CERTIFICATION TEST REPORT

Report Number. : S-4791706661-E5V1

Applicant	:	SAMSUNG ELECTRONICS CO., LTD. 129 SAMSUNG-RO, YEONGTONG-GU, SUWON-SI, GYEONGGI-DO, 16677, KOREA
Model	:	SM-L505U, SM-L505F
FCC ID	:	A3LSML505
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:
2025-04-24

Prepared by:
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Suwon Test Site: UL KOREA LTD. Suwon Laboratory
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TEL: (031) 337-9902
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IAS ACCREDITED Testing Laboratory TL-637

Revision History

Rev.	Issue Date	Revisions	Revised By
V1	2025-04-24	Initial issue	Jaejin Lee

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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-L505U, SM-L505F
SERIAL NUMBER:	354907200130332, 354907200130134 (CONDUCTED); R3AY30059FL, R3AY3005E6Y (RADIATED)
DATE TESTED:	2025-03-18 - 2025-04-22

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.

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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:

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	1.4 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-L505F
SM-L505U	Hardware	Same
	Software	The UI has changed according to Service Provider

The model SM-L505U 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	20.33	107.89
	802.11g SISO	23.93	247.17
	802.11n(HT20) SISO	23.93	247.17

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: -11.2 dBi

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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 Z orientation was the worst-case for 1TX SISO mode.

Worst case of antenna axis: Z

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

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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.

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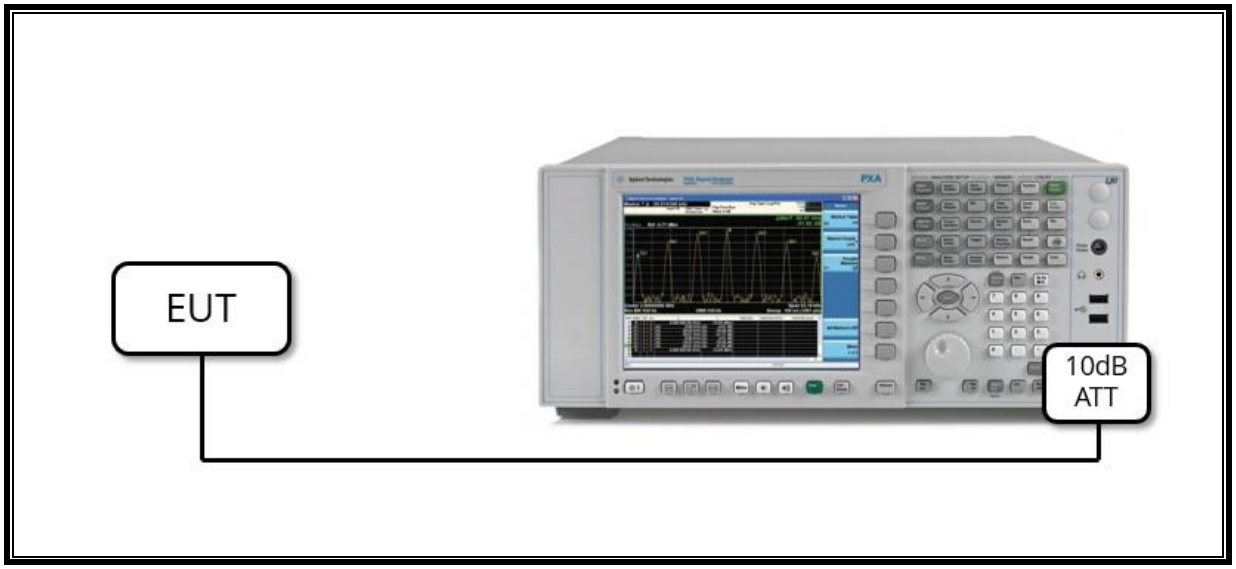
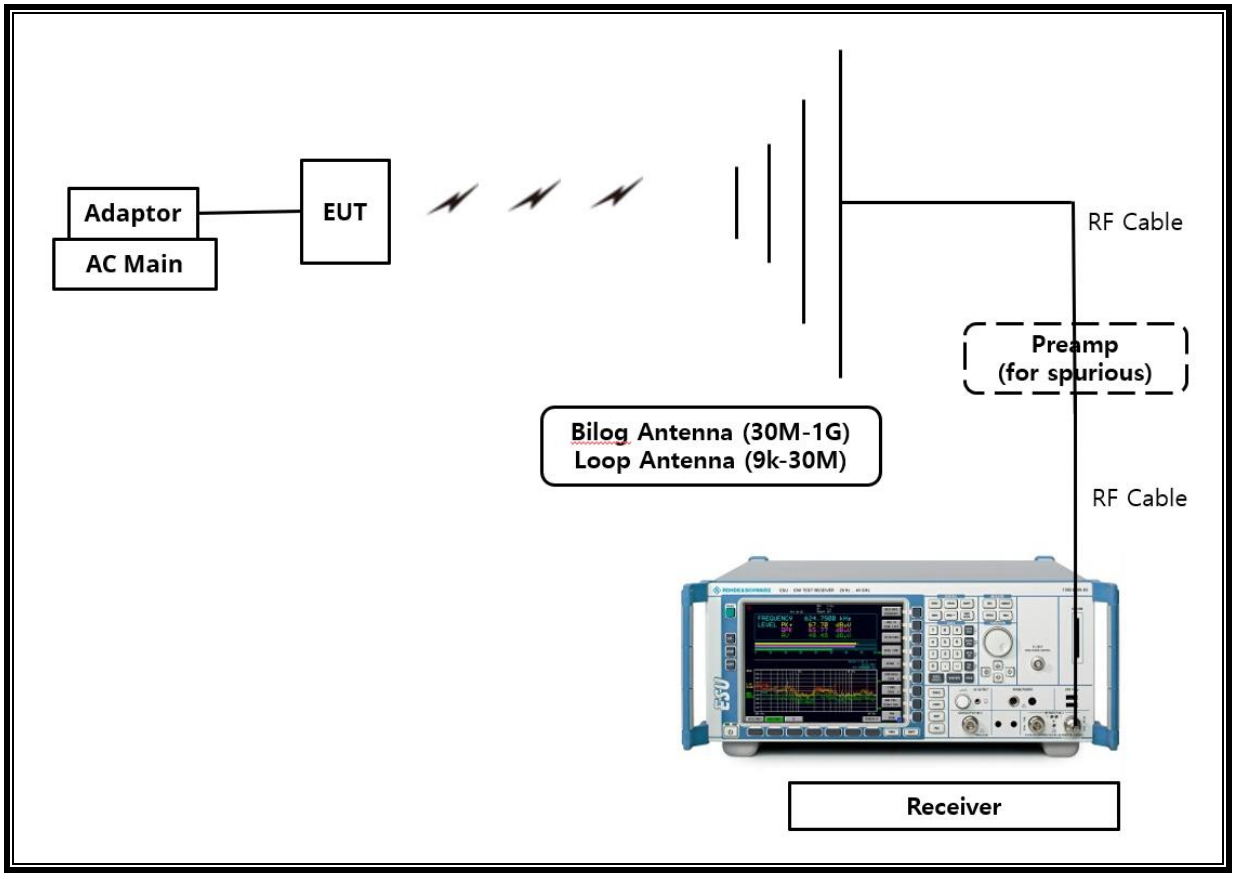
SETUP DIAGRAM FOR TESTS (CONDUCTED TEST SETUP)



SETUP DIAGRAM FOR TESTS (RADIATED TEST SETUP)



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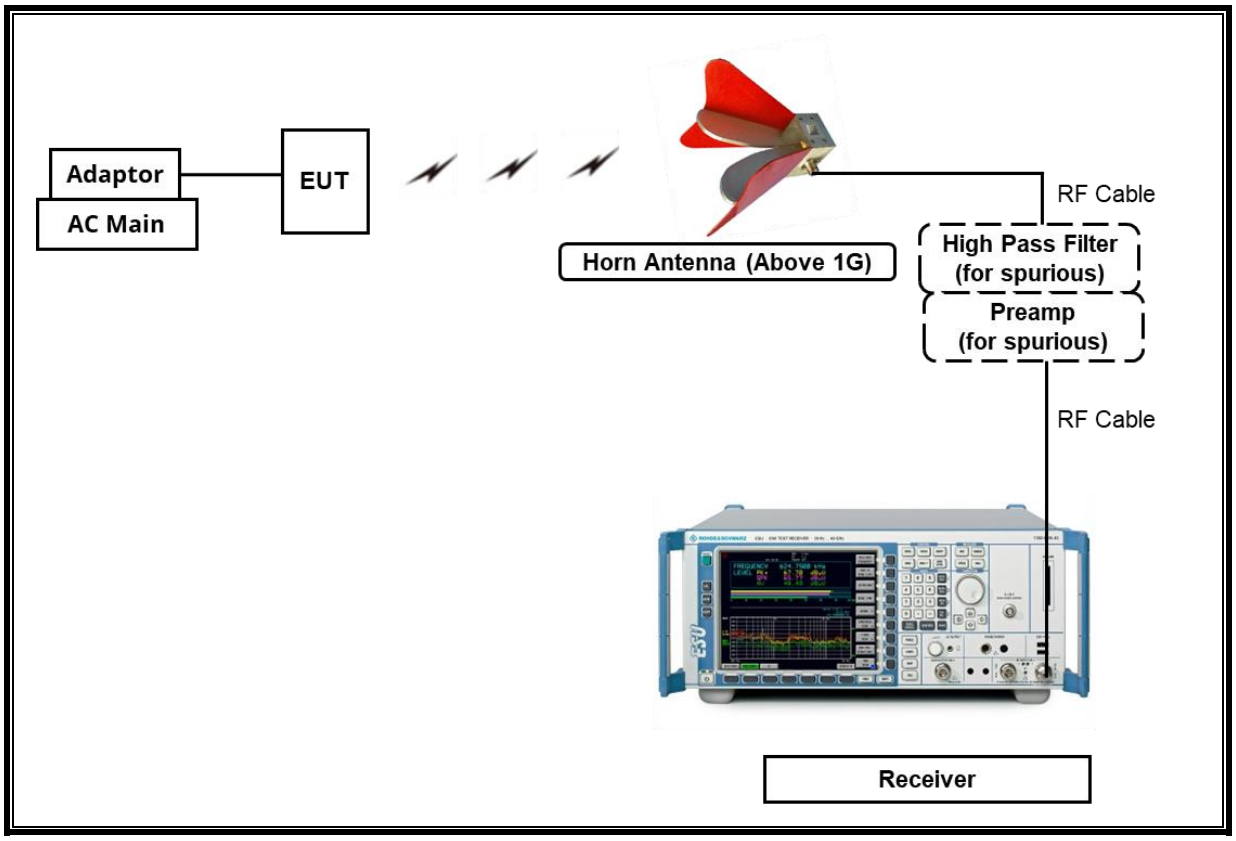

6. MEASUREMENT METHOD

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 ≥ 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	PASTERNACK	PE7087-10	A001	2025-07-23
Attenuator	PASTERNACK	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

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9. ANTENNA PORT TEST RESULTS

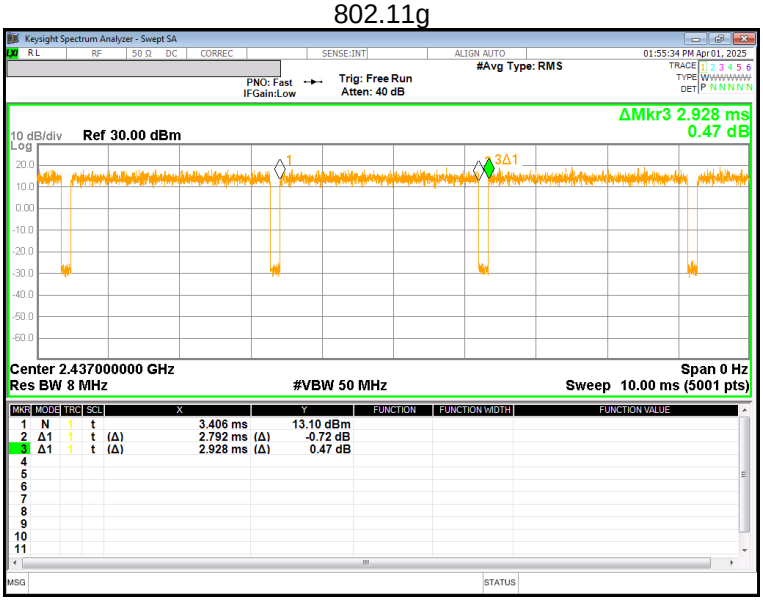
9.1. ON TIME AND DUTY CYCLE

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	8.760	0.9822	98.22	0.00	0.12
802.11g SISO	2.792	2.928	0.9536	95.36	0.21	0.36
802.11n(HT20) SISO	5.368	5.524	0.9718	97.18	0.12	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.

802.11g



9.2. 6 dB BANDWIDTH

LIMITS

FCC §15.247 (a) (2)
The minimum 6 dB bandwidth shall be at least 500 kHz.

TEST PROCEDURE

Reference to ANSI C63.10 2020: The transmitter output is connected to a spectrum analyzer with the RBW set to 1-5% OBW, the VBW >= 3 x RBW, peak detector and max hold.

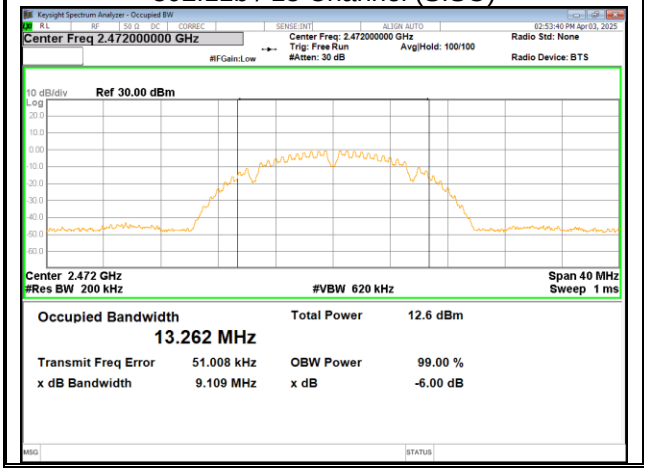
RESULTS

- Please refer to the next page

WORST CASE TEST PLOTS

ANT1

802.11b / 13 Channel (SISO)



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	9.127	0.5
6	2 437	9.123	
11	2 462	9.133	
12	2 467	9.128	
13	2 472	9.109	
Worst		**9.109**	

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	15.940	0.5
6	2 437	15.960	
11	2 462	15.980	
12	2 467	16.120	
13	2 472	16.030	
Worst		**15.940**	

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	16.370	0.5
6	2 437	16.380	
11	2 462	16.780	
12	2 467	16.980	
13	2 472	16.390	
Worst		**16.370**	

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 ≥ DTS bandwidth.
b) Set VBW ≥ [3 × RBW].
c) Set span ≥ [3 × 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.

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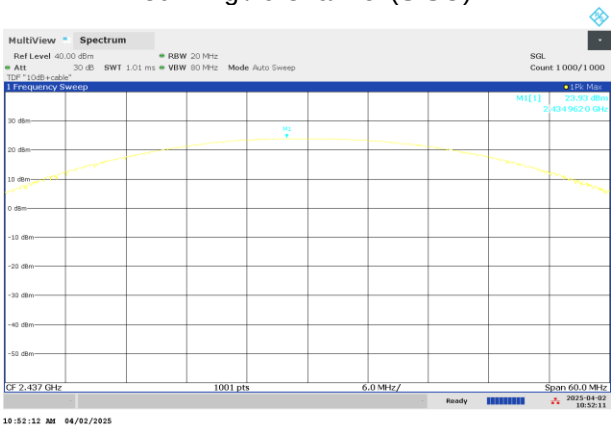
Maximum peak conducted output power (WORST CASE TEST PLOT)

ANT 1

802.11g / 6 Channel (SISO)



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	18.14	20.08	30.00
	6	2 437	18.05	20.33	
	11	2 462	18.01	20.15	
	12	2 467	8.25	10.73	
	13	2 472	8.07	10.57	
Worst Case			**18.14**	**20.33**	
802.11g	1	2 412	17.15	23.62	
	6	2 437	17.10	23.93	
	11	2 462	16.90	23.67	
	12	2 467	8.34	17.44	
	13	2 472	8.15	17.28	
Worst Case			**17.15**	**23.93**	
802.11n HT20	1	2 412	17.08	23.69	
	6	2 437	17.01	23.93	
	11	2 462	17.06	23.45	
	12	2 467	8.19	17.59	
	13	2 472	8.03	17.17	
Worst Case			**17.08**	**23.93**	

- 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)

a) Set analyzer center frequency to DTS channel center frequency.
b) Set the span >1.5 times the DTS bandwidth.
c) Set the RBW to 3 kHz ≤ RBW ≤ 100 kHz.
d) Set the VBW ≥ [3 × RBW].
e) Detector = peak.
f) Sweep time = No faster than coupled (auto) time.
g) Trace mode = max-hold.
h) Allow trace to fully stabilize.
i) Use the peak marker function to determine the maximum amplitude level within the RBW.
j) If measured value exceeds requirement, then reduce RBW (but no less than 3 kHz) and repeat.

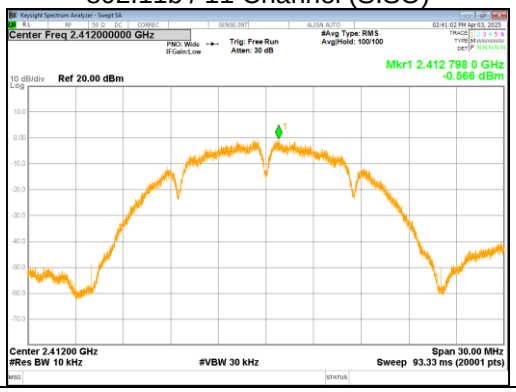
RESULTS

- Please refer to the next page

WORST CASE TEST PLOTS

ANT 1

802.11b / 11 Channel (SISO)



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	-0.566	8.00 Note
	6	2 437	-0.986	
	11	2 462	-0.636	
	12	2 467	-10.338	
	13	2 472	-11.142	
802.11g	1	2 412	-4.543	
	6	2 437	-4.410	
	11	2 462	-3.625	
	12	2 467	-12.785	
	13	2 472	-13.931	
802.11n HT20	1	2 412	-2.504	
	6	2 437	-2.675	
	11	2 462	-2.668	
	12	2 467	-11.293	
	13	2 472	-11.530	

- Calculation of Output PSD result
- 1TX : Corr'd PSD = Meas PSD
Note. RBW 10kHz measurement data is lower than 3kHz limit.

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9.5. CONDUCTED SPURIOUS EMISSIONS

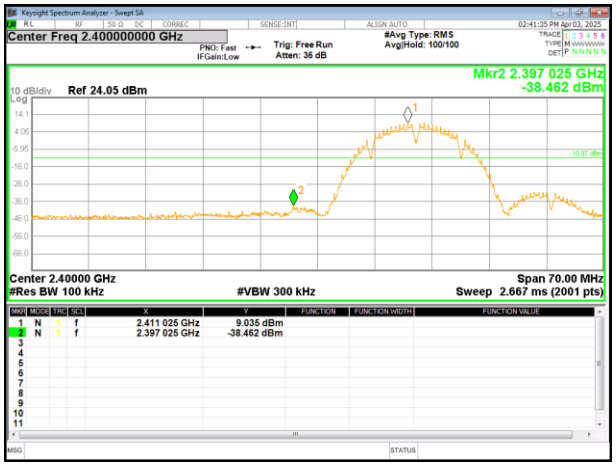
LIMITS

FCC §15.247 (d)

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

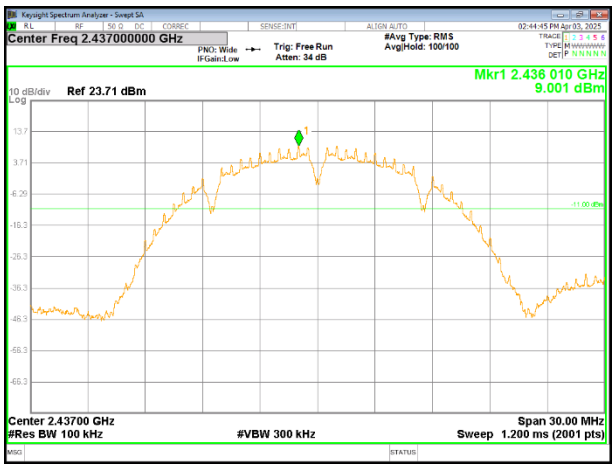
RESULTS

9.5.1. 802.11b MODE

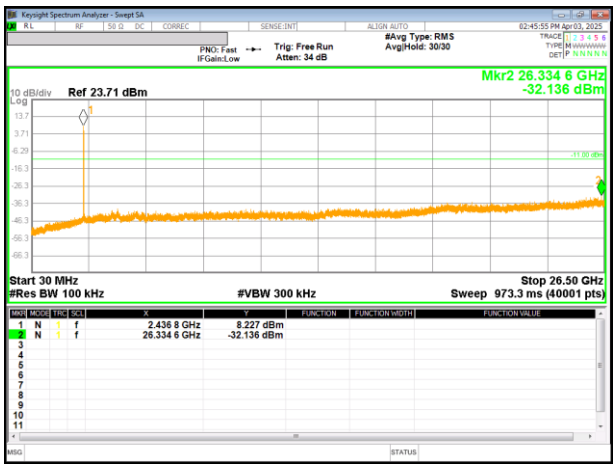


1 Channel Band-edge

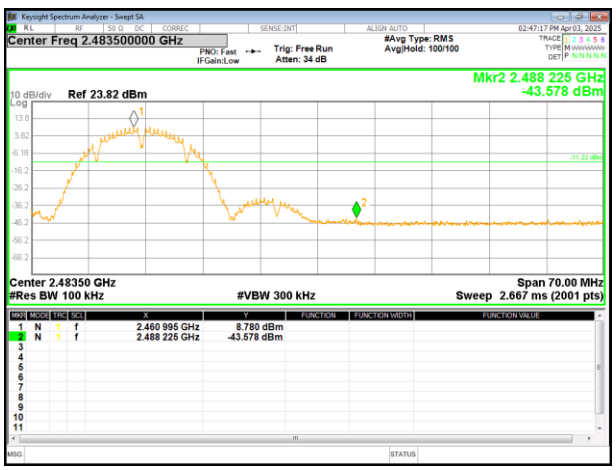
Out-Of-Band 1 Channel



6 Channel Reference



Out-Of-Band 6 Channel



11 Channel Band-edge

Out-Of-Band 11 Channel

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12 Channel Band-edge

13 Channel Band-edge

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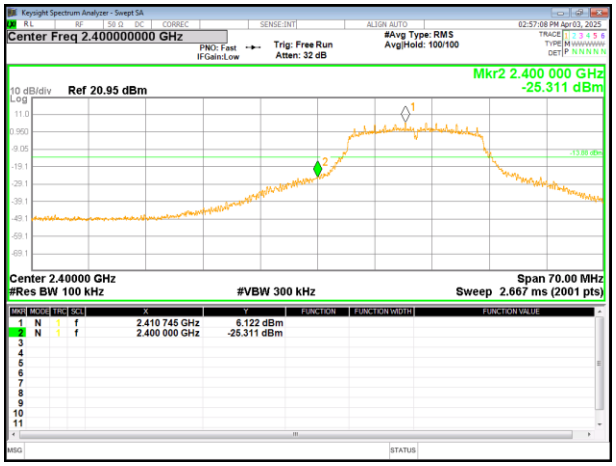
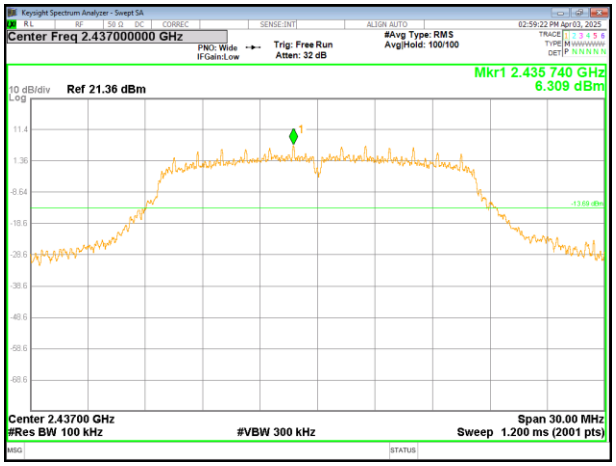
9.5.2. 802.11g MODE



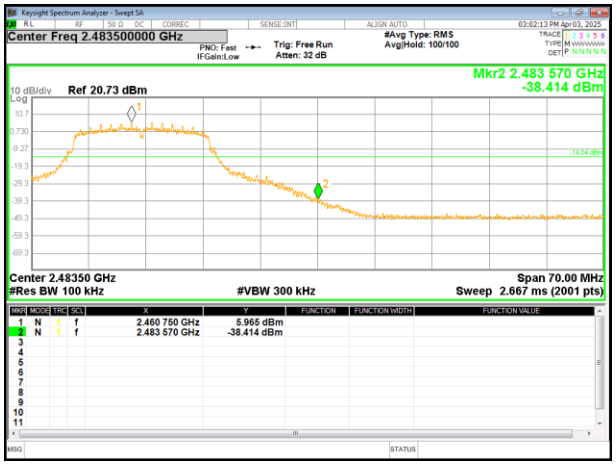
1 Channel Band-edge

Out-Of-Band 1 Channel

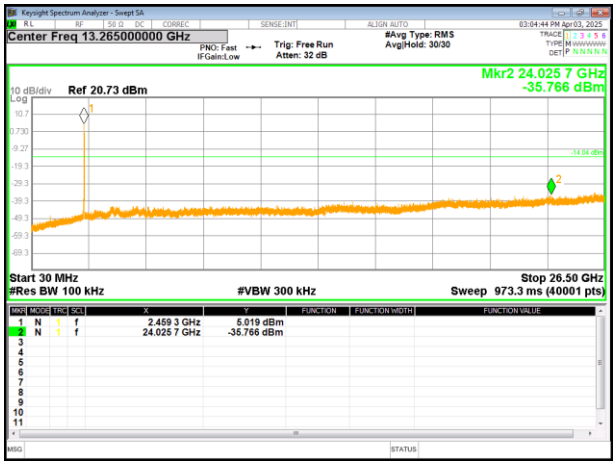


6 Channel Reference

Out-Of-Band 6 Channel



11 Channel Band-edge



Out-Of-Band 11 Channel

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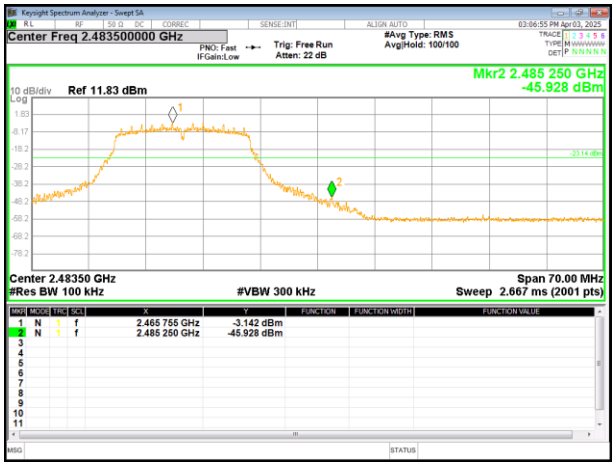
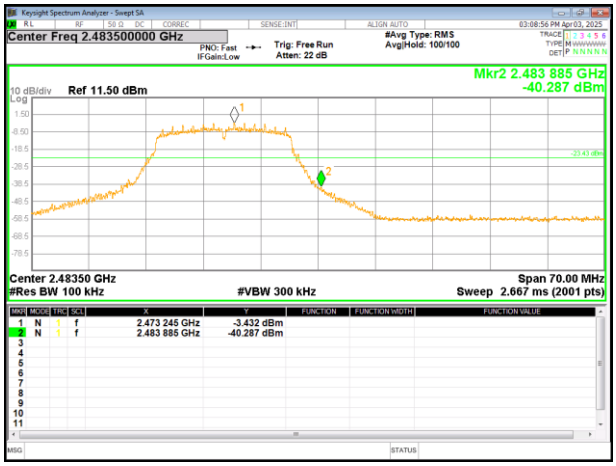


12 Channel Band-edge



13 Channel Band-edge

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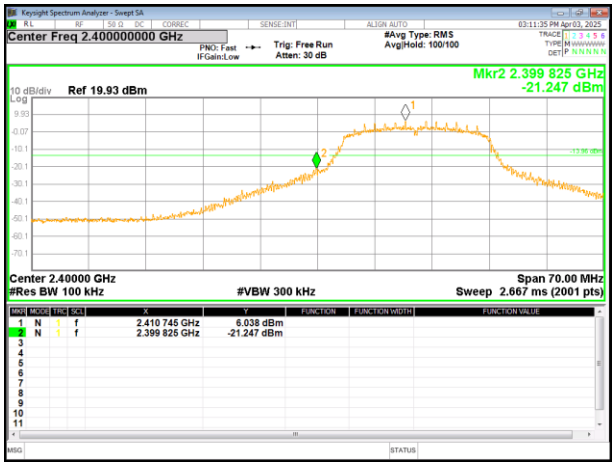
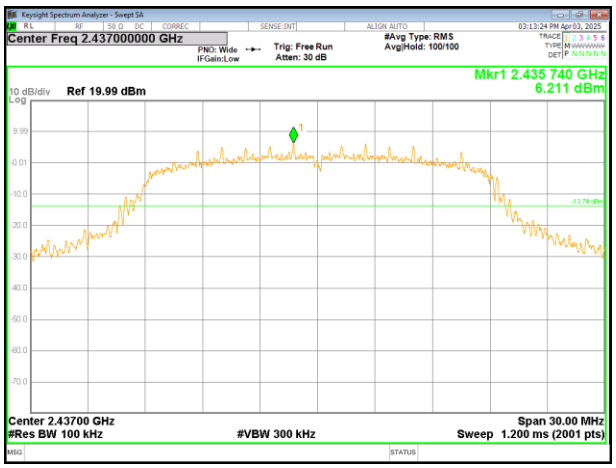
9.5.3. 802.11n HT20 MODE

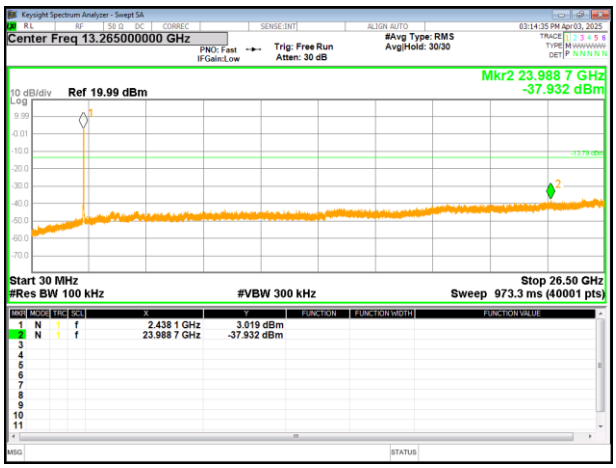


1 Channel Band-edge

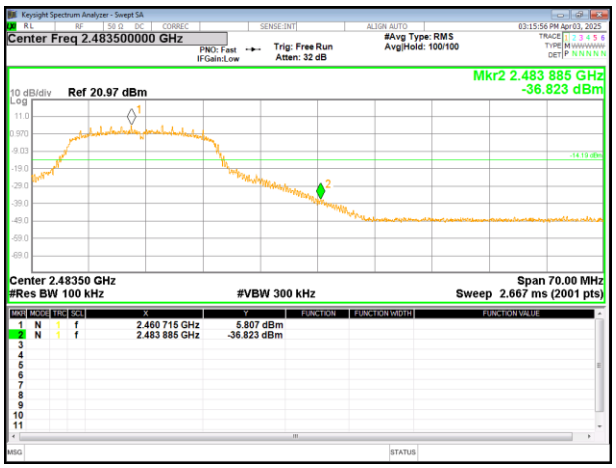
Out-Of-Band 1 Channel



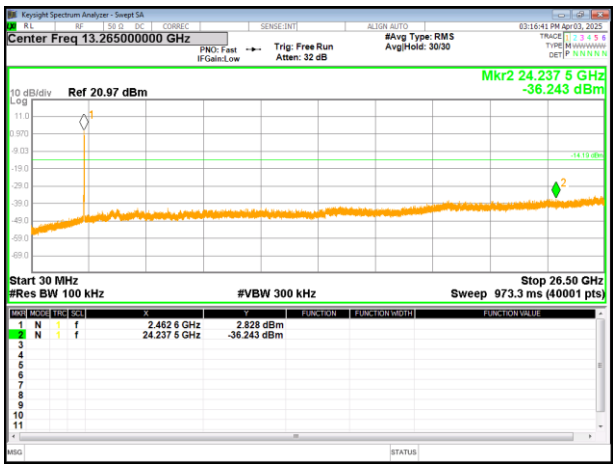
6 Channel Reference



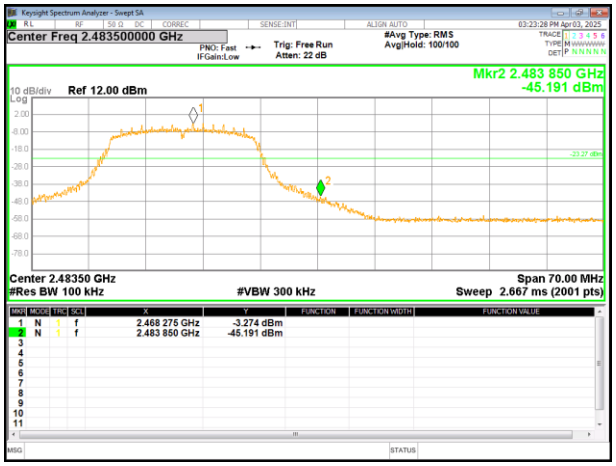
Out-Of-Band 6 Channel



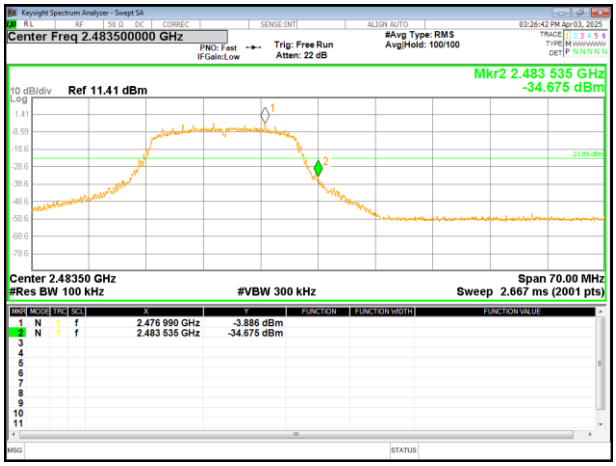
11 Channel Band-edge



Out-Of-Band 11 Channel



12 Channel Band-edge



13 Channel Band-edge

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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.
(Restriced bandedge, Final detection of spurious harmonic emissions)

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

802.11b SISO mode = 0.00 dB (98.22%)
802.11g SISO mode = 0.21 dB (95.36%)
802.11n(HT20) SISO mode = 0.12 dB (97.18%)

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.

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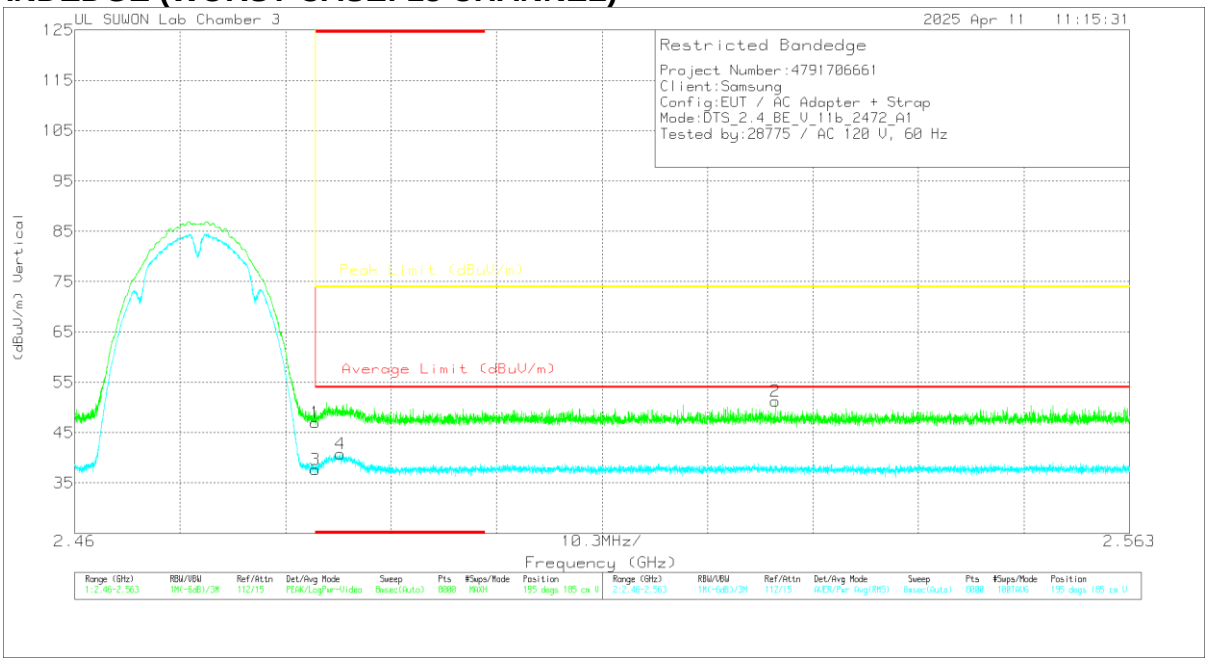
10.1. TRANSMITTER ABOVE 1 GHz

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

1TX Antenna 1

BANDEDGE (WORST CASE: 13 CHANNEL)



VERTICAL RESULT

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	Antenna_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)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.4835	39.46	Pk	32.4	-24.9	0	46.96	-	-	74	-27.04	195	185	V
2	2.5284	43.69	Pk	32.4	-24.8	0	51.29	-	-	74	-22.71	195	185	V
3	* 2.4835	30.21	RMS	32.4	-24.9	0	37.71	54	-16.29	-	-	195	185	V
4	* 2.48595	33.26	RMS	32.4	-24.9	0	40.76	54	-13.24	-	-	195	185	V

* - 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	39.84	Pk	32.10	-24.90	0.00	47.04	-	-	74.00	-26.96	191	104	V
		* 2.37595	42.83	Pk	32.10	-25.00	0.00	49.93	-	-	74.00	-24.07	191	104	V
		* 2.39	30.23	RMS	32.10	-24.90	0.00	37.43	54.00	-16.57	-	-	191	104	V
		* 2.38602	31.75	RMS	32.10	-25.00	0.00	38.85	54.00	-15.15	-	-	191	104	V
2462	ANT1	* 2.4835	40.86	Pk	32.40	-24.90	0.00	48.36	-	-	74.00	-25.64	195	185	V
		* 2.48832	43.45	Pk	32.40	-24.90	0.00	50.95	-	-	74.00	-23.05	195	185	V
		* 2.4835	30.74	RMS	32.40	-24.90	0.00	38.24	54.00	-15.76	-	-	195	185	V
		* 2.48659	31.79	RMS	32.40	-24.90	0.00	39.29	54.00	-14.71	-	-	195	185	V
2467	ANT1	* 2.4835	41.45	Pk	32.40	-24.90	0.00	48.95	-	-	74.00	-25.05	198	182	V
		2.508	43.33	Pk	32.40	-24.80	0.00	50.93	-	-	74.00	-23.07	198	182	V
		* 2.4835	30.49	RMS	32.40	-24.90	0.00	37.99	54.00	-16.01	-	-	198	182	V
		* 2.48484	31.46	RMS	32.40	-24.90	0.00	38.96	54.00	-15.04	-	-	198	182	V
2472	ANT1	* 2.4835	39.58	Pk	32.40	-24.90	0.00	47.08	-	-	74.00	-26.92	128	110	H
		2.534	43.98	Pk	32.40	-24.90	0.00	51.48	-	-	74.00	**-22.52**	128	110	H
		* 2.4835	29.50	RMS	32.40	-24.90	0.00	37.00	54.00	-17.00	-	-	128	110	H
		* 2.48635	32.05	RMS	32.40	-24.90	0.00	39.55	54.00	-14.45	-	-	128	110	H
		* 2.4835	39.46	Pk	32.40	-24.90	0.00	46.96	-	-	74.00	-27.04	195	185	V
		2.528	43.69	Pk	32.40	-24.80	0.00	51.29	-	-	74.00	-22.71	195	185	V
		* 2.4835	30.21	RMS	32.40	-24.90	0.00	37.71	54.00	-16.29	-	-	195	185	V
		* 2.48595	33.26	RMS	32.40	-24.90	0.00	40.76	54.00	**-13.24**	-	-	195	185	V

Note1. Pk - Peak detector, RMS - RMS detector
Note2. * - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

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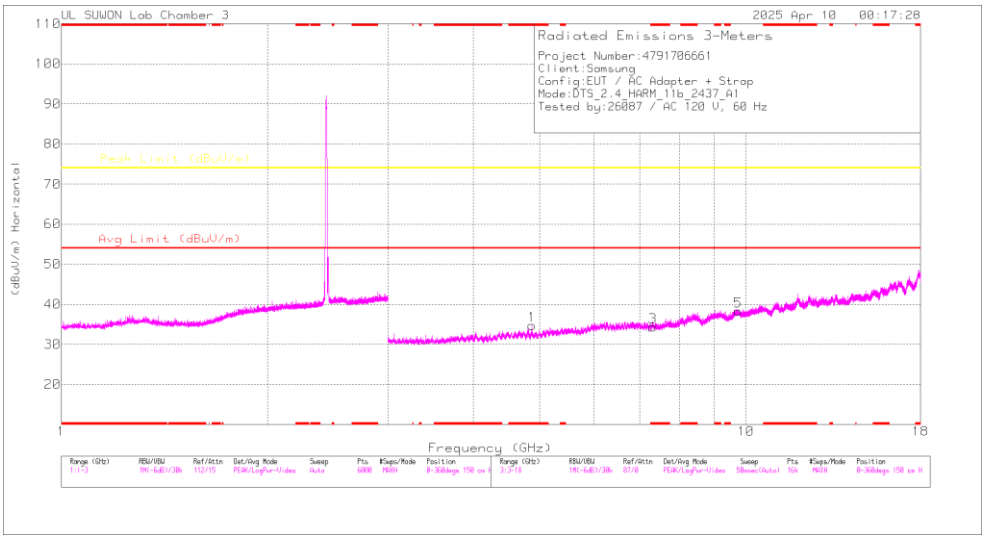
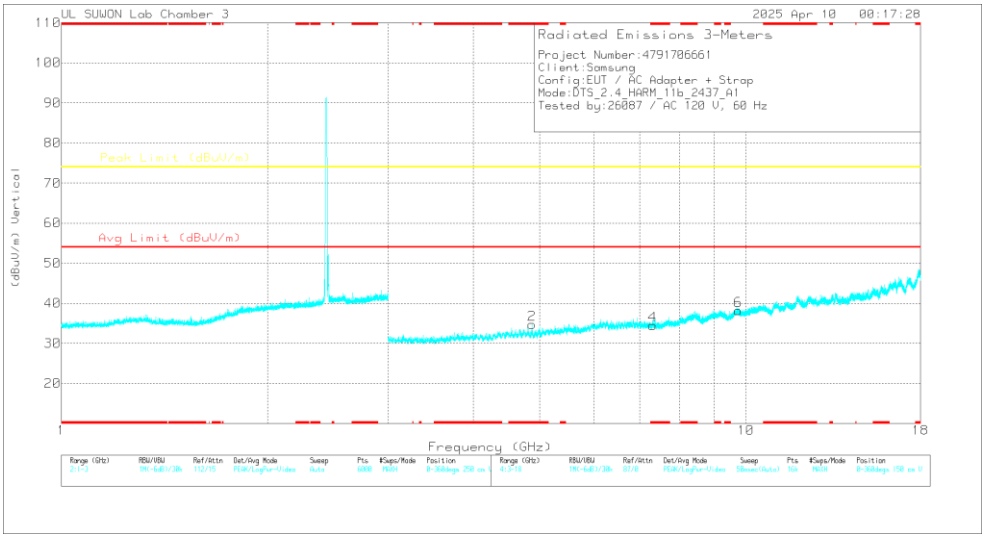
HARMONICS AND SPURIOUS EMISSIONS(WORST CASE: 6 CHANNEL)

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
* 4.87392	40.73	PK2	34.2	-30.5	0	44.43	-	-	74	-29.57	194	319	H
* 4.87399	31.18	MAv1	34.2	-30.5	0	34.88	54	-19.12	-	-	194	319	H
* 4.87412	39.73	PK2	34.2	-30.5	0	43.43	-	-	74	-30.57	151	106	V
* 4.87409	30.38	MAv1	34.2	-30.5	0	34.08	54	-19.92	-	-	151	106	V
* 7.31518	34.65	PK2	35.8	-25.2	0	45.25	-	-	74	-28.75	0	100	H
* 7.30881	34.9	PK2	35.8	-25.3	0	45.4	-	-	74	-28.6	0	100	V
9.74815	32.32	PK2	36.9	-21.3	0	47.92	-	-	74	-26.08	142	101	H
9.74807	33.28	PK2	36.9	-21.3	0	48.88	-	-	74	-25.12	158	239	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	* 4.824	39.00	PK2	34.30	-30.10	0.00	43.20	-	-	74.00	-30.80	301	116	H
		* 4.824	28.58	MAv1	34.30	-30.10	0.00	32.78	54.00	-21.22	-	-	301	116	H
		* 4.8239	39.32	PK2	34.30	-30.00	0.00	43.62	-	-	74.00	-30.38	155	129	V
		* 4.82381	29.35	MAv1	34.30	-30.00	0.00	33.65	54.00	-20.35	-	-	155	129	V
		7.240	34.83	PK2	35.80	-25.60	0.00	45.03	-	-	74.00	-28.97	0	100	H
		7.236	34.58	PK2	35.80	-25.70	0.00	44.68	-	-	74.00	-29.32	0	100	V
		9.646	32.22	PK2	36.80	-21.30	0.00	47.72	-	-	74.00	-26.28	145	104	H
		9.648	32.53	PK2	36.80	-21.30	0.00	48.03	-	-	74.00	-25.97	163	265	V
2437	ANT1	* 4.87392	40.73	PK2	34.20	-30.50	0.00	44.43	-	-	74.00	-29.57	194	319	H
		* 4.87399	31.18	MAv1	34.20	-30.50	0.00	34.88	54.00	**-19.12**	-	-	194	319	H
		* 4.87412	39.73	PK2	34.20	-30.50	0.00	43.43	-	-	74.00	-30.57	151	106	V
		* 4.87409	30.38	MAv1	34.20	-30.50	0.00	34.08	54.00	-19.92	-	-	151	106	V
		* 7.31518	34.65	PK2	35.80	-25.20	0.00	45.25	-	-	74.00	-28.75	0	100	H
		* 7.30881	34.90	PK2	35.80	-25.30	0.00	45.40	-	-	74.00	-28.60	0	100	V
		9.748	32.32	PK2	36.90	-21.30	0.00	47.92	-	-	74.00	-26.08	142	101	H
		9.748	33.28	PK2	36.90	-21.30	0.00	48.88	-	-	74.00	**-25.12**	158	239	V
2462	ANT1	* 4.92349	39.33	PK2	34.20	-30.60	0.00	42.93	-	-	74.00	-31.07	166	395	H
		* 4.92397	29.33	MAv1	34.20	-30.60	0.00	32.93	54.00	-21.07	-	-	166	395	H
		* 4.92377	39.47	PK2	34.20	-30.60	0.00	43.07	-	-	74.00	-30.93	151	106	V
		* 4.92399	29.58	MAv1	34.20	-30.60	0.00	33.18	54.00	-20.82	-	-	151	106	V
		* 7.38299	33.89	PK2	35.70	-24.70	0.00	44.89	-	-	74.00	-29.11	0	100	H
		* 7.38395	33.58	PK2	35.70	-24.70	0.00	44.58	-	-	74.00	-29.42	0	100	V
		9.849	31.84	PK2	37.10	-21.40	0.00	47.54	-	-	74.00	-26.46	149	111	H
		9.845	31.86	PK2	37.10	-21.30	0.00	47.66	-	-	74.00	-26.34	208	106	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

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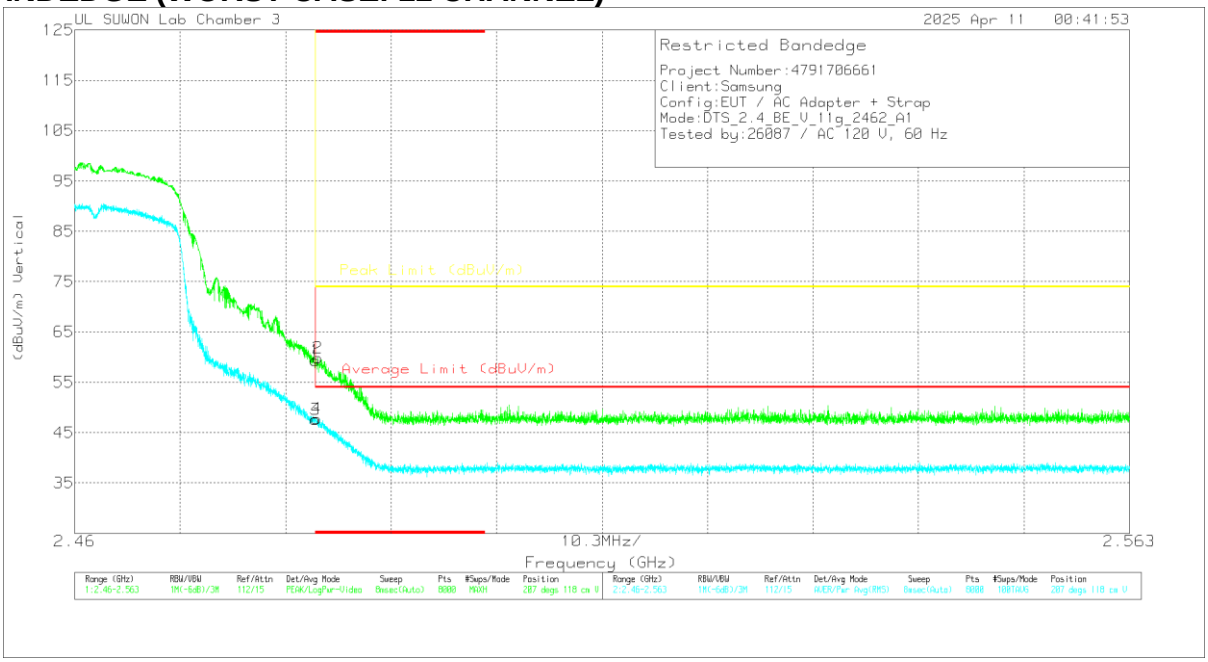
10.1.2. TX ABOVE 1 GHz 802.11g MODE IN THE 2.4 GHz BAND

1TX Antenna 1

BANDEDGE (WORST CASE: 11 CHANNEL)



VERTICAL RESULT

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	Antenna_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)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.4835	51.8	Pk	32.4	-24.9	0	59.3	-	-	74	-14.7	207	118	V
2	* 2.48372	52.31	Pk	32.4	-24.9	0	59.81	-	-	74	-14.19	207	118	V
3	* 2.4835	39.92	RMS	32.4	-24.9	.21	47.63	54	-6.37	-	-	207	118	V
4	* 2.48363	40.05	RMS	32.4	-24.9	.21	47.76	54	-6.24	-	-	207	118	V

* - 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	48.35	Pk	32.10	-24.90	0.00	55.55	-	-	74.00	-18.45	209	110	V
		* 2.38946	50.11	Pk	32.10	-25.00	0.00	57.21	-	-	74.00	-16.79	209	110	V
		* 2.39	37.03	RMS	32.10	-24.90	0.21	44.44	54.00	-9.56	-	-	209	110	V
		* 2.38976	37.23	RMS	32.10	-24.90	0.21	44.64	54.00	-9.36	-	-	209	110	V
2462	ANT1	* 2.4835	49.92	Pk	32.40	-24.90	0.00	57.42	-	-	74.00	-16.58	185	108	H
		* 2.48371	50.67	Pk	32.40	-24.90	0.00	58.17	-	-	74.00	-15.83	185	108	H
		* 2.4835	38.85	RMS	32.40	-24.90	0.21	46.56	54.00	-7.44	-	-	185	108	H
		* 2.48363	38.85	RMS	32.40	-24.90	0.21	46.56	54.00	-7.44	-	-	185	108	H
		* 2.4835	51.80	Pk	32.40	-24.90	0.00	59.30	-	-	74.00	-14.70	207	118	V
		* 2.48372	52.31	Pk	32.40	-24.90	0.00	59.81	-	-	74.00	-14.19	207	118	V
		* 2.4835	39.92	RMS	32.40	-24.90	0.21	47.63	54.00	-6.37	-	-	207	118	V
		* 2.48363	40.05	RMS	32.40	-24.90	0.21	47.76	54.00	**-6.24**	-	-	207	118	V
2467	ANT1	* 2.4835	44.73	Pk	32.40	-24.90	0.00	52.23	-	-	74.00	-21.77	194	100	V
		* 2.4836	45.87	Pk	32.40	-24.90	0.00	53.37	-	-	74.00	-20.63	194	100	V
		* 2.4835	33.22	RMS	32.40	-24.90	0.21	40.93	54.00	-13.07	-	-	194	100	V
		* 2.48367	33.96	RMS	32.40	-24.90	0.21	41.67	54.00	-12.33	-	-	194	100	V
2472	ANT1	* 2.4835	50.23	Pk	32.40	-24.90	0.00	57.73	-	-	74.00	-16.27	194	103	V
		* 2.48351	52.53	Pk	32.40	-24.90	0.00	60.03	-	-	74.00	**-13.97**	194	103	V
		* 2.4835	37.45	RMS	32.40	-24.90	0.21	45.16	54.00	-8.84	-	-	194	103	V
		* 2.48356	38.70	RMS	32.40	-24.90	0.21	46.41	54.00	-7.59	-	-	194	103	V

Note1. Pk - Peak detector, RMS - RMS detector
Note2. * - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

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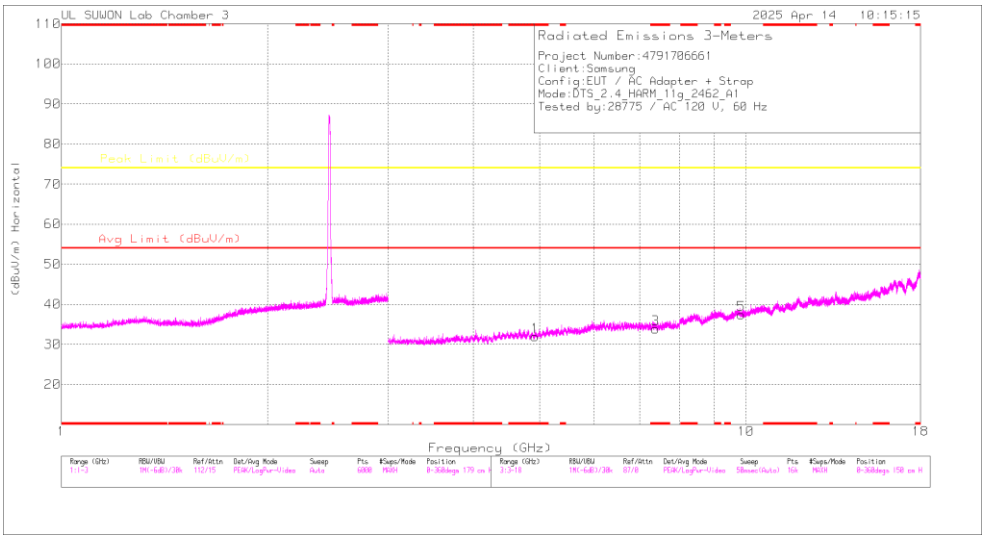
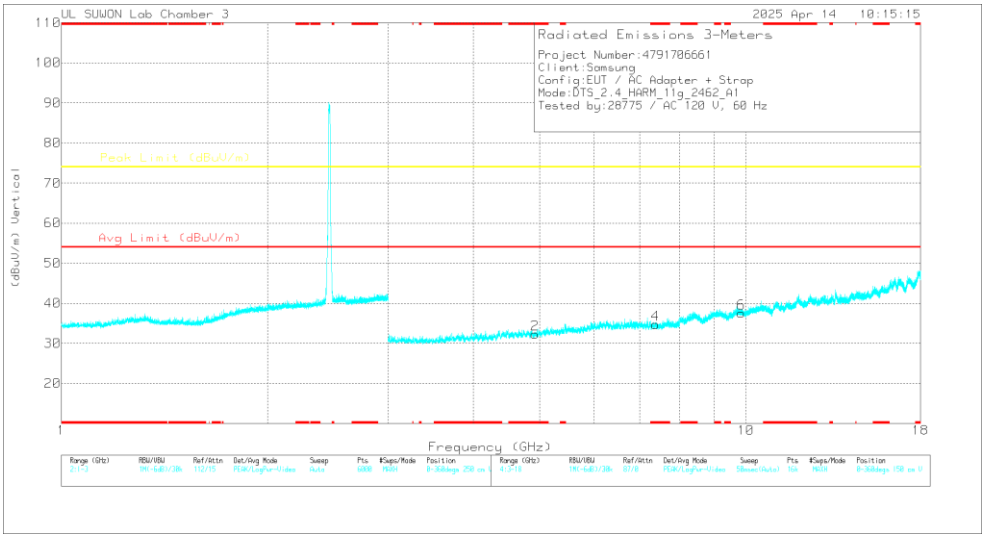
HARMONICS AND SPURIOUS EMISSIONS (WORST CASE: 11 CHANNEL)

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
* 4.92513	38.97	PK2	34.3	-30.6	0	42.67	-	-	74	-31.33	0	100	H
* 4.92002	38.94	PK2	34.2	-30.7	0	42.44	-	-	74	-31.56	0	100	V
* 7.38324	34.24	PK2	35.7	-24.7	0	45.24	-	-	74	-28.76	0	100	H
* 7.38936	33.45	PK2	35.7	-24.6	0	44.55	-	-	74	-29.45	0	100	V
9.84392	32.81	PK2	37.1	-21.4	0	48.51	-	-	74	-25.49	0	100	H
9.84971	31.97	PK2	37.1	-21.3	0	47.77	-	-	74	-26.23	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

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	* 4.82629	38.72	PK2	34.20	-30.10	0.00	42.82	-	-	74.00	-31.18	0	100	H
		* 4.82754	38.35	PK2	34.20	-30.10	0.00	42.45	-	-	74.00	-31.55	0	100	V
		7.236	34.74	PK2	35.80	-25.70	0.00	44.84	-	-	74.00	-29.16	0	100	H
		7.235	34.49	PK2	35.80	-25.70	0.00	44.59	-	-	74.00	-29.41	0	100	V
		9.647	31.71	PK2	36.80	-21.30	0.00	47.21	-	-	74.00	-26.79	0	100	H
		9.644	32.35	PK2	36.80	-21.40	0.00	47.75	-	-	74.00	-26.25	0	100	V
2437	ANT1	* 4.87426	39.05	PK2	34.20	-30.50	0.00	42.75	-	-	74.00	-31.25	0	100	H
		* 4.87841	38.88	PK2	34.20	-30.60	0.00	42.48	-	-	74.00	-31.52	0	100	V
		* 7.31253	34.48	PK2	35.80	-25.20	0.00	45.08	-	-	74.00	-28.92	0	100	H
		* 7.3098	34.17	PK2	35.80	-25.30	0.00	44.67	-	-	74.00	-29.33	0	100	V
		9.752	32.41	PK2	36.90	-21.30	0.00	48.01	-	-	74.00	-25.99	0	100	H
		9.748	31.82	PK2	36.90	-21.30	0.00	47.42	-	-	74.00	-26.58	0	100	V
2462	ANT1	* 4.92513	38.97	PK2	34.30	-30.60	0.00	42.67	-	-	74.00	-31.33	0	100	H
		* 4.92002	38.94	PK2	34.20	-30.70	0.00	42.44	-	-	74.00	-31.56	0	100	V
		* 7.38936	33.45	PK2	35.70	-24.60	0.00	44.55	-	-	74.00	-29.45	0	100	V
		* 7.38324	34.24	PK2	35.70	-24.70	0.00	45.24	-	-	74.00	-28.76	0	100	H
		9.844	32.81	PK2	37.10	-21.40	0.00	48.51	-	-	74.00	**-25.49**	0	100	H
		9.850	31.97	PK2	37.10	-21.30	0.00	47.77	-	-	74.00	-26.23	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

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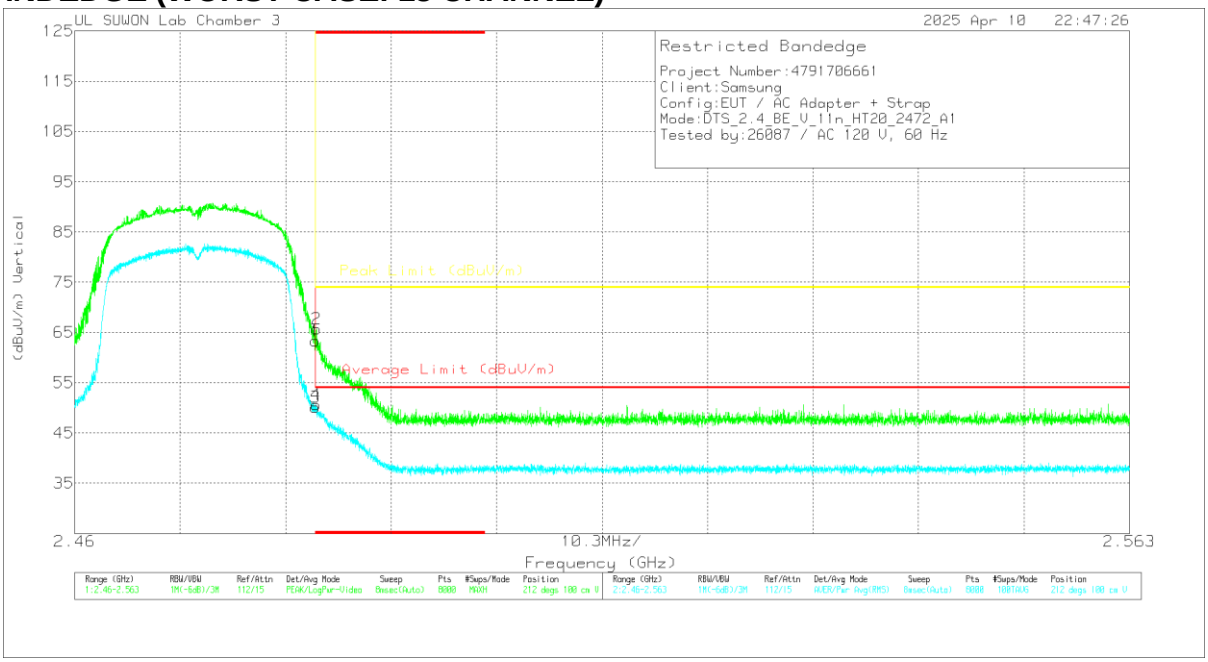
10.1.3. TX ABOVE 1 GHz 802.11n HT20 MODE IN THE 2.4 GHz BAND

1TX Antenna 1

BANDEDGE (WORST CASE: 13 CHANNEL)



VERTICAL RESULT

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	Antenna_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)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.4835	55.86	Pk	32.4	-24.9	0	63.36	-	-	74	-10.64	212	100	V
2	* 2.4836	58.26	Pk	32.4	-24.9	0	65.76	-	-	74	-8.24	212	100	V
3	* 2.4835	42.5	RMS	32.4	-24.9	.12	50.12	54	-3.88	-	-	212	100	V
4	* 2.48355	43.04	RMS	32.4	-24.9	.12	50.66	54	-3.34	-	-	212	100	V

* - 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	53.82	Pk	32.10	-24.90	0.00	61.02	-	-	74.00	-12.98	209	108	V
		* 2.38988	53.98	Pk	32.10	-24.90	0.00	61.18	-	-	74.00	-12.82	209	108	V
		* 2.39	38.77	RMS	32.10	-24.90	0.12	46.09	54.00	-7.91	-	-	209	108	V
		* 2.38951	40.07	RMS	32.10	-25.00	0.12	47.29	54.00	-6.71	-	-	209	108	V
2462	ANT1	* 2.4835	54.89	Pk	32.40	-24.90	0.00	62.39	-	-	74.00	-11.61	212	100	V
		* 2.48381	54.28	Pk	32.40	-24.90	0.00	61.78	-	-	74.00	-12.22	212	100	V
		* 2.4835	40.72	RMS	32.40	-24.90	0.12	48.34	54.00	-5.66	-	-	212	100	V
		* 2.48403	41.88	RMS	32.40	-24.90	0.12	49.50	54.00	-4.50	-	-	212	100	V
2467	ANT1	* 2.4835	49.12	Pk	32.40	-24.90	0.00	56.62	-	-	74.00	-17.38	211	100	V
		* 2.48362	50.59	Pk	32.40	-24.90	0.00	58.09	-	-	74.00	-15.91	211	100	V
		* 2.4835	36.96	RMS	32.40	-24.90	0.12	44.58	54.00	-9.42	-	-	211	100	V
		* 2.48351	37.59	RMS	32.40	-24.90	0.12	45.21	54.00	-8.79	-	-	211	100	V
2472	ANT1	* 2.4835	55.33	Pk	32.40	-24.90	0.00	62.83	-	-	74.00	-11.17	202	106	H
		* 2.4836	55.01	Pk	32.40	-24.90	0.00	62.51	-	-	74.00	-11.49	202	106	H
		* 2.4835	38.12	RMS	32.40	-24.90	0.12	45.74	54.00	-8.26	-	-	202	106	H
		* 2.48363	40.01	RMS	32.40	-24.90	0.12	47.63	54.00	-6.37	-	-	202	106	H
		* 2.4835	55.86	Pk	32.40	-24.90	0.00	63.36	-	-	74.00	-10.64	212	100	V
		* 2.4836	58.26	Pk	32.40	-24.90	0.00	65.76	-	-	74.00	**-8.24**	212	100	V
		* 2.4835	42.50	RMS	32.40	-24.90	0.12	50.12	54.00	-3.88	-	-	212	100	V
		* 2.48355	43.04	RMS	32.40	-24.90	0.12	50.66	54.00	**-3.34**	-	-	212	100	V

Note1. Pk - Peak detector, RMS - RMS detector
Note2. * - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

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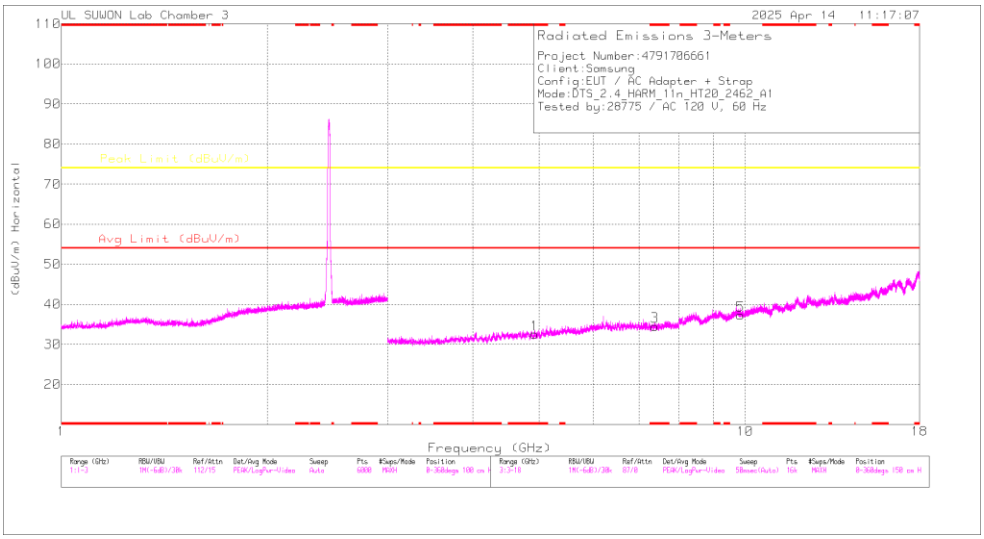
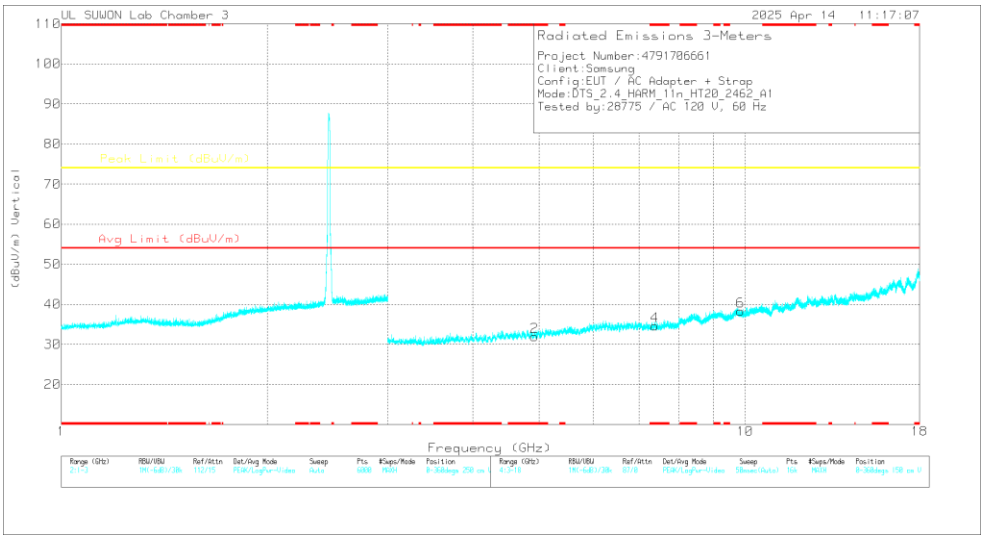
HARMONICS AND SPURIOUS EMISSIONS (WORST CASE: 11 CHANNEL)

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
* 4.92536	39.35	PK2	34.3	-30.6	0	43.05	-	-	74	-30.95	0	100	H
* 4.92383	39.21	PK2	34.2	-30.6	0	42.81	-	-	74	-31.19	0	100	V
* 7.38663	33.97	PK2	35.7	-24.7	0	44.97	-	-	74	-29.03	0	100	H
* 7.38462	33.88	PK2	35.7	-24.7	0	44.88	-	-	74	-29.12	0	100	V
9.84584	32.27	PK2	37.1	-21.3	0	48.07	-	-	74	-25.93	0	100	H
9.84622	31.79	PK2	37.1	-21.3	0	47.59	-	-	74	-26.41	0	100	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
Pk - Peak detector
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	* 4.82462	38.56	PK2	34.30	-30.10	0.00	42.76	-	-	74.00	-31.24	0	100	H
		* 4.82614	37.90	PK2	34.20	-30.10	0.00	42.00	-	-	74.00	-32.00	0	100	V
		7.240	34.62	PK2	35.80	-25.60	0.00	44.82	-	-	74.00	-29.18	0	100	H
		7.236	34.87	PK2	35.80	-25.70	0.00	44.97	-	-	74.00	-29.03	0	100	V
		9.650	32.06	PK2	36.80	-21.30	0.00	47.56	-	-	74.00	-26.44	0	100	H
		9.652	31.80	PK2	36.80	-21.30	0.00	47.30	-	-	74.00	-26.70	0	100	V
2437	ANT1	* 4.87444	38.65	PK2	34.20	-30.50	0.00	42.35	-	-	74.00	-31.65	0	100	H
		* 4.87862	39.15	PK2	34.20	-30.60	0.00	42.75	-	-	74.00	-31.25	0	100	V
		* 7.30952	34.48	PK2	35.80	-25.30	0.00	44.98	-	-	74.00	-29.02	0	100	H
		* 7.3106	34.41	PK2	35.80	-25.30	0.00	44.91	-	-	74.00	-29.09	0	100	V
		9.746	32.28	PK2	36.90	-21.30	0.00	47.88	-	-	74.00	-26.12	0	100	H
		9.748	31.73	PK2	36.90	-21.30	0.00	47.33	-	-	74.00	-26.67	0	100	V
2462	ANT1	* 4.92536	39.35	PK2	34.30	-30.60	0.00	43.05	-	-	74.00	-30.95	0	100	H
		* 4.92383	39.21	PK2	34.20	-30.60	0.00	42.81	-	-	74.00	-31.19	0	100	V
		* 7.38663	33.97	PK2	35.70	-24.70	0.00	44.97	-	-	74.00	-29.03	0	100	H
		* 7.38462	33.88	PK2	35.70	-24.70	0.00	44.88	-	-	74.00	-29.12	0	100	V
		9.846	32.27	PK2	37.10	-21.30	0.00	48.07	-	-	74.00	**-25.93**	0	100	H
		9.846	31.79	PK2	37.10	-21.30	0.00	47.59	-	-	74.00	-26.41	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

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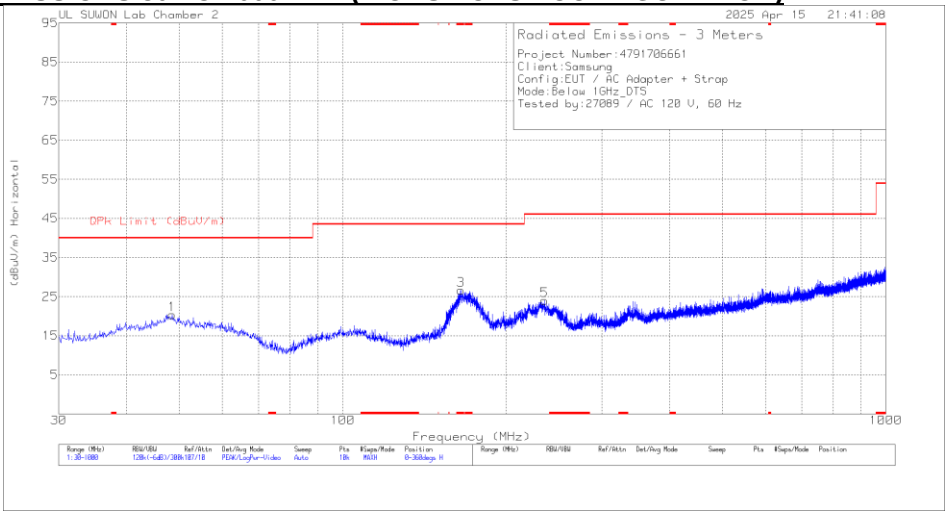
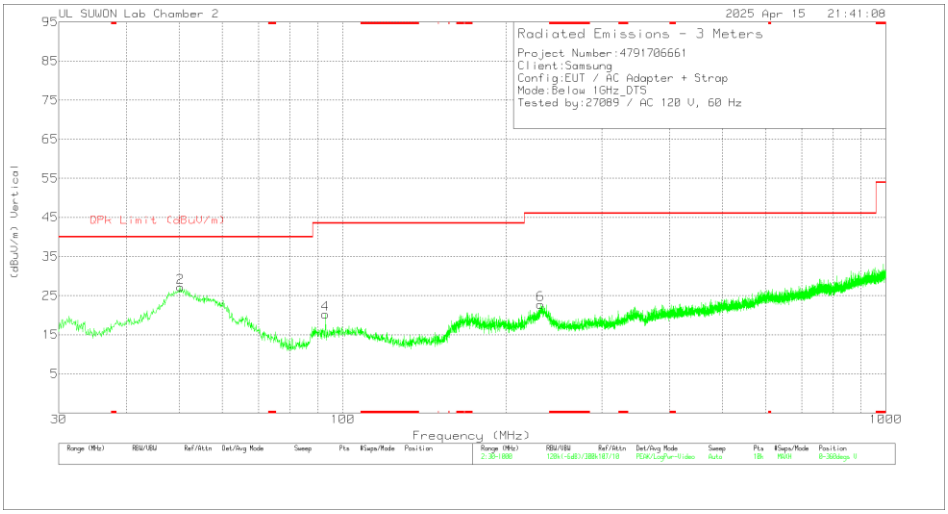
10.2. WORST CASE BELOW 1 GHZ

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	48.527	32.25	Pk	19.7	-31.6	0	20.35	40	-19.65	0-360	300	H
3	* 165.121	43.19	Pk	14.4	-30.9	0	26.69	43.52	-16.83	0-360	100	H
5	234.961	36.82	Pk	17.8	-30.6	0	24.02	46.02	-22	0-360	100	H
2	50.273	39.11	Pk	19.8	-31.7	0	27.21	40	-12.79	0-360	100	V
4	92.953	35.2	Pk	16.4	-31.4	0	20.2	43.52	-23.32	0-360	100	V
6	231.081	35.89	Pk	17.6	-30.7	0	22.79	46.02	-23.23	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.

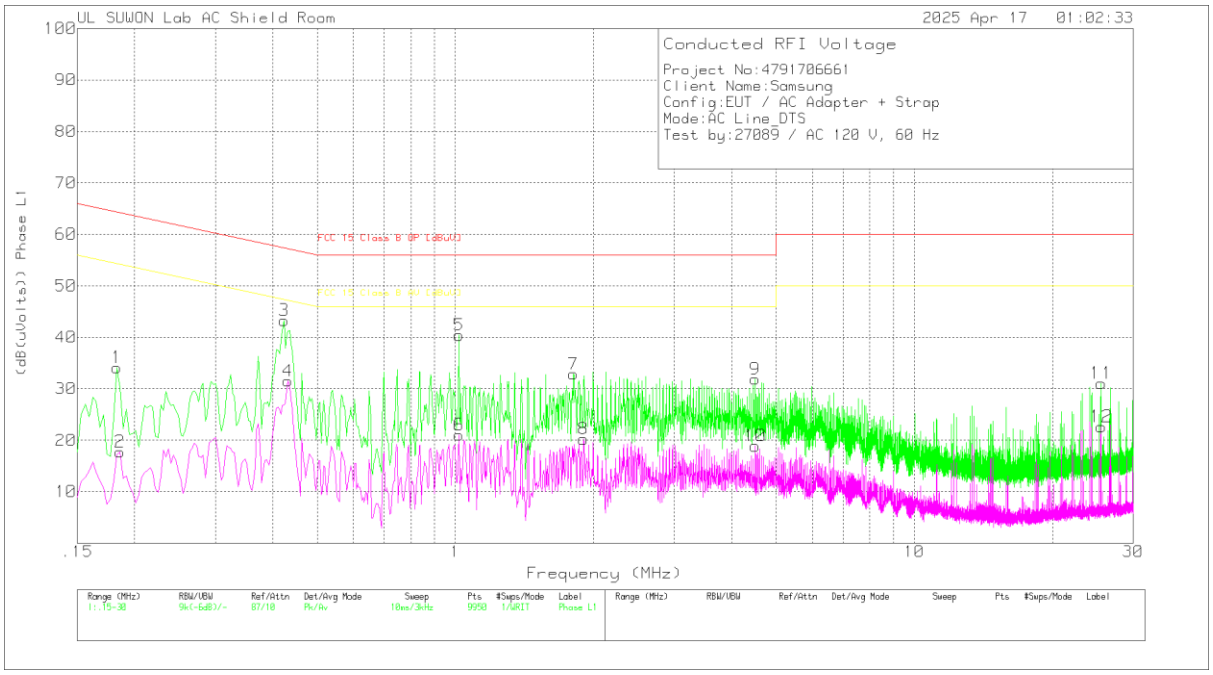
Line conducted data is recorded for both NEUTRAL and HOT lines.

RESULTS

UL KOREA LTD. Suwon Laboratory FORM ID: FCC_15C(05)
218 Maeyeong-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16675, Korea TEL: (031) 337-9902 FAX: (031) 213-5433

11.1.1. AC Power Line

LINE 1 DATA

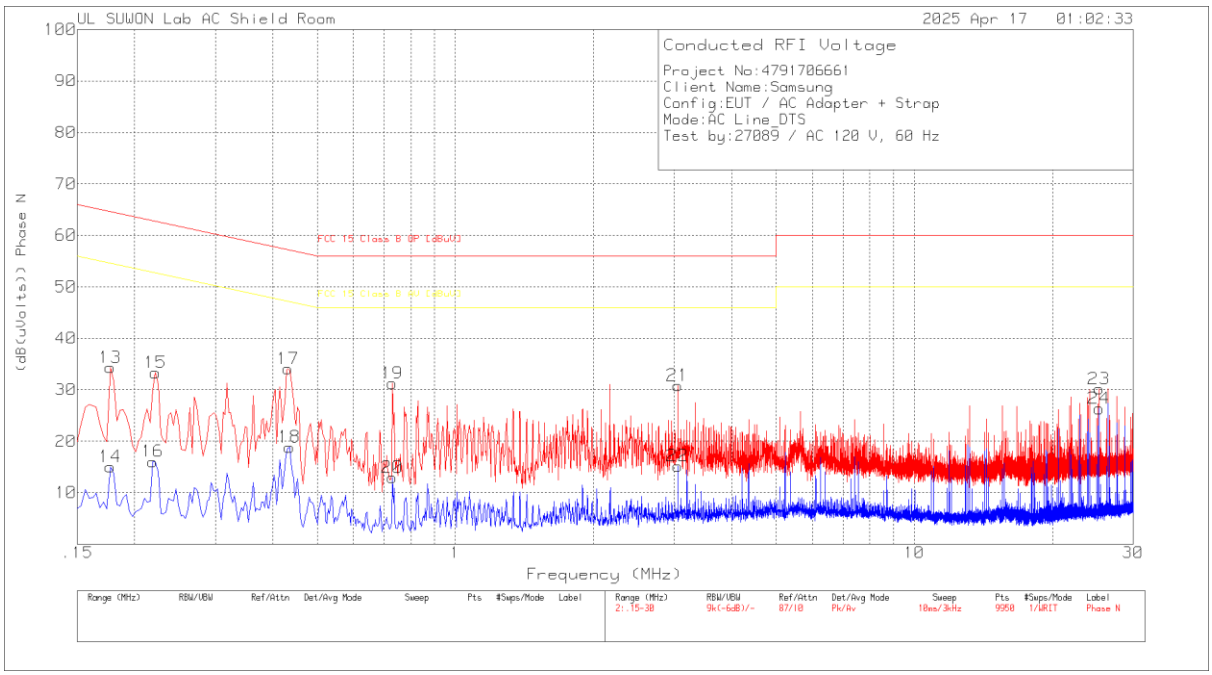


Trace Markers
Range 1: Phase L1 .15 - 30MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	101836_With EX_L1 [dB]	Cable Loss [dB]	Corrected Reading (dB(uVolts))	FCC 15 Class B QP [dBuV]	Margin (dB)	FCC 15 Class B AV [dBuV]	Margin (dB)
1	.183	24.13	Pk	9.9	.1	34.13	64.35	-30.22	-	-
2	.186	7.75	Av	9.9	.1	17.75	-	-	54.21	-36.46
3	.423	33.38	Pk	9.8	.1	43.28	57.39	-14.11	-	-
4	.432	21.59	Av	9.8	.1	31.49	-	-	47.21	-15.72
5	1.017	30.61	Pk	9.7	.1	40.41	56	-15.59	-	-
6	1.017	11.22	Av	9.7	.1	21.02	-	-	46	-24.98
7	1.809	23.04	Pk	9.7	.1	32.84	56	-23.16	-	-
8	1.902	10.43	Av	9.7	.1	20.23	-	-	46	-25.77
9	4.5	21.98	Pk	9.7	.2	31.88	56	-24.12	-	-
10	4.506	8.98	Av	9.7	.2	18.88	-	-	46	-27.12
11	25.566	20.37	Pk	10.4	.3	31.07	60	-28.93	-	-
12	25.563	11.93	Av	10.4	.3	22.63	-	-	50	-27.37

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_With EX_N [dB]	Cable Loss [dB]	Corrected Reading (dB(uVolts))	FCC 15 Class B QP [dBuV]	Margin (dB)	FCC 15 Class B AV [dBuV]	Margin (dB)
13	.177	24.2	Pk	10	.1	34.3	64.63	-30.33	-	-
14	.177	4.92	Av	10	.1	15.02	-	-	54.63	-39.61
15	.222	23.41	Pk	9.8	.1	33.31	62.74	-29.43	-	-
16	.219	6.15	Av	9.8	.1	16.05	-	-	52.86	-36.81
17	.432	24.17	Pk	9.8	.1	34.07	57.21	-23.14	-	-
18	.435	8.95	Av	9.8	.1	18.85	-	-	47.16	-28.31
19	.729	21.34	Pk	9.8	.1	31.24	56	-24.76	-	-
20	.729	3.04	Av	9.8	.1	12.94	-	-	46	-33.06
21	3.051	21.03	Pk	9.7	.1	30.83	56	-25.17	-	-
22	3.051	5.39	Av	9.7	.1	15.19	-	-	46	-30.81
23	25.272	19.37	Pk	10.5	.3	30.17	60	-29.83	-	-
24	25.269	15.54	Av	10.5	.3	26.34	-	-	50	-23.66

Pk - Peak detector

Av - Average detection

END OF TEST REPORT