

CERTIFICATION TEST REPORT

Report Number. : S-4791547073-E6V2

Applicant : SAMSUNG ELECTRONICS CO., LTD.
129 SAMSUNG-RO, YEONGTONG-GU, SUWON-SI,
GYEONGGI-DO, 16677, KOREA

Model : SM-A366E/DS, SM-A366E

FCC ID : A3LSMA366E

EUT Description : GSM/WCDMA/LTE/5G NR Phone + BT/BLE, DTS/UNII a/b/g/n/ac/ax
and NFC

Test Standard(s) : FCC 47 CFR PART 15 SUBPART C

Date Of Issue:
2025-01-06

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Revision History

Rev.	Issue Date	Revisions	Presented By
V1	2025-01-03	Initial issue	David(Dongwook) Jung
V2	2025-01-06	Updated to address TCB's question	David(Dongwook) Jung

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: SAMSUNG ELECTRONICS CO., LTD.

EUT DESCRIPTION: GSM/WCDMA/LTE/5G NR Phone + BT/BLE, DTS/UNII a/b/g/n/ac/ax and NFC

MODEL NUMBER: SM-A366E/DS, SM-A366E

SERIAL NUMBER: 8b11ae3c50347ece, 8b11ae3d37347ece (CONDUCTED);
R3CXB0GBYZJ, R3CXB0GBYXM (RADIATED);

DATE TESTED: 2024-12-18 – 2025-01-03

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
47 CFR Part 15 Subpart C	Complies

UL KOREA LTD. tested the above equipment in accordance with the requirements set forth in the above standards. All indications of Pass/Fail in this report are opinions expressed by UL KOREA LTD. based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Note: The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. This document may not be altered or revised in any way unless done so by UL KOREA LTD. and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL KOREA LTD. will constitute fraud and shall nullify the document. This report must not be used by the client to claim product certification, approval, or endorsement by IAS, any agency of the Federal Government, or any agency of any government.

Approved & Released For
UL KOREA LTD. By:



Seokhwan Hong
Suwon Lab Engineer
UL KOREA LTD.

Tested By:



David(Dongwook) Jung
Suwon Lab Engineer
UL KOREA LTD.

2. TEST METHODOLOGY

1. FCC 47 CFR Part 2.
2. FCC 47 CFR Part 15.
3. KDB 558074 D01 15.247 Meas Guidance v05r02.
4. ANSI C63.10-2020.

3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 218 Maeyeong-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16675, Korea. Line conducted emissions are measured only at the 218 address. The following table identifies which facilities were utilized for radiated emission measurements documented in this report. Specific facilities are also identified in the test results sections.

218 Maeyeong-ro	
☒	Chamber 1(3m semi-anechoic chamber)
☒	Chamber 2(3m semi-anechoic chamber)
☒	Chamber 3(3m semi-anechoic chamber)
☐	Chamber 4(3m Full-anechoic chamber)
☐	Chamber 5(3m Full-anechoic chamber)

UL KOREA LTD. is accredited by IAS, Laboratory Code TL-637. The full scope of accreditation can be viewed at <https://www.iasonline.org/wp-content/uploads/2017/05/TL-637-cert-New.pdf>.

4. DECISION RULES AND MEASUREMENT UNCERTAINTY

4.1. METROLOGICAL TRACEABILITY

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations and is traceable to recognized national standards.

4.2. SAMPLE CALCULATION

Where relevant, the following sample calculation is provided:

Field Strength (dBuV/m) = Measured Voltage (dBuV) + Antenna Factor (dB/m) +
Cable Loss (dB) – Preamp Gain (dB)

28.9 dBuV/m = 36.5 dBuV + 18.7 dB/m + 0.6 dB – 26.9 dB

AC Corrected Reading (dBuV) = Measured Voltage (dBuV) + Extension Cord
Loss (dB) + Cable Loss (dB)

44.72 dBuV = 34.72 dBuV + 9.9 dB + 0.1 dB

4.3. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

PARAMETER	UNCERTAINTY
RF Output Power	0.69 dB
Power Spectral Density	1.40 dB
Occupied Bandwidth	0.04 %
Conducted Spurious Emissions	1.40 dB
Conducted Disturbance, 0.15 to 30 MHz	2.79 dB
Radiated Disturbance, 9 kHz to 30 MHz	1.69 dB
Radiated Disturbance, 30 MHz to 1 GHz	4.07 dB
Radiated Disturbance, 1 GHz to 18 GHz	4.99 dB
Radiated Disturbance, Above 18 GHz	5.96 dB

Uncertainty figures are valid to a confidence level of 95%.

4.4. DECISION RULES

Decision rule for statement(s) of conformity is based on Clause 4.4.3 in IEC Guide 115:2023.

5. EQUIPMENT UNDER TEST

5.1. EUT DESCRIPTION

The EUT is a GSM/WCDMA/LTE 5G NR Phone + BT/BLE, DTS/UNII a/b/g/n/ac/ax and NFC. This test report addresses the DTS (BLE) operational mode.

Representative model	Difference	Derivative model
		SM-A366E
SM-A366E/DS	Hardware	Different Sim Tray
	Software	Same as SM-A366E/DS

The model SM-A366E/DS was used for final testing and is representative of the test results in this report.

5.2. MAXIMUM OUTPUT POWER

The transmitter has a maximum peak conducted output power as follows:

Frequency Range[MHz]	Mode	Power Mode	Output Power [dBm]	Output Power [mW]
2 402 – 2 480	1 Mbps (37pkt)	Peak	12.820	19.143
		Average	12.466	17.644
2 404 – 2 478	2Mbps (37 pkt)	Peak	12.920	19.588
		Average	12.249	16.784

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

An intentional radiator antenna shall be designed to ensure that no antenna other than that furnished by the responsible party can be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section.

The internal antenna was Permanently attached.
Therefore, this E.U.T Complies with the requirement of §15.203.

The radio utilizes a internal antenna, with a maximum gain of:

Frequency Band[MHz]	ANT1 Gain [dBi]	ANT2 Gain [dBi]
DTS 2400 – 2483.5	-2.25	-3.25

“SUB4” and “SUB6” as indicated in antenna specification are written as ANT1 and ANT2 in this report.

5.4. WORST-CASE CONFIGURATION AND MODE

Bluetooth LE Diversity mode has been investigated and confirmed.

The fundamentals of the EUT were investigated in three orthogonal orientations X, Y and Z. It was determined that below table's orientation was the worst-case orientation.

ANT1	ANT2
Y	Y

For conducted power test, Diversity mode was verified and reported. Diversity mode test was performed on each SISO iPA mode.

Radiated and power line conducted tests were performed with EUT connected to AC power adapter as the worst-case configuration. Radiated harmonics spurious 1~18 GHz Low/Mid/High channels, 18-26GHz were performed with the EUT set at the Diversity mode. Radiated emission below 1GHz and power line conducted emission were performed with the EUT set to transmit at the channel with highest output power as worst-case scenario.

For Radiated band-edge and spurious test, tests were performed on each antenna with Diversity mode.

All radiated and power line conducted tests were performed attached with travel adapter for the worst-case condition mode.

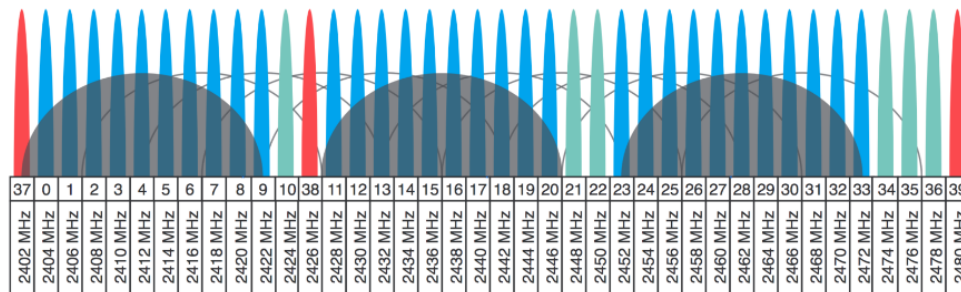
Due to modulation characteristics, BLE coded data was worse than 1Mbps in the RBW 3kHz PSD results. However, based on the RBW (1MHz) when measuring radiated spurious, the PSD of 1Mbps is higher, so 1Mbps was selected as the worst case to suit the radiation test environment.

The EUT supports LE Diversity mode on each antenna as follows:

Antenna 1: 1Mbps / 125k coded / 500k coded / 2Mbps

Antenna 2: 1Mbps / 2Mbps

The EUT does not supported Primary PHY channels (2402[37] / 2426[38] / 2480[39] MHz) at the BLE 2Mbps data-rate. BLE Channels that used for testing are follows in below.



Power verification

The Output Power of all data rate are all investigated, the 1 Mbps (37 pkt) and 2 Mbps (37 pkt) power is the worst case for symbol rate. All tests were performed in these two modes.

Symbol Rate [Ms/s]	Mode	Freq. [MHz]	Conducted Burst Average Power [dBm]	Symbol Rate [Ms/s]	Mode	Freq. [MHz]	Conducted Burst Average Power [dBm]
1	1 Mbps 37 pkt ANT1	2 402	11.502	2	2 Mbps 37 pkt ANT1	2 404	11.374
		2 440	12.466			2 440	12.249
		2 480	9.864			2 478	10.296
	1 Mbps 37 pkt ANT2	2 402	9.588		2 Mbps 37 pkt ANT2	2 404	9.612
		2 440	10.109			2 440	9.930
		2 480	7.682			2 478	7.667
	1 Mbps 255 pkt ANT1	2 402	11.419		2 Mbps 255 pkt ANT1	2 404	11.285
		2 440	12.383			2 440	12.153
		2 480	9.735			2 478	10.120
	1 Mbps 255 pkt ANT2	2 402	9.548		2 Mbps 255 pkt ANT2	2 404	9.550
		2 440	10.042			2 440	9.852
		2 480	7.606			2 478	7.566
1 Coded S=8	125 kbps 37 pkt ANT1	2 402	7.245	1 Coded S=2	500 kbps 37 pkt ANT1	2 402	7.288
		2 440	8.237			2 440	8.292
		2 480	5.603			2 480	5.674
	125 kbps 255 pkt ANT1	2 402	7.190		500 kbps 255 pkt ANT1	2 402	7.254
		2 440	8.178			2 440	8.244
		2 480	5.546			2 480	5.612

5.5. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	Manufacturer	Model	Serial Number	FCC ID
Charger	SAMSUNG	EP-TA800	R37TC7A00JBDKA	N/A
Data Cable	SAMSUNG	EP-DN980	GH39-02115A	N/A

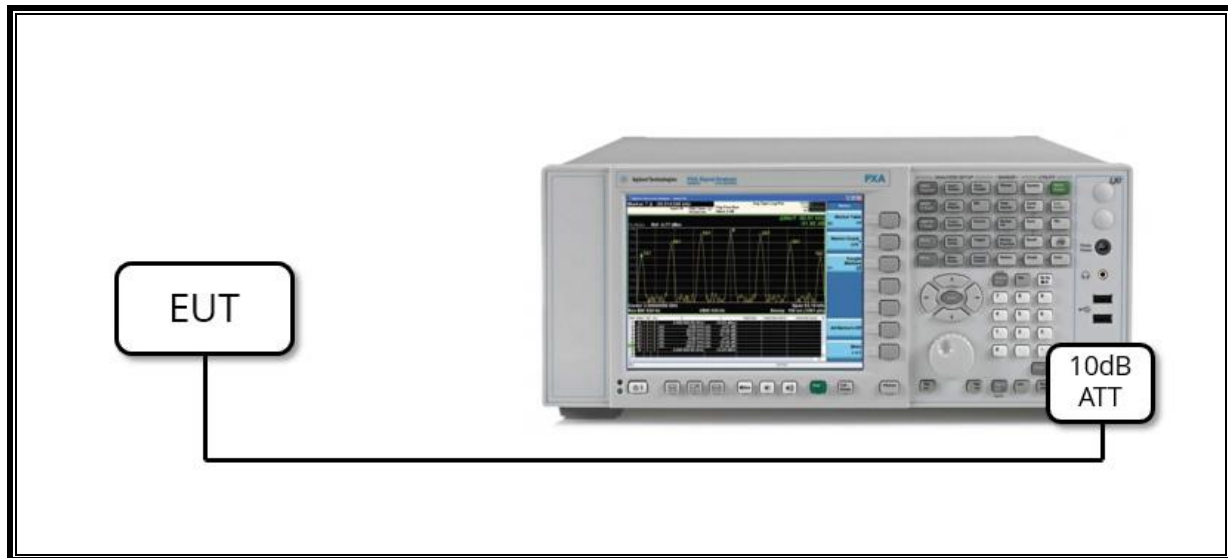
I/O CABLE

I/O Cable List						
Cable No.	Port	# of identical ports	Connector Type	Cable Type	Cable Length (m)	Remarks
1	DC Power	1	C Type	Shielded	1.0 m	N/A

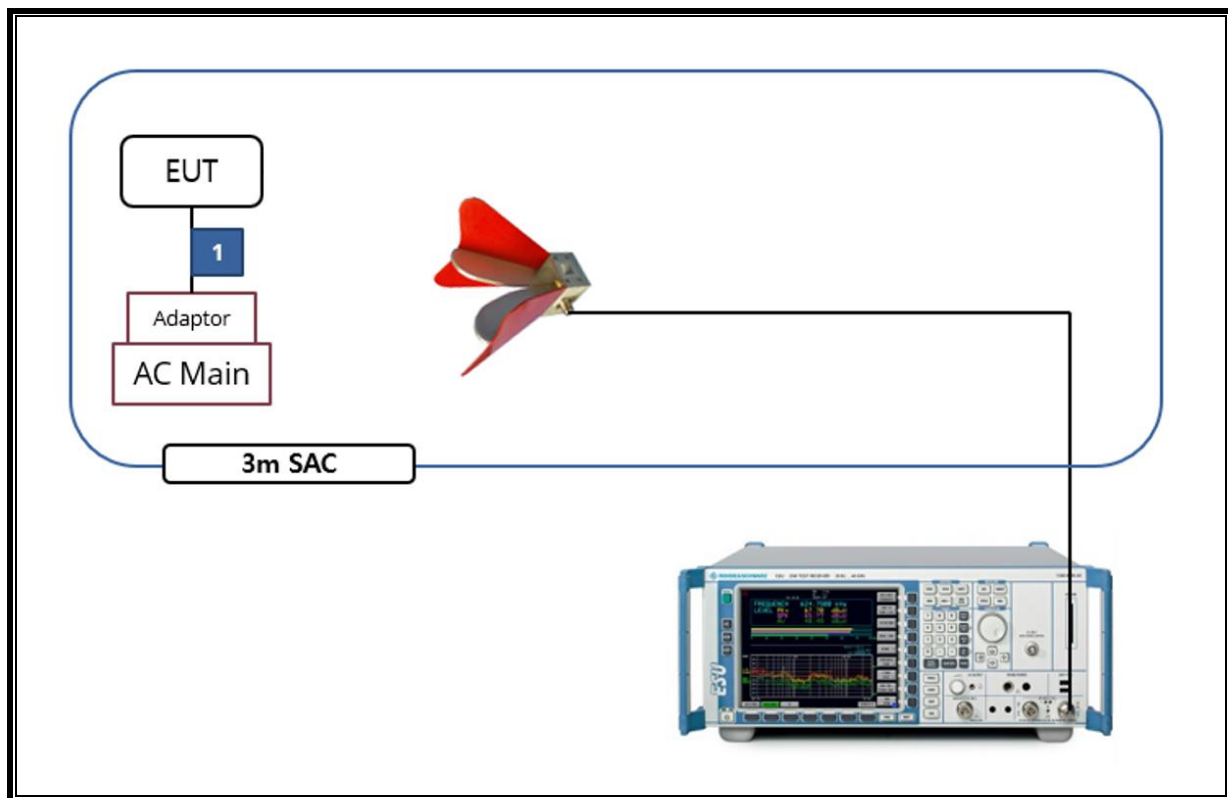
TEST SETUP

The EUT is a stand-alone unit during the tests.
Test software in hidden menu exercised the EUT to enable BLE mode.

SETUP DIAGRAM FOR TESTS (CONDUCTED TEST SETUP)



SETUP DIAGRAM FOR TESTS (RADIATED TEST SETUP)



6. MEASUREMENT METHOD

6 dB BW : ANSI C63.10-2020, Section 11.8.2 Option 2

OUTPUT POWER: ANSI C63.10-2020, Section 11.9.1.1 $RBW \geq$ DTS bandwidth

POWER SPECTRAL DENSITY: ANSI C63.10-2020, Section 11.10.2 Method PKPSD (peak PSD)

Out-of-band Emissions (Conducted): ANSI C63.10-2020, Section 11.11 Emissions in nonrestricted frequency bands

Out-of-band Emissions in Non-restricted Bands: ANSI C63.10-2020, Section 11.11 Emissions in nonrestricted frequency bands

Out-of-band Emissions in Restricted Bands: ANSI C63.10-2020, Section 11.12 Emissions in restricted frequency bands

AC Power Line Conducted Emission: ANSI C63.10-2020, Section 6.2

7. TEST AND MEASUREMENT EQUIPMENT

The following test and measurement equipment was utilized for the tests documented in this report:

Test Equipment List				
Description	Manufacturer	Model	S/N	Cal Due
Antenna, Bilog, 30MHz-1GHz	SCHWARZBECK	VULB 9163	750	2026-07-30
Antenna, Horn, 18 GHz	ETS	3117	00168717	2026-07-17
Antenna, Horn, 40 GHz	ETS	3116C	00166155	2026-07-23
Preamplifier	ETS	3116C-PA	00168841	2025-07-25
Preamplifier, 1000 MHz	Sonoma	310N	341282	2025-07-22
Preamplifier, 18 GHz	Miteq	AFS42-00101800-25-S-42	2029169	2025-07-23
Spectrum Analyzer, 44 GHz	Agilent / HP	N9030A	MY54170614	2025-07-24
Spectrum Analyzer, 44 GHz	Agilent / HP	N9030A	MY54490312	2025-01-03
Spectrum Analyzer, 44 GHz	KEYSIGHT	N9040B	MY60080268	2025-01-03
RF Switching Unit	TA Engineering	TA-018S-16	SW-1	N/A
Average Power Sensor	Agilent / HP	U2000A	MY54270007	2025-07-23
Average Power Sensor	Agilent / HP	U2000A	MY54260010	2025-07-23
Attenuator	PASTERNAK	PE7087-10	A001	2025-07-23
Attenuator	PASTERNAK	PE7087-10	A008	2025-07-23
EMI Test Receive, 40 GHz	R&S	ESU40	100439	2025-07-23
EMI Test Receive, 40 GHz	R&S	ESU40	100457	2025-07-22
EMI Test Receive, 3 GHz	R&S	ESR 3	101832	2025-07-22
Low Pass Filter 5GHz	Micro-Tronics	LPS17541	009	2025-07-22
High Pass Filter 3GHz	Micro-Tronics	HPM17543	010	2025-07-22
High Pass Filter 6GHz	Micro-Tronics	HPS17542	21	2025-07-23
LISN	R&S	ENV216	101837	2025-07-22
Antenna, Loop, 9kHz-30MHz	R&S	HFH2-Z2E	100900	2025-07-25
UL Software				
Description	Manufacturer	Model	Version	
Radiated software	UL	UL EMC	Ver 9.5	
AC Line Conducted software	UL	UL EMC	Ver 9.5	

8. TEST RESULTS SUMMARY

FCC Part Section	Test Description	Test Limit	Test Condition	Test Result
15.247 (a)(2)	Occupied Bandwidth(6dB)	> 500kHz	Conducted	Complies
2.1051, 15.247(d)	Band Edge / Conducted Spurious Emission	-20 dBc		Complies
15.247 (b)(3)	TX conducted output power	< 30 dBm		Complies
15.247(e)	PSD	< 8 dBm/3kHz		Complies
15.207(a)	AC Power Line conducted emissions	Section 11	Power Line conducted	Complies
15.205, 15.209	Radiated Spurious Emission	< 54dBuV/m(Av)	Radiated	Complies

9. ANTENNA PORT TEST RESULTS

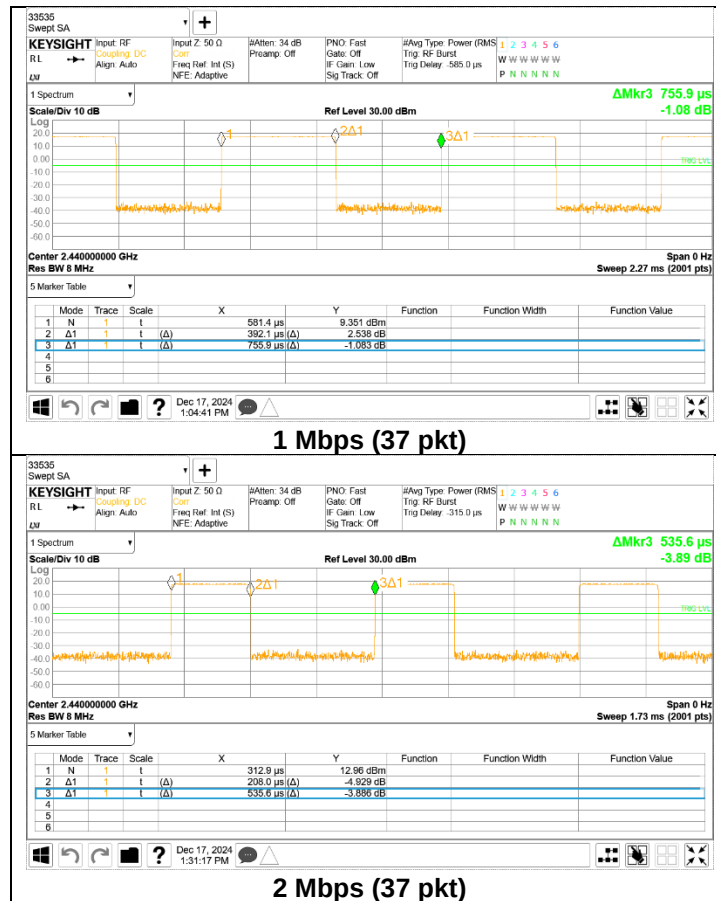
9.1. ON TIME AND DUTY CYCLE

LIMITS

None; for reporting purposes only.

Mode	On time [msec]	Period [msec]	Duty cycle x [Linear]	Duty Cycle [%]	Duty Cycle Correction Factor [dB]	1/T Minimum VBW [kHz]
2 400 ~ 2 483.5 MHz Bands						
1 Mbps [37pkt]	0.392	0.756	0.519	51.905	2.85	2.55
2 Mbps [37pkt]	0.208	0.536	0.388	38.835	4.11	4.81

Note: Since ANT1 and 2 have the same duty cycle, the duty cycle of ANT1 is reported as representative in the table above.



9.2. 6 dB BANDWIDTH

LIMITS

FCC §15.247 (a) (2)

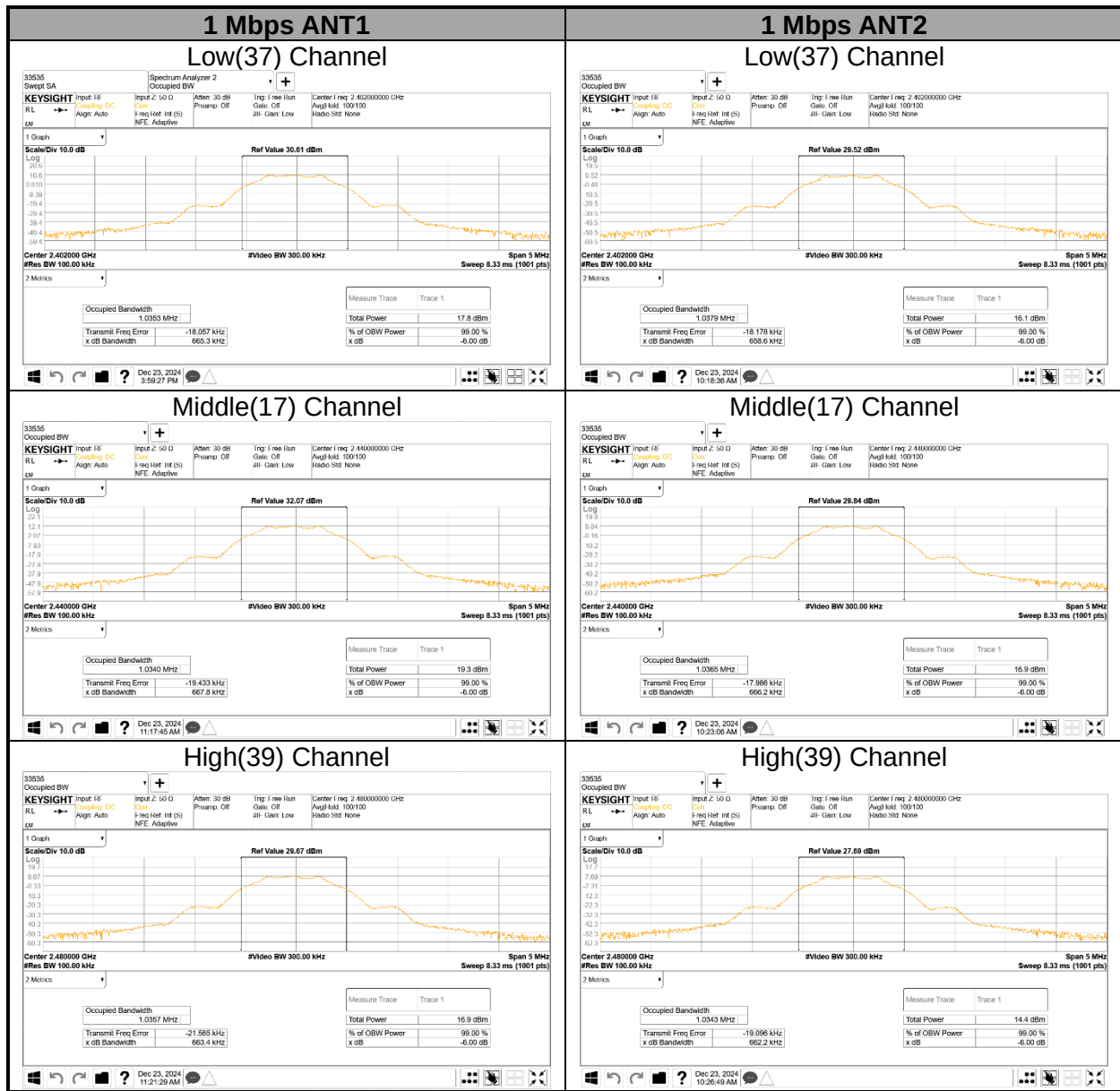
The minimum 6 dB bandwidth shall be at least 500 kHz.

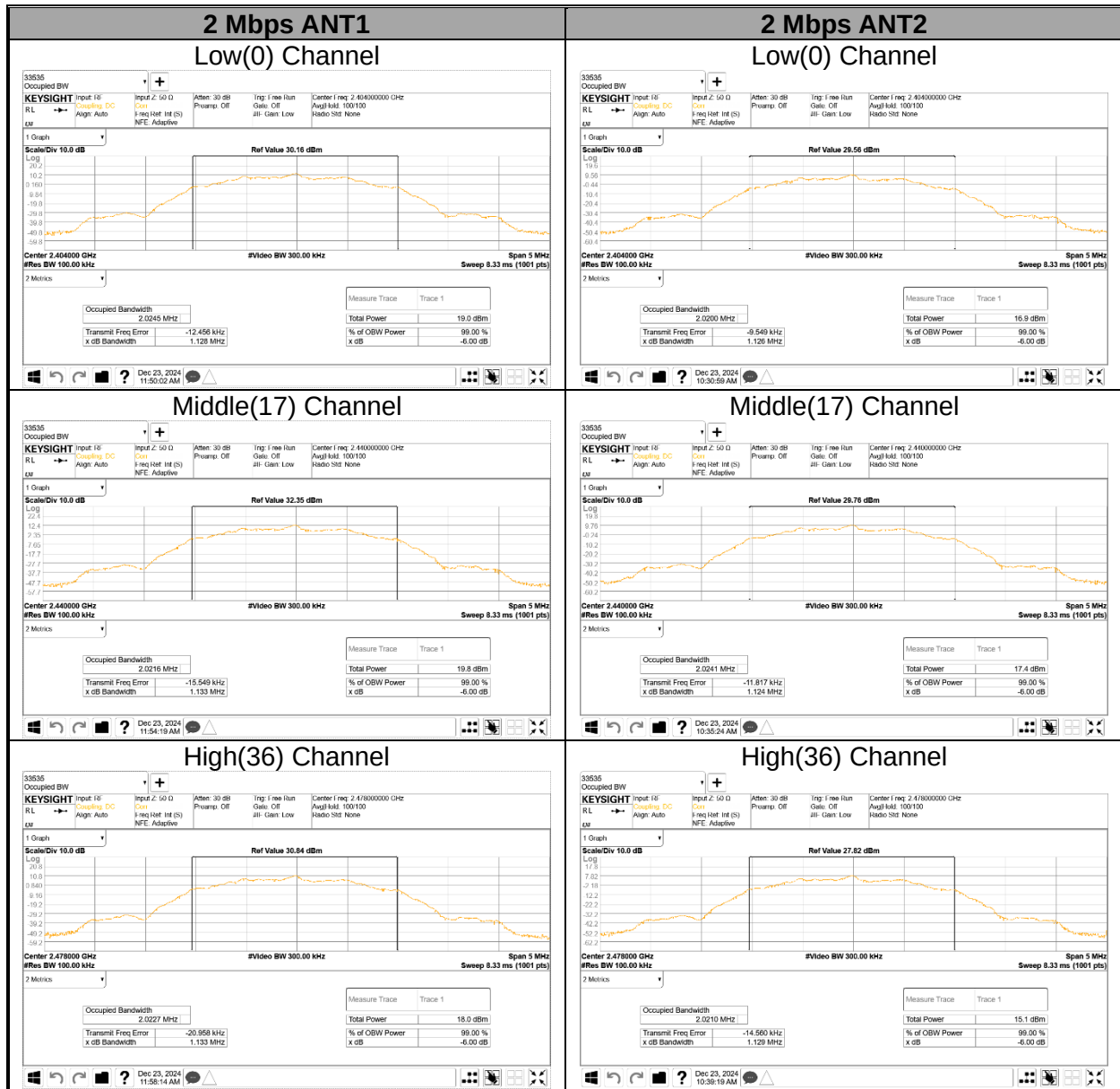
RESULTS

9.2.1. TEST DATA

Mode	Antenna	Channel	Frequency [MHz]	6 dB Bandwidth [kHz]	Minimum Limit [kHz]
1 Mbps (37pkt)	ANT1	37	2 402	665.3	500.0
		17	2 440	667.8	
		39	2 480	663.4	
	ANT2	37	2 402	658.6	
		17	2 440	666.2	
		39	2 480	662.2	
2 Mbps (37pkt)	ANT1	0	2 404	1 128.0	
		17	2 440	1 133.0	
		36	2 478	1 133.0	
	ANT2	0	2 404	1 126.0	
		17	2 440	1 124.0	
		36	2 478	1 129.0	
Worst				658.6	500.0

9.2.2. 6 dB BANDWIDTH PLOTS





9.3. OUTPUT POWER

LIMITS

FCC §15.247 (b) (3)

The maximum antenna gain is less than or equal to 6 dBi, therefore the limit is 30 dBm.

TEST PROCEDURE

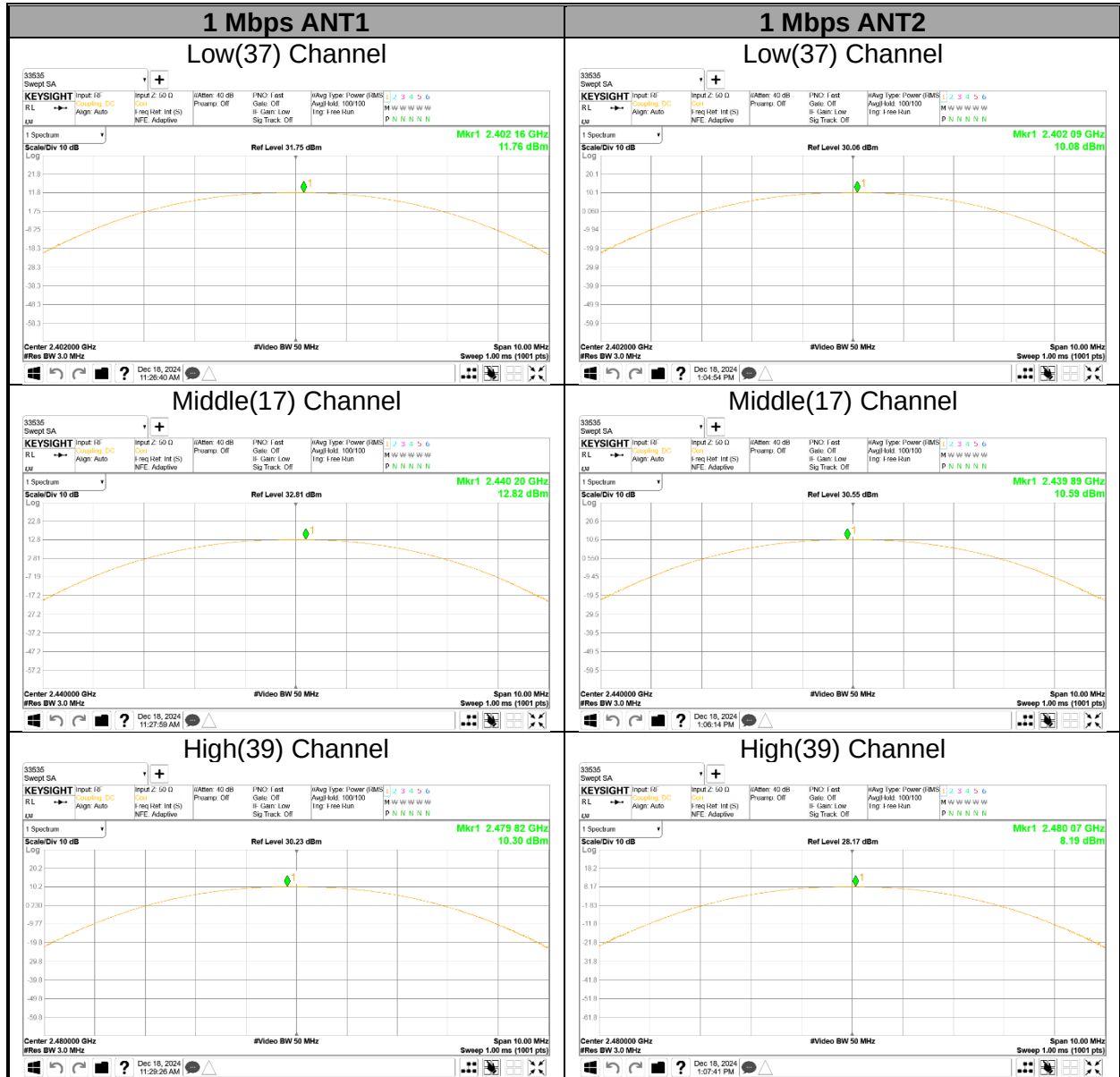
Peak power is measured using ANSI C63.10(2013) under section 11.9.1.1 utilizing spectrum analyzer(RBW $\geq$ DTS bandwidth).

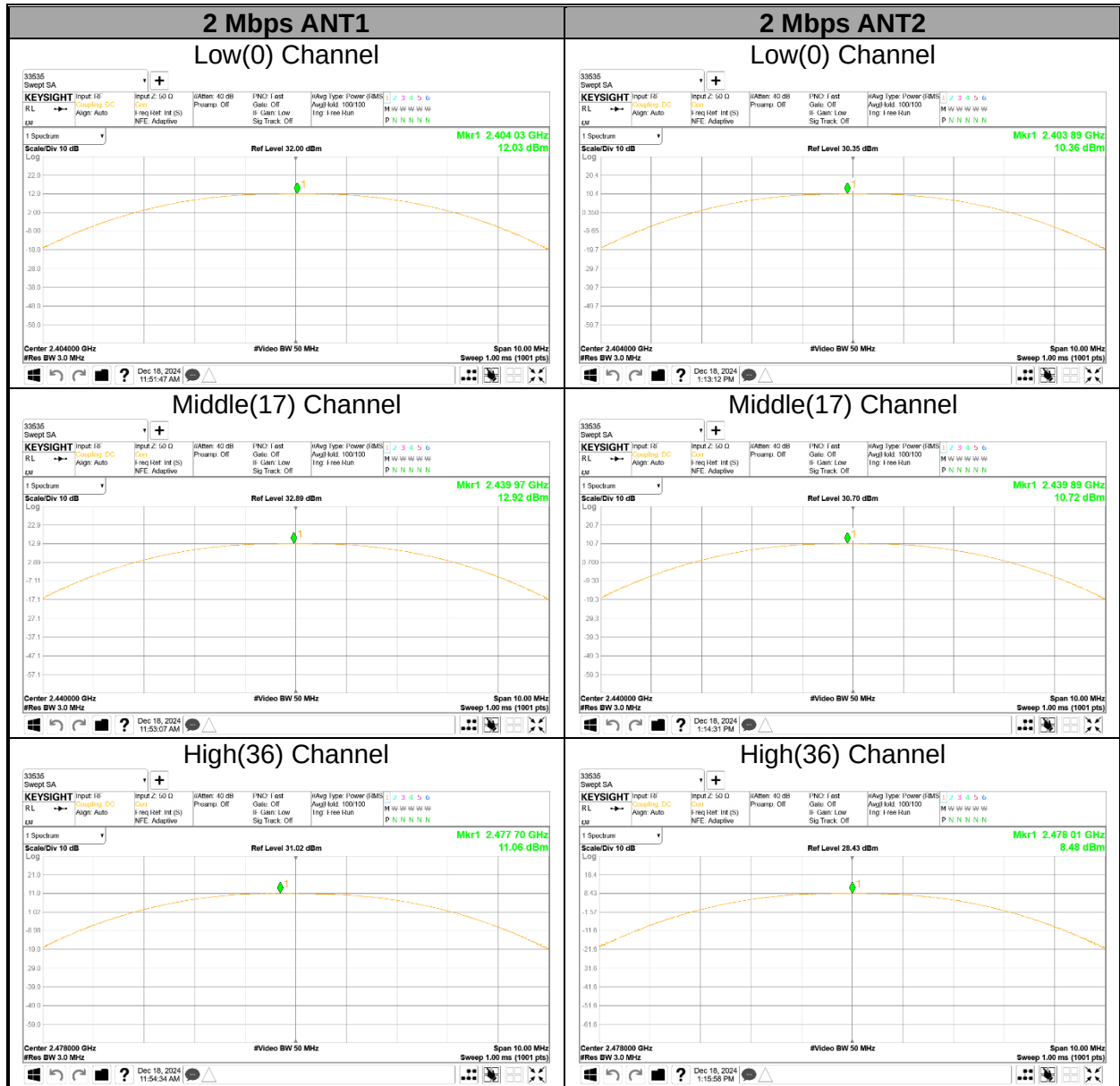
RESULTS

9.3.1. DIVERSITY MODE TEST DATA

Mode	Antenna	Channel	Frequency [MHz]	Peak Output Power [dBm]	Limit [dBm]	Margin [dB]
1 Mbps (37 pkt)	ANT1	37	2 402	11.76	30.000	-18.24
		17	2 440	12.82		-17.18
		39	2 480	10.30		-19.70
	ANT2	37	2 402	10.08		-19.92
		17	2 440	10.59		-19.41
		39	2 480	8.19		-21.81
2 Mbps (37 pkt)	ANT1	0	2 404	12.03		-17.97
		17	2 440	12.92		-17.08
		36	2 478	11.06		-18.94
	ANT2	0	2 404	10.36		-19.64
		17	2 440	10.72		-19.28
		36	2 478	8.48		-21.52
Worst				<u>12.92</u>	<u>-17.08</u>	

9.3.2. PEAK POWER PLOTS





9.4. AVERAGE POWER

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

Measurements perform using a wideband RF frame average power sensor.
The cable assembly insertion loss and duty cycle correction factor were entered as an offset in the power meter to allow for direct reading of power.

RESULTS

9.4.1. DIVERSITY MODE TEST DATA

Mode	Antenna	Channel	Frequency [MHz]	Average Output Power [dBm]	Average Output Power [mW]
1 Mbps (37pkt)	ANT1	37	2 402	11.502	14.132
		17	2 440	12.466	17.644
		39	2 480	9.864	9.691
	ANT2	37	2 402	9.588	9.094
		17	2 440	10.109	10.254
		39	2 480	7.682	5.863
2 Mbps (37 pkt)	ANT1	0	2 404	11.374	13.721
		17	2 440	12.249	16.784
		36	2 478	10.296	10.705
	ANT2	0	2 404	9.612	9.146
		17	2 440	9.930	9.841
		36	2 478	7.667	5.843

9.5. POWER SPECTRAL DENSITY

LIMITS

FCC §15.247 (e)

The power spectral density conducted from the transmitter to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

TEST PROCEDURE

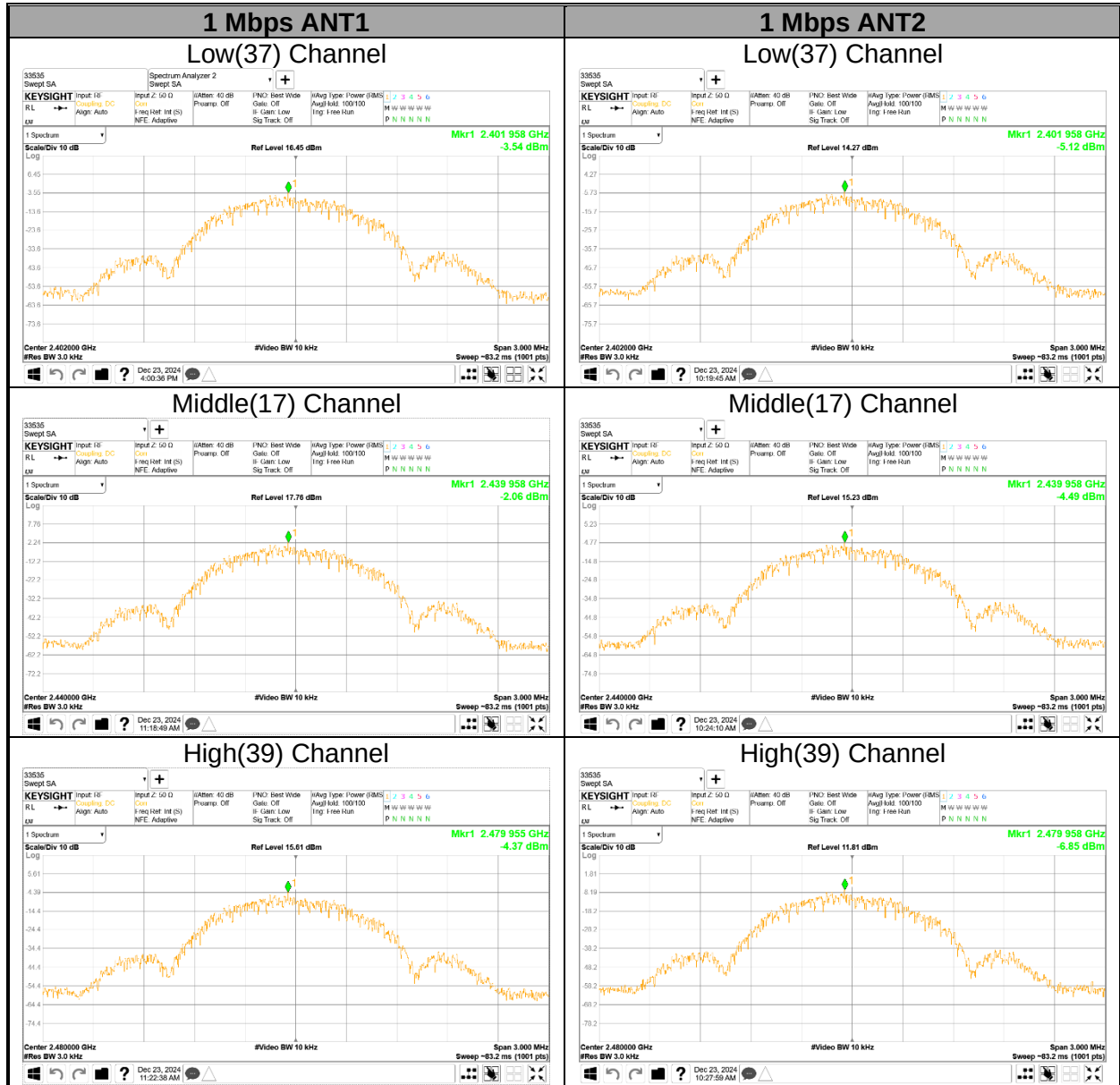
ANSI C63.10-2013, Section 11.10.2 Method PKPSD (peak PSD)

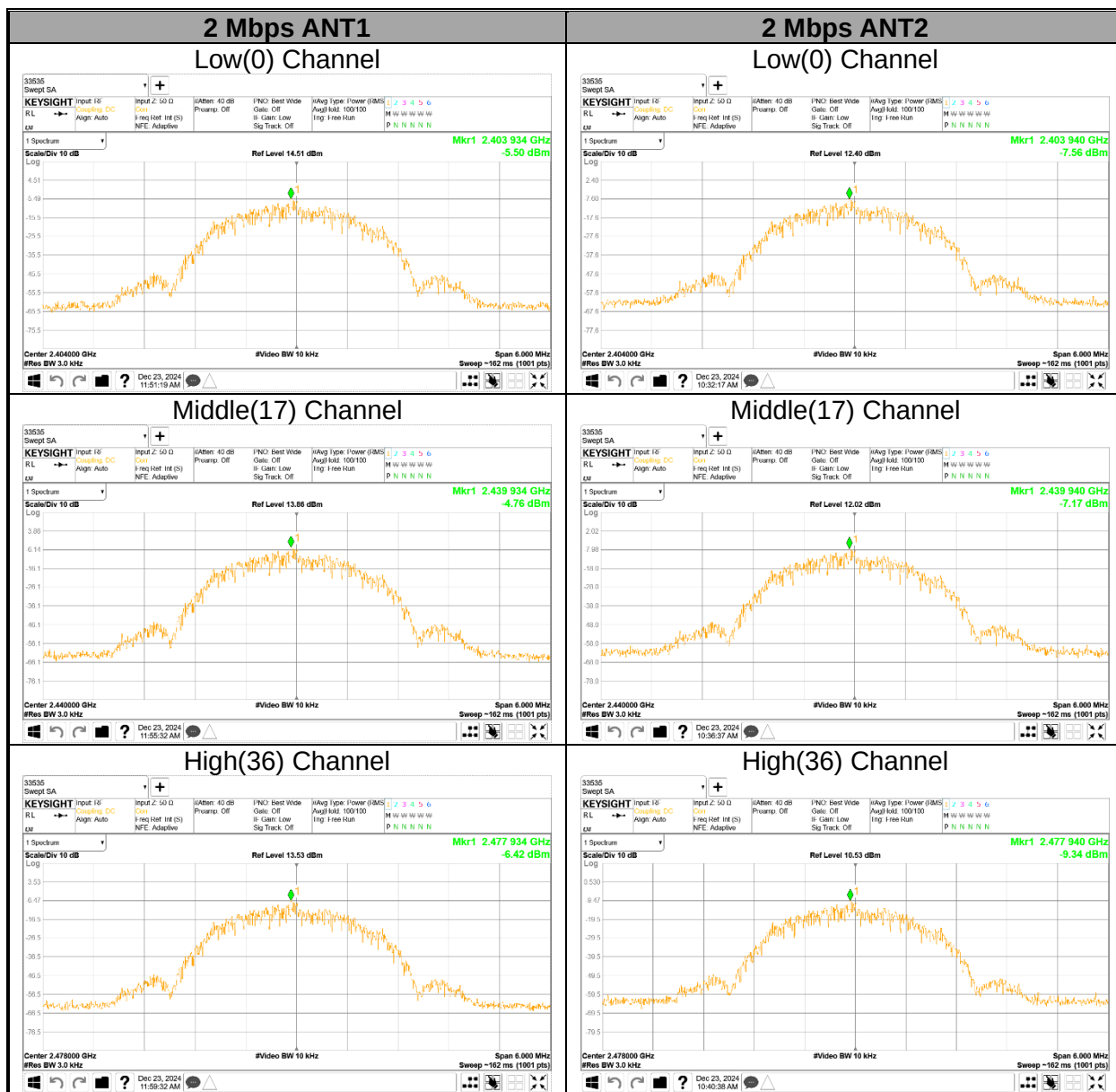
RESULTS

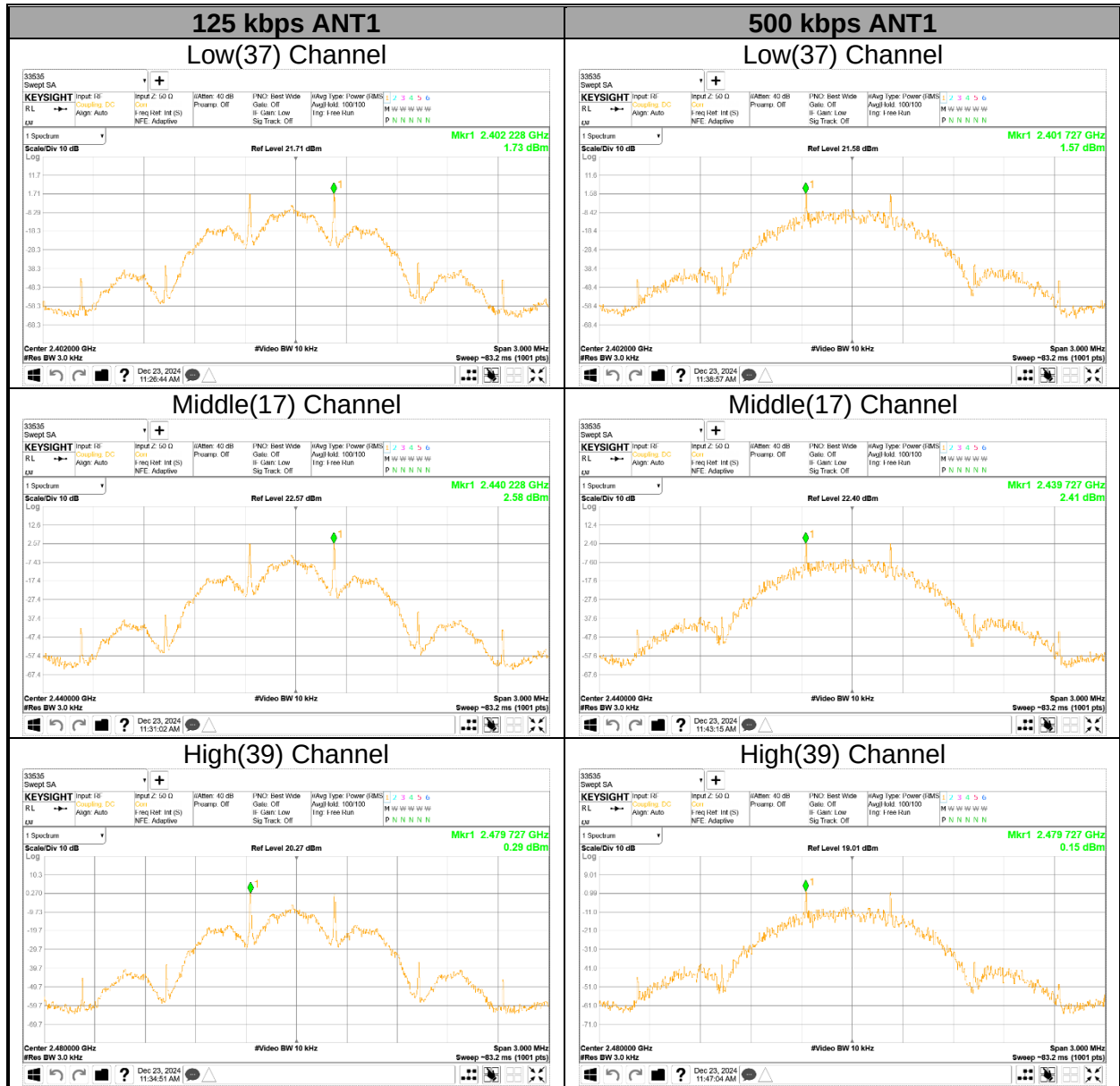
9.5.1. TEST DATA

Mode	Antenna	Channel	Frequency [MHz]	PSD [dBm/3kHz]	Limit [dBm/3kHz]	Margin [dB]
1 Mbps (37pkt)	ANT1	37	2 402	-3.54	8.00	-11.54
		17	2 440	-2.06		-10.06
		39	2 480	-4.37		-12.37
	ANT2	37	2 402	-5.12		-13.12
		17	2 440	-4.49		-12.49
		39	2 480	-6.85		-14.85
2 Mbps (37 pkt)	ANT1	0	2 404	-5.50		-13.50
		17	2 440	-4.76		-12.76
		36	2 478	-6.42		-14.42
	ANT2	0	2 404	-7.56		-15.56
		17	2 440	-7.17		-15.17
		36	2 478	-9.34		-17.34
125 kbps (37 pkt)	ANT1	37	2 402	1.73		-6.27
		17	2 440	2.58		-5.42
		39	2 480	0.29		-7.71
500 kbps (37 pkt)	ANT1	37	2 402	1.57		-6.43
		17	2 440	2.41		-5.59
		39	2 480	0.15		-7.85
Worst				2.58		-5.42

9.5.2. PSD TEST PLOTS







9.6. CONDUCTED SPURIOUS EMISSIONS

LIMITS

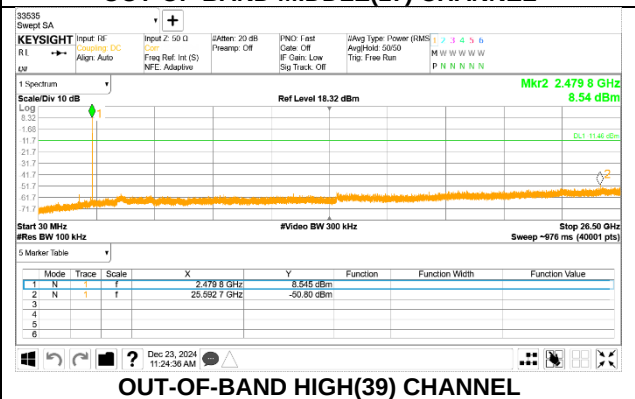
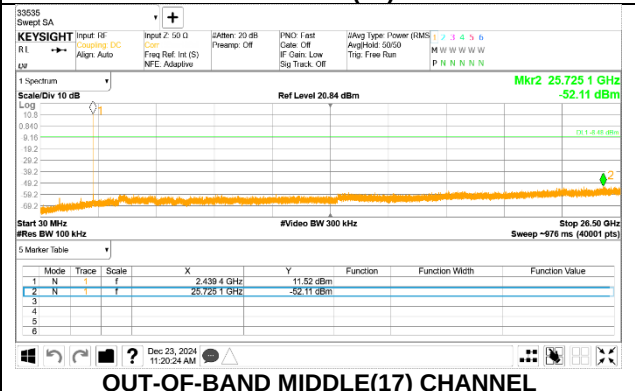
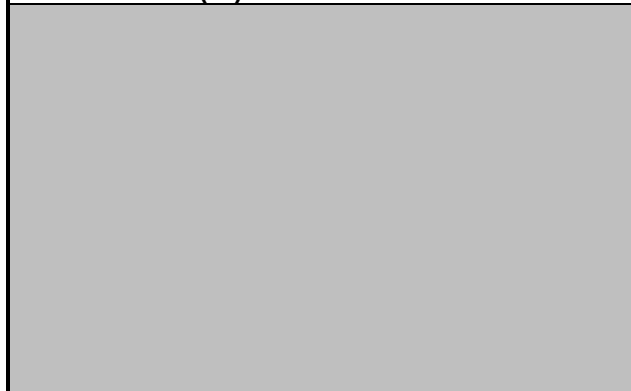
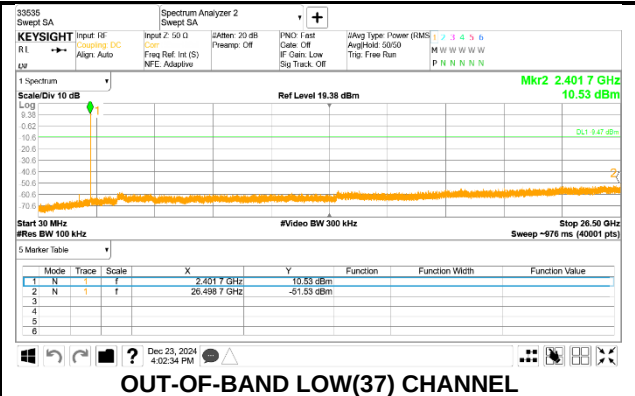
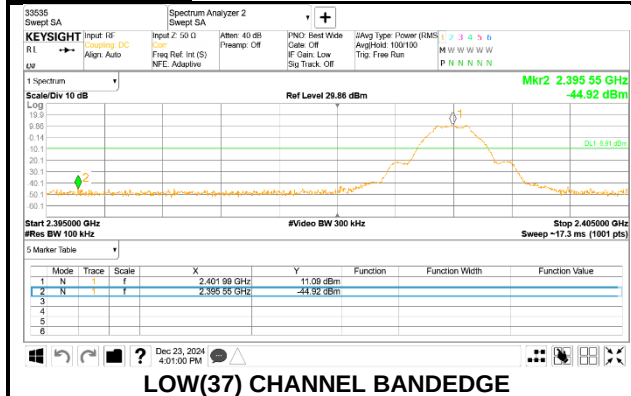
FCC §15.247 (d)

Output power was measured based on the use of a peak measurement.
Therefore, spurious emissions are required to be 20 dBc.

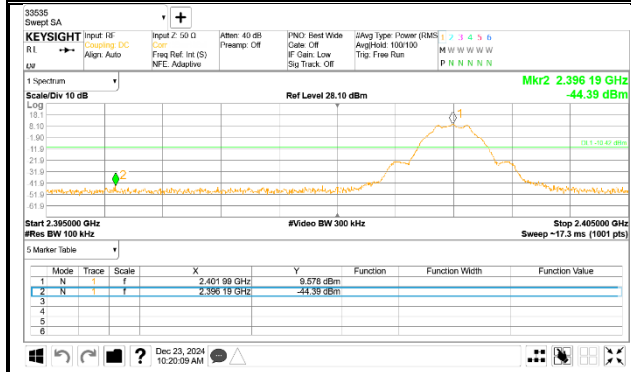
RESULTS

9.6.1. TEST PLOT

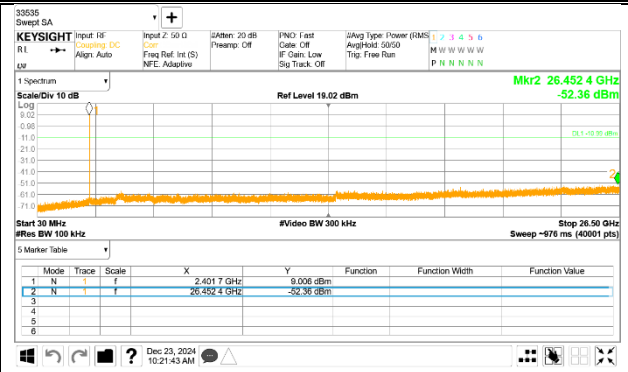
1 Mbps ANT1



1 Mbps ANT2



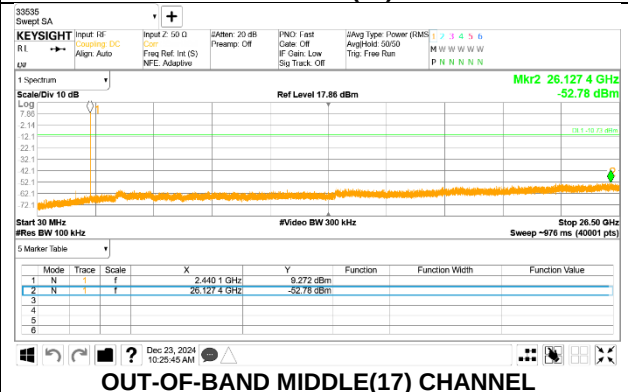
LOW(37) CHANNEL BANDEDGE



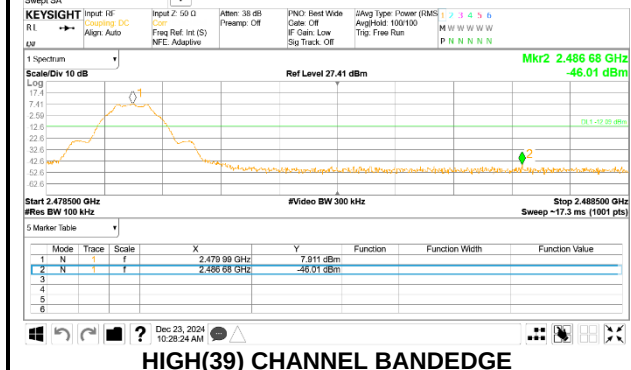
OUT-OF-BAND LOW(37) CHANNEL



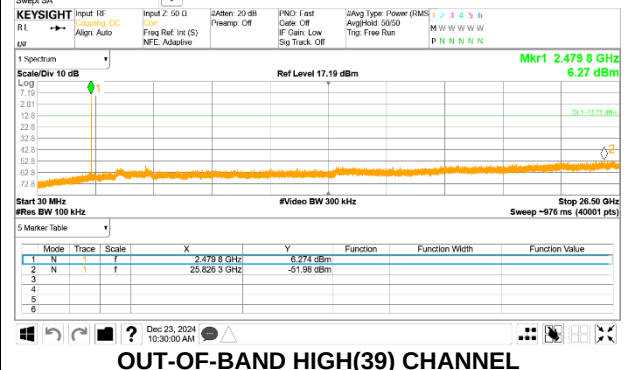
HIGH(39) CHANNEL BANDEDGE



OUT-OF-BAND MIDDLE(17) CHANNEL

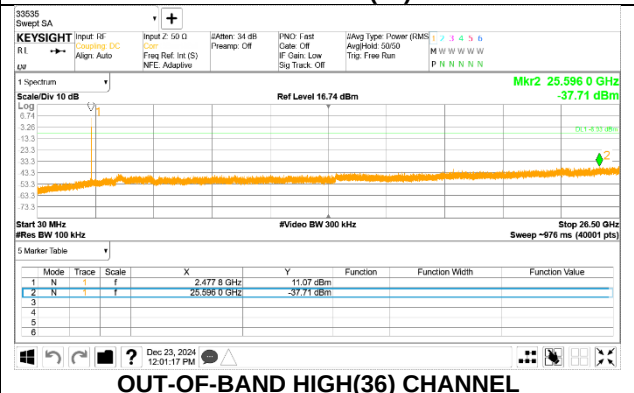
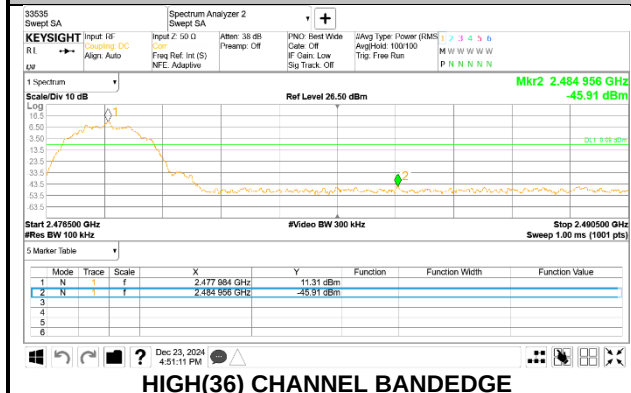
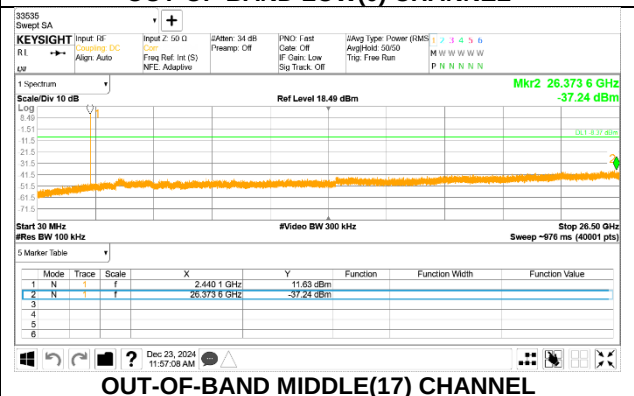
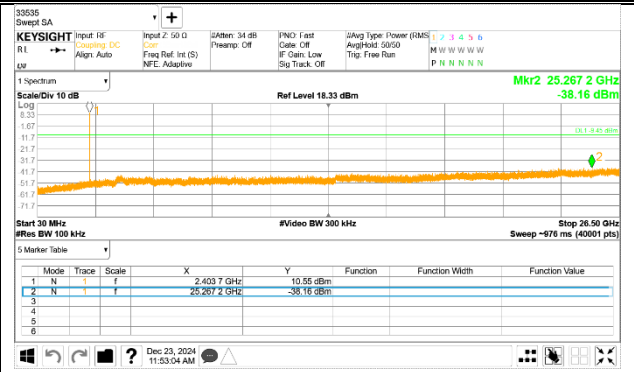
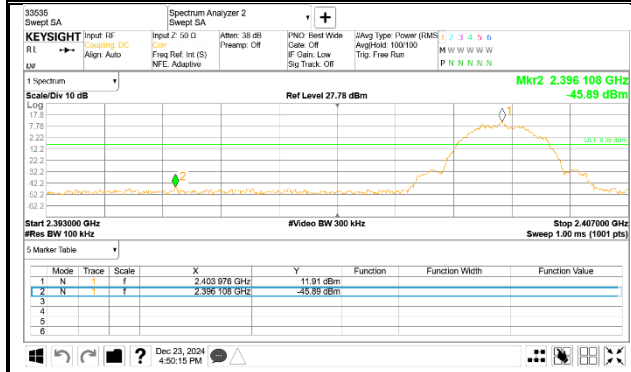


HIGH(39) CHANNEL BANDEDGE

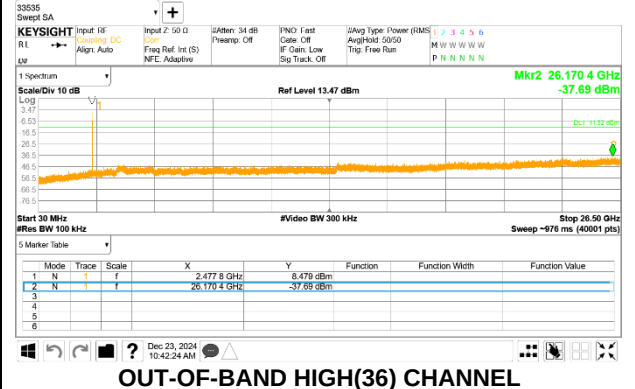
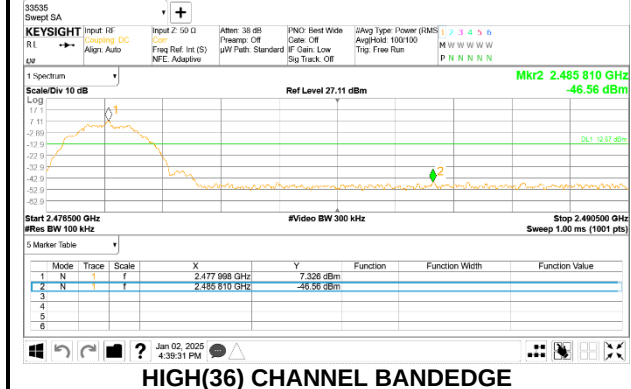
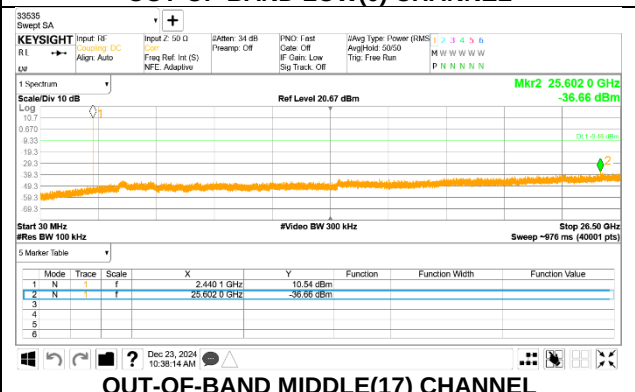
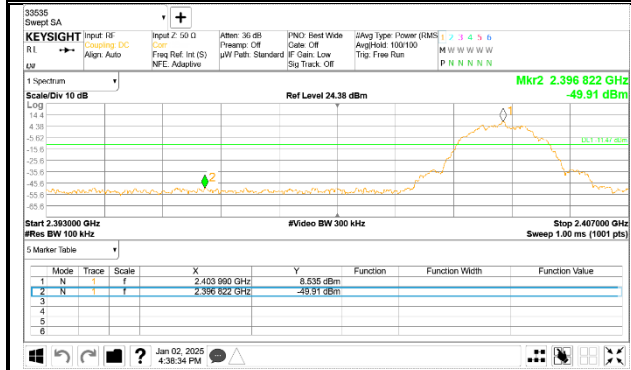


OUT-OF-BAND HIGH(39) CHANNEL

2 Mbps ANT1



2 Mbps ANT2



10. RADIATED TEST RESULTS

10.1. LIMITS AND PROCEDURE

LIMITS

FCC §15.205 and §15.209

Limits for radiated disturbance of an intentional radiator		
Frequency range (MHz)	Limits (μV/m)	Measurement Distance (m)
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

** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g. §§ 15.231 and 15.241.

TEST PROCEDURE

The EUT is placed on a non-conducting table 80 cm above the ground plane for below 1GHz and 150 cm for above 1GHz. The antenna to EUT distance is 3 meters. The EUT is configured in accordance with ANSI C63.10. The EUT is set to transmit in a continuous mode.

For measurements below 1 GHz the resolution bandwidth is set to 100 kHz for peak detection measurements or 120 kHz for quasi-peak detection measurements. Peak detection is used unless otherwise noted as quasi-peak.

For measurements above 1 GHz the resolution bandwidth is set to 1 MHz, then the video bandwidth is set to 3 MHz for peak measurements and add duty cycle factor for average measurements. (Restricted band-edge, Final detection of spurious harmonic emissions)
Duty cycle factor = $10 \log (1/x)$. For this sample: For 1 Mbps, DCF = $10 \log (1/0.519) = 2.848 \text{ dB}$ (Spectrum Analyzer round it up to 2.85 dB) and for 2 Mbps, DCF = $10 \log (1/0.388) = 4.108 \text{ dB}$ (Spectrum Analyzer round it up to 4.11 dB).

Pre-scans to detect harmonic and spurious emissions, the resolution bandwidth is set to 1 MHz; the video bandwidth is set to 30 kHz for peak measurements.

The spectrum from 1 GHz to 26 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in the 2.4 GHz band.
(From 30MHz to 1GHz, test was performed with the EUT set to transmit at the channel with highest output power)

The frequency range of interest is monitored at a fixed antenna height and EUT azimuth. The EUT is rotated through 360 degrees to maximize emissions received. The antenna is scanned from 1 to 4 meters above the ground plane to further maximize the emission. Measurements are made with the antenna polarized in both the vertical and the horizontal positions.

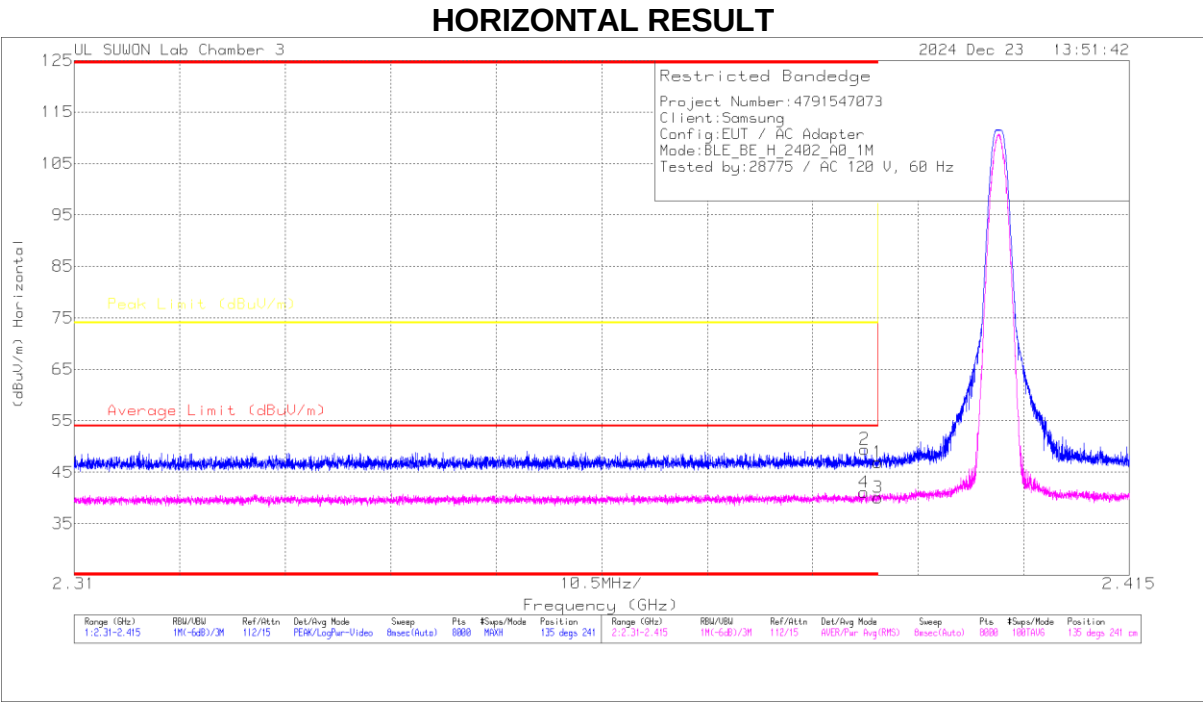
Note: Emission was pre-scanned from 9kHz to 30MHz; No emissions were detected which was at least 20dB below the specification limit (consider distance correction factor). Per FCC part 15.31(o), test results were not reported.

Although these tests were performed other than open field test site, adequate comparison measurements were confirmed against 30 m open are test site.
Therefore, sufficient tests were made to demonstrate that the alternative site produces results that correlate with the one of tests made in an open field based on KDB 414788.

10.2. TRANSMITTER ABOVE 1 GHz

10.2.1. 1 Mbps ANT1

BANDEDGE (37 CHANNEL)

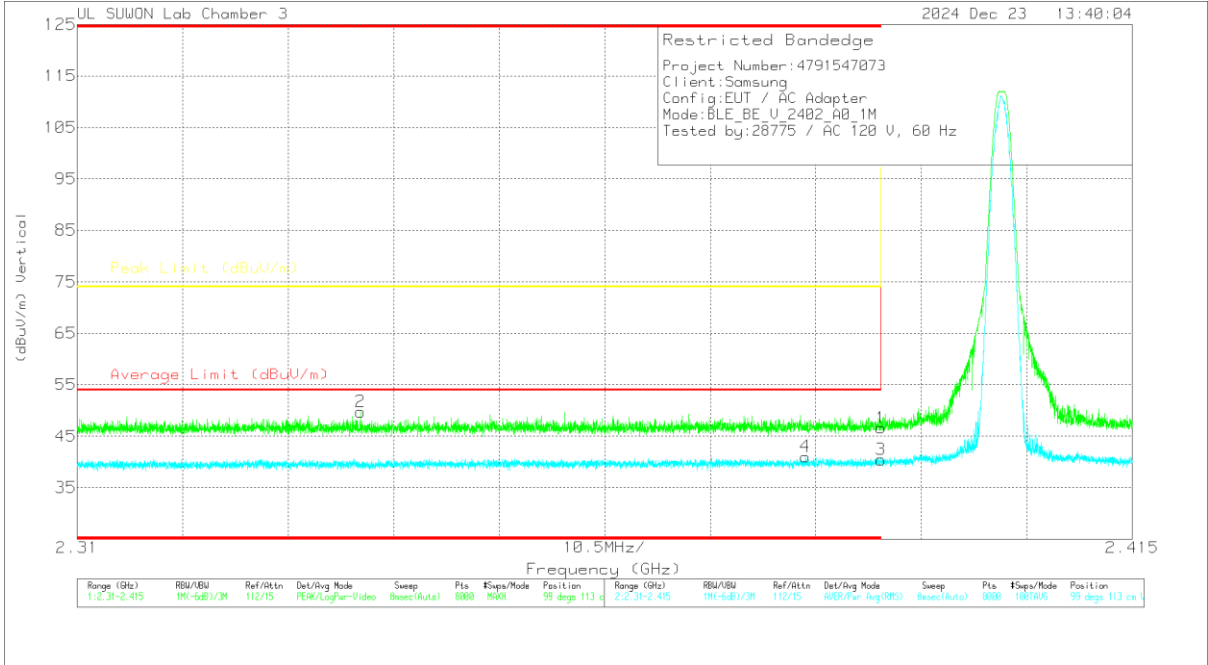


Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	Antenna_507_Factor (dBm)	10dB_Path Loss (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	39.73	PK	32.1	-24.9	0	46.93	-	-	74	-27.07	135	241	H
2	* 2.38868	42.35	PK	32.1	-25	0	49.45	-	-	74	-24.55	135	241	H
3	* 2.39	30.03	RMS	32.1	-24.9	2.85	40.08	54	-13.92	-	-	135	241	H
4	* 2.38862	31.16	RMS	32.1	-25	2.85	41.11	54	-12.89	-	-	135	241	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

VERTICAL RESULT

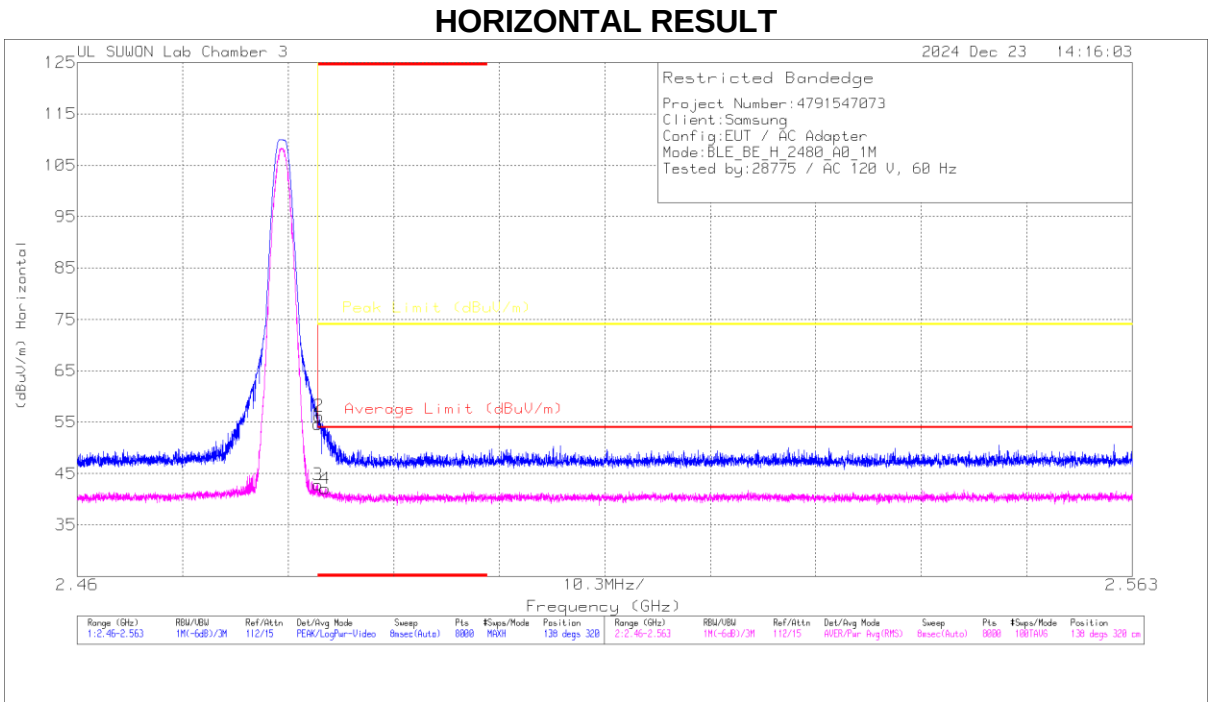


Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	Antenna_957_Factor (dBm)	10dB_Path Loss(dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Altitude (Degs)	Height (cm)	Polarity
1	* 2.39	39.4	PK	32.1	-24.9	0	46.6	-	-	74	-27.4	99	113	V
2	* 2.33818	42.85	PK	32	-25.1	0	49.75	-	-	74	-24.25	99	113	V
3	* 2.39	30.4	RMS	32.1	-24.9	2.85	40.45	54	-13.55	-	-	99	113	V
4	* 2.38246	31.09	RMS	32.1	-25	2.85	41.04	54	-12.96	-	-	99	113	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

BANDEDGE (39 CHANNEL)

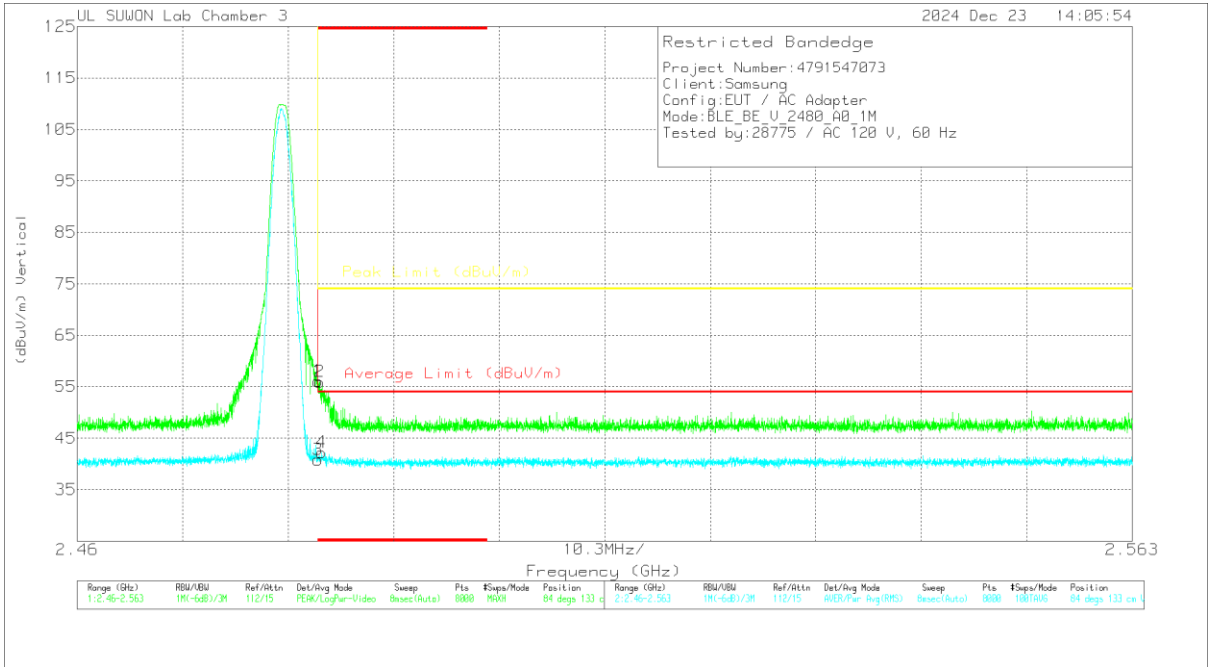


Trace Markers

Marker	Frequency (GHz)	Meas Reading (dBuV)	Det	Antenna_507_Factor (dB/m)	10dB_Path Loss (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Acimuth (Degs)	Height (cm)	Polarity
1	* 2.4835	47.15	PK	32.4	-24.9	0	54.65	-	-	74	-19.35	138	320	H
2	* 2.48363	48.68	PK	32.4	-24.9	0	56.18	-	-	74	-17.82	138	320	H
3	* 2.4835	32.49	RMS	32.4	-24.9	2.85	42.84	54	-11.16	-	-	138	320	H
4	* 2.4842	31.73	RMS	32.4	-24.9	2.85	42.08	54	-11.92	-	-	138	320	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PK - Peak detector
RMS - RMS detection

VERTICAL RESULT



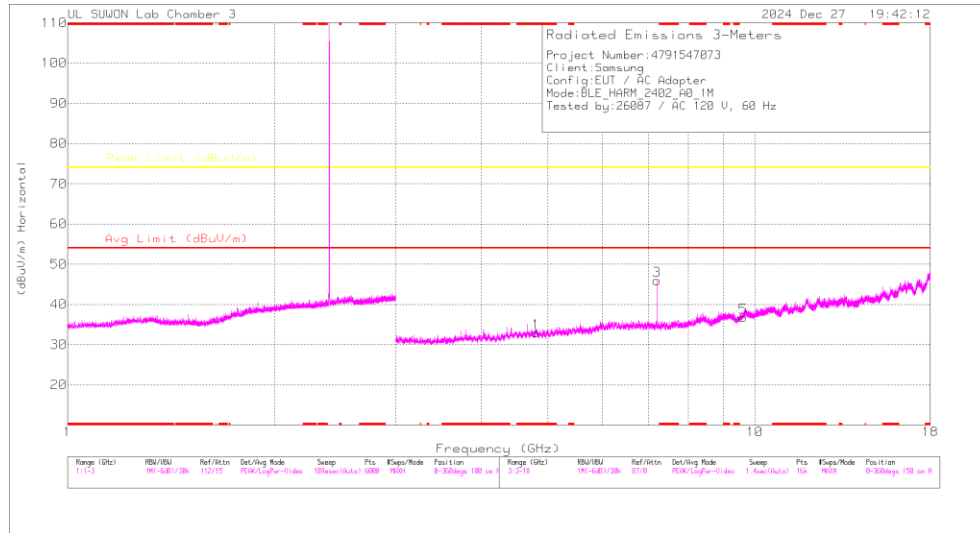
Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	Antenna 957 Factor (dBm)	10dB_Path Loss (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Pk Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.4835	48.6	Pk	32.4	-24.9	0	56.1	-	-	74	-17.9	84	133	V
2	* 2.48366	48.47	Pk	32.4	-24.9	0	55.97	-	-	74	-18.03	84	133	V
3	* 2.4835	30.47	RMS	32.4	-24.9	2.85	40.82	54	-13.18	-	-	84	133	V
4	* 2.48386	31.88	RMS	32.4	-24.9	2.85	42.23	54	-11.77	-	-	84	133	V

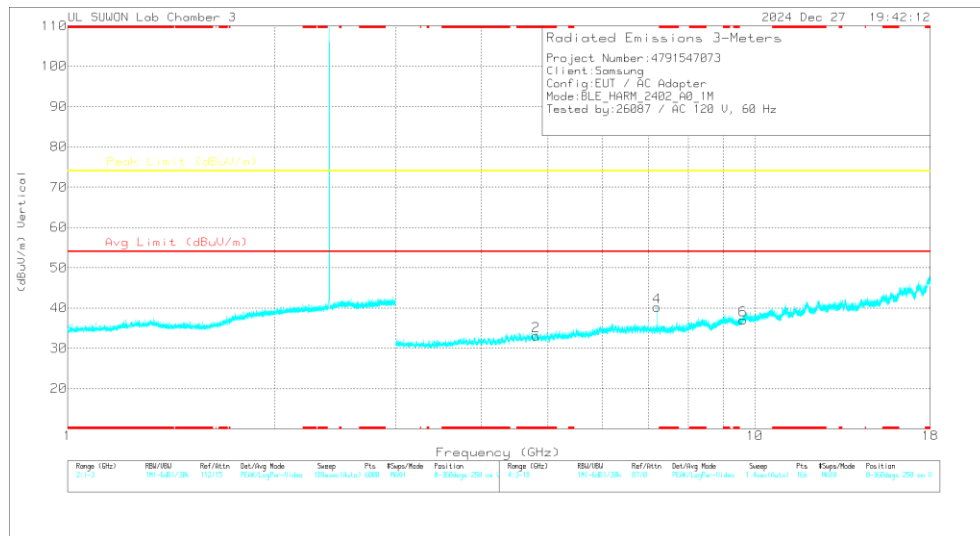
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

HARMONICS AND SPURIOUS EMISSIONS

37 CHANNEL RESULTS



HORIZONTAL



VERTICAL

Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

Radiated Emissions

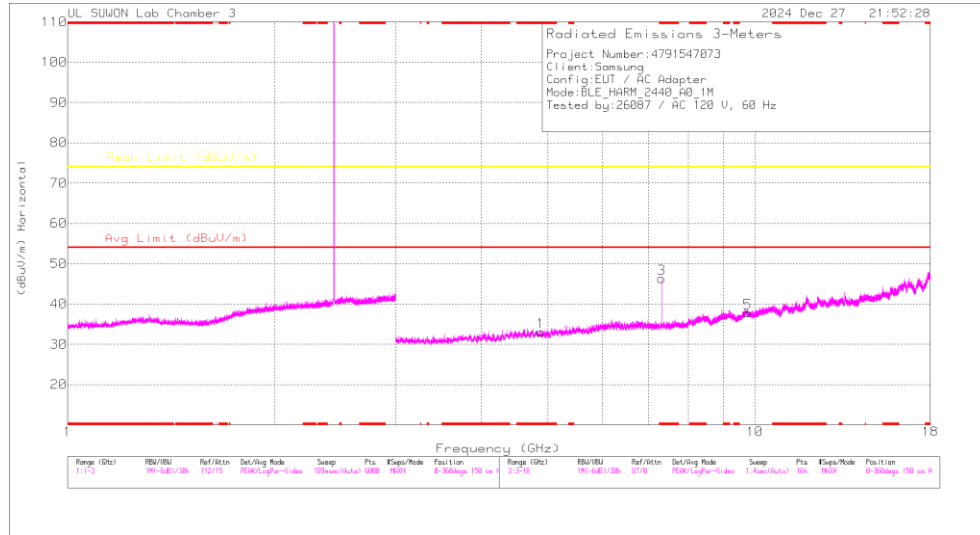
Frequency (GHz)	Meter Reading (dBuV)	Det	Antenna_957_Factor(dB/m)	3GHz_HP_Pat h Loss(dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 4.80348	39.6	PK2	34.3	-29.8	0	44.1	-	-	74	-29.9	120	106	H
* 4.80423	27.88	MAV1	34.3	-29.8	2.85	35.23	54	-18.77	-	-	120	106	H
* 4.80338	39.72	PK2	34.3	-29.8	0	44.22	-	-	74	-29.78	186	104	V
* 4.80366	28.47	MAV1	34.3	-29.8	2.85	35.82	54	-18.18	-	-	186	104	V
7.20663	41.46	PK2	35.8	-25.7	0	51.56	-	-	74	-22.44	244	100	H
7.20533	40.37	PK2	35.8	-25.7	0	50.47	-	-	74	-23.53	132	130	V
9.60863	32.21	PK2	36.7	-21.7	0	47.21	-	-	74	-26.79	0	100	H
9.60997	32.15	PK2	36.7	-21.7	0	47.15	-	-	74	-26.85	0	100	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

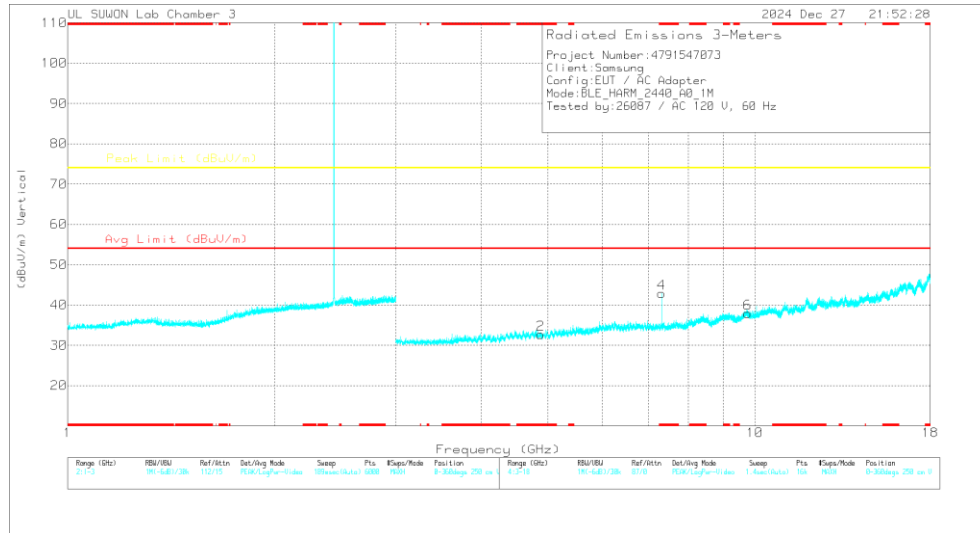
PK2 - KDB558074 Method: Maximum Peak

MAV1 - KDB558074 Option 1 Maximum RMS Average

17 CHANNEL RESULTS



HORIZONTAL



VERTICAL

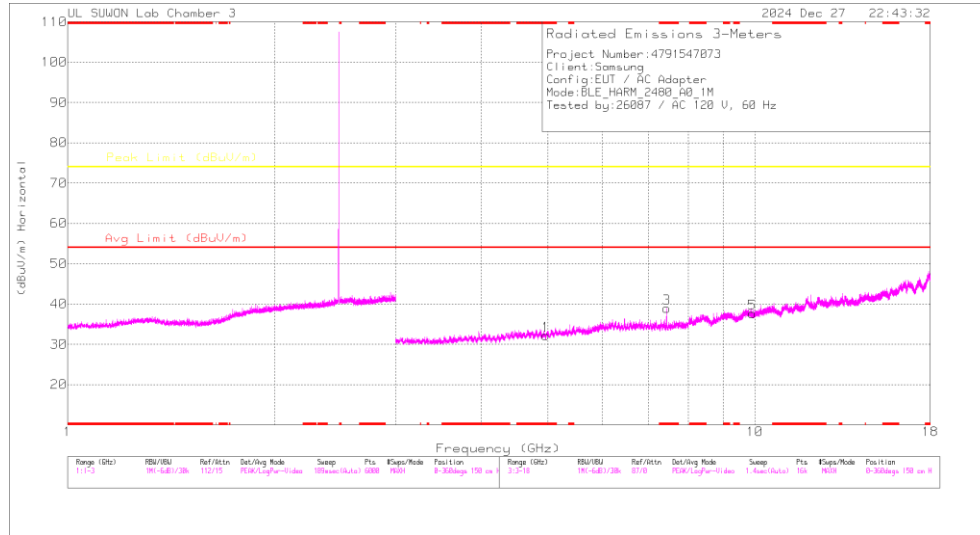
Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

Radiated Emissions

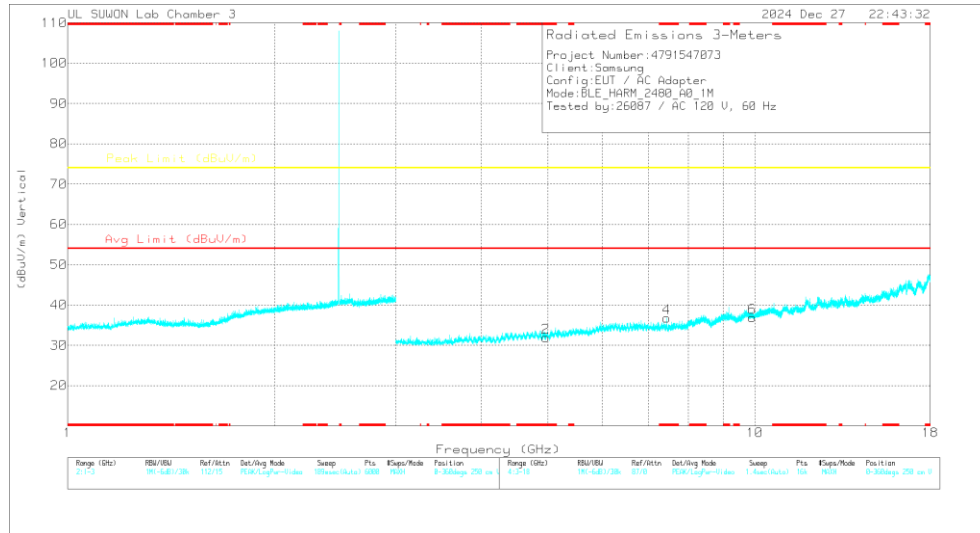
Frequency (GHz)	Meter Reading (dBuV)	Det	Antenna_957_Factor(dB/m)	3GHz_HP_Pat h Loss(dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 4.8796	39.68	PK2	34.2	-30.5	0	43.38	-	-	74	-30.62	235	125	H
* 4.87993	28.51	MAv1	34.2	-30.5	2.85	35.06	54	-18.94	-	-	235	125	H
* 4.88009	39.64	PK2	34.2	-30.5	0	43.34	-	-	74	-30.66	181	100	V
* 4.87984	28.12	MAv1	34.2	-30.5	2.85	34.67	54	-19.33	-	-	181	100	V
* 7.32068	41.06	PK2	35.8	-25.1	0	51.76	-	-	74	-22.24	232	132	H
* 7.31937	31.75	MAv1	35.8	-25.2	2.85	45.2	54	-8.8	-	-	232	132	H
* 7.32039	39.96	PK2	35.8	-25.2	0	50.56	-	-	74	-23.44	133	125	V
* 7.31949	30.67	MAv1	35.8	-25.2	2.85	44.12	54	-9.88	-	-	133	125	V
9.76026	32.61	PK2	36.9	-21.2	0	48.31	-	-	74	-25.69	0	100	H
9.762	31.72	PK2	36.9	-21.2	0	47.42	-	-	74	-26.58	0	100	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PK2 - KDB558074 Method: Maximum Peak
MAv1 - KDB558074 Option 1 Maximum RMS Average

39 CHANNEL RESULTS



HORIZONTAL



VERTICAL

Note: Emission was scanned up to 26GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	Antenna_957_Factor(dB/m)	3GHz_HP_Pat h Loss(dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
* 4.96	38.55	PK2	34.3	-30.4	0	42.45	-	-	74	-31.55	159	100	H
* 4.95955	27.57	MAv1	34.3	-30.4	2.85	34.32	54	-19.68	-	-	159	100	H
* 4.95743	38.73	PK2	34.3	-30.3	0	42.73	-	-	74	-31.27	321	104	V
* 4.95984	27.26	MAv1	34.3	-30.4	2.85	34.01	54	-19.99	-	-	321	104	V
* 7.44071	37.09	PK2	35.7	-25	0	47.79	-	-	74	-26.21	215	251	H
* 7.44053	26.06	MAv1	35.7	-25	2.85	39.61	54	-14.39	-	-	215	251	H
* 7.44089	35.9	PK2	35.7	-25	0	46.6	-	-	74	-27.4	130	117	V
* 7.44049	24.66	MAv1	35.7	-25	2.85	38.21	54	-15.79	-	-	130	117	V
9.92051	31.2	PK2	37.1	-21.3	0	47	-	-	74	-27	0	100	H
9.91756	31.87	PK2	37.1	-21.3	0	47.67	-	-	74	-26.33	0	100	V

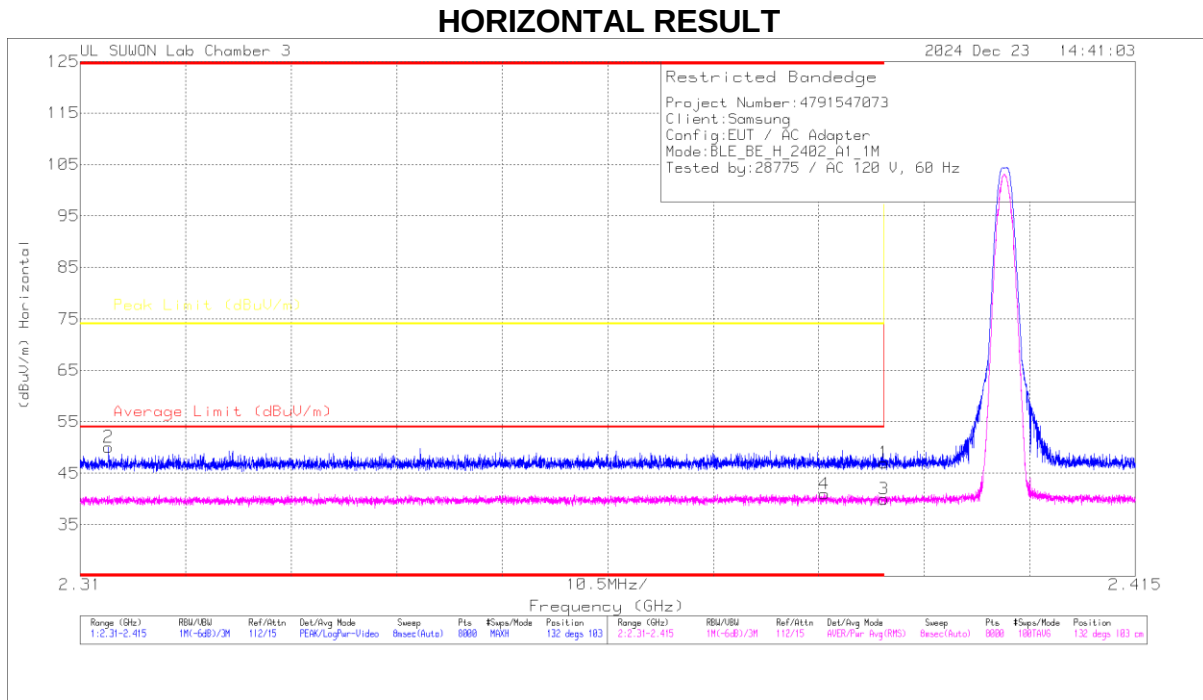
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

PK2 - KDB558074 Method: Maximum Peak

MAv1 - KDB558074 Option 1 Maximum RMS Average

10.2.2. 1 Mbps ANT2

BANDEDGE (37 CHANNEL)



Trace Markers

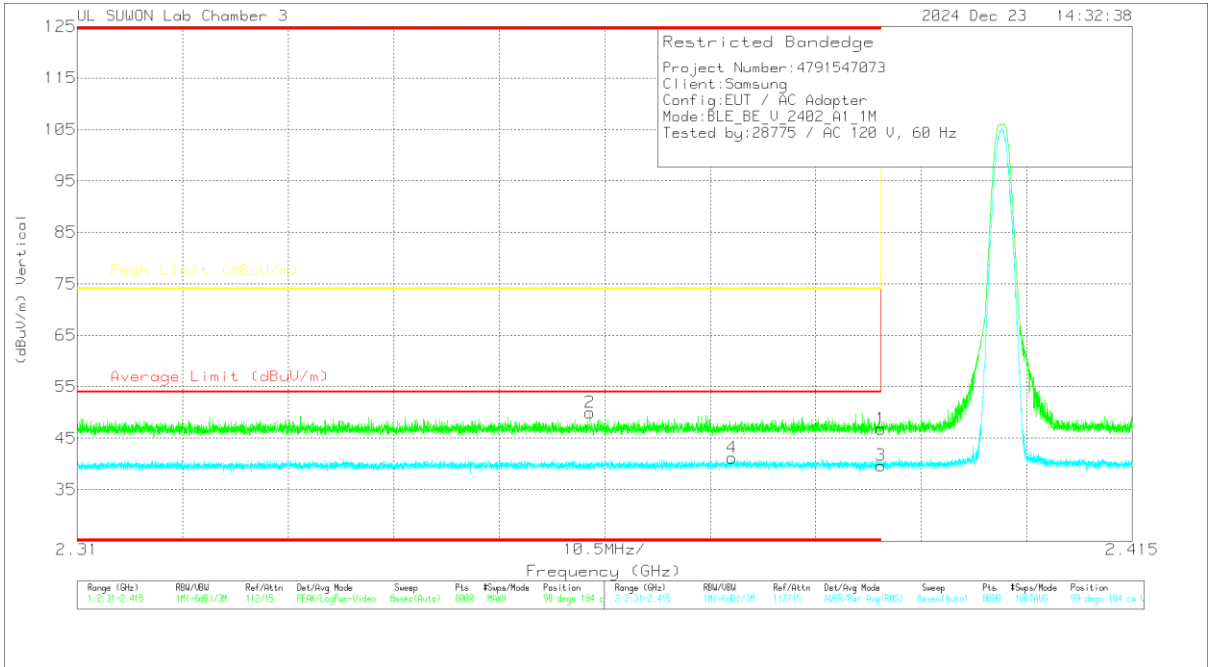
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	Antenna_957_Factor (dBm)	10dB_Path Loss(dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	39.84	Pk	32.1	-24.9	0	47.04	-	-	74	-26.96	132	103	H
2	* 2.31281	43.15	Pk	31.9	-25	0	50.05	-	-	74	-23.95	132	103	H
3	* 2.39	29.93	RMS	32.1	-24.9	2.85	39.98	54	-14.02	-	-	132	103	H
4	* 2.38406	31.03	RMS	32.1	-25	2.85	40.98	54	-13.02	-	-	132	103	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

Pk - Peak detector

RMS - RMS detection

VERTICAL RESULT

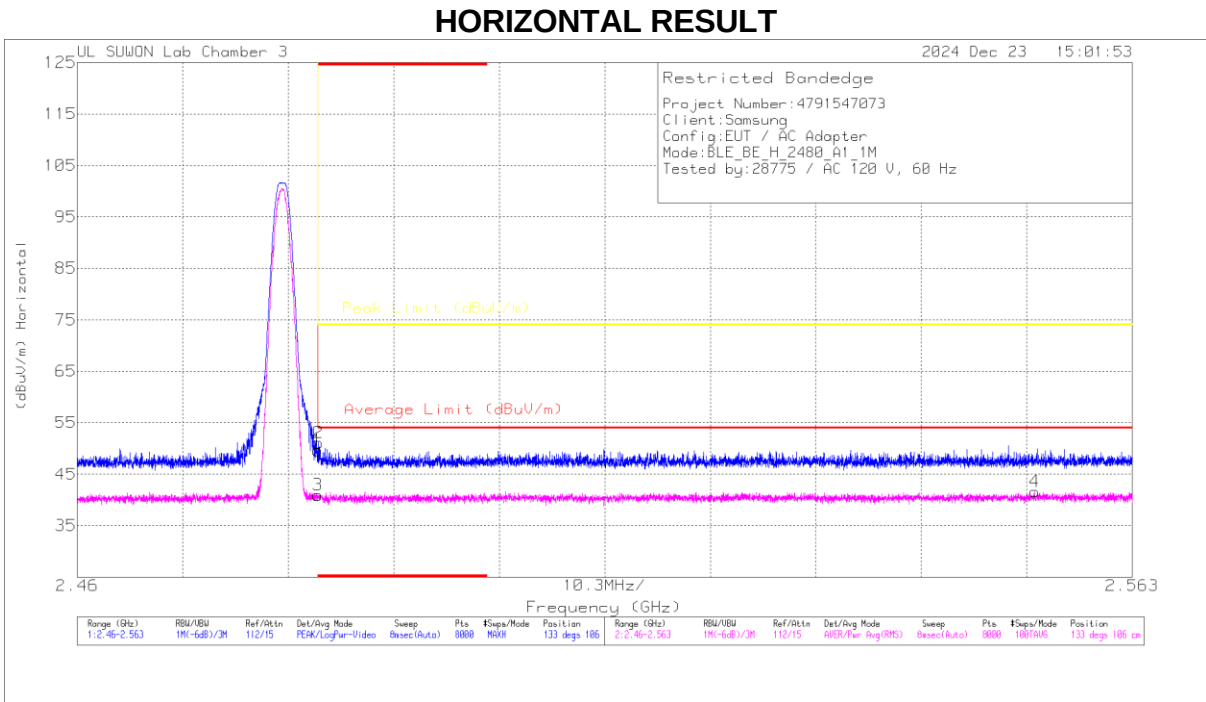


Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	Antenna_957_Factor (dBm)	10dB_Path Loss(dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	39.62	Pk	32.1	-24.9	0	46.82	-	-	74	-27.18	99	184	V
2	* 2.36101	43.09	Pk	32	-25.1	0	49.99	-	-	74	-24.01	99	184	V
3	* 2.39	29.65	RMS	32.1	-24.9	2.85	39.7	54	-14.3	-	-	99	184	V
4	* 2.37515	31.23	RMS	32.1	-25	2.85	41.18	54	-12.82	-	-	99	184	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
RMS - RMS detection

BANDEDGE (39 CHANNEL)



Trace Markers

Marker	Frequency (GHz)	Meas Reading (dBuV)	Det	Antenna_567_Factor (dB/m)	10dB_Path Loss (dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Acimuth (Degs)	Height (cm)	Polarity
1	* 2.4835	42.14	PK	32.4	-24.9	0	49.64	-	-	74	-24.36	133	106	H
2	* 2.48353	43.59	PK	32.4	-24.9	0	51.09	-	-	74	-22.91	133	106	H
3	* 2.4835	30.61	RMS	32.4	-24.9	2.85	40.96	54	-19.04	-	-	133	106	H
4	2.5535	31.07	RMS	32.4	-24.7	2.85	41.62	54	-12.38	-	-	133	106	H

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PK - Peak detector
RMS - RMS detection