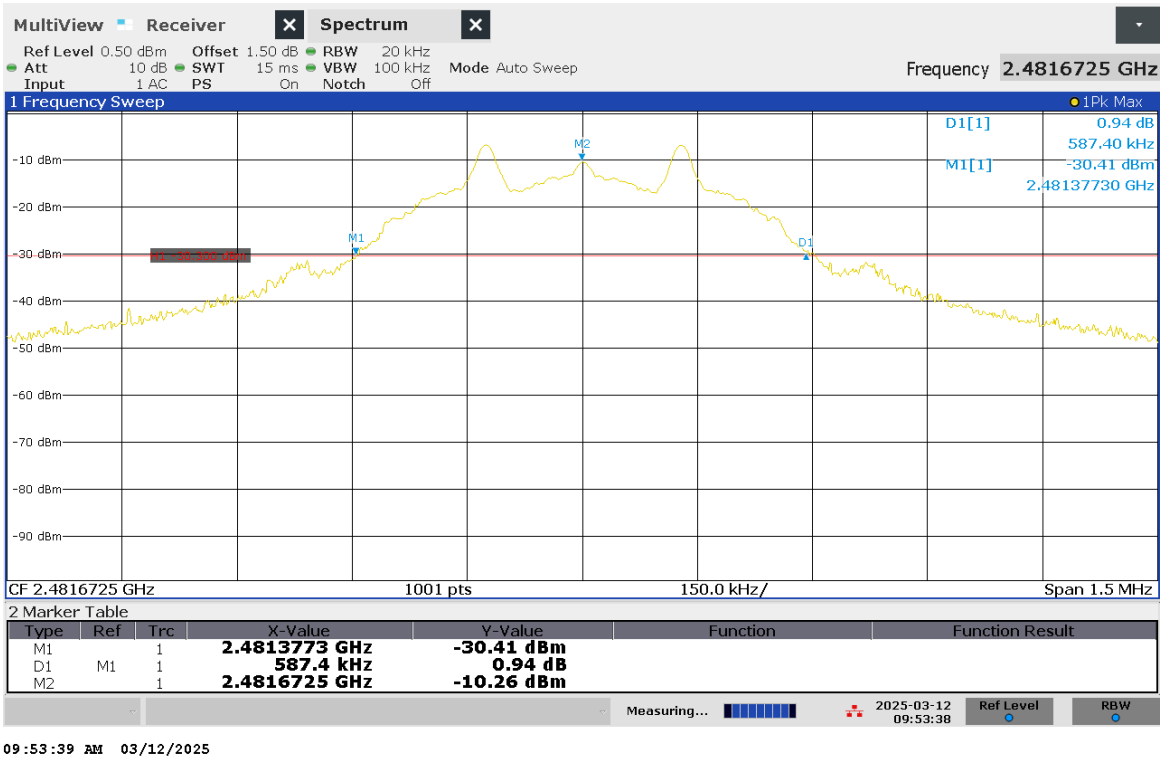

MultiView
Receiver
Spectrum
Ref Level 0.50 dBm
Offset 1.50 dB
RBW 20 kHz
Att 10 dB
SWT 15 ms
VBW 100 kHz
Mode Auto Sweep
Input 1 AC
PS On
Notch Off
Frequency 2.4330150 GHz
1 Frequency Sweep
1Pk Max
D1[1] 0.60 dB
587.40 kHz
M1[1] -28.12 dBm
2.43272380 GHz
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
-80 dBm
-90 dBm
M1
M2
D1
CF 2.433015 GHz
1001 pts
150.0 kHz/
Span 1.5 MHz
2 Marker Table
Type Ref Trc X-Value Y-Value Function Function Result
M1 1 2.4327238 GHz -28.12 dBm
D1 M1 1 587.4 kHz 0.60 dB
M2 1 2.4330165 GHz -8.25 dBm
Measuring...
2025-03-12
09:38:43
Ref Level
RBW
09:38:44 AM 03/12/2025

Plot 1. 2

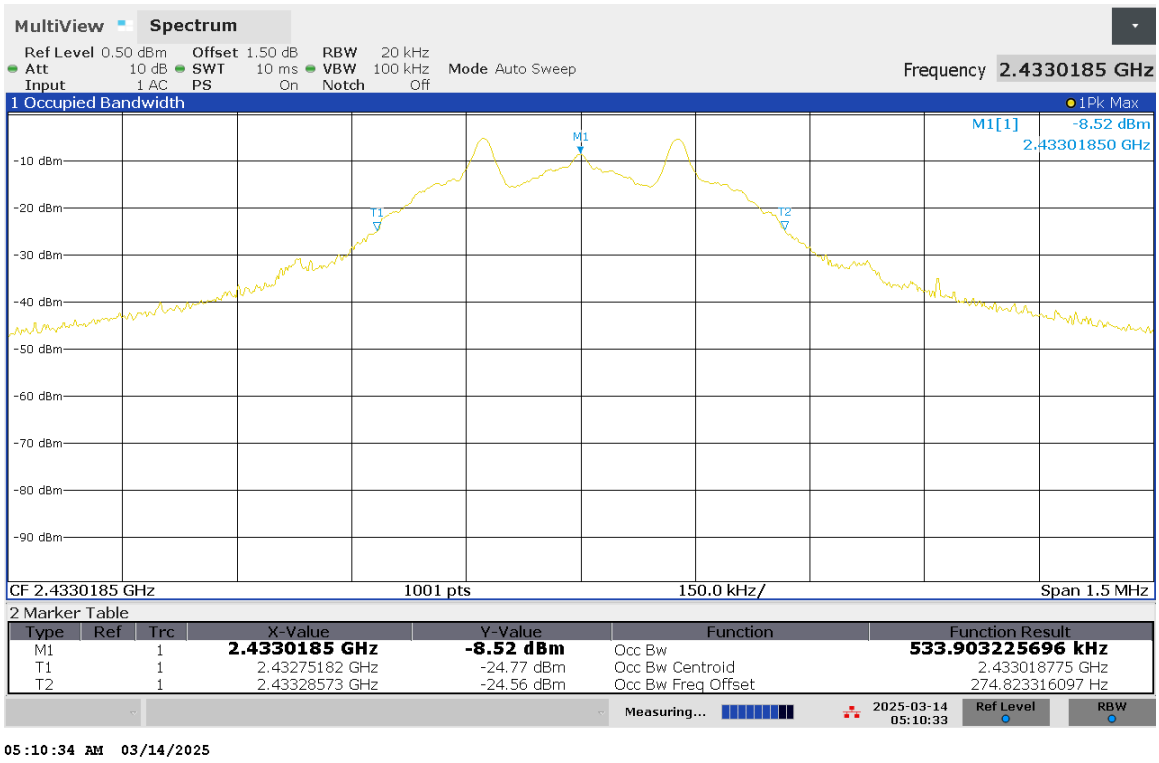


09:57:00 AM 03/12/2025

Plot 1. 3

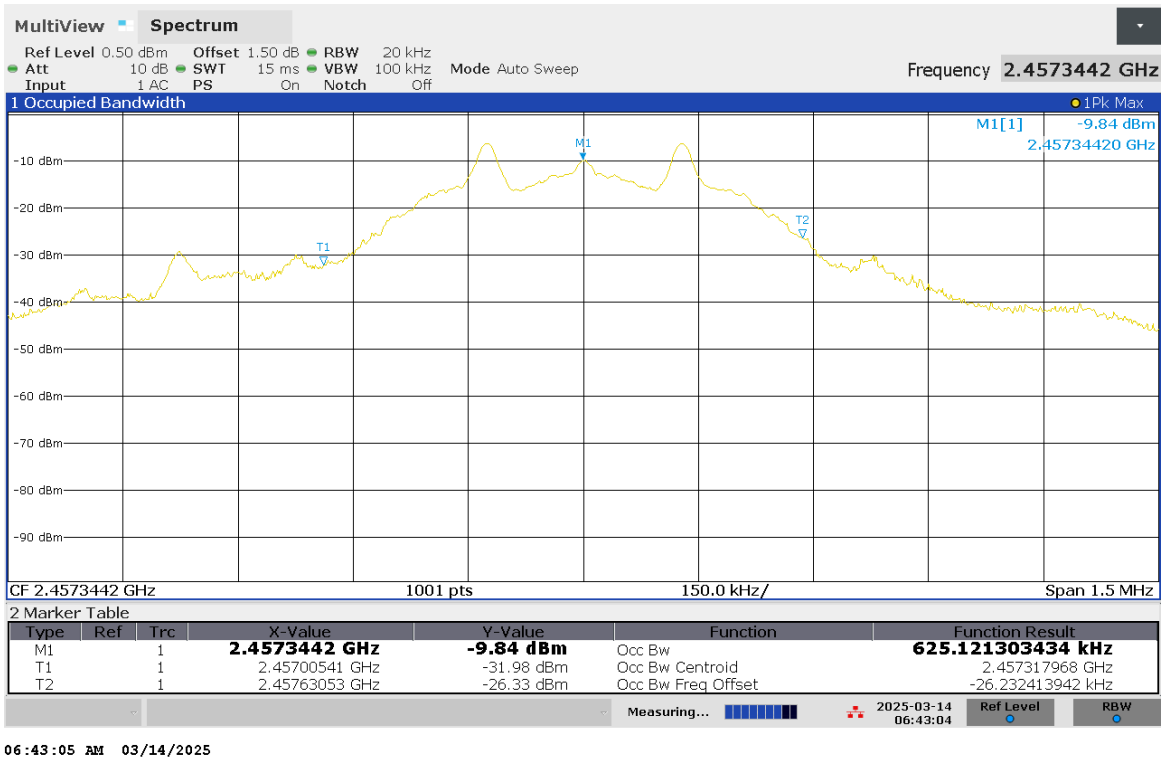

MultiView
Receiver
Spectrum
Ref Level 0.50 dBm
Offset 1.50 dB
RBW 20 kHz
Att 10 dB
SWT 15 ms
VBW 100 kHz
Mode Auto Sweep
Input 1 AC
PS On
Notch Off
Frequency 2.4816725 GHz
1 Frequency Sweep
1Pk Max
D1[1] 0.94 dB
587.40 kHz
M1[1] -30.41 dBm
2.48137730 GHz
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
-80 dBm
-90 dBm
M1
M2
D1
CF 2.4816725 GHz
1001 pts
150.0 kHz/
Span 1.5 MHz
2 Marker Table
Type Ref Trc X-Value Y-Value Function Function Result
M1 1 2.4813773 GHz -30.41 dBm
D1 M1 1 587.4 kHz 0.94 dB
M2 1 2.4816725 GHz -10.26 dBm
Measuring...
2025-03-12
09:53:38
Ref Level
RBW
09:53:39 AM 03/12/2025

Plot 1. 4

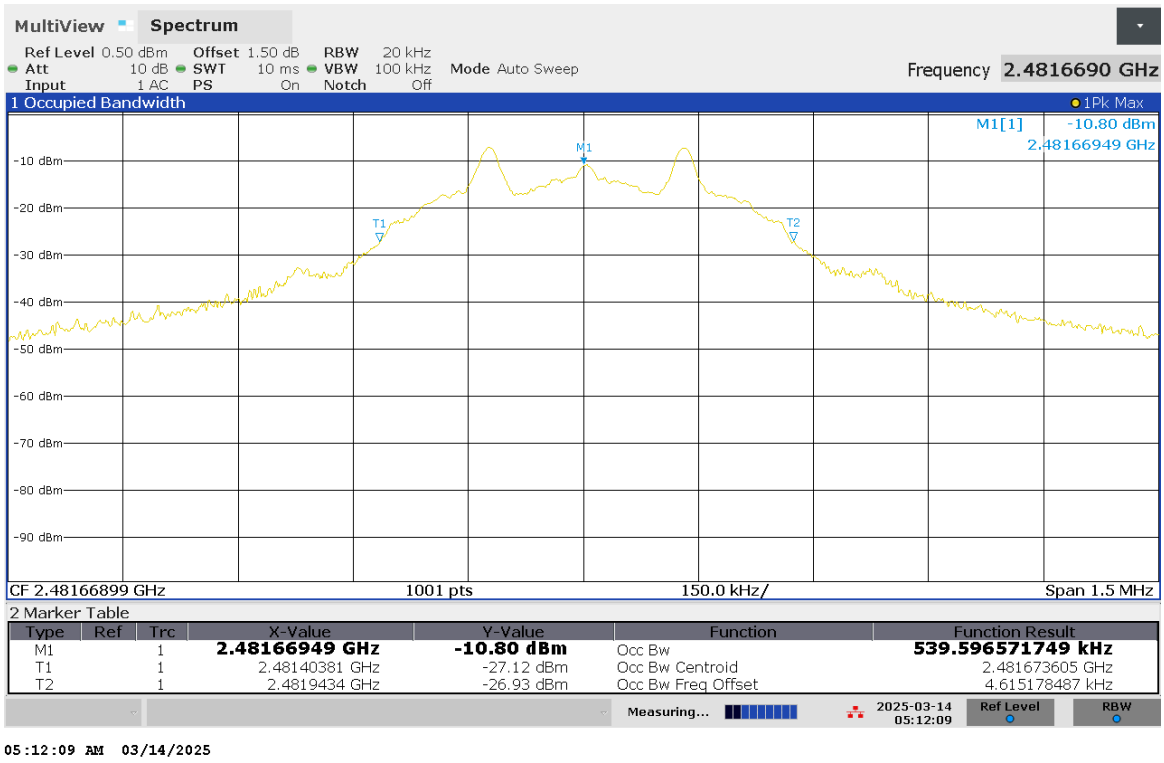


05:10:34 AM 03/14/2025

Plot 1. 5


MultiView
Spectrum
Ref Level 0.50 dBm
Offset 1.50 dB
RBW 20 kHz
Att 10 dB
SWT 15 ms
VBW 100 kHz
Mode Auto Sweep
Input 1 AC
PS On
Notch Off
Frequency 2.4573442 GHz
1 Occupied Bandwidth
1Pk Max
M1[1] -9.84 dBm
2.45734420 GHz
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
-80 dBm
-90 dBm
M1
T1
T2
CF 2.4573442 GHz
1001 pts
150.0 kHz/
Span 1.5 MHz
2 Marker Table
Type Ref Trc X-Value Y-Value Function Function Result
M1 1 2.4573442 GHz -9.84 dBm Occ Bw 625.121303434 kHz
T1 1 2.45700541 GHz -31.98 dBm Occ Bw Centroid 2.457317968 GHz
T2 1 2.45763053 GHz -26.33 dBm Occ Bw Freq Offset -26.232413942 kHz
Measuring...
2025-03-14
06:43:04
Ref Level
RBW
06:43:05 AM 03/14/2025

Plot 1. 6


MultiView
Spectrum
Ref Level 0.50 dBm
Offset 1.50 dB
RBW 20 kHz
Att 10 dB
SWT 10 ms
VBW 100 kHz
Mode Auto Sweep
Input 1 AC
PS On
Notch Off
Frequency 2.4816690 GHz
1 Occupied Bandwidth
1Pk Max
M1[1] -10.80 dBm
2.48166949 GHz
-10 dBm
-20 dBm
-30 dBm
-40 dBm
-50 dBm
-60 dBm
-70 dBm
-80 dBm
-90 dBm
M1
T1
T2
CF 2.48166899 GHz
1001 pts
150.0 kHz/
Span 1.5 MHz
2 Marker Table
Type Ref Trc X-Value Y-Value Function Function Result
M1 1 2.48166949 GHz -10.80 dBm Occ Bw 539.596571749 kHz
T1 1 2.48140381 GHz -27.12 dBm Occ Bw Centroid 2.481673605 GHz
T2 1 2.4819434 GHz -26.93 dBm Occ Bw Freq Offset 4.615178487 kHz
Measuring...
2025-03-14
05:12:09
Ref Level
RBW
05:12:09 AM 03/14/2025

5.3 AC Line Conducted Emission

FCC Rule 15.207

5.3.1 Requirement

Frequency Band MHz	Class B Limit dB(μV)	
	Quasi-Peak	Average
0.15-0.50	66 to 56 *	56 to 46 *
0.50-5.00	56	46
5.00-30.00	60	50

*Note: *Decreases linearly with the logarithm of the frequency. At the transition frequency the lower limit applies.*

5.3.2 Procedure

Measurements are carried out using quasi-peak and average detector receivers in accordance with CISPR 16. An AMN is required to provide a defined impedance at high frequencies across the power feed at the point of measurement of terminal voltage and also to provide isolation of the circuit under test from the ambient noise on the power lines. An AMN as defined in CISPR 16 shall be used.

The EUT is located so that the distance between the boundary of the EUT and the closest surface of the AMN is 0.8m.

Where a flexible mains cord is provided by the manufacturer, this shall be 1m long or if in excess of 1m, the excess cable is folded back and forth as far as possible so as to form a bundle not exceeding 0.4m in length.

The EUT is arranged and connected with cables terminated in accordance with the product specification.

Conducted disturbance is measured between the phase lead and the reference ground, and between the neutral lead and the reference ground. Both measured values are reported.

The EUT, where intended for tabletop use, is placed on a table whose top is 0.8m above the ground plane. A vertical, metal reference plane is placed 0.4m from the EUT. The vertical metal reference-plane is at least 2m by 2m. The EUT shall be kept at least 0.8m from any other metal surface or other ground plane not being part of the EUT. The table is constructed of non-conductive materials. Its dimensions are 1m by 1.5m but may be extended for larger EUT.

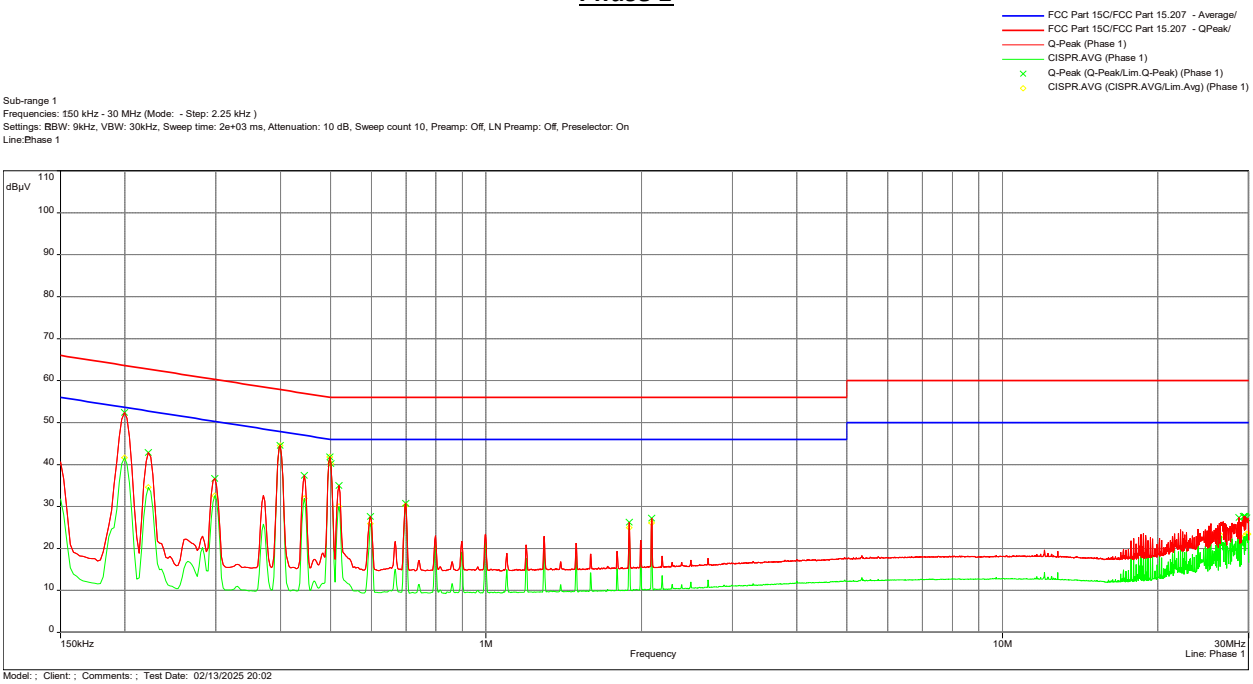
Floor standing EUT are placed on a horizontal metal ground plane and isolated from the ground plane by resting on an insulating material. The metal ground plane extends at least 0.5m beyond the boundaries of the EUT and has minimum dimensions of 2m by 2m.

EUT was placed in transmission mode then tested for conducted emissions per 15.207.

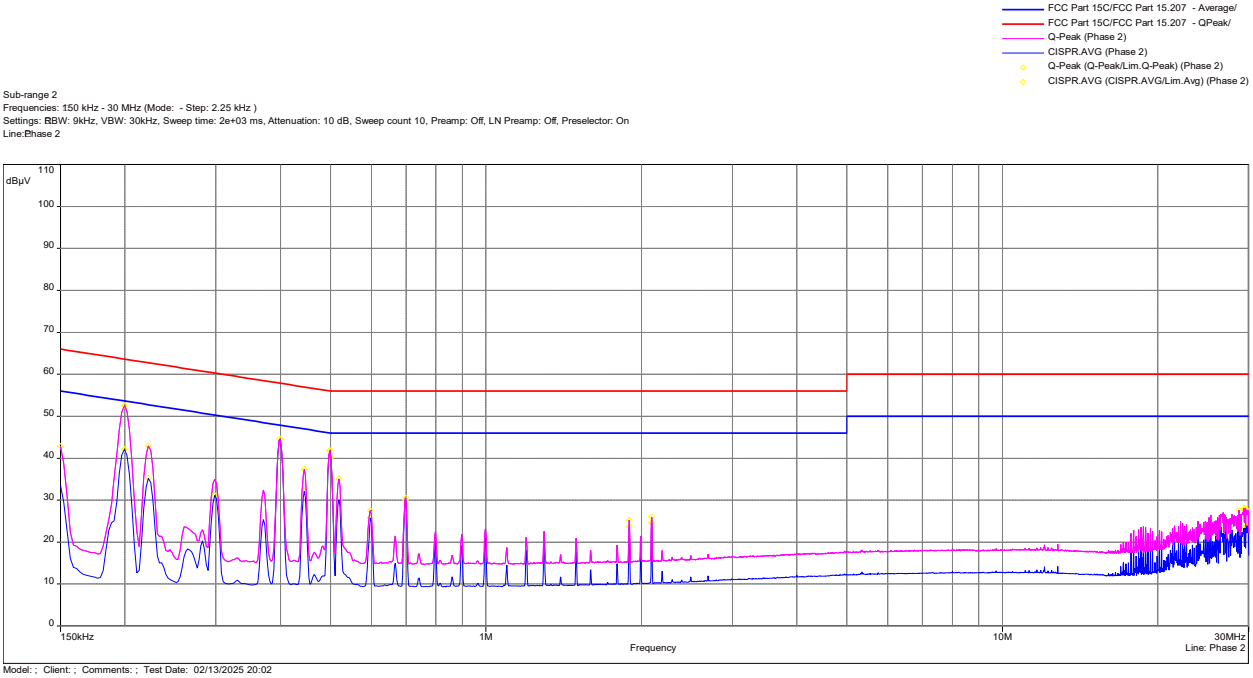
5.3.3 Test Result

15.207 AC Line Conducted Emission from 150kMHz to 30 MHz

Phase 1



Phase 2



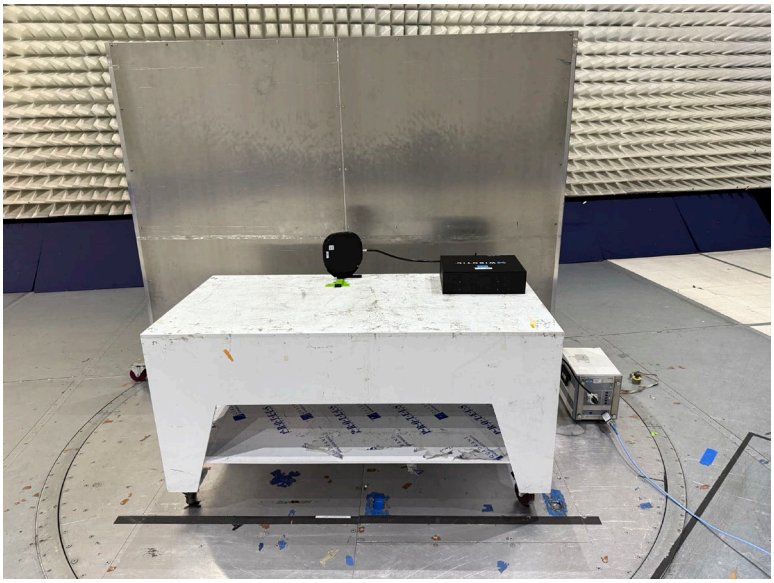
Quasi Peak Table					
Frequency (MHz)	QPeak (dBµV)	Lim. QPeak (dBµV)	Margin (dB)	Phase #	Correction (dB)
0.200	52.55	63.6	-11.08	Phase 2	20.39
0.200	52.39	63.6	-11.24	Phase 1	20.39
0.400	44.59	57.9	-13.27	Phase 2	20.42
0.400	44.51	57.9	-13.35	Phase 1	20.42
0.499	41.86	56.0	-14.16	Phase 2	20.43
0.499	41.83	56.0	-14.20	Phase 1	20.43
0.501	40.23	56.0	-15.77	Phase 2	20.43
0.501	40.21	56.0	-15.79	Phase 1	20.43
0.445	37.40	57.0	-19.57	Phase 2	20.43
0.445	37.38	57.0	-19.59	Phase 1	20.43
0.222	42.92	62.7	-19.82	Phase 2	20.39
0.222	42.87	62.7	-19.88	Phase 1	20.39
0.519	35.07	56.0	-20.93	Phase 2	20.43
0.519	34.95	56.0	-21.05	Phase 1	20.43
0.150	42.88	66.0	-23.12	Phase 2	20.38
0.299	36.69	60.3	-23.59	Phase 1	20.41
0.699	30.70	56.0	-25.30	Phase 1	20.45
0.699	30.60	56.0	-25.40	Phase 2	20.45
0.598	27.58	56.0	-28.42	Phase 1	20.44
0.598	27.54	56.0	-28.46	Phase 2	20.44
2.094	27.24	56.0	-28.76	Phase 1	20.54
1.896	26.24	56.0	-29.76	Phase 1	20.53
2.094	26.03	56.0	-29.97	Phase 2	20.54
1.894	25.30	56.0	-30.70	Phase 2	20.53
29.488	28.12	60.0	-31.88	Phase 2	21.62
29.351	28.00	60.0	-32.00	Phase 2	21.61
29.551	27.93	60.0	-32.07	Phase 2	21.62
29.290	27.89	60.0	-32.11	Phase 2	21.61
29.490	27.67	60.0	-32.33	Phase 1	21.62
29.292	27.62	60.0	-32.38	Phase 1	21.61
29.688	27.61	60.0	-32.39	Phase 2	21.62
28.721	27.60	60.0	-32.40	Phase 2	21.59
29.353	27.57	60.0	-32.43	Phase 1	21.61
29.551	27.54	60.0	-32.46	Phase 1	21.62
28.723	27.37	60.0	-32.63	Phase 1	21.59
29.722	27.27	60.0	-32.73	Phase 1	21.63

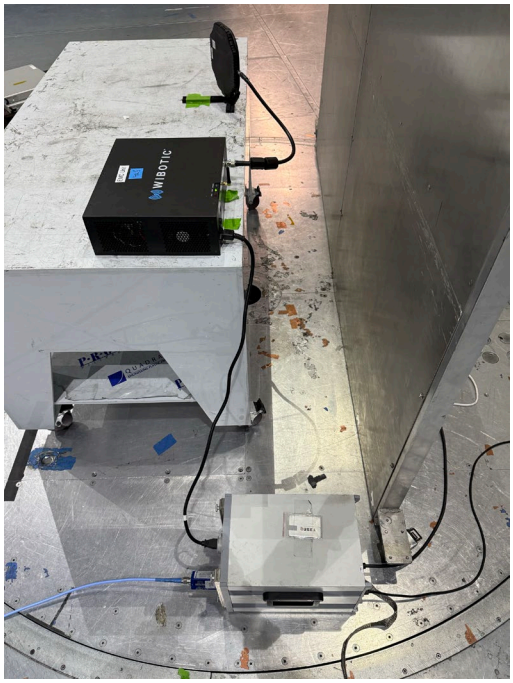
Average Table					
Frequency (MHz)	**AVG (dBµV)**	**Lim. Average (dBµV)**	**Margin (dB)**	**Phase #**	**Correction (dB)**
0.400	44.57	47.9	-3.29	Phase 2	20.42
0.400	44.50	47.9	-3.36	Phase 1	20.42
0.499	41.84	46.0	-4.18	Phase 2	20.43
0.499	41.81	46.0	-4.21	Phase 1	20.43
0.501	40.19	46.0	-5.81	Phase 2	20.43
0.501	40.17	46.0	-5.83	Phase 1	20.43
0.200	42.15	53.6	-11.48	Phase 2	20.39
0.200	41.61	53.6	-12.02	Phase 1	20.39
0.445	32.18	47.0	-14.80	Phase 2	20.43
0.445	31.96	47.0	-15.01	Phase 1	20.43
0.699	30.23	46.0	-15.77	Phase 1	20.45
0.699	30.13	46.0	-15.87	Phase 2	20.45
0.519	30.12	46.0	-15.88	Phase 2	20.43
0.519	29.99	46.0	-16.01	Phase 1	20.43
0.222	35.21	52.7	-17.54	Phase 2	20.39
0.299	32.58	50.3	-17.71	Phase 1	20.41
0.222	34.59	52.7	-18.15	Phase 1	20.39
0.299	31.17	50.3	-19.11	Phase 2	20.41
2.094	26.08	46.0	-19.92	Phase 1	20.54
0.598	25.93	46.0	-20.07	Phase 1	20.44
0.598	25.77	46.0	-20.23	Phase 2	20.44
1.896	24.96	46.0	-21.04	Phase 1	20.53
2.094	24.62	46.0	-21.38	Phase 2	20.54
1.894	23.74	46.0	-22.26	Phase 2	20.53
28.721	24.74	50.0	-25.26	Phase 2	21.59
28.723	24.22	50.0	-25.78	Phase 1	21.59
29.720	23.95	50.0	-26.05	Phase 2	21.62
29.920	23.93	50.0	-26.07	Phase 2	21.63
26.527	23.57	50.0	-26.43	Phase 2	21.51
29.722	23.53	50.0	-26.47	Phase 1	21.63
25.330	23.49	50.0	-26.51	Phase 2	21.47
29.490	23.43	50.0	-26.57	Phase 2	21.62
29.920	23.43	50.0	-26.57	Phase 1	21.63
26.531	23.03	50.0	-26.97	Phase 1	21.51
29.488	22.97	50.0	-27.03	Phase 1	21.62
28.923	22.79	50.0	-27.21	Phase 1	21.60

Results	**Complies**

5.3.4 Test Configuration Photographs

The following photographs show the testing configurations used:





AC Line Conducted Emission setup photos

6.0 Document History

Revision/ Job Number	Writer Initials	Reviewer Initials	Date	Change
1.0 /G106081003	KT	ML	March 31, 2025	Original document

END OF REPORT