

CERTIFICATION TEST REPORT

Report Number. : S-4791706309-E5V1

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

Model : SM-L325U, SM-L325F

FCC ID : A3LSML325

EUT Description : WCDMA/LTE Smart Wearable + BT/BLE, DTS/UNII a/b/g/n

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

Date Of Issue:

2025-04-28

Prepared by:

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Revision History

Rev.	Issue Date	Revisions	Revised By
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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: SAMSUNG ELECTRONICS CO., LTD.

EUT DESCRIPTION: WCDMA/LTE Smart Wearable + BT/BLE, DTS/UNII a/b/g/n

MODEL NUMBER: SM-L325U, SM-L325F

SERIAL NUMBER: R3AY100906N (CONDUCTED);
R3AY3003C9X, R3AY30039KX (RADIATED)

DATE TESTED: 2025-03-18 - 2025-04-28

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.

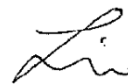
Note: The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. This document may not be altered or revised in any way unless done so by UL KOREA LTD. and all revisions are duly noted in the revisions section. Any alteration 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:



Jaejin Lee
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 DTS 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. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

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:

$$\begin{aligned}\text{Field Strength (dBuV/m)} &= \text{Measured Voltage (dBuV)} + \text{Antenna Factor (dB/m)} + \\ &\text{Cable Loss (dB)} - \text{Preamp Gain (dB)} \\ 28.9 \text{ dBuV/m} &= 36.5 \text{ dBuV} + 18.7 \text{ dB/m} + 0.6 \text{ dB} - 26.9 \text{ dB}\end{aligned}$$

$$\begin{aligned}\text{AC Corrected Reading (dBuV)} &= \text{Measured Voltage (dBuV)} + \text{Extension Cord Loss} \\ &\text{(dB)} + \text{Cable Loss (dB)} \\ 44.72 \text{ dBuV} &= 34.72 \text{ dBuV} + 9.9 \text{ dB} + 0.1 \text{ dB}\end{aligned}$$

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	1.4 dB
Occupied Bandwidth	0.04 %
Conducted Spurious Emissions	1.4 dB
Conducted Disturbance, 0.15 to 30 MHz	1.84 dB
Radiated Disturbance, 9 kHz to 30 MHz	2.41 dB
Radiated Disturbance, 30 MHz to 1 GHz	3.69 dB
Radiated Disturbance, 1 GHz to 18 GHz	5.18 dB
Radiated Disturbance, Above 18 GHz	5.07 dB

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

4.4. DECISION RULE

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 WCDMA/LTE Smart Wearable + BT/BLE, DTS/UNII a/b/g/n.
This test report addresses the DTS(WLAN) operational mode.

Representative model	Difference	Derivative model
		SM-L325F
SM-L325U	Hardware	Same
	Software	The UI has changed according to Service Provider

The model SM-L325U was used for final testing and is representative of the test results in this report.

WiFi operating mode

Frequency rage	Mode	ANT 1
2.4GHz (2412 MHz ~ 2472 MHz)	802.11b SISO	TX/RX
	802.11g SISO	TX/RX
	802.11n(HT20) SISO	TX/RX

5.2. MAXIMUM PEAK OUTPUT POWER

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

Frequency Range [MHz]	Mode	Output Power [dBm]	Output Power [mW]
		ANT1	ANT1
2412 - 2472	802.11b SISO	20.35	108.39
	802.11g SISO	23.60	229.09
	802.11n(HT20) SISO	23.61	229.61

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: -9.0 dBi

5.4. TESTED CHANNELS LIST

Ch.	Frequency [MHz]	11b	11g	11n(HT20)
		SISO	SISO	SISO
1	2 412	O	O	O
6	2 437	O	O	O
11	2 462	O	O	O
12	2 467	O	O	O
13	2 472	O	O	O

Note. Tested channels are applied to all test items.

5.5. WORST-CASE CONFIGURATION AND MODE

The fundamentals of the EUT were investigated in three orthogonal orientations X, Y and Z on 1TX SISO mode. It was determined that Y orientation was the worst-case for 1TX SISO mode.

Worst case of antenna axis: Y

Radiated and power line conducted tests were performed with EUT connected to AC power adapter and strap 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 worst 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.

Simultaneous transmission with related transmitters were investigated and no noticeable emission was found.

Based on the baseline scan, the worst-case data rates were:

802.11b mode: 1 Mbps 1TX

802.11g mode: 6 Mbps 1TX

802.11n HT20 mode: MCS0 1TX

5.6. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	Manufacturer	Model	Serial Number	FCC ID
Charger	SAMSUNG	EP-TA800	R37XBMJF8FBDKA	N/A
Wireless Charger	SAMSUNG	EP-OL300	-	-

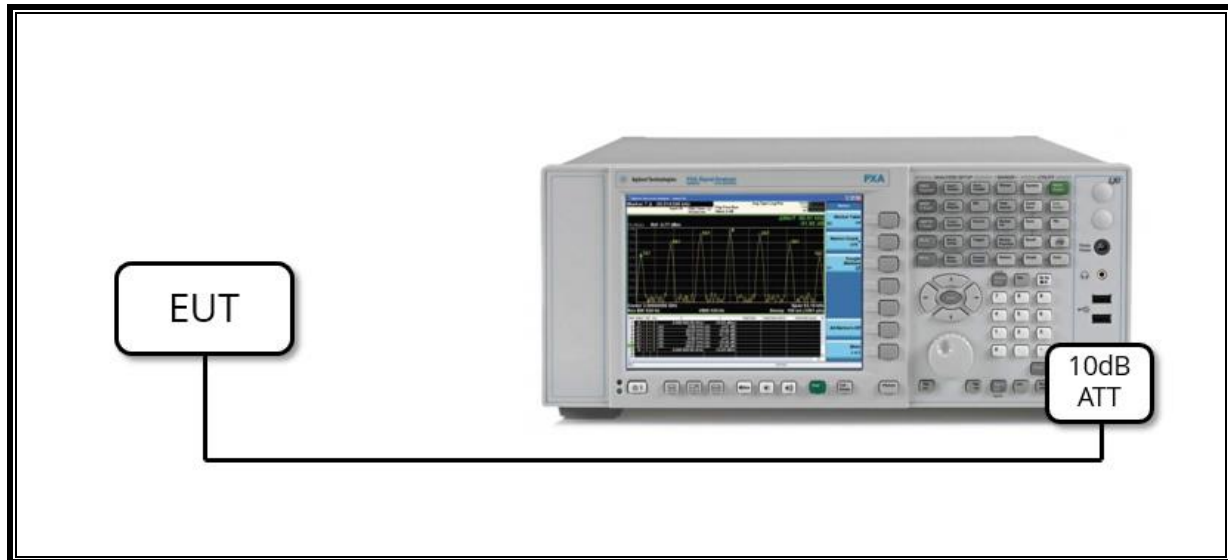
I/O CABLE

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	0.8 m	N/A

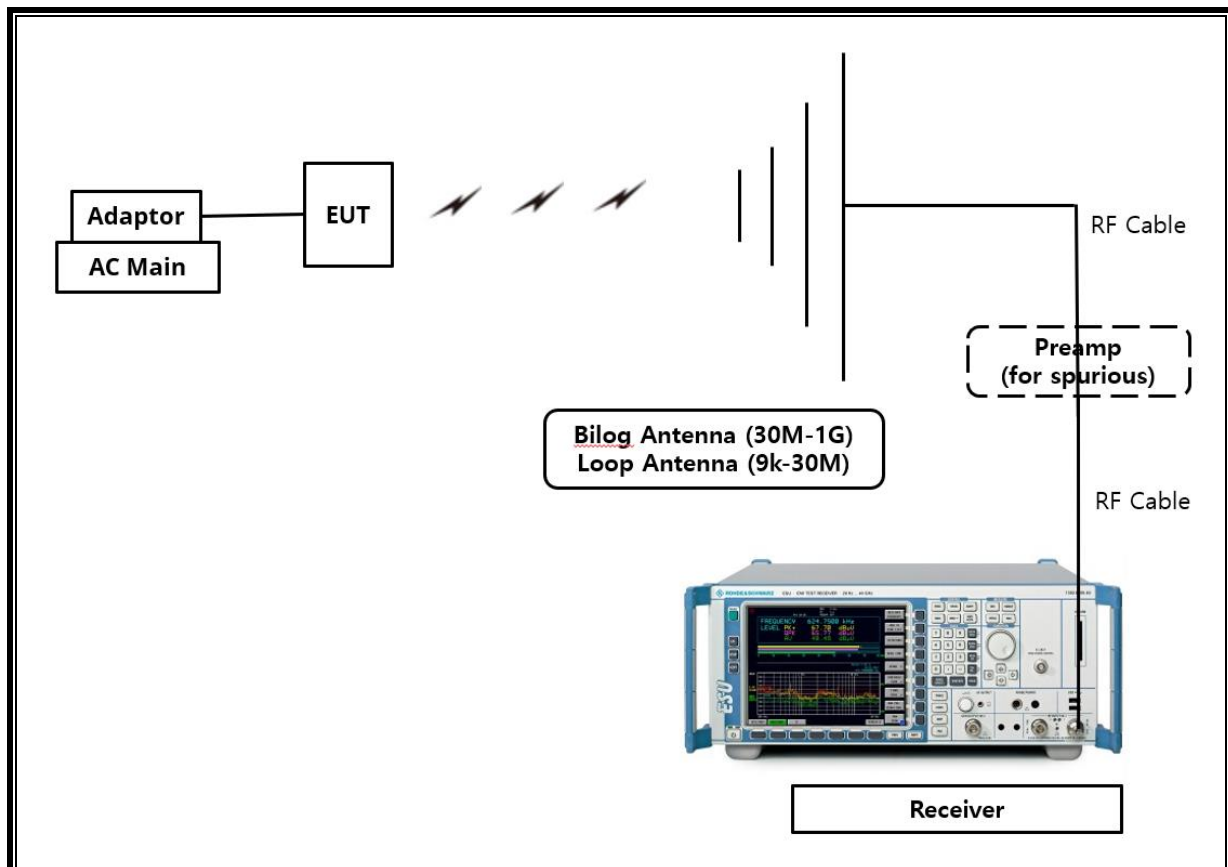
TEST SETUP

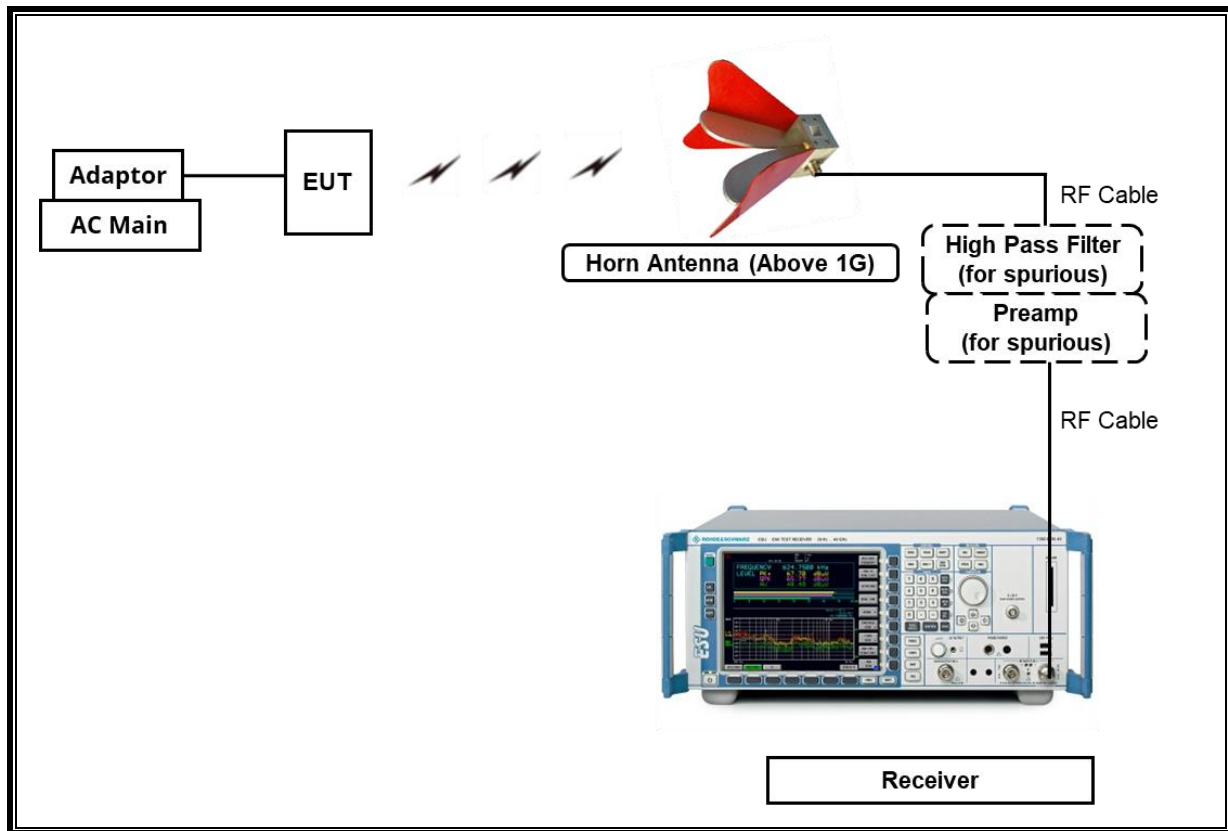
The EUT is a stand-alone unit during the tests.
Test software in hidden menu exercised the EUT to enable DTS mode.

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 Method and Section 11.9.2.3.1 Method AVGPM

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	KEYSIGHT	N9030B	MY60070693	2026-01-02
Spectrum Analyzer, 50 GHz	R&S	FSW 50	101538	2025-12-24
Power Supply	Agilent	E3640A	MY54286199	2025-07-24
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-Z2	100418	2025-09-07
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. SUMMARY TABLE

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

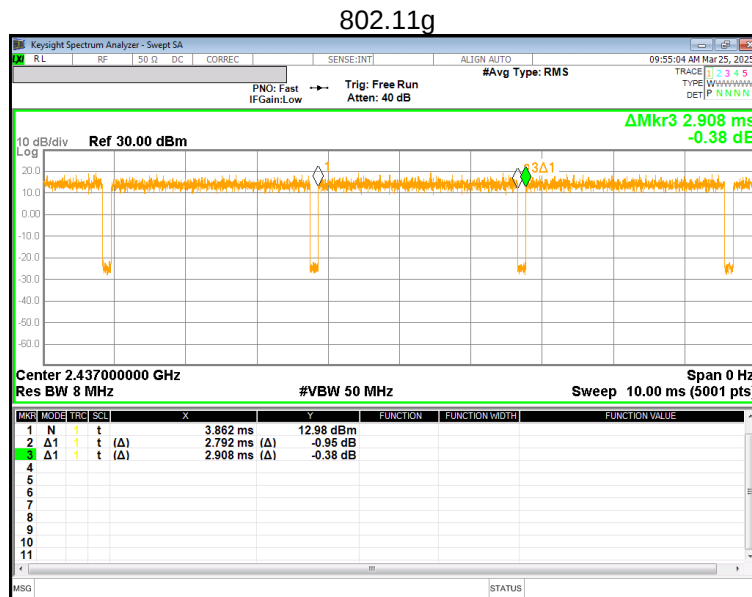
9.1. ON TIME AND DUTY CYCLE

LIMITS

None; for reporting purposes only.

Mode	On Time [ms]	Period [ms]	Duty Cycle X [Linear]	Duty Cycle X [%]	Duty Cycle Correction Factor[dB]	1/T Minimum VBW[kHz]
802.11b SISO	8.604	8.736	0.985	98.49	0.00	0.12
802.11g SISO	2.792	2.908	0.960	96.01	0.18	0.36
802.11n(HT20) SISO	5.368	5.484	0.979	97.88	0.09	0.19

Note. According to ANSI C63.10 Section 11.6, do not apply the Duty Cycle Correction Factor judging that a duty cycle of greater than or equal to 98% is continuous signal.



9.2.1. 802.11b SISO MODE IN THE 2.4 GHz BAND

Channel	Frequency [MHz]	6 dB Bandwidth [MHz]	Minimum Limit [MHz]
		ANT 1	
1	2 412	8.656	0.5
6	2 437	8.656	
11	2 462	8.651	
12	2 467	8.647	
13	2 472	9.066	
Worst		8.647	

9.2.2. 802.11g SISO MODE IN THE 2.4 GHz BAND

Channel	Frequency [MHz]	6 dB Bandwidth [MHz]	Minimum Limit [MHz]
		ANT 1	
1	2 412	16.160	0.5
6	2 437	16.030	
11	2 462	16.180	
12	2 467	16.170	
13	2 472	16.010	
Worst		16.010	

9.2.3. 802.11n HT20 SISO MODE IN THE 2.4 GHz BAND

Channel	Frequency [MHz]	6 dB Bandwidth [MHz]	Minimum Limit [MHz]
		ANT 1	
1	2 412	17.140	0.5
6	2 437	16.990	
11	2 462	17.000	
12	2 467	16.960	
13	2 472	16.580	
Worst		16.580	

9.3. OUTPUT POWER

LIMITS

FCC §15.247 (b) (3)

For systems using digital modulation in the 902–928 MHz, 2400–2483.5 MHz, and 5725–5850 MHz bands: 1 Watt, based on the use of antennas with directional gains that do not exceed 6 dBi. If transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

TEST PROCEDURE

Maximum conducted (average) output power

Measurements perform using a wideband RF frame average power sensor.

The cable assembly insertion loss and duty cycle correction factor was entered as an offset in the power sensor to allow for direct reading of power.

Output power measurement was performed utilizing the 8.3.2.3 under KDB558074 D01 15.247 Meas Guidance.

Maximum peak conducted output power

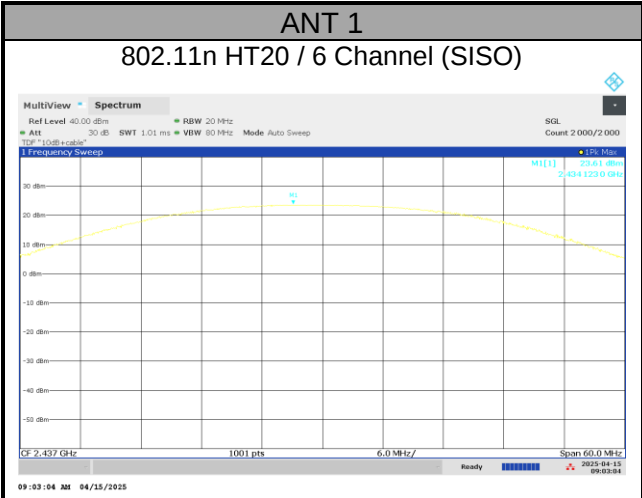
Measurements perform using a spectrum analyzer(SA).

The cable assembly insertion loss correction factor was entered as an offset in the SA to allow for direct reading of power.

Output power measurement was performed utilizing the 8.3.2.2 under KDB558074 D01 15.247 Meas Guidance.

- a) Set the RBW $\geq$ DTS bandwidth.
- b) Set VBW $\geq$ $[3 \times \text{RBW}]$.
- c) Set span $\geq$ $[3 \times \text{RBW}]$.
- d) Sweep time = No faster than coupled (auto) time.
- e) Detector = peak.
- f) Trace mode = max-hold.
- g) Allow trace to fully stabilize.
- h) Use peak marker function to determine the peak amplitude level.

Maximum peak conducted output power (WORST CASE TEST PLOT)



9.3.1. TEST RESULTS

- 802.11b, g, n mode

Mode	Channel	Frequency [MHz]	Average Power	Peak Power	Power Limit [dBm]
			ANT1 [dBm]		
802.11b	1	2 412	18.05	19.89	30.00
	6	2 437	18.14	20.35	
	11	2 462	18.09	20.28	
	12	2 467	8.18	10.71	
	13	2 472	6.07	8.68	
Worst Case			18.14	20.35	
802.11g	1	2 412	16.63	23.56	
	6	2 437	16.71	23.60	
	11	2 462	16.63	23.58	
	12	2 467	8.24	17.06	
	13	2 472	6.01	15.03	
Worst Case			16.71	23.60	
802.11n HT20	1	2 412	16.45	23.59	
	6	2 437	16.57	23.61	
	11	2 462	16.46	23.57	
	12	2 467	7.99	17.55	
	13	2 472	5.98	15.49	
Worst Case			16.57	23.61	

- Calculation of Output Power result

Average Power = Meas. Power + Duty Cycle CF

9.4. 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

Power Spectral Density was performed utilizing the section 8.4 under KDB558074 D01 15.247 Meas Guidance.

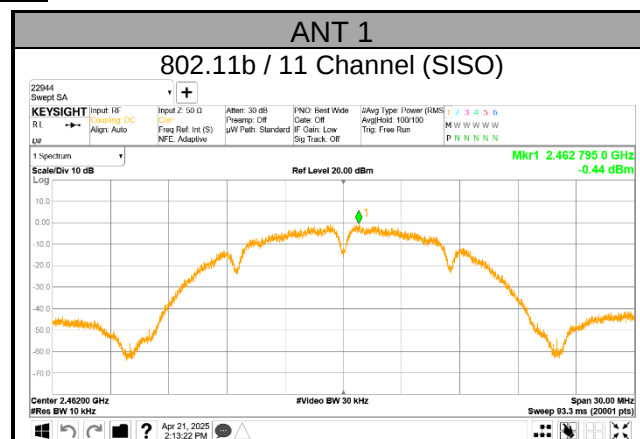
Method PKPSD (peak PSD)

- Set analyzer center frequency to DTS channel center frequency.
- Set the span >1.5 times the DTS bandwidth.
- Set the RBW to $3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$.
- Set the VBW $\geq [3 \times \text{RBW}]$.
- Detector = peak.
- Sweep time = No faster than coupled (auto) time.
- Trace mode = max-hold.
- Allow trace to fully stabilize.
- Use the peak marker function to determine the maximum amplitude level within the RBW.
- If measured value exceeds requirement, then reduce RBW (but no less than 3 kHz) and repeat.

RESULTS

- Please refer to the next page

WORST CASE TEST PLOTS



9.4.1. 802.11b/g/n HT20 MODE TEST RESULTS

- SISO MODE

Mode	Channel	Frequency [MHz]	Meas PSD [dBm/10kHz]	PSD Limit [dBm/3kHz]
			ANT1	
802.11b	1	2 412	-0.520	8.00 ^{Note}
	6	2 437	-0.620	
	11	2 462	-0.440	
	12	2 467	-10.270	
	13	2 472	-12.570	
802.11g	1	2 412	-5.090	
	6	2 437	-5.330	
	11	2 462	-5.030	
	12	2 467	-13.260	
	13	2 472	-15.000	
802.11n HT20	1	2 412	-2.980	
	6	2 437	-3.710	
	11	2 462	-4.030	
	12	2 467	-10.850	
	13	2 472	-12.960	

- Calculation of Output PSD result

- 1TX : Corr'd PSD = Meas PSD

Note. RBW 10kHz measurement data is lower than 3kHz limit.

9.5. CONDUCTED SPURIOUS EMISSIONS

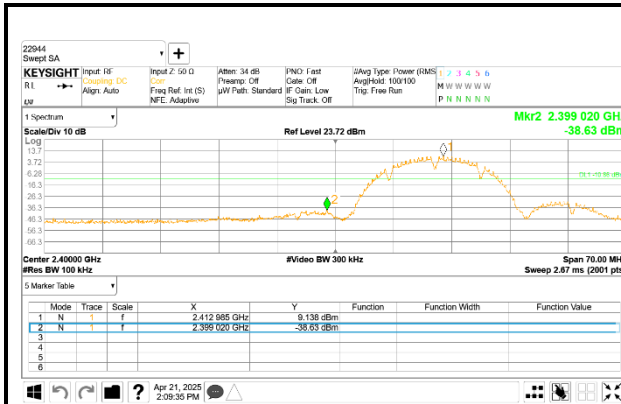
LIMITS

FCC §15.247 (d)

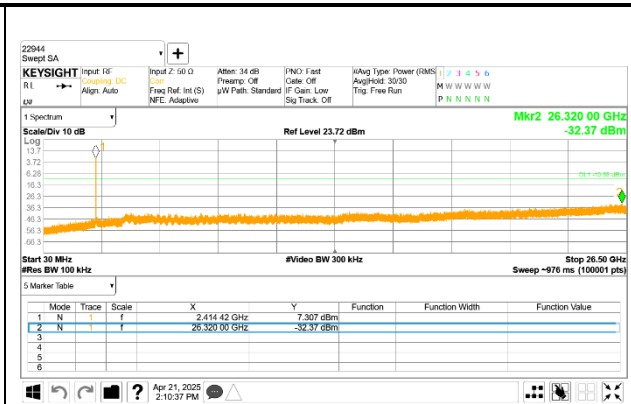
Output power was measured based on the use of peak measurement therefore the required attenuation is 20 dB.

RESULTS

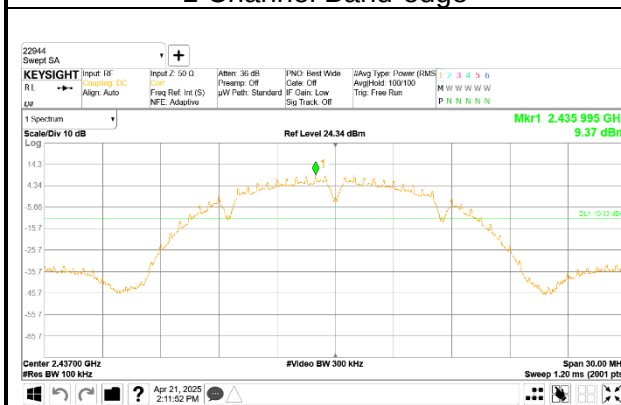
9.5.1. 802.11b MODE



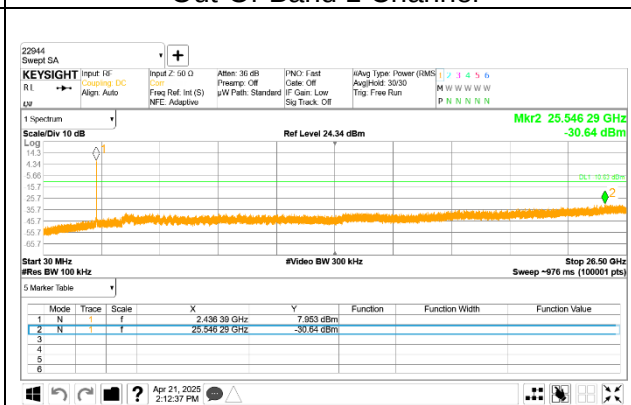
1 Channel Band-edge



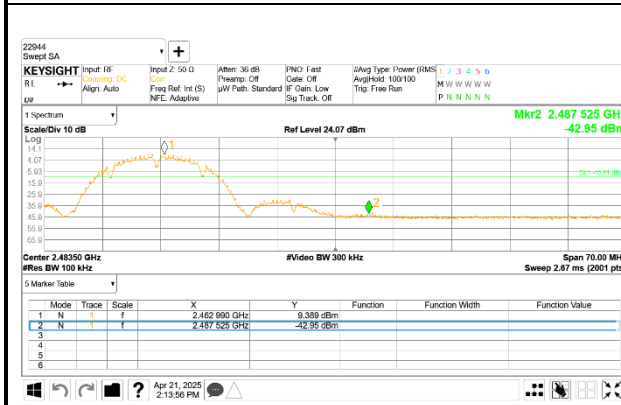
Out-Of-Band 1 Channel



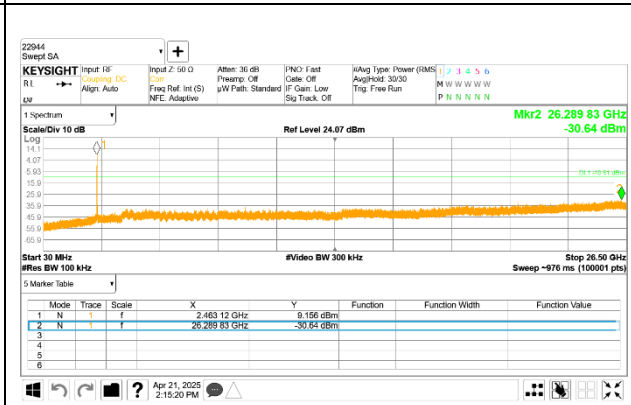
6 Channel Reference



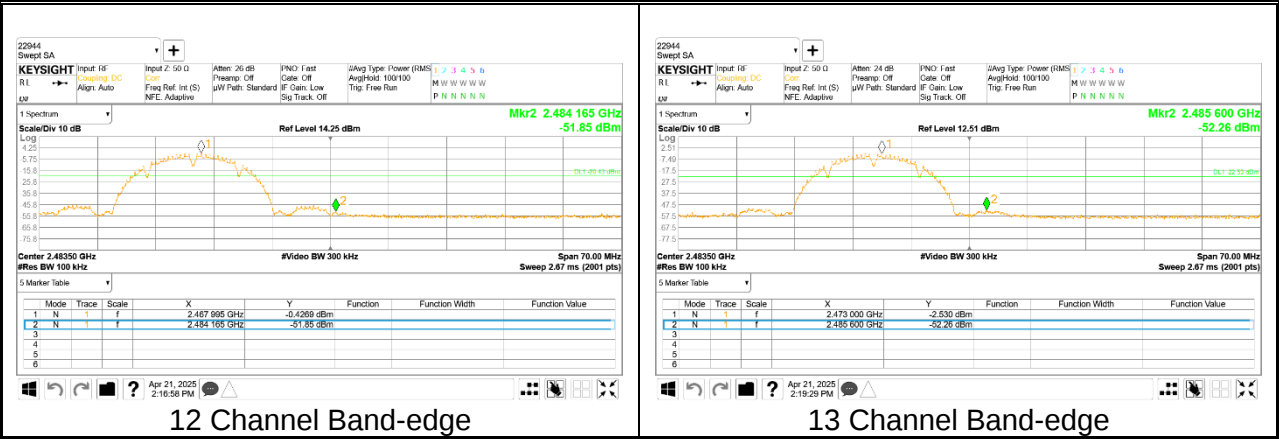
Out-Of-Band 6 Channel



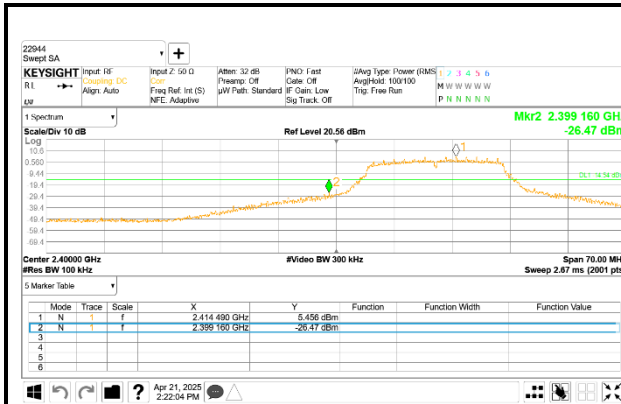
11 Channel Band-edge



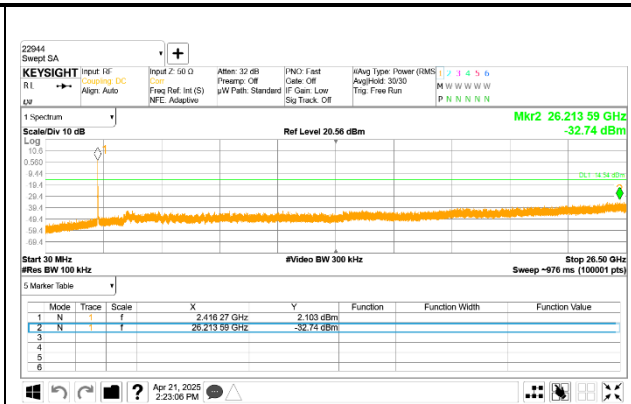
Out-Of-Band 11 Channel



9.5.2. 802.11g MODE



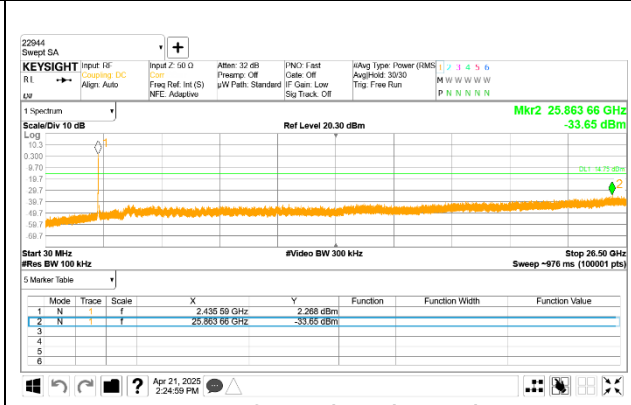
1 Channel Band-edge



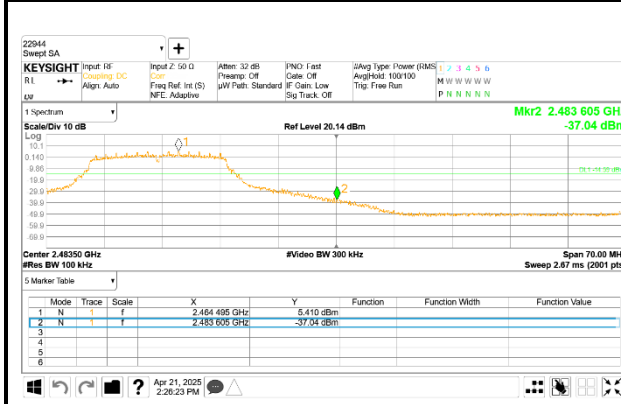
Out-Of-Band 1 Channel



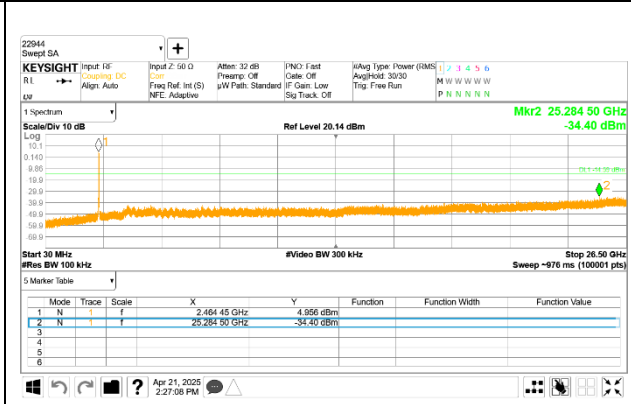
6 Channel Reference



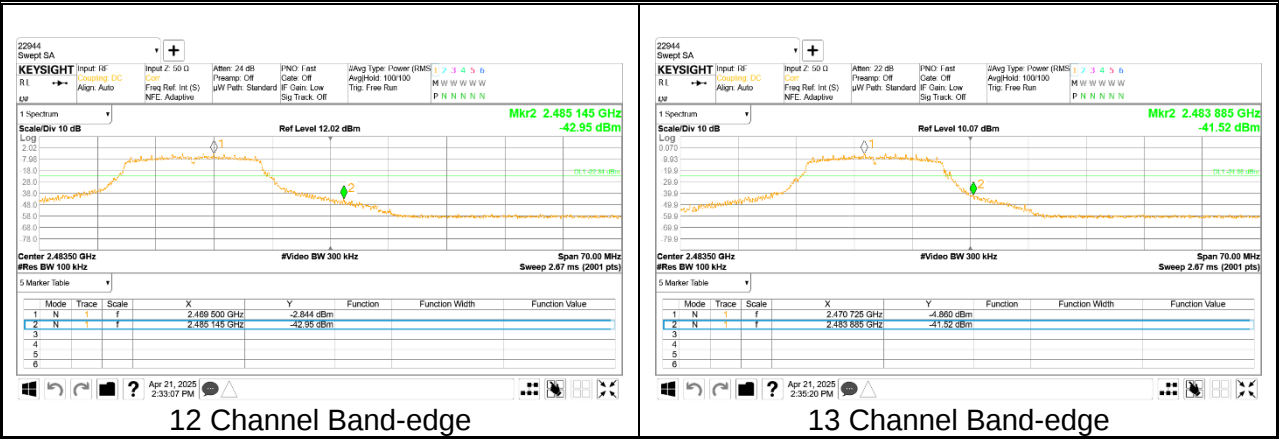
Out-Of-Band 6 Channel



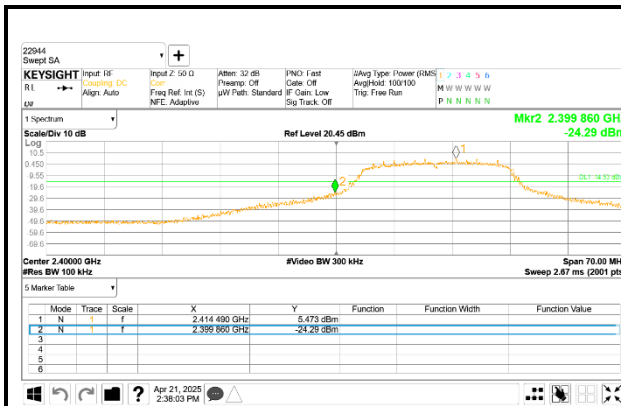
11 Channel Band-edge



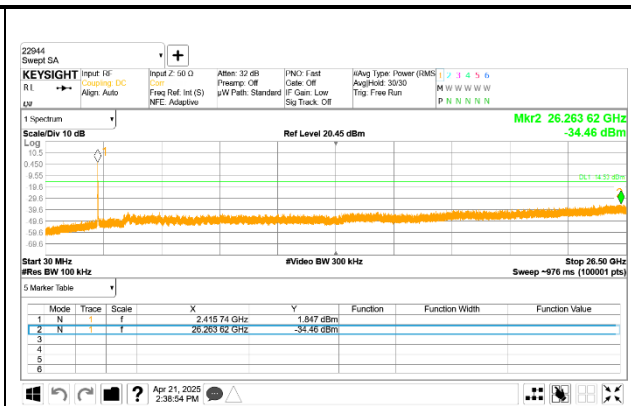
Out-Of-Band 11 Channel



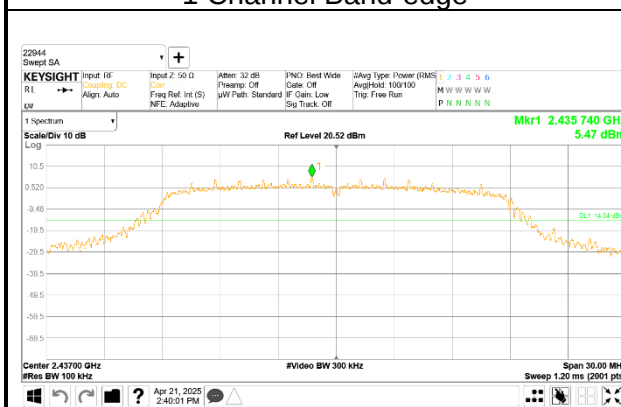
9.5.3. 802.11n HT20 MODE



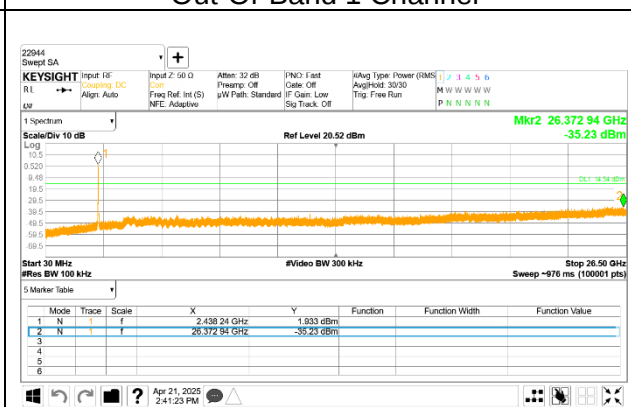
1 Channel Band-edge



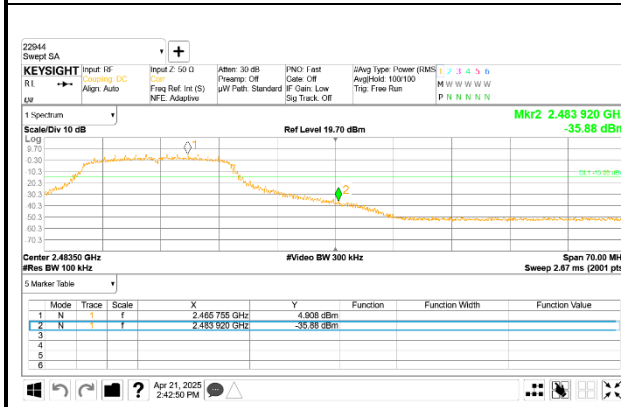
Out-Of-Band 1 Channel



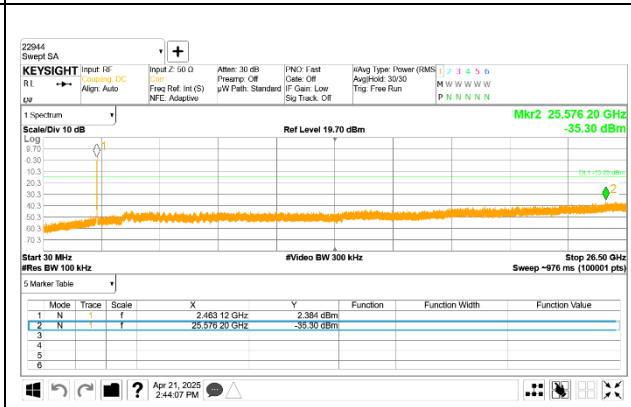
6 Channel Reference



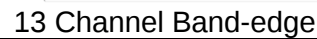
Out-Of-Band 6 Channel



11 Channel Band-edge



Out-Of-Band 11 Channel



10. RADIATED TEST RESULTS

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.

FCC Part 15.205 (a) : Only spurious emissions are permitted in any of the frequency bands listed below :

MHz	MHz	MHz	MHz	GHz	GHz
0.009 ~ 0.110	8.41425 ~ 8.41475	108 ~ 121.94	1300 ~ 1427	4.5 ~ 5.15	14.47 ~ 14.5
0.495 ~ 0.505	12.29 ~ 12.293	123 ~ 138	1435 ~ 1626.5	5.35 ~ 5.46	15.35 ~ 16.2
2.1735 ~ 2.1905	12.51975 ~ 12.52025	149.9 ~ 150.05	1645.5 ~ 1646.5	7.25 ~ 7.75	17.7 ~ 21.4
4.125 ~ 4.128	12.57675 ~ 12.57725	156.52475 ~	1660 ~ 1710	8.025 ~ 8.5	22.01 ~ 23.12
4.17725 ~ 4.17775	13.36 ~ 13.41	156.52525	1718.8 ~ 1722.2	9.0 ~ 9.2	23.6 ~ 24.0
4.20725 ~ 4.20775	16.42 ~ 16.423	156.7 ~ 156.9	2200 ~ 2300	9.3 ~ 9.5	31.2 ~ 31.8
6.215 ~ 6.218	16.69475 ~ 16.69525	162.0125 ~	2310 ~ 2390	10.6 ~ 12.7	36.43 ~ 36.5
6.26775 ~ 6.26825	16.80425 ~ 16.80475	167.17	2483.5 ~ 2500	13.25 ~ 13.4	Above 38.6
6.31175 ~ 6.31225	25.5 ~ 25.67	167.72 ~ 173.2	2655 ~ 2900		
8.291 ~ 8.294	37.5 ~ 38.25	240 ~ 285	3260 ~ 3267		
8.362 ~ 8.366	73 ~ 74.6	322 ~ 335.4	3332 ~ 3339		
8.37625 ~ 8.38675	74.8 ~ 75.2	399.90 ~ 410	3345.8 ~ 3358		
		608 ~ 614	3600 ~ 4400		
		960 ~ 1240			

▪ FCC Part 15.205(b) : The field strength of emissions appearing within these frequency bands shall not exceed the limits shown in §15.209. At frequencies equal to or less than 1000 MHz, compliance with the limits in §15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000 MHz, compliance with the emission limits in §15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in §15.35 apply to these measurements.

TEST PROCEDURE

The EUT is placed on a non-conducting table 80 cm above the ground plane for below 1 GHz and 150 cm for above 1 GHz. 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; the video bandwidth is set to 3 MHz for peak measurements and add duty cycle factor for average measurements.
(Restricted bandedge, Final detection of spurious harmonic emissions)

Duty cycle factor = $10\log(1/x)$ For this sample:

802.11b SISO mode = 0.00 dB (98.22%)
802.11g SISO mode = 0.18 dB (96.01%)
802.11n(HT20) SISO mode = 0.09 dB (97.88%)

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 each applicable 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 9 kHz to 30 MHz; 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 area 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.

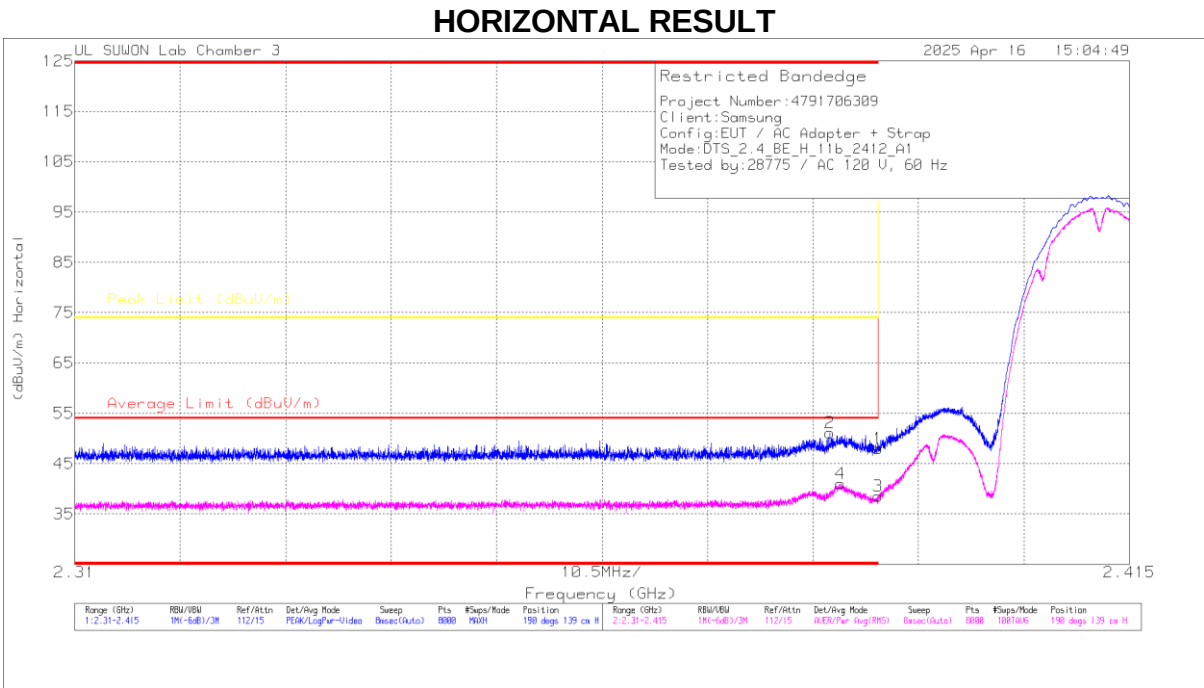
The radiated band edge with the measurement antenna in the vertical polarity represented the worst case compared to the horizontal polarity, and results for all cases were reported. For measurements with the antenna in the horizontal polarity, only the worst case channel was reported.

10.1. TRANSMITTER ABOVE 1 GHz

10.1.1. TX ABOVE 1 GHz 802.11b MODE IN THE 2.4 GHz BAND

1TX Antenna 1

BANDEDGE (WORST CASE: 1 CHANNEL)



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	Antenna Factor (dBm)	10dB Path Loss (dB)	DC Cor (dB)	Corrected Reading (dBm)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	40.79	PK	32.1	-24.9	0	47.99	-	-	74	-26.01	190	139	H
2	* 2.39518	44.01	PK	32.1	-25	0	51.11	-	-	74	-22.89	190	139	H
3	* 2.39	31.39	RMS	32.1	-24.9	0	38.59	54	-15.41	-	-	190	139	H
4	* 2.39625	33.92	RMS	32.1	-25	0	41.02	54	-12.98	-	-	190	139	H

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

BANDEDGE TEST DATA

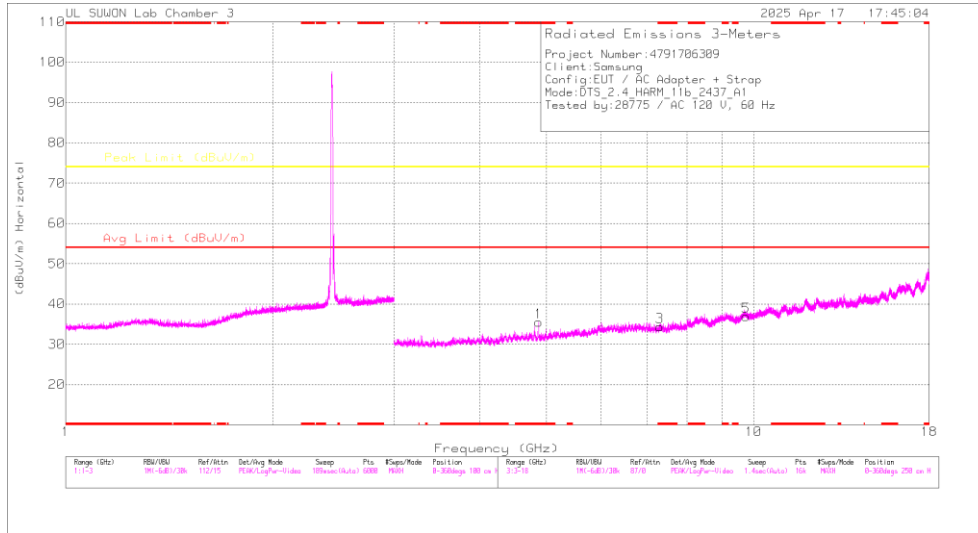
Freq. [MHz]	Antenna	Frequency [GHz]	Reading [dBuV]	Detector Mode	ANT Factor [dB/m]	Loss [dB]	DC Corr [dB]	Result dBuV/m	AV Limit dBuV/m	AV Margin [dB]	PK Limit dBuV/m	PK Margin [dB]	Azimuth [Degs]	Height [cm]	Polarity
2412	ANT1	* 2.39	40.79	Pk	32.10	-24.90	0.00	47.99	-	-	74.00	-26.01	190	139	H
		* 2.38518	44.01	Pk	32.10	-25.00	0.00	51.11	-	-	74.00	-22.89	190	139	H
		* 2.39	31.39	RMS	32.10	-24.90	0.00	38.59	54.00	-15.41	-	-	190	139	H
		* 2.38625	33.92	RMS	32.10	-25.00	0.00	41.02	54.00	-12.98	-	-	190	139	H
		* 2.39	40.34	Pk	32.10	-24.90	0.00	47.54	-	-	74.00	-26.46	179	105	V
		* 2.37859	42.42	Pk	32.10	-25.00	0.00	49.52	-	-	74.00	-24.48	179	105	V
		* 2.39	30.06	RMS	32.10	-24.90	0.00	37.26	54.00	-16.74	-	-	179	105	V
		* 2.38648	31.79	RMS	32.10	-25.00	0.00	38.89	54.00	-15.11	-	-	179	105	V
2462	ANT1	* 2.4835	39.61	Pk	32.40	-24.90	0.00	47.11	-	-	74.00	-26.89	186	118	H
		2.561	43.14	Pk	32.40	-24.70	0.00	50.84	-	-	74.00	-23.16	186	118	H
		* 2.4835	30.88	RMS	32.40	-24.90	0.00	38.38	54.00	-15.62	-	-	186	118	H
		2.559	31.60	RMS	32.40	-24.80	0.00	39.20	54.00	-14.80	-	-	186	118	H
		* 2.4835	40.49	Pk	32.40	-24.90	0.00	47.99	-	-	74.00	-26.01	181	121	V
		2.506	42.68	Pk	32.40	-24.90	0.00	50.18	-	-	74.00	-23.82	181	121	V
		* 2.4835	29.65	RMS	32.40	-24.90	0.00	37.15	54.00	-16.85	-	-	181	121	V
		2.524	31.33	RMS	32.40	-24.70	0.00	39.03	54.00	-14.97	-	-	181	121	V
2467	ANT1	* 2.4835	40.21	Pk	32.40	-24.90	0.00	47.71	-	-	74.00	-26.29	1	119	H
		2.528	42.46	Pk	32.40	-24.80	0.00	50.06	-	-	74.00	-23.94	1	119	H
		* 2.4835	30.79	RMS	32.40	-24.90	0.00	38.29	54.00	-15.71	-	-	1	119	H
		2.527	31.38	RMS	32.40	-24.70	0.00	39.08	54.00	-14.92	-	-	1	119	H
		* 2.4835	40.11	Pk	32.40	-24.90	0.00	47.61	-	-	74.00	-26.39	195	102	V
		2.525	42.86	Pk	32.40	-24.70	0.00	50.56	-	-	74.00	-23.44	195	102	V
		* 2.4835	29.91	RMS	32.40	-24.90	0.00	37.41	54.00	-16.59	-	-	195	102	V
		2.525	31.34	RMS	32.40	-24.70	0.00	39.04	54.00	-14.96	-	-	195	102	V
2472	ANT1	* 2.4835	40.32	Pk	32.40	-24.90	0.00	47.82	-	-	74.00	-26.18	164	198	H
		2.522	43.01	Pk	32.40	-24.90	0.00	50.51	-	-	74.00	-23.49	164	198	H
		* 2.4835	29.50	RMS	32.40	-24.90	0.00	37.00	54.00	-17.00	-	-	164	198	H
		* 2.48461	31.65	RMS	32.40	-24.90	0.00	39.15	54.00	-14.85	-	-	164	198	H
		* 2.4835	39.41	Pk	32.40	-24.90	0.00	46.91	-	-	74.00	-27.09	174	100	V
		2.523	42.45	Pk	32.40	-24.80	0.00	50.05	-	-	74.00	-23.95	174	100	V
		* 2.4835	30.50	RMS	32.40	-24.90	0.00	38.00	54.00	-16.00	-	-	174	100	V
		2.522	31.15	RMS	32.40	-24.90	0.00	38.65	54.00	-15.35	-	-	174	100	V

Note1. Pk - Peak detector, RMS - RMS detector

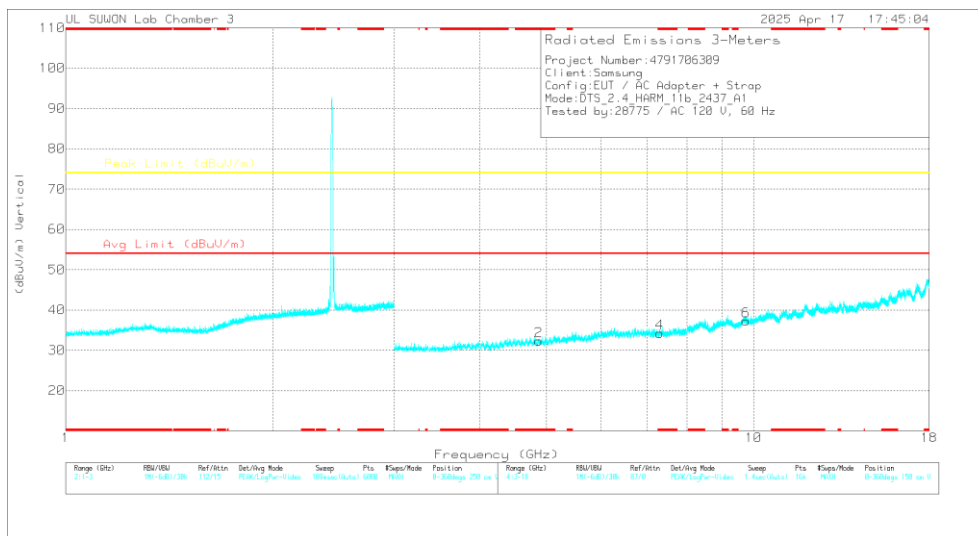
Note2. * - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

HARMONICS AND SPURIOUS EMISSIONS(WORST CASE: 6 CHANNEL)

CH 6 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 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
* 4.8743	39.9	PK2	34.2	-30.5	0	43.6	-	-	74	-30.4	41	265	H
* 4.87393	31.32	MAV1	34.2	-30.5	0	35.02	54	-18.98	-	-	41	265	H
* 4.8741	39.09	PK2	34.2	-30.5	0	42.79	-	-	74	-31.21	61	106	V
* 4.87394	28.65	MAV1	34.2	-30.5	0	32.35	54	-21.65	-	-	61	106	V
* 7.31434	34.37	PK2	35.8	-25.2	0	44.97	-	-	74	-29.03	0	100	H
* 7.30814	34.84	PK2	35.8	-25.3	0	45.34	-	-	74	-28.66	0	100	V
9.75217	32.41	PK2	36.9	-21.3	0	48.01	-	-	74	-25.99	140	106	H
9.75115	32.18	PK2	36.9	-21.3	0	47.78	-	-	74	-26.22	65	261	V

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

PK2 - KDB558074 Method: Maximum Peak

MAV1 - KDB558074 Option 1 Maximum RMS Average

HARMONICS AND SPURIOUS EMISSIONS TEST DATA

Freq. [MHz]	Antenna	Frequency [GHz]	Reading [dBuV]	Detector Mode	ANT Factor [dB/m]	Loss [dB]	DC Corr [dB]	Result dBuV/m	AV Limit dBuV/m	AV Margin [dB]	PK Limit dBuV/m	PK Margin [dB]	Azimuth [Degs]	Height [cm]	Polarity
2412	ANT1	* 4.82409	38.64	PK2	34.30	-30.10	0.00	42.84	-	-	74.00	-31.16	26	242	H
		* 4.82397	28.83	MAv1	34.30	-30.00	0.00	33.13	54.00	-20.87	-	-	26	242	H
		* 4.824	37.81	PK2	34.30	-30.10	0.00	42.01	-	-	74.00	-31.99	55	109	V
		* 4.82409	27.27	MAv1	34.30	-30.10	0.00	31.47	54.00	-22.53	-	-	55	109	V
		7.234	34.45	PK2	35.80	-25.70	0.00	44.55	-	-	74.00	-29.45	0	100	H
		7.235	34.22	PK2	35.80	-25.70	0.00	44.32	-	-	74.00	-29.68	0	100	V
		9.648	31.75	PK2	36.80	-21.30	0.00	47.25	-	-	74.00	-26.75	0	100	H
		9.645	31.93	PK2	36.80	-21.30	0.00	47.43	-	-	74.00	-26.57	0	100	V
2437	ANT1	* 4.8743	39.90	PK2	34.20	-30.50	0.00	43.60	-	-	74.00	-30.40	41	265	H
		* 4.87393	31.32	MAv1	34.20	-30.50	0.00	35.02	54.00	-18.98	-	-	41	265	H
		* 4.8741	39.09	PK2	34.20	-30.50	0.00	42.79	-	-	74.00	-31.21	61	106	V
		* 4.87394	28.65	MAv1	34.20	-30.50	0.00	32.35	54.00	-21.65	-	-	61	106	V
		* 7.31434	34.37	PK2	35.80	-25.20	0.00	44.97	-	-	74.00	-29.03	0	100	H
		* 7.30814	34.84	PK2	35.80	-25.30	0.00	45.34	-	-	74.00	-28.66	0	100	V
		9.752	32.41	PK2	36.90	-21.30	0.00	48.01	-	-	74.00	-25.99	140	106	H
		9.751	32.18	PK2	36.90	-21.30	0.00	47.78	-	-	74.00	-26.22	65	261	V
2462	ANT1	* 4.92437	39.15	PK2	34.20	-30.60	0.00	42.75	-	-	74.00	-31.25	37	233	H
		* 4.92409	29.15	MAv1	34.20	-30.60	0.00	32.75	54.00	-21.24	-	-	37	233	H
		* 4.92616	38.80	PK2	34.30	-30.60	0.00	42.50	-	-	74.00	-31.50	56	122	V
		* 4.92403	27.67	MAv1	34.20	-30.60	0.00	31.27	54.00	-22.73	-	-	56	122	V
		* 7.38772	33.54	PK2	35.70	-24.70	0.00	44.54	-	-	74.00	-29.46	0	100	H
		* 7.38244	33.58	PK2	35.70	-24.70	0.00	44.58	-	-	74.00	-29.42	0	100	V
		9.851	31.53	PK2	37.10	-21.30	0.00	47.33	-	-	74.00	-26.67	0	100	H
		9.847	31.37	PK2	37.10	-21.40	0.00	47.07	-	-	74.00	-26.93	0	100	V

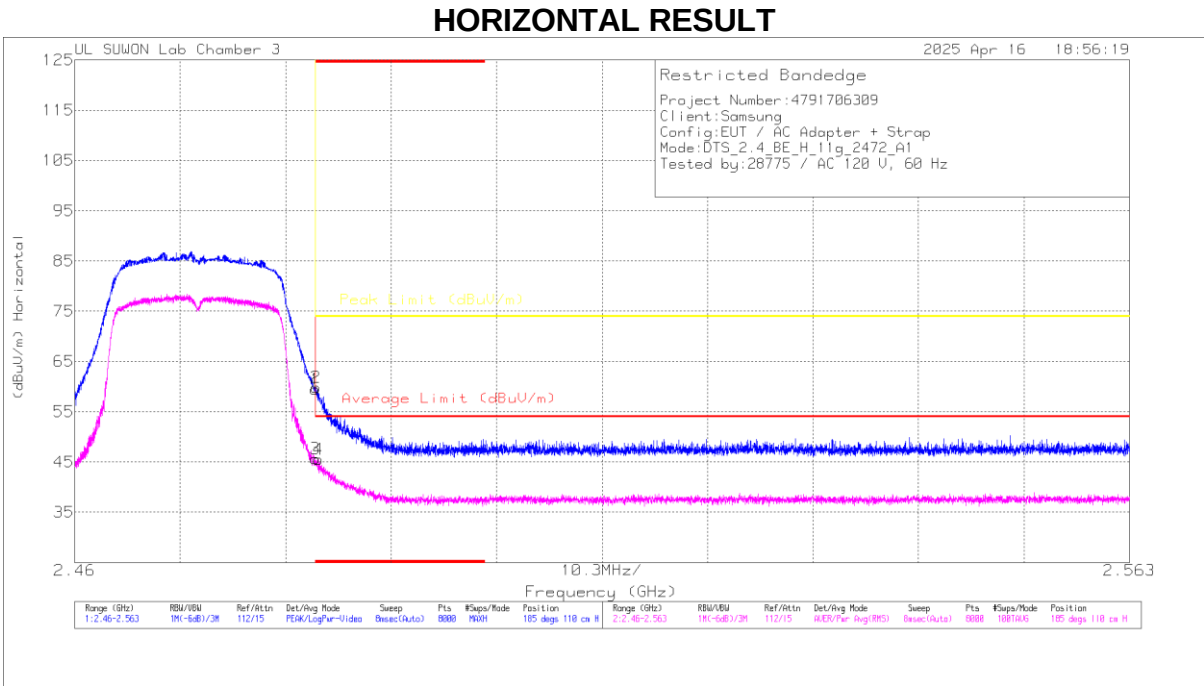
Note1. PK2 - KDB558074 Method: Maximum Peak / MAV1 - KDB558074 Option 1 Maximum RMS Average

Note2. * - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

10.1.2. TX ABOVE 1 GHz 802.11g MODE IN THE 2.4 GHz BAND

1TX Antenna 1

BANDEDGE (WORST CASE: 13 CHANNEL)



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	Antenna_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	51.93	PK	32.4	-24.9	0	59.43	-	-	74	-14.57	185	110	H
2	* 2.48354	52.33	PK	32.4	-24.9	0	59.83	-	-	74	-14.17	185	110	H
3	* 2.4835	38.01	RMS	32.4	-24.9	18	45.69	54	-8.31	-	-	185	110	H
4	* 2.4838	37.87	RMS	32.4	-24.9	18	45.55	54	-8.45	-	-	185	110	H

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

BANDEDGE TEST DATA

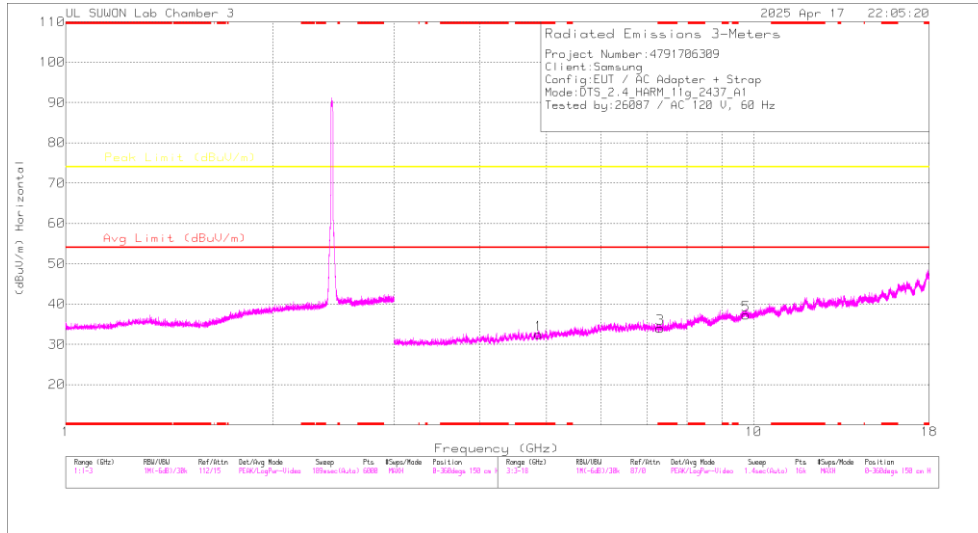
Freq. [MHz]	Antenna	Frequency [GHz]	Reading [dBuV]	Detector Mode	ANT Factor [dB/m]	Loss [dB]	DC Corr [dB]	Result dBuV/m	AV Limit dBuV/m	AV Margin [dB]	PK Limit dBuV/m	PK Margin [dB]	Azimuth [Degs]	Height [cm]	Polarity
2412	ANT1	* 2.39	48.97	Pk	32.10	-24.90	0.00	56.17	-	-	74.00	-17.83	189	137	H
		* 2.38904	52.38	Pk	32.10	-25.00	0.00	59.48	-	-	74.00	-14.52	189	137	H
		* 2.39	37.54	RMS	32.10	-24.90	0.18	44.92	54.00	-9.08	-	-	189	137	H
		* 2.38963	37.78	RMS	32.10	-24.90	0.18	45.16	54.00	-8.84	-	-	189	137	H
		* 2.39	43.93	Pk	32.10	-24.90	0.00	51.13	-	-	74.00	-22.87	180	111	V
		* 2.38782	46.19	Pk	32.10	-25.10	0.00	53.19	-	-	74.00	-20.81	180	111	V
		* 2.39	32.83	RMS	32.10	-24.90	0.18	40.21	54.00	-13.79	-	-	180	111	V
		* 2.38963	33.72	RMS	32.10	-24.90	0.18	41.10	54.00	-12.90	-	-	180	111	V
		* 2.4835	50.00	Pk	32.40	-24.90	0.00	57.50	-	-	74.00	-16.50	10	100	H
		* 2.48355	50.31	Pk	32.40	-24.90	0.00	57.81	-	-	74.00	-16.19	10	100	H
2462	ANT1	* 2.4835	36.42	RMS	32.40	-24.90	0.18	44.10	54.00	-9.90	-	-	10	100	H
		* 2.48353	37.90	RMS	32.40	-24.90	0.18	45.58	54.00	-8.42	-	-	10	100	H
		* 2.4835	48.10	Pk	32.40	-24.90	0.00	55.60	-	-	74.00	-18.40	192	118	V
		* 2.48363	47.94	Pk	32.40	-24.90	0.00	55.44	-	-	74.00	-18.56	192	118	V
		* 2.4835	34.98	RMS	32.40	-24.90	0.18	42.66	54.00	-11.34	-	-	192	118	V
		* 2.48359	35.59	RMS	32.40	-24.90	0.18	43.27	54.00	-10.73	-	-	192	118	V
		* 2.4835	43.29	Pk	32.40	-24.90	0.00	50.79	-	-	74.00	-23.21	187	151	H
		* 2.48483	45.41	Pk	32.40	-24.90	0.00	52.91	-	-	74.00	-21.09	187	151	H
		* 2.4835	31.88	RMS	32.40	-24.90	0.18	39.56	54.00	-14.44	-	-	187	151	H
		* 2.48385	32.89	RMS	32.40	-24.90	0.18	40.57	54.00	-13.43	-	-	187	151	H
2467	ANT1	* 2.4835	44.41	Pk	32.40	-24.90	0.00	51.91	-	-	74.00	-22.09	195	103	V
		* 2.48448	45.87	Pk	32.40	-24.90	0.00	53.37	-	-	74.00	-20.63	195	103	V
		* 2.4835	33.53	RMS	32.40	-24.90	0.18	41.21	54.00	-12.79	-	-	195	103	V
		* 2.48372	33.92	RMS	32.40	-24.90	0.18	41.60	54.00	-12.40	-	-	195	103	V
		* 2.4835	51.93	Pk	32.40	-24.90	0.00	59.43	-	-	74.00	-14.57	185	110	H
		* 2.48354	52.33	Pk	32.40	-24.90	0.00	59.83	-	-	74.00	-14.17	185	110	H
		* 2.4835	38.01	RMS	32.40	-24.90	0.18	45.69	54.00	-8.31	-	-	185	110	H
		* 2.4838	37.87	RMS	32.40	-24.90	0.18	45.55	54.00	-8.45	-	-	185	110	H
		* 2.4835	49.11	Pk	32.40	-24.90	0.00	56.61	-	-	74.00	-17.39	187	153	V
		* 2.48354	49.42	Pk	32.40	-24.90	0.00	56.92	-	-	74.00	-17.08	187	153	V
2472	ANT1	* 2.4835	34.97	RMS	32.40	-24.90	0.18	42.65	54.00	-11.35	-	-	187	153	V
		* 2.48359	35.66	RMS	32.40	-24.90	0.18	43.34	54.00	-10.66	-	-	187	153	V

Note1. Pk - Peak detector, RMS - RMS detector

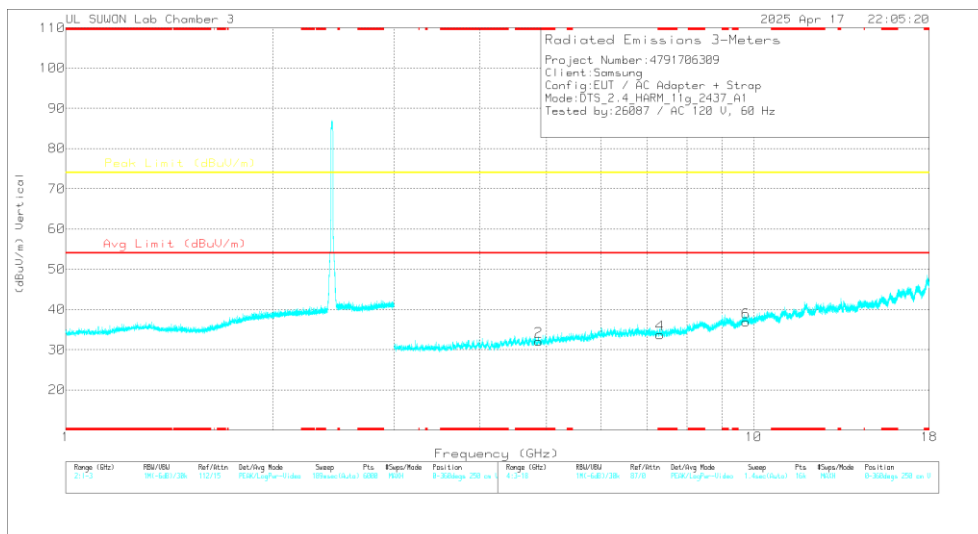
Note2. * - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

HARMONICS AND SPURIOUS EMISSIONS (WORST CASE: 6 CHANNEL)

CH 6 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_Factor (dB/m)	3GHz_HP_Path 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
* 4.87432	39.7	PK2	34.2	-30.5	0	42.4	-	-	74	-31.6	0	100	H
* 4.87899	38.74	PK2	34.2	-30.6	0	42.34	-	-	74	-31.66	0	100	V
* 7.3072	34.67	PK2	35.8	-25.4	0	45.07	-	-	74	-28.93	0	100	H
* 7.31122	34.02	PK2	35.8	-25.3	0	44.52	-	-	74	-29.48	0	100	V
9.74349	32.22	PK2	36.9	-21.2	0	47.92	-	-	74	-26.08	0	100	H
9.75177	31.71	PK2	36.9	-21.3	0	47.31	-	-	74	-26.69	0	100	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PK2 - KDB558074 Method: Maximum Peak

HARMONICS AND SPURIOUS EMISSIONS TEST DATA

Freq. [MHz]	Antenna	Frequency [GHz]	Reading [dBuV]	Detector Mode	ANT Factor [dB/m]	Loss [dB]	DC Corr [dB]	Result dBuV/m	AV Limit dBuV/m	AV Margin [dB]	PK Limit dBuV/m	PK Margin [dB]	Azimuth [Degs]	Height [cm]	Polarity
2417	ANT1	* 4.82759	37.99	PK2	34.20	-30.10	0.00	42.09	-	-	74.00	-31.91	0	100	H
		* 4.82281	37.77	PK2	34.30	-30.00	0.00	42.07	-	-	74.00	-31.93	0	100	V
		7.238	34.15	PK2	35.80	-25.70	0.00	44.25	-	-	74.00	-29.75	0	100	H
		7.233	34.62	PK2	35.80	-25.70	0.00	44.72	-	-	74.00	-29.28	0	100	V
		9.648	31.87	PK2	36.80	-21.30	0.00	47.37	-	-	74.00	-26.63	0	100	H
2437	ANT1	9.646	31.84	PK2	36.80	-21.30	0.00	47.34	-	-	74.00	-26.66	0	100	V
		* 4.87432	38.70	PK2	34.20	-30.50	0.00	42.40	-	-	74.00	-31.60	0	100	H
		* 4.87899	38.74	PK2	34.20	-30.60	0.00	42.34	-	-	74.00	-31.66	0	100	V
		* 7.3072	34.67	PK2	35.80	-25.40	0.00	45.07	-	-	74.00	-28.93	0	100	H
		* 7.31122	34.02	PK2	35.80	-25.30	0.00	44.52	-	-	74.00	-29.48	0	100	V
2462	ANT1	9.743	32.22	PK2	36.90	-21.20	0.00	47.92	-	-	74.00	-26.08	0	100	H
		9.752	31.71	PK2	36.90	-21.30	0.00	47.31	-	-	74.00	-26.69	0	100	V
		* 4.92098	38.58	PK2	34.20	-30.70	0.00	42.08	-	-	74.00	-31.92	0	100	H
		* 4.92849	39.58	PK2	34.30	-30.50	0.00	43.38	-	-	74.00	-30.62	0	100	V
		* 7.38862	33.85	PK2	35.70	-24.60	0.00	44.95	-	-	74.00	-29.05	0	100	H
		* 7.38597	33.56	PK2	35.70	-24.70	0.00	44.56	-	-	74.00	-29.44	0	100	V
		9.849	31.95	PK2	37.10	-21.30	0.00	47.75	-	-	74.00	-26.25	0	100	H
		9.846	31.85	PK2	37.10	-21.30	0.00	47.65	-	-	74.00	-26.35	0	100	V

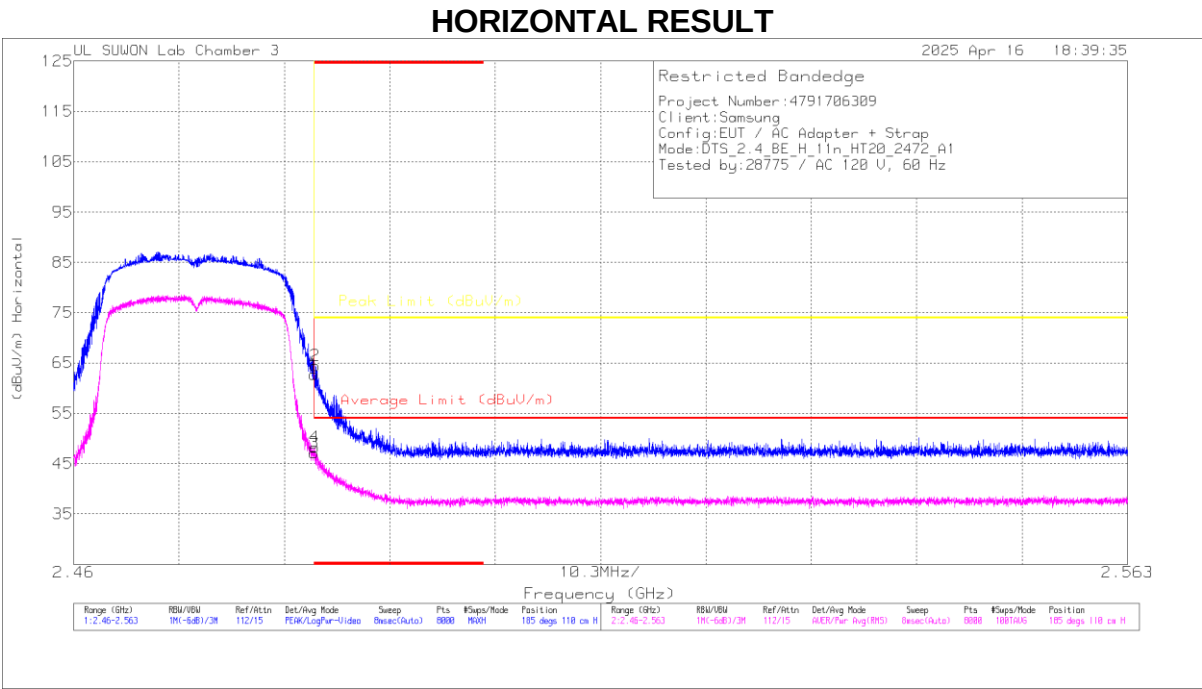
Note1. PK2 - KDB558074 Method: Maximum Peak / MAV1 - KDB558074 Option 1 Maximum RMS Average

Note2. * - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

10.1.3. TX ABOVE 1 GHz 802.11n HT20 MODE IN THE 2.4 GHz BAND

1TX Antenna 1

BANDEDGE (WORST CASE: 13 CHANNEL)



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBU/m)	Det	Antenna Factor (dB/m)	10dB Path Loss (dB)	DC Corr (dB)	Corrected Reading (dBU/m)	Average Limit (dBU/m)	Margin (dB)	Peak Limit (dBU/m)	PK Margin (dB)	Azimuth (Degs)	Height (m)	Polarity
1	* 2.4835	55.19	PK	32.4	-24.9	0	62.69	-	-	74	-11.31	185	110	H
2	* 2.48364	56.96	PK	32.4	-24.9	0	64.46	-	-	74	-9.54	185	110	H
3	* 2.4835	39.51	RMS	32.4	-24.9	.09	47.1	54	-6.9	-	-	185	110	H
4	* 2.48354	40.7	RMS	32.4	-24.9	.09	48.29	54	-5.71	-	-	185	110	H

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

BANDEDGE TEST DATA

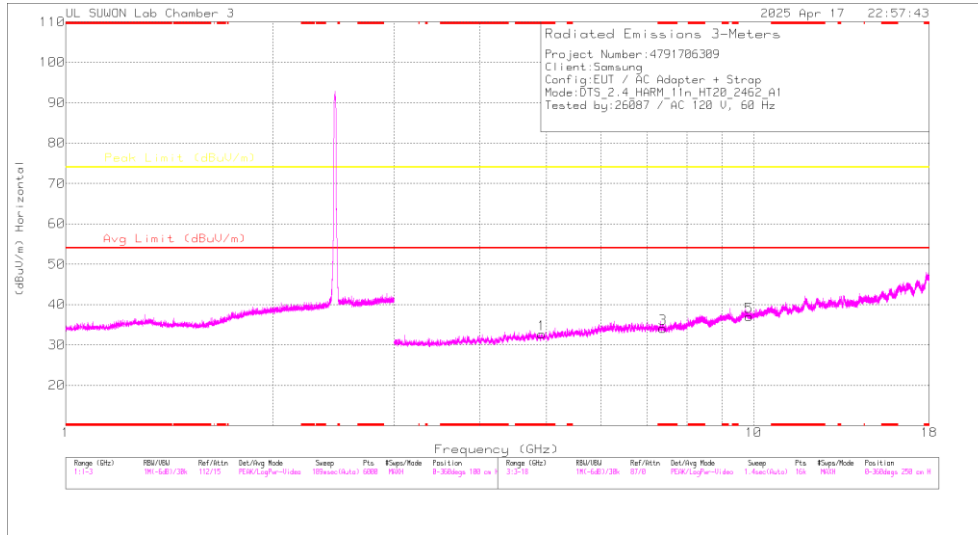
Freq. [MHz]	Antenna	Frequency [GHz]	Reading [dBuV]	Detector Mode	ANT Factor [dB/m]	Loss [dB]	DC Corr [dB]	Result dBuV/m	AV Limit dBuV/m	AV Margin [dB]	PK Limit dBuV/m	PK Margin [dB]	Azimuth [Degs]	Height [cm]	Polarity
2412	ANT1	* 2.39	46.19	Pk	32.10	-24.90	0.00	53.39	-	-	74.00	-20.61	185	108	H
		* 2.38986	50.01	Pk	32.10	-24.90	0.00	57.21	-	-	74.00	-16.79	185	108	H
		* 2.39	35.48	RMS	32.10	-24.90	0.09	42.77	54.00	-11.23	-	-	185	108	H
		* 2.38934	35.34	RMS	32.10	-25.00	0.09	42.53	54.00	-11.47	-	-	185	108	H
		* 2.39	47.44	Pk	32.10	-24.90	0.00	54.64	-	-	74.00	-19.36	186	108	V
		* 2.38946	49.19	Pk	32.10	-25.00	0.00	56.29	-	-	74.00	-17.71	186	108	V
		* 2.39	34.09	RMS	32.10	-24.90	0.09	41.38	54.00	-12.62	-	-	186	108	V
		* 2.38994	35.13	RMS	32.10	-24.90	0.09	42.42	54.00	-11.58	-	-	186	108	V
2462	ANT1	* 2.4835	50.29	Pk	32.40	-24.90	0.00	57.79	-	-	74.00	-16.21	186	135	H
		* 2.48528	51.40	Pk	32.40	-24.90	0.00	58.90	-	-	74.00	-15.10	186	135	H
		* 2.4835	37.65	RMS	32.40	-24.90	0.09	45.24	54.00	-8.76	-	-	186	135	H
		* 2.48353	37.93	RMS	32.40	-24.90	0.09	45.52	54.00	-8.48	-	-	186	135	H
		* 2.4835	47.89	Pk	32.40	-24.90	0.00	55.39	-	-	74.00	-18.61	187	116	V
		* 2.48355	48.71	Pk	32.40	-24.90	0.00	56.21	-	-	74.00	-17.79	187	116	V
		* 2.4835	34.97	RMS	32.40	-24.90	0.09	42.56	54.00	-11.44	-	-	187	116	V
		* 2.48368	36.03	RMS	32.40	-24.90	0.09	43.62	54.00	-10.38	-	-	187	116	V
2467	ANT1	* 2.4835	44.20	Pk	32.40	-24.90	0.00	51.70	-	-	74.00	-22.30	167	108	H
		* 2.4842	50.46	Pk	32.40	-24.90	0.00	57.96	-	-	74.00	-16.04	167	108	H
		* 2.4835	33.67	RMS	32.40	-24.90	0.09	41.26	54.00	-12.74	-	-	167	108	H
		* 2.48364	34.39	RMS	32.40	-24.90	0.09	41.98	54.00	-12.02	-	-	167	108	H
		* 2.4835	43.30	Pk	32.40	-24.90	0.00	50.80	-	-	74.00	-23.20	201	100	V
		* 2.48421	48.09	Pk	32.40	-24.90	0.00	55.59	-	-	74.00	-18.41	201	100	V
		* 2.4835	33.50	RMS	32.40	-24.90	0.09	41.09	54.00	-12.91	-	-	201	100	V
		* 2.48353	33.72	RMS	32.40	-24.90	0.09	41.31	54.00	-12.69	-	-	201	100	V
2472	ANT1	* 2.4835	55.19	Pk	32.40	-24.90	0.00	62.69	-	-	74.00	-11.31	185	110	H
		* 2.48364	56.96	Pk	32.40	-24.90	0.00	64.46	-	-	74.00	-9.54	185	110	H
		* 2.4835	39.51	RMS	32.40	-24.90	0.09	47.10	54.00	-6.90	-	-	185	110	H
		* 2.48354	40.70	RMS	32.40	-24.90	0.09	48.29	54.00	-5.71	-	-	185	110	H
		* 2.4835	52.03	Pk	32.40	-24.90	0.00	59.53	-	-	74.00	-14.47	187	128	V
		* 2.48351	54.24	Pk	32.40	-24.90	0.00	61.74	-	-	74.00	-12.26	187	128	V
		* 2.4835	36.57	RMS	32.40	-24.90	0.09	44.16	54.00	-9.84	-	-	187	128	V
		* 2.48351	37.66	RMS	32.40	-24.90	0.09	45.25	54.00	-8.75	-	-	187	128	V

Note1. Pk - Peak detector, RMS - RMS detector

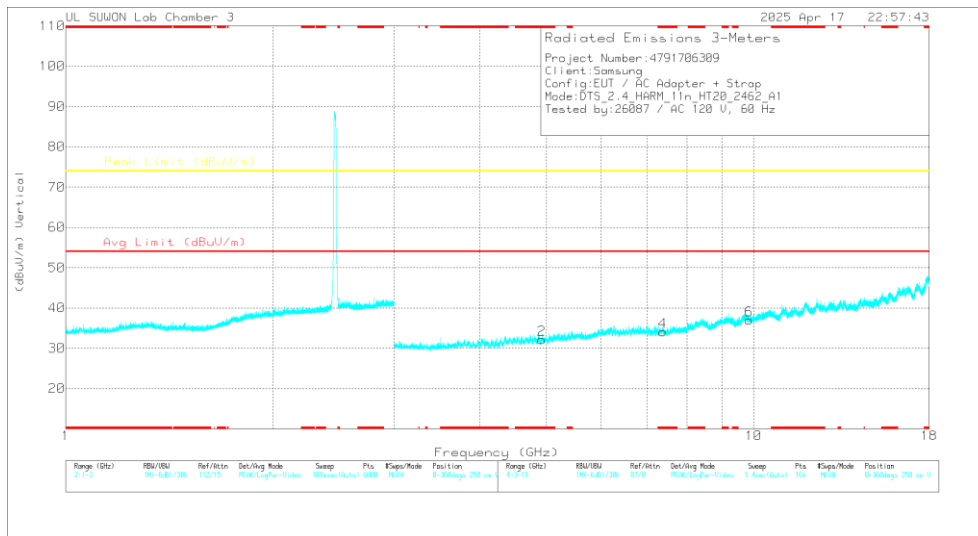
Note2. * - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

HARMONICS AND SPURIOUS EMISSIONS (WORST CASE: 11 CHANNEL)

CH 11 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_Factor (dB/m)	3GHz_HP_Path 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
* 4.92018	39.71	PK2	34.2	-30.7	0	43.21	-	-	74	-30.79	0	100	H
* 4.92105	39.05	PK2	34.2	-30.7	0	42.55	-	-	74	-31.45	0	100	V
* 7.39018	33.72	PK2	35.7	-24.6	0	44.82	-	-	74	-29.18	0	100	H
* 7.38146	33.46	PK2	35.7	-24.7	0	44.46	-	-	74	-29.54	0	100	V
* 9.84843	31.87	PK2	37.1	-21.4	0	47.57	-	-	74	-26.43	0	100	H
9.84984	31.88	PK2	37.1	-21.3	0	47.68	-	-	74	-26.32	0	100	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PK2 - KDB558074 Method: Maximum Peak

HARMONICS AND SPURIOUS EMISSIONS TEST DATA

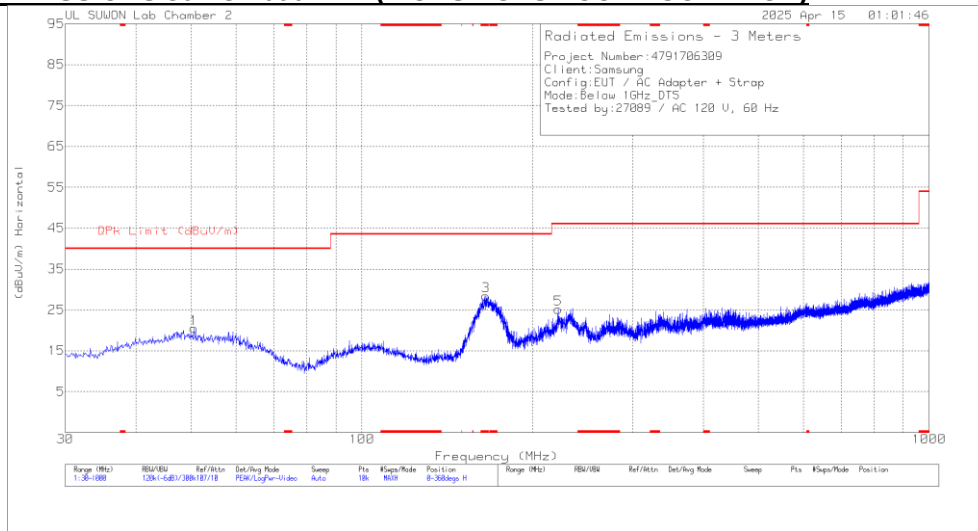
Freq. [MHz]	Antenna	Frequency [GHz]	Reading [dBuV]	Detector Mode	ANT Factor [dB/m]	Loss [dB]	DC Corr [dB]	Result dBuV/m	AV Limit dBuV/m	AV Margin [dB]	PK Limit dBuV/m	PK Margin [dB]	Azimuth [Degs]	Height [cm]	Polarity
2412	ANT1	* 4.82101	37.88	PK2	34.30	-30.00	0.00	42.18	-	-	74.00	-31.82	0	100	H
		* 4.82717	37.85	PK2	34.20	-30.10	0.00	41.95	-	-	74.00	-32.05	0	100	V
		7.234	34.29	PK2	35.80	-25.70	0.00	44.39	-	-	74.00	-29.61	0	100	H
		7.241	34.53	PK2	35.80	-25.60	0.00	44.73	-	-	74.00	-29.27	0	100	V
		9.648	31.82	PK2	36.80	-21.30	0.00	47.32	-	-	74.00	-26.68	0	100	H
2437	ANT1	9.648	31.76	PK2	36.80	-21.30	0.00	47.26	-	-	74.00	-26.74	0	100	V
		* 4.87045	39.23	PK2	34.20	-30.40	0.00	43.03	-	-	74.00	-30.97	0	100	H
		* 4.87013	38.48	PK2	34.20	-30.40	0.00	42.28	-	-	74.00	-31.72	0	100	V
		* 7.30602	34.22	PK2	35.80	-25.40	0.00	44.62	-	-	74.00	-29.38	0	100	H
		* 7.30937	34.30	PK2	35.80	-25.30	0.00	44.80	-	-	74.00	-29.20	0	100	V
2462	ANT1	9.752	31.89	PK2	36.90	-21.30	0.00	47.49	-	-	74.00	-26.51	0	100	H
		9.748	31.85	PK2	36.90	-21.30	0.00	47.45	-	-	74.00	-26.55	0	100	V
		* 4.92018	39.71	PK2	34.20	-30.70	0.00	43.21	-	-	74.00	-30.79	0	100	H
		* 4.92105	39.05	PK2	34.20	-30.70	0.00	42.55	-	-	74.00	-31.45	0	100	V
		* 7.39018	33.72	PK2	35.70	-24.60	0.00	44.82	-	-	74.00	-29.18	0	100	H
		* 7.38146	33.46	PK2	35.70	-24.70	0.00	44.46	-	-	74.00	-29.54	0	100	V
		9.848	31.87	PK2	37.10	-21.40	0.00	47.57	-	-	74.00	-26.43	0	100	H
		9.850	31.88	PK2	37.10	-21.30	0.00	47.68	-	-	74.00	-26.32	0	100	V

Note1. PK2 - KDB558074 Method: Maximum Peak / MAV1 - KDB558074 Option 1 Maximum RMS Average

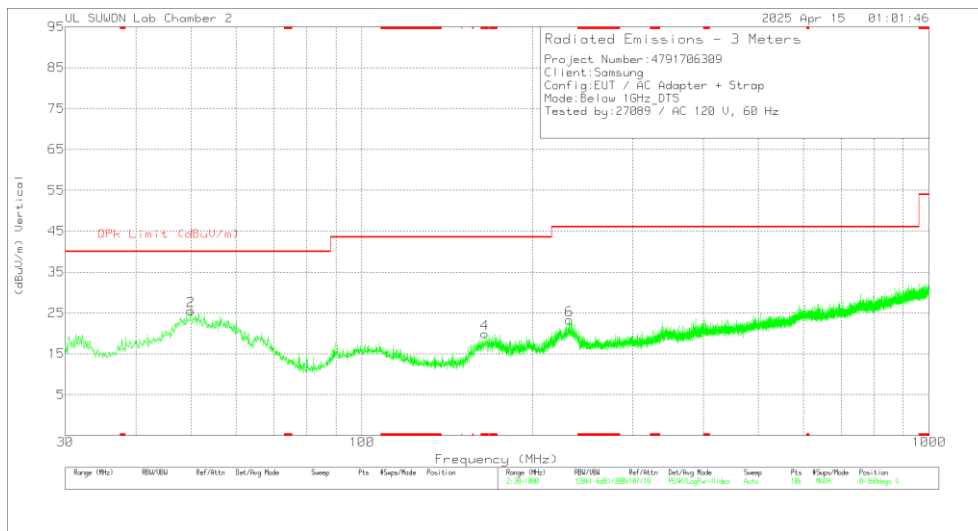
Note2. * - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

10.2. WORST CASE BELOW 1 GHZ

SPURIOUS EMISSIONS 30 TO 1000 MHz (WORST-CASE CONFIGURATION)



HORIZONTAL



VERTICAL

Below 1GHz DATA

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	Antenna_Factor (dB/m)	Below_1G_Path Loss(dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	50.564	32.43	Pk	19.7	-31.7	0	20.43	40	-19.57	0-360	100	H
3	*165.412	44.94	Pk	14.4	-30.9	0	28.44	43.52	-15.08	0-360	100	H
5	221.769	38.54	Pk	17.2	-30.6	0	25.14	46.02	-20.88	0-360	100	H
2	49.982	37.37	Pk	19.8	-31.7	0	25.47	40	-14.53	0-360	100	V
4	*164.636	36.42	Pk	14.4	-30.9	0	19.92	43.52	-23.6	0-360	100	V
6	232.051	36.24	Pk	17.7	-30.7	0	23.24	46.02	-22.78	0-360	100	V

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

Pk - Peak detector

11. AC POWER LINE CONDUCTED EMISSIONS

LIMITS

FCC §15.207 (a)

Frequency of Emission (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56 *	56 to 46 *
0.5-5	56	46
5-30	60	50

* Decreases with the logarithm of the frequency.

TEST PROCEDURE

The EUT is placed on a non-conducting table 40 cm from the vertical ground plane and 80 cm above the horizontal ground plane. The EUT is configured in accordance with ANSI C63.10.

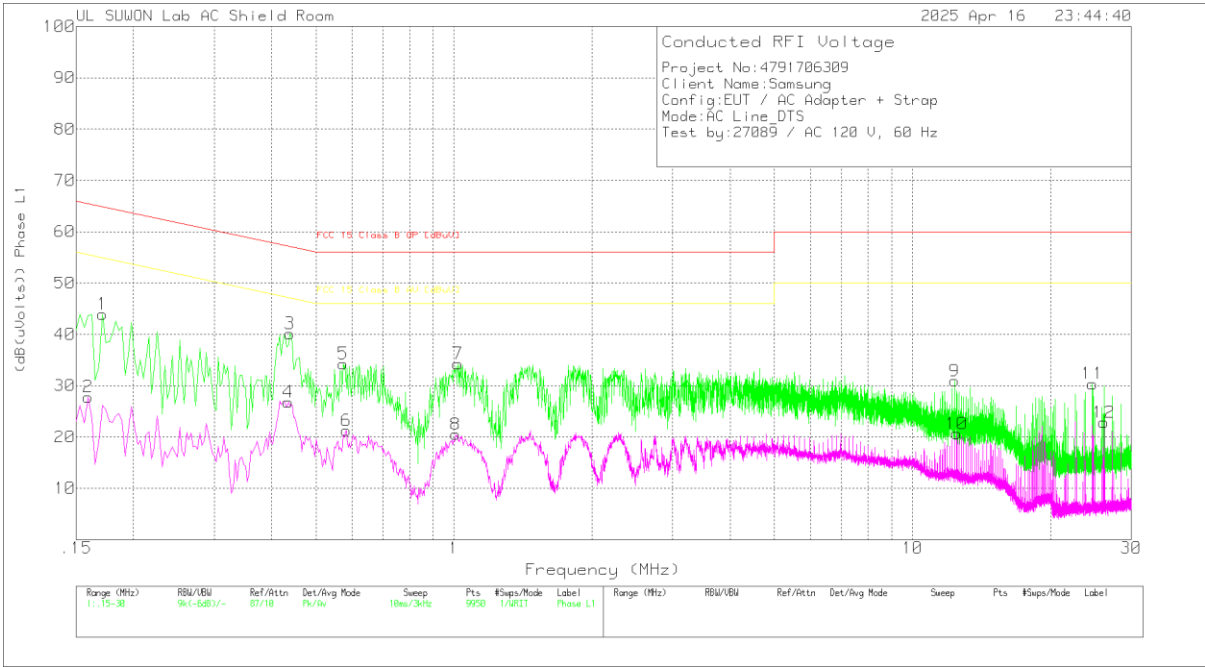
The receiver is set to a resolution bandwidth of 9 kHz. Peak detection is used unless otherwise noted as quasi-peak or average.

Line conducted data is recorded for both NEUTRAL and HOT lines.

RESULTS

11.1.1. AC Power Line

LINE 1 DATA



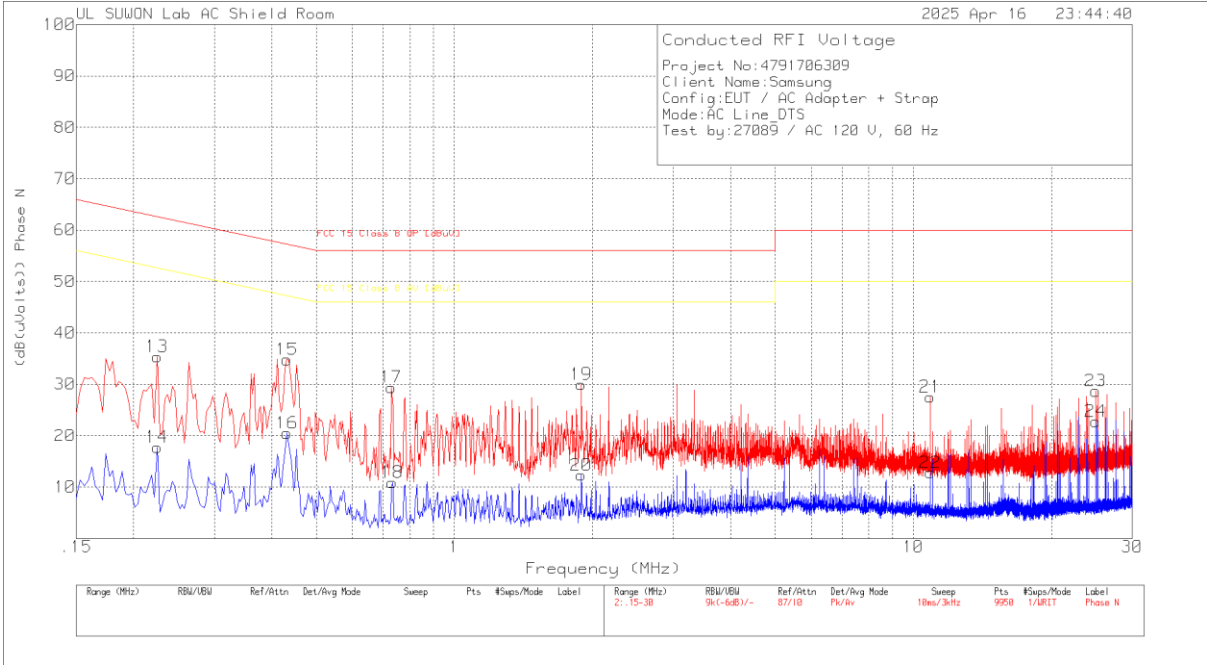
Trace Markers

Range 1: Phase L1 .15 - 30MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	101836_Wit h EX_L1 [dB]	Cable Loss [dB]	Corrected Reading [dBuV]	FCC 15 Class B QP [dBuV]	Margin (dB)	FCC 15 Class B AV [dBuV]	Margin (dB)
1	.171	33.84	Pk	10	.1	43.94	64.91	-20.97	-	-
2	.159	17.9	Av	9.8	.1	27.8	-	-	55.52	-27.72
3	.438	30.24	Pk	9.8	.1	40.14	57.1	-16.96	-	-
4	.435	16.88	Av	9.8	.1	26.78	-	-	47.16	-20.38
5	.573	24.37	Pk	9.8	.1	34.27	56	-21.73	-	-
6	.582	11.33	Av	9.8	.1	21.23	-	-	46	-24.77
7	1.02	24.45	Pk	9.7	.1	34.25	56	-21.75	-	-
8	1.008	10.71	Av	9.7	.1	20.51	-	-	46	-25.49
9	12.345	20.8	Pk	9.9	.2	30.9	60	-29.1	-	-
10	12.489	10.54	Av	9.9	.2	20.64	-	-	50	-29.36
11	24.696	19.67	Pk	10.4	.3	30.37	60	-29.63	-	-
12	26.142	12.05	Av	10.5	.3	22.85	-	-	50	-27.15

Pk - Peak detector
Av - Average detection

LINE 2 DATA



Trace Markers
Range 2: Phase N .15 - 30MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	101836_Wit h EX_N [dB]	Cable Loss [dB]	Corrected Reading [dBuV]	FCC 15 Class B QP [dBuV]	Margin (dB)	FCC 15 Class B AV [dBuV]	Margin (dB)
13	.225	25.57	Pk	9.7	.1	35.37	62.63	-27.26	-	-
14	.225	7.94	Av	9.7	.1	17.74	-	-	52.63	-34.89
15	.432	24.9	Pk	9.8	.1	34.8	57.21	-22.41	-	-
16	.432	10.58	Av	9.8	.1	20.48	-	-	47.21	-26.73
17	.729	19.49	Pk	9.8	.1	29.39	56	-26.61	-	-
18	.732	.97	Av	9.8	.1	10.87	-	-	46	-35.13
19	1.89	20.16	Pk	9.7	.1	29.96	56	-26.04	-	-
20	1.89	2.51	Av	9.7	.1	12.31	-	-	46	-33.69
21	10.896	17.42	Pk	9.9	.2	27.52	60	-32.48	-	-
22	10.896	2.7	Av	9.9	.2	12.8	-	-	50	-37.2
23	24.987	17.88	Pk	10.5	.3	28.68	60	-31.32	-	-
24	24.987	11.96	Av	10.5	.3	22.76	-	-	50	-27.24

Pk - Peak detector
Av - Average detection

END OF TEST REPORT