CERTIFICATION TEST REPORT

Report Number. : 4790841160-E7V3

Applicant	:	SAMSUNG ELECTRONICS CO., LTD. 129 SAMSUNG-RO, YEONGTONG-GU, SUWON-SI, GYEONGGI-DO, 16677, KOREA
Model	:	SC-55D, SCG22
FCC ID	:	A3LSMF946JPN
EUT Description	:	GSM/WCDMA/LTE 5G NR Phone + BT/BLE, DTS/UNII a/b/g/n/ac/ax, NFC, WPT and UWB
Test Standard(s)	:	FCC 47 CFR PART 15 SUBPART C

Date Of Issue:
2023-07-10

Prepared by:
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Suwon Test Site: UL KOREA LTD. Suwon Laboratory
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IAS ACCREDITED Testing Laboratory TL-637

Revision History

Rev.	Issue Date	Revisions	Revised By
V1	2023-06-30	Initial issue	Minju Cha
V2	2023-07-07	Updated to address TCB's question	Minju Cha
V3	2023-07-10	Updated to address TCB's question	Minju Cha

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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

1. ATTESTATION OF TEST RESULTS

COMPANY NAME:	SAMSUNG ELECTRONICS CO., LTD.
EUT DESCRIPTION:	GSM/WCDMA/LTE 5G NR Phone + BT/BLE, DTS/UNII a/b/g/n/ac/ax, NFC, WPT and UWB
MODEL NUMBER:	SC-55D, SCG22
SERIAL NUMBER:	6c4c5d98ba4c7eee, 723c6c5d0f4d7ece (CONDUCTED, Original); R3CW30K682H (RADIATED, Original); R3CW408V1CV, R3CW408V0PF (RADIATED, Spot-check);
DATE TESTED:	2023-03-22 ~ 2023-05-12 (Original); 2023-05-31 ~ 2023-06-30 (Spot-check);

APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
CFR 47 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:

Minju Cha
Suwon Lab Technician
UL KOREA LTD.

1.1. INTRODUCTION OF TEST DATA REUSE

This report referenced from the FCC ID: A3LSMF946U DTS WLAN(FCC CFR 47 Part 15C).
And the applicant takes full responsibility that the test data as referenced in this report represent compliance for this FCC ID.

1.2. DIFFERENCE

The A3LSMF946JPN model shares the same enclosure and circuit board as A3LSMF946U.
The WLAN antennas and surrounding circuitry and layout are identical between these two units.

After confirming through preliminary radiated emissions that the performance of the A3LSMF946JPN remains representative of A3LSMF946U. The test data of A3LSMF946U being submitted for this application to cover WLAN features.

1.3. SPOT CHECK VERIFICATION DATA

(Worst case of the radiated band-edge and radiated spurious emissions)

Band	Test Item	Mode	Frequency	Test Limit	Original model	Spot check model	Deviation	Remark
					SM-F946U Results	SM-F946D Results		
					FCC ID : A3LSMF946U	FCC ID : A3LSMF946JPN		
DTS WLAN (2.4GHz)	BANDEDGE	802.11b ALL	2462 MHz	54 dBuV/m	40.96 dBuV/m	41.14 dBuV/m	0.18 dB	
	RSE	802.11b ALL	4924 MHz	54 dBuV/m	38.03 dBuV/m	38.39 dBuV/m	0.36 dB	
	BANDEDGE	802.11g ALL	2412 MHz	54 dBuV/m	44.67 dBuV/m	45.89 dBuV/m	1.22 dB	
	RSE	802.11g ALL	9748 MHz	74 dBuV/m	48.00 dBuV/m	47.43 dBuV/m	-0.57 dB	Noise floor
	BANDEDGE	802.11n HT20 ALL	2462 MHz	54 dBuV/m	45.70 dBuV/m	45.98 dBuV/m	0.28 dB	
	RSE	802.11n HT20 ALL	9648 MHz	74 dBuV/m	48.43 dBuV/m	48.08 dBuV/m	-0.35 dB	Noise floor
	BANDEDGE	802.11ax HE20(SU) ALL	2417 MHz	54 dBuV/m	45.69 dBuV/m	44.59 dBuV/m	-1.10 dB	
	RSE	802.11ax HE20(26T RU8) ALL	4924 MHz	54 dBuV/m	32.47 dBuV/m	31.74 dBuV/m	-0.73 dB	

Comparison of two models, upper deviation is within 3 dB range and all test results are under FCC Technical Limits.

1.4. REFERENCE DETAIL

Reference application that contains the reused reference data in the individual test reports:

Equipment Class	Reference FCC ID (Parent)	Application Type	Reference Test report number	Exhibit Type	Variant Test Report Number	Data Re-used
DTS	A3LSMF946U	Original Grant	4790748041-E8 (802.11b/g/n/ax)	Test Report	4790841160-E7 (802.11b/g/n/ax)	All
DSS	A3LSMF946U	Original Grant	4790748041-E10 (Bluetooth)	Test Report	4790841160-E6 (Bluetooth)	All
NII	A3LSMF946U	Original Grant	4790748041-E11 (802.11a/n/ac/ax)	Test Report	4790841160-E8 (802.11a/n/ac/ax)	All
6CD	A3LSMF946U	Original Grant	4790748041-E12 (802.11a/n/ac/ax)	Test Report	4790841160-E9 (802.11a/n/ac/ax)	All
DCD	A3LSMF946U	Original Grant	4790748041-E14 (WPT)	Test Report	4790841160-E11 (WPT)	All
UWB	A3LSMF946U	Original Grant	4790748041-E15 (UWB)	Test Report	4790841160-E12 (UWB)	All

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2. TEST METHODOLOGY

1. FCC CFR 47 Part 2.
2. FCC CFR 47 Part 15.
3. KDB 558074 D01 DTS Meas Guidance v05r02.
4. KDB 662911 D01 Multiple Transmitter Output v02r01
5. KDB 484596 D01 Referencing Test Data v01
6. ANSI C63.10-2013.

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
Conducted Disturbance, 0.15 to 30 MHz	2.80 dB
Radiated Disturbance, 9 kHz to 30 MHz	1.69 dB
Radiated Disturbance, 30 MHz to 1 GHz	3.92 dB
Radiated Disturbance, 1 GHz to 18 GHz	5.06 dB
Radiated Disturbance, Above 18 GHz	6.02 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 Procedure 2, Clause 4.4.3 in IEC Guide 115:2021.

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5. EQUIPMENT UNDER TEST

5.1. EUT DESCRIPTION

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

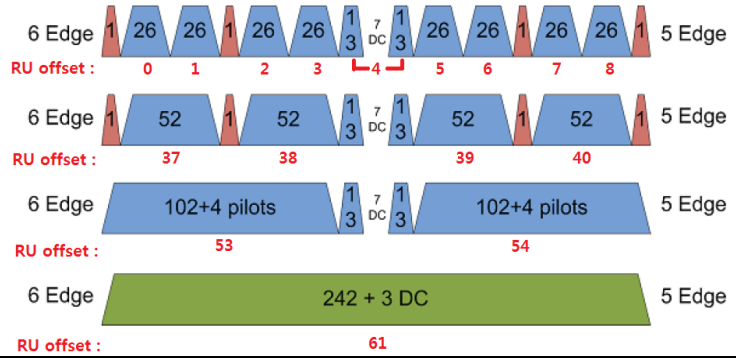
Representative model	Difference	Derivative model
		SCG22
SC-55D	Hardware	SC-55D BT/WIFI IC and layout is same as SM-F946U.
	Software	Supported WWAN Band is different.

Thus, SC-55D was set for final test.

WiFi operating mode

Frequency rage	Mode	ANT 1	ANT 2
2.4GHz (2412 MHz ~ 2472 MHz)	802.11b MIMO	TX/RX	
	802.11g MIMO	TX/RX	
	802.11n(HT20) MIMO	TX/RX	
	802.11ax(HE20) MIMO	TX/RX	

802.11ax RU allocations



HE20

Test RU offset for tones

Mode	Tones number in RU	RU offset
HE20	26T	0
		4
		8
	52T	37
		38
		40
	106T	53
		54
	242T / SU Note 1	61 / -

Note. Full RU(Resource Unit) 242T mode and SU(Single Unit) mode have no difference in physical waveform. This report has been reported the SU mode with highest output power in MIMO.

5.2. MAXIMUM OUTPUT POWER

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

Frequency Range [MHz]	Mode	Output Power [dBm]		Output Power [mW]	
		ANT1	ANT2	ANT1	ANT2
2412 - 2472	802.11b MIMO	21.22		132.43	
	802.11g MIMO	20.71		117.76	
	802.11n(HT20) MIMO	20.30		107.15	
	802.11ax(HE20) MIMO	20.73		118.30	

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.

Bands [MHz]	ANT 1 [dBi]	ANT 2 [dBi]	Correlated Directional Gain [dBi]
2 412 ~ 2 472	-2.76	-1.53	0.89

Directional gain for the MIMO operations is determined using KDB 662911 D01 Multiple Transmitter Output section F (2)(d)(1) for *Unequal antenna gains, with equal transmit powers*. The gain is calculated using the formula for correlated transmissions across the two transmit antennas. Directional gain = 10 log[$(10^{G1/20} + 10^{G2/20} + \ldots + 10^{GN/20})^2 / N_{ANT}$] dBi.

Sample calculation for this device with $N_{ANT} = 2$

Directional gain = 10 log[$(10^{0.40/20} + 10^{0.30/20})^2 / 2$] = 3.36 dBi

"Q5_NA Wi-Fi1" and "Q5_NA Wi-Fi2" as indicated in antenna specification are written as ANT1 and ANT2 in this report.

5.4. List of test reduction and modes covering other modes:

The output power on covered modes is equal to or less than one referenced.

Authorized Frequency Band			
Mode	**Antenna Stream**	**Mode**	**Covered by**
802.11ac VHT20	MIMO	802.11ac VHT20 2TX	802.11n HT20 2TX

5.5. TESTED CHANNELS LIST

Ch.	Frequency [MHz]	11b		11g		11n(HT20)		11ax(HE20)	
		SISO	MIMO	SISO	MIMO	SISO	MIMO	SISO	MIMO
1	2 412		O		O		O		O
2	2 417								O
6	2 437		O		O		O		O
10	2 457								O
11	2 462		O		O		O		O
12	2 467		O		O		O		O
13	2 472		O		O		O		O

5.6. WORST-CASE CONFIGURATION AND 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.

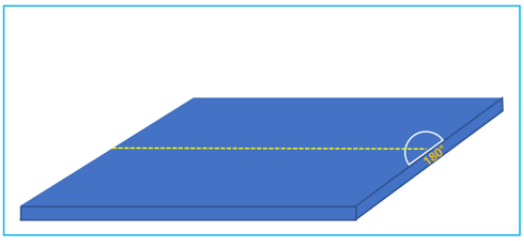
Radiated emission above 1GHz was performed with the EUT set to transmit low/mid/High Channels.

i. Worst case of antenna axis:

Chamber 2	Chamber 3
X	X

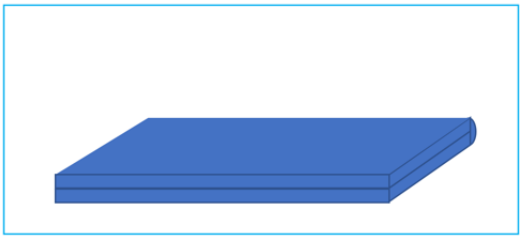
ii. Foldable condition

Chamber 2	Chamber 3
Half-folded	Open



Open

Half-folded



Full-folded

Based on the baseline scan, the worst-case data rates were:
802.11b mode: 1 Mbps 2TX
802.11g mode: 6 Mbps 2TX
802.11n HT20 mode: MCS0 2TX
802.11ax HE20 mode: MCS0 2TX

Worst-case selection criteria for 802.11ax test items:
For the 6dB Bandwidth, it was tested at the RU allocation with lowest tones number for each bandwidth.

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

Test case configuration for 802.11b, g, n HT20, ax HE20(SU) modes:

SISO ANT2 Target[dBm]						MIMO Target[dBm]					
Ch.	Freq.	802.11b	802.11g	802.11n HT20	802.11ax HE20	Ch.	Freq.	802.11b	802.11g	802.11n HT20	802.11ax HE20
1	2412	18	17	17	15	1	2412	21	20	20	18
2	2417				17	2	2417				20
6	2437	18	17	17	17	6	2437	21	20	20	20
10	2457				17	10	2457				20
11	2462	18	17	17	15	11	2462	21	20	20	18
12	2467	5	5	5	5	12	2467	8	8	8	8
13	2472	-1	-1	-1	-1	13	2472	2	2	2	2

Radiated Band-Edge, Conducted Band-Edge
Radiated Band-Edge, Radiated Spurious Emission, Conducted Band-Edge, Conducted Spurious Emission, PSD
Radiated Spurious Emission, Conducted Spurious Emission, PSD

Note1. In 802.11ax (RU mode), conducted & radiated spurious test was performed on the lower tone(26T) with high density.

Test case configuration for 802.11ax HE20(RU) modes :

MIMO Worst RU offset[dBm]					
Mode	Ch.	Freq.	Tone	RU offset	Test Case
802.11ax RU mode	1	2412	26 T	0	-
				4	**O**
				8	-
	6	2437		0	-
				4	-
				8	**O**
	11	2462		0	-
				4	-
				8	**O**

Note1. In 802.11ax HE20(RU) mode, the test case according to RU offset was selected from the offset with worst average power.
Note2. Radiated Band-Edge: investigated additional test with other lower RU tones. SU Mode (Worst case) is reported.

5.7. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	**Manufacturer**	**Model**	**Serial Number**	**FCC ID**
Charger	SAMSUNG	EP-TA800	R37N9QP4SL9DK3	N/A
Data Cable	SAMSUNG	WBR0062M	GH39-02112A	N/A

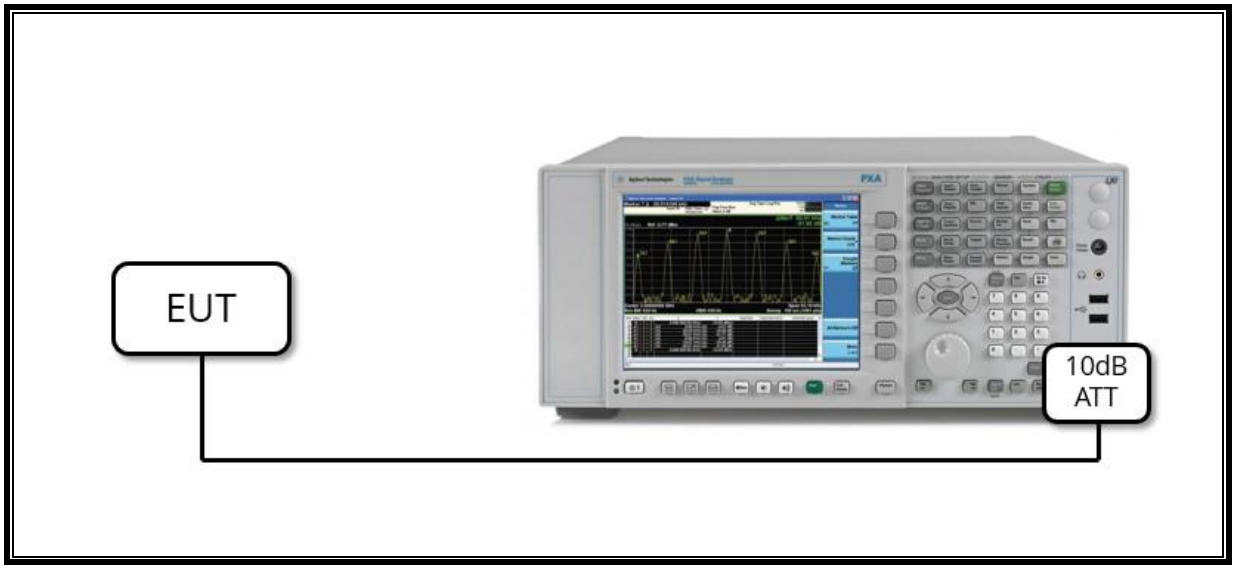
I/O CABLE

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

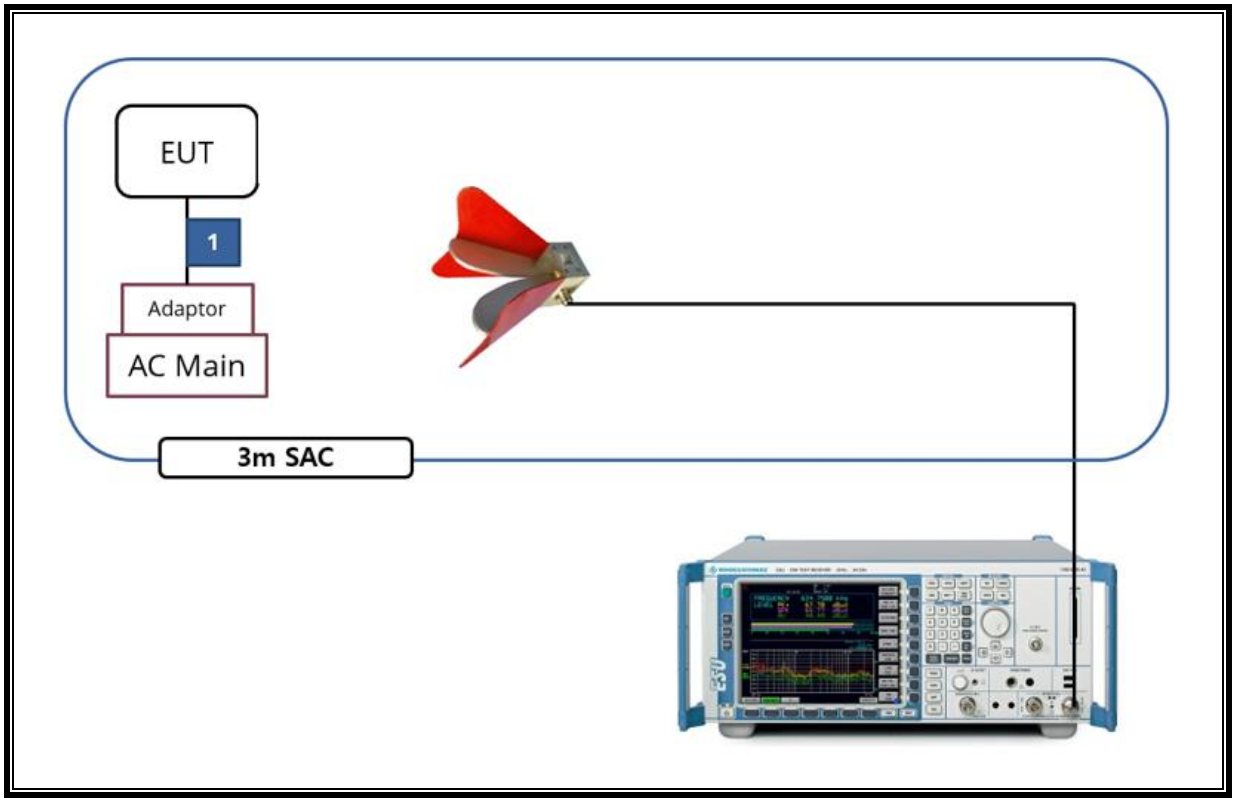
TEST SETUP

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

SETUP DIAGRAM FOR TESTS (CONDUCTED TEST SETUP)



SETUP DIAGRAM FOR TESTS (RADIATED TEST SETUP)



6. MEASUREMENT METHOD

6 dB BW : ANSI C63.10-2013, Section 11.8.2 Option 2

OUTPUT POWER : ANSI C63.10-2013, Section 11.9.2.3.1 Method AVGPM

POWER SPECTRAL DENSITY : ANSI C63.10-2013, Section 11.10.3 & 11.10.5 Method AVGPSD-1 and Method AVGPSD-2

Out-of-band Emissions (Conducted) : ANSI C63.10-2013, Section 11.11 Emissions in nonrestricted frequency bands

Out-of-band Emissions in Non-restricted Bands: ANSI C63.10-2013, Section 11.11 Emissions in nonrestricted frequency bands

Out-of-band Emissions in Restricted Bands : ANSI C63.10-2013, Section 11.12 Emissions in restricted frequency bands

AC Power Line Conducted Emission : ANSI C63.10-2013, Section 6.2

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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	VULB9163	750	2024-08-15
Antenna, Bilog, 30MHz-1GHz	SCHWARZBECK	VULB9163	749	2024-08-15
Antenna, Bilog, 30MHz-1GHz	SCHWARZBECK	VULB9163	845	2024-08-15
Antenna, Horn, 18 GHz	ETS	3115	00167211	2024-08-04
Antenna, Horn, 18 GHz	ETS	3115	00161451	2024-08-21
Antenna, Horn, 18 GHz	ETS	3117	00168724	2024-08-04
Antenna, Horn, 18 GHz	ETS	3117	00168717	2024-08-21
Antenna, Horn, 40 GHz	ETS	3116C	00166155	2024-08-02
Preamplifier	ETS	3115-PA	00167475	2023-08-04
Preamplifier	ETS	3116C-PA	00168841	2023-08-04
Preamplifier, 1000 MHz	Sonoma	310N	341282	2023-08-02
Preamplifier, 1000 MHz	Sonoma	310N	351741	2023-08-02
Preamplifier, 18 GHz	Miteq	AFS42-00101800-25-S-42	1896138	2023-08-01
Preamplifier, 18 GHz	Miteq	AFS42-00101800-25-S-42	2029169	2023-08-01
Spectrum Analyzer, 44 GHz	Agilent / HP	N9030A	MY54170614	2023-08-03
Spectrum Analyzer, 44 GHz	Agilent / HP	N9030A	MY54490312	2023-08-01
Spectrum Analyzer, 44 GHz	KEYSIGHT	N9030B	MY60070693	2024-01-09
Spectrum Analyzer, 44 GHz	KEYSIGHT	N9040B	MY60080268	2024-01-09
Average Power Sensor	Agilent / HP	U2000A	MY54270007	2023-08-03
Average Power Sensor	Agilent / HP	U2000A	MY54260010	2023-08-03
Attenuator	PASTERNACK	PE7087-10	A001	2023-08-03
Attenuator	PASTERNACK	PE7087-10	A008	2023-08-03
Attenuator	PASTERNACK	PE7004-10	2	2023-08-01
Attenuator	PASTERNACK	PE7087-10	A009	2023-08-03
EMI Test Receive, 40 GHz	R&S	ESU40	100439	2023-08-02
EMI Test Receive, 40 GHz	R&S	ESU40	100457	2023-07-29
EMI Test Receive, 3 GHz	R&S	ESR3	101832	2023-08-01
Low Pass Filter 5GHz	Micro-Tronics	LPS17541	009	2023-08-02
Low Pass Filter 5GHz	Micro-Tronics	LPS17541	015	2023-08-01
Low Pass Filter 5GHz	Micro-Tronics	LPS17541	020	2023-08-01
High Pass Filter 3GHz	Micro-Tronics	HPM17543	010	2023-08-02
High Pass Filter 3GHz	Micro-Tronics	HPM17543	020	2023-08-01
High Pass Filter 6GHz	Micro-Tronics	HPS17542	009	2023-08-02
High Pass Filter 6GHz	Micro-Tronics	HPS17542	021	2023-08-01
LISN	R&S	ENV-216	101837	2023-08-04
Antenna, Loop, 9kHz-30MHz	R&S	HFH2-Z2	100418	2023-10-06
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	-30 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 MIMO	8.817	8.919	0.989	98.856	-	0.11
802.11g MIMO	2.827	2.933	0.964	96.386	0.16	0.35
802.11n(HT20) MIMO	5.279	5.385	0.980	98.032	-	0.19
802.11ax(HE20) MIMO SU	5.443	5.460	0.997	99.689	-	0.18
802.11ax(HE20) MIMO 26T	2.582	2.606	0.991	99.079	-	0.39
802.11ax(HE20) MIMO 52T	2.590	2.612	0.992	99.158	-	0.39
802.11ax(HE20) MIMO 106T	2.435	2.458	0.991	99.064	-	0.41

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.

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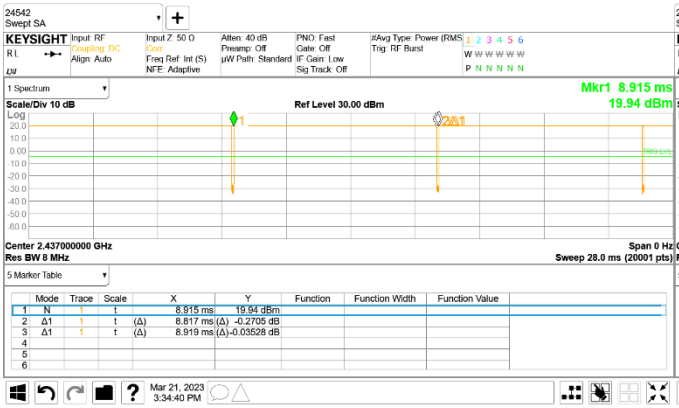
802.11b



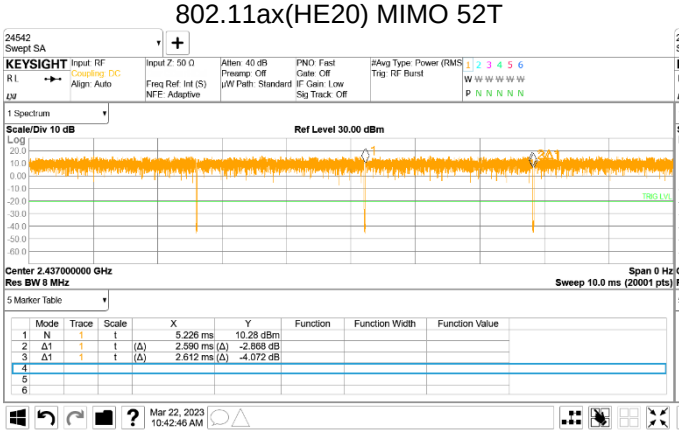
802.11g

802.11n HT20

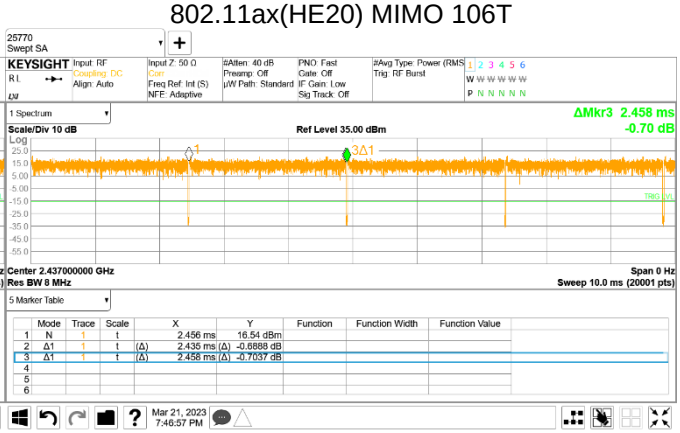
802.11ax(HE20) MIMO SU

802.11ax(HE20) MIMO 26T

802.11ax(HE20) MIMO 52T



802.11ax(HE20) MIMO 106T



9.2. 6 dB BANDWIDTH

LIMITS

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

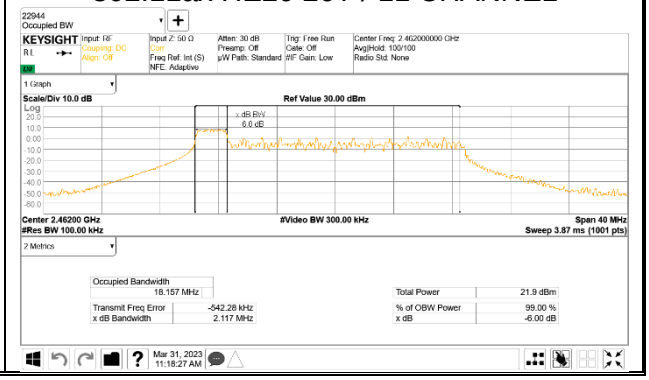
TEST PROCEDURE

Reference to KDB 558074 D01 15.247 Meas Guidance: The transmitter output is connected to a spectrum analyzer with the RBW set to100 kHz, the VBW >= 3 x RBW, peak detector and max hold.

RESULTS

- Please refer to the next page

WORST CASE TEST PLOTS

ANT1	ANT2
802.11ax HE20 26T / 11 CHANNEL	802.11ax HE20 26T / 11 CHANNEL
	

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	ANT 2	
1	2 412	7.616	7.588	0.5
6	2 437	8.096	7.633	
11	2 462	8.108	7.109	
12	2 467	7.617	8.099	
13	2 472	8.075	8.103	
Worst		7.616	7.109	

9.2.2. 802.11g MIMO MODE IN THE 2.4 GHz BAND

Channel	Frequency [MHz]	6 dB Bandwidth [MHz]		Minimum Limit [MHz]
		ANT 1	ANT 2	
1	2 412	16.330	16.380	0.5
6	2 437	16.340	16.350	
11	2 462	16.360	16.360	
12	2 467	16.370	16.360	
13	2 472	16.370	16.370	
Worst		16.330	16.350	

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

Channel	Frequency [MHz]	6 dB Bandwidth [MHz]		Minimum Limit [MHz]
		ANT 1	ANT 2	
1	2 412	17.310	17.600	0.5
6	2 437	17.300	17.580	
11	2 462	17.580	17.580	
12	2 467	17.580	17.330	
13	2 472	17.340	17.600	
Worst		17.300	17.330	

9.2.4. 802.11ax HE20(26T) MIMO MODE IN THE 2.4 GHz BAND

Channel	Frequency [MHz]	6 dB Bandwidth [MHz]		Minimum Limit [MHz]
		ANT 1	ANT 2	
1	2 412	2.161	2.117	0.5
6	2 437	2.146	2.123	
11	2 462	**2.126**	**2.117**	
Worst		**2.126**	**2.117**	

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

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.

DIRECTIONAL ANTENNA GAIN

The TX chains are correlated and the antenna gain is unequal among the chains.
The directional gain is:

Bands [MHz]	ANT 1 [dBi]	ANT 2 [dBi]	Correlated Directional Gain [dBi]
2 412 - 2 472	-2.76	-1.53	0.89

Note. Since the correlated directional gain does not exceed 6dBi, it is not mentioned further below.

9.3.1. TEST RESULTS

- 802.11b,g,n,ax(SU) mode

Mode	Channel	Frequency [MHz]	SISO Average Power [dBm]		MIMO Average Power [dBm]			Power Limit [dBm]
			ANT1	ANT2	ANT1	ANT2	Total Corr'd Power [dBm]	
802.11b	1	2 412		18.38	18.28	18.04	21.17	30.00
	6	2 437		18.74	18.07	18.35	21.22	
	11	2 462		18.53	18.33	18.05	21.20	
	12	2 467		5.75	5.56	5.74	8.66	
	13	2 472		-0.52	-0.04	-0.37	2.81	
Worst Case				18.74			**21.22**	
802.11g	1	2 412		17.61	17.61	17.78	20.71	
	6	2 437		17.52	17.03	17.62	20.35	
	11	2 462		17.86	17.22	17.27	20.26	
	12	2 467		5.06	5.01	5.62	8.34	
	13	2 472		-0.44	-0.30	-0.66	2.53	
Worst Case				17.86			**20.71**	
802.11n HT20	1	2 412		16.87	16.82	17.19	20.02	
	6	2 437		17.01	16.97	17.59	20.30	
	11	2 462		17.19	17.17	17.25	20.22	
	12	2 467		4.96	4.95	5.58	8.29	
	13	2 472		-0.12	-0.08	-0.43	2.76	
Worst Case				17.19			**20.30**	
802.11ax HE20(SU)	1	2 412		15.43	15.45	15.54	18.56	
	2	2 417		17.51	17.75	17.69	20.73	
	6	2 437		17.33	17.08	17.54	20.33	
	10	2 457		17.02	17.30	17.17	20.25	
	11	2 462		15.16	15.27	15.38	18.34	
	12	2 467		5.29	5.08	5.43	8.27	
	13	2 472		-1.07	-0.35	-0.91	2.39	
Worst Case				**17.51**			**20.73**	

- Calculation of Output Power result

Average Power = Meas. Power + Duty Cycle CF / Total Corr'd Power = ANT1's Avearage Power + ANT2's Average Power

- 802.11ax (RU) mode

Channel	Frequency [MHz]	Tones	RU Offset	SISO Average Power [dBm]		MIMO Average Power [dBm]			Power Limit [dBm]
				ANT1	ANT2	ANT1	ANT2	Total Corr'd Power [dBm]	
1	2 412	26T	0		12.57	11.93	12.65	15.32	30.00
			4		12.46	12.12	12.58	15.37	
			8		12.56	11.96	12.68	15.35	
		52T	37		13.62	13.28	13.75	16.53	
			38		13.57	13.42	13.73	16.59	
			40		13.21	13.20	13.35	16.29	
		106T	53		15.41	15.54	15.57	18.57	
			54		15.38	15.36	15.52	18.45	
6	2 437	26T	0		12.57	12.13	12.71	15.44	
			4		12.17	11.92	12.28	15.11	
			8		12.45	12.47	12.60	15.55	
		52T	37		13.27	12.59	13.41	16.03	
			38		13.12	12.46	13.25	15.88	
			40		13.13	12.85	13.28	16.08	
		106T	53		15.65	15.16	15.76	18.48	
			54		15.49	15.39	15.61	18.51	
11	2 462	26T	0		12.57	12.23	12.67	15.47	
			4		12.60	12.10	12.67	15.40	
			8		12.68	12.50	12.75	15.64	
		52T	37		13.36	13.58	13.45	16.53	
			38		13.10	13.24	13.21	16.24	
			40		12.96	13.34	13.03	16.20	
		106T	53		15.61	15.57	15.70	18.65	
			54		15.27	15.42	15.39	18.42	
12	2 467	26T	0		5.60	5.07	5.70	8.41	
			4		5.34	5.04	5.40	8.23	
			8		5.28	5.42	5.35	8.40	
		52T	37		5.81	5.42	5.95	8.70	
			38		5.46	5.08	5.59	8.35	
			40		5.21	5.34	5.33	8.35	
		106T	53		5.81	5.38	5.89	8.65	
			54		5.32	5.34	5.45	8.41	
13	2 472	26T	0		-1.01	-0.44	-0.86	2.37	
			4		-0.83	-0.23	-0.66	2.57	
			8		-1.08	-0.21	-0.89	2.47	
		52T	37		-0.78	-0.14	-0.56	2.67	
			38		-0.70	-0.11	-0.49	2.71	
			40		-1.06	-0.17	-0.89	2.50	
		106T	53		-0.84	-0.21	-0.73	2.55	
			54		-0.86	-0.01	-0.72	2.66	
Worst Case					**15.65**			**18.65**	

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.

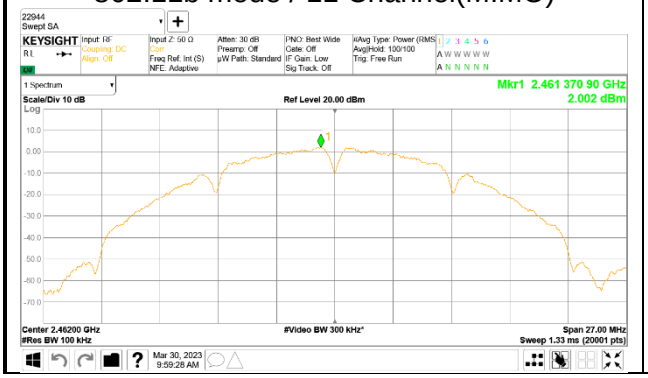
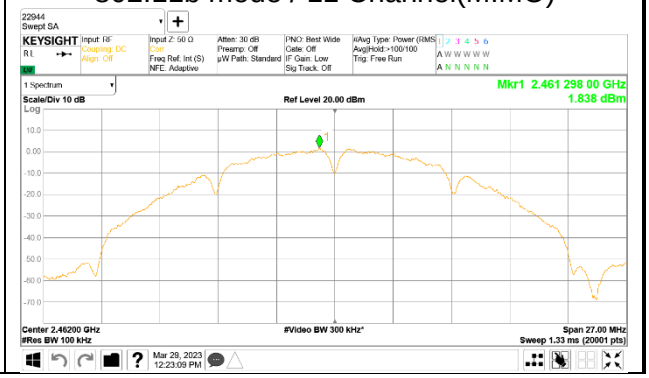
TEST PROCEDURE

Power Spectral Density was performed utilizing the section8.4 under KDB558074 D01 15.247 Meas Guidance.

RESULTS

- Please refer to the next page

WORST CASE TEST PLOTS

ANT 1	ANT 2
802.11b mode / 11 Channel(MIMO)	802.11b mode / 11 Channel(MIMO)
	

9.4.1. 802.11b/g/n HT20/ax HE20 MODE TEST RESULTS

- MIMO Mode

Mode	Channel	Frequency [MHz]	Meas PSD [dBm/100kHz]		DCCF	Total Corr'd PSD [dBm/100kHz]	PSD Limit [dBm/3kHz]
			ANT1	ANT2			
802.11b	1	2 412	2.097	1.514	-	4.826	8.00 Note
	6	2 437	1.730	1.610	-	4.681	
	11	2 462	**2.002**	**1.838**	**-**	**4.931**	
	12	2 467	-10.923	-10.782	-	-7.842	
	13	2 472	-16.354	-16.917	-	-13.616	
802.11g	1	2 412	-2.110	-2.164	0.16	1.033	
	6	2 437	-2.522	-2.329	0.16	0.746	
	11	2 462	-1.874	-2.015	0.16	1.226	
	12	2 467	-14.943	-14.400	0.16	-11.493	
	13	2 472	-20.062	-20.896	0.16	-17.289	
802.11n HT20	1	2 412	-3.251	-3.176	-	-0.203	
	6	2 437	-3.032	-2.934	-	0.028	
	11	2 462	-2.429	-3.107	-	0.256	
	12	2 467	-14.855	-14.673	-	-11.753	
	13	2 472	-20.426	-20.776	-	-17.587	
802.11ax HE20	1	2 412	-5.696	-5.660	-	-2.668	
	2	2 417	-3.666	-3.546	-	-0.595	
	6	2 437	-4.216	-3.636	-	-0.906	
	10	2 457	-3.906	-3.724	-	-0.804	
	11	2 462	-6.054	-5.588	-	-2.804	
	12	2 467	-16.271	-15.855	-	-13.048	
	13	2 472	-21.518	-22.162	-	-18.818	

- MIMO Mode(802.11ax HE20)

Channel	Frequency [MHz]	Tones	RU Offset	Meas PPSD [dBm/100kHz]		DCCF	Total Corr'd PPSD [dBm/100kHz]	PSD Limit [dBm/3kHz]
				ANT1	ANT2			
1	2 412	26T	0	-0.087	0.843	-	3.413	8.00 Note
			4	-0.180	0.580	-	3.227	
			8	0.105	0.688	-	3.417	
6	2 437	26T	0	0.052	0.626	-	3.359	
			4	-0.111	0.202	-	3.059	
			8	0.468	0.681	-	3.586	
11	2 462	26T	0	-0.023	0.778	-	3.406	
			4	0.146	0.692	-	3.438	
			8	0.278	1.154	-	3.748	

Calculation of Output PSD result
- 1TX : Corr'd PSD = Meas PSD + Duty Cycle CF
- 2TX : Total PSD = ANT1 Meas PSD + ANT2 Meas PSD + Duty Cycle CF

Note. RBW 100kHz measurement data is lower than 3kHz limit.

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9.5. CONDUCTED SPURIOUS EMISSIONS

LIMITS

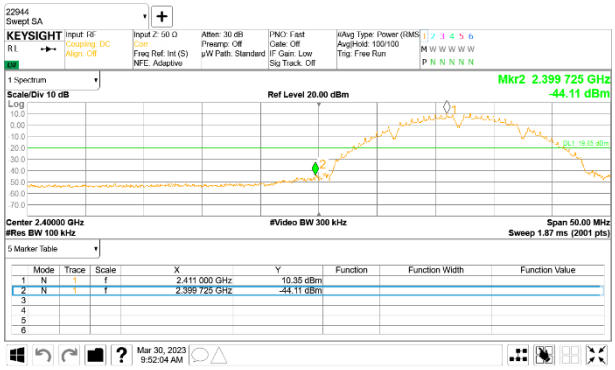
FCC §15.247 (d)

Output power was measured based on the use of average measurement, therefore the required attenuation is 30 dB.

RESULTS

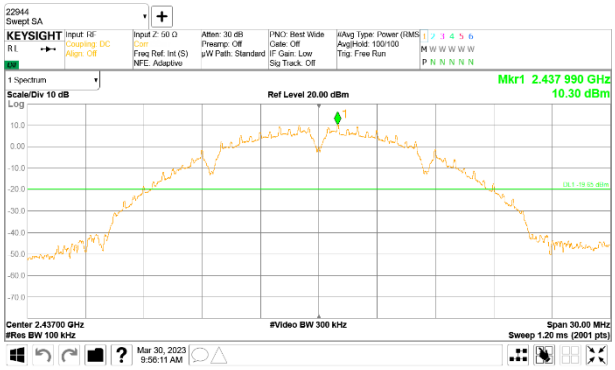
9.5.1. 802.11b MODE

2TX Antenna 1



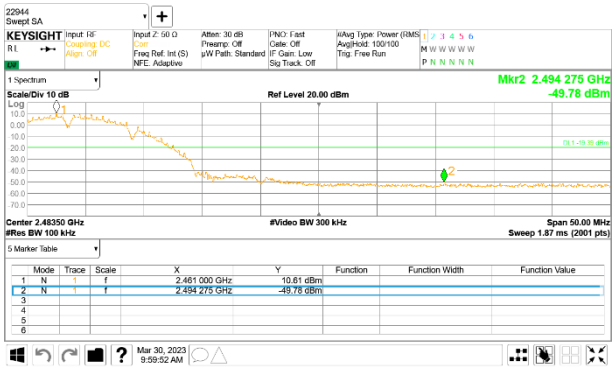
1 Channel Band-edge

Out-Of-Band 1 Channel

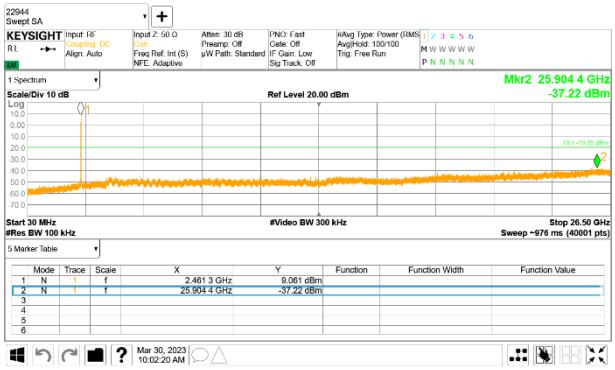


6 Channel Band-edge

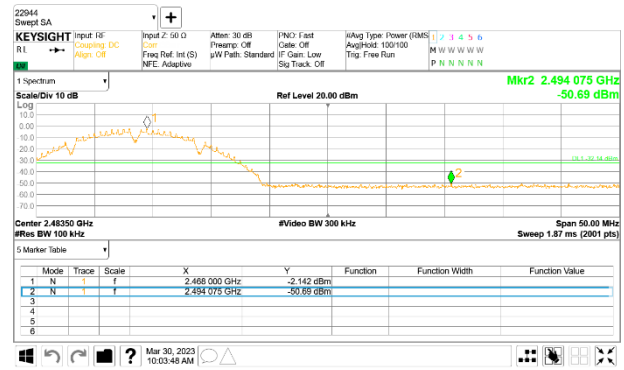
Out-Of-Band 6 Channel



11 Channel Band-edge



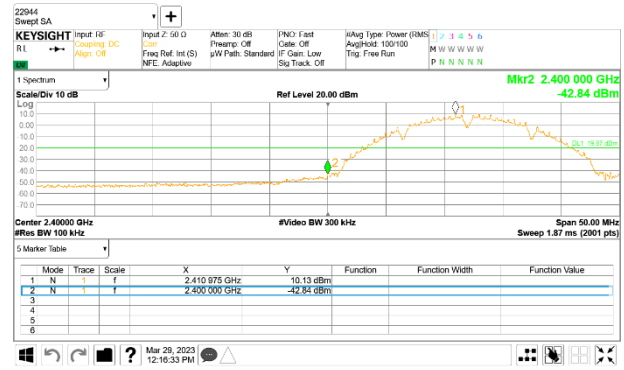
Out-Of-Band 11 Channel



12 Channel Band-edge

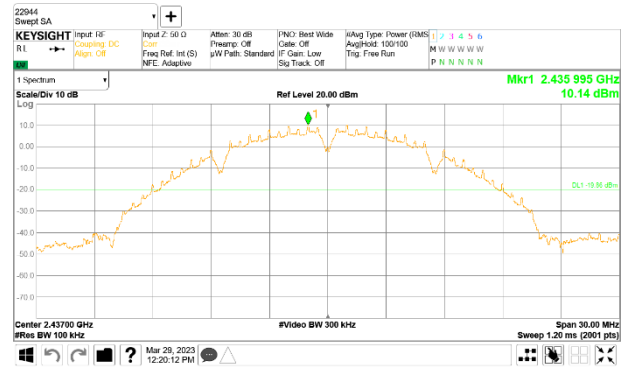
13 Channel Band-edge

2TX Antenna 2



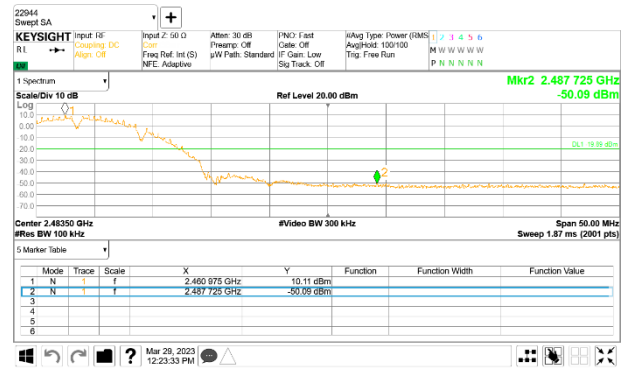
1 Channel Band-edge

Out-Of-Band 1 Channel

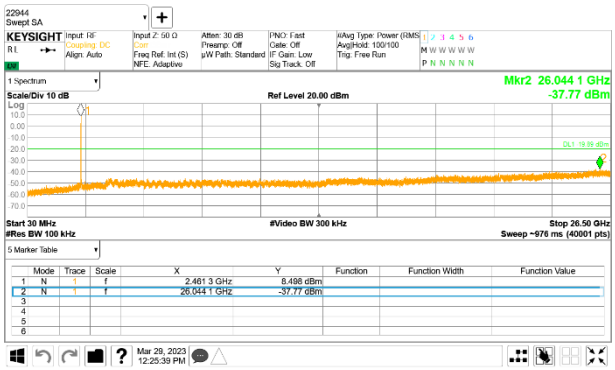


6 Channel Band-edge

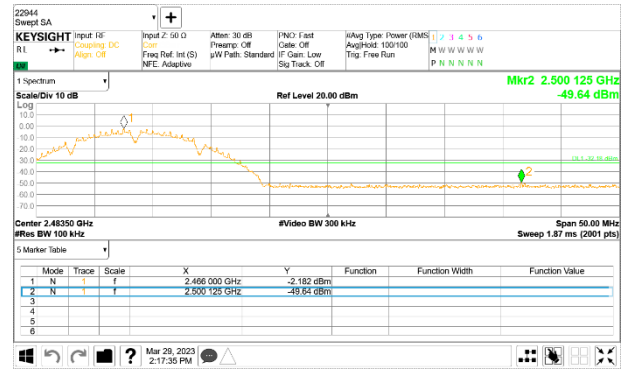
Out-Of-Band 6 Channel



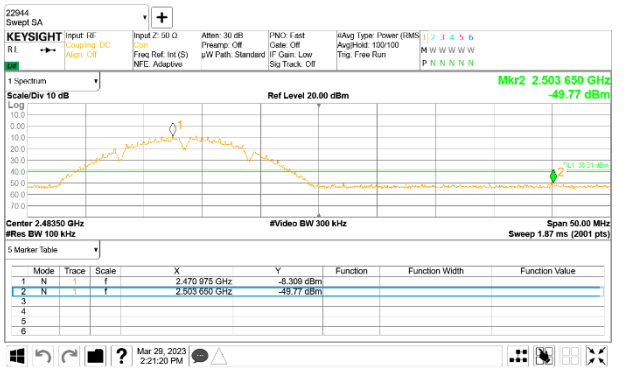
1 Channel Band-edge



Out-Of-Band 11 Channel



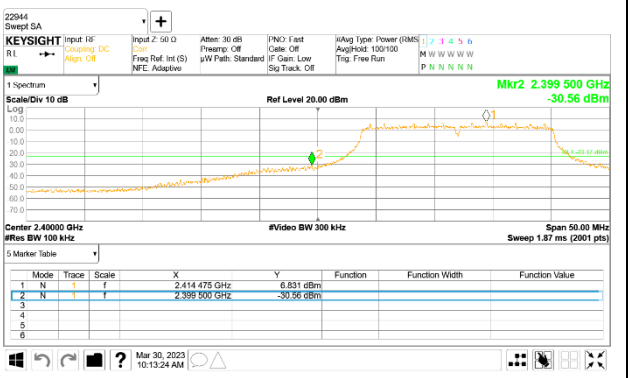
12 Channel Band-edge



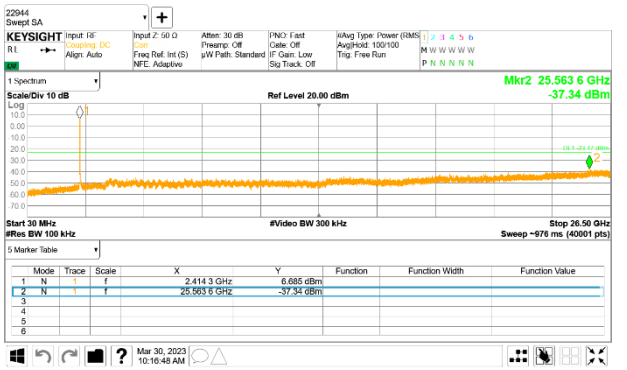
13 Channel Band-edge

9.5.2. 802.11g MODE

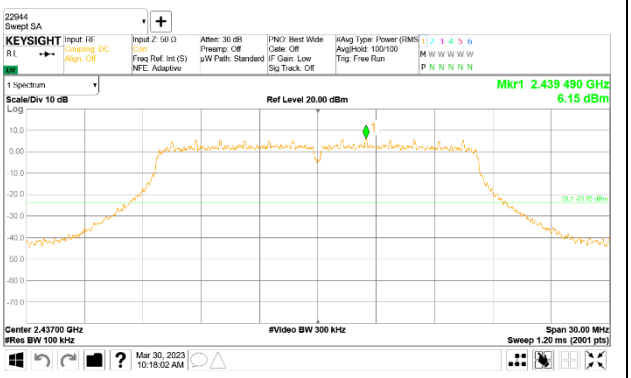
2TX Antenna 1



1 Channel Band-edge

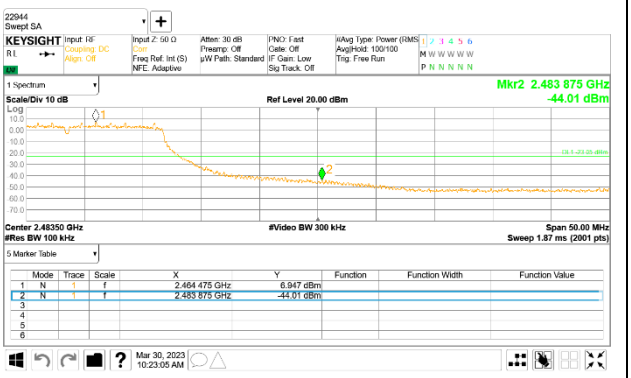


Out-Of-Band 1 Channel



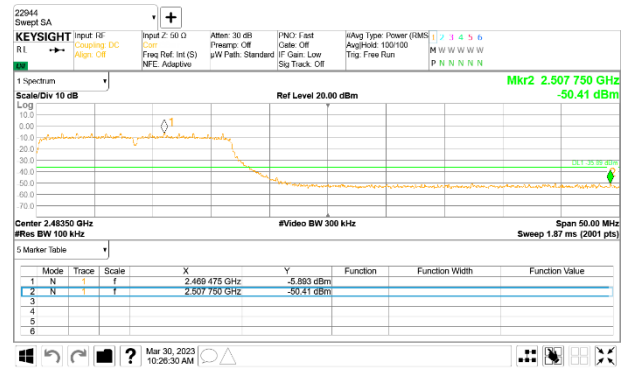
6 Channel Band-edge

Out-Of-Band 6 Channel



11 Channel Band-edge

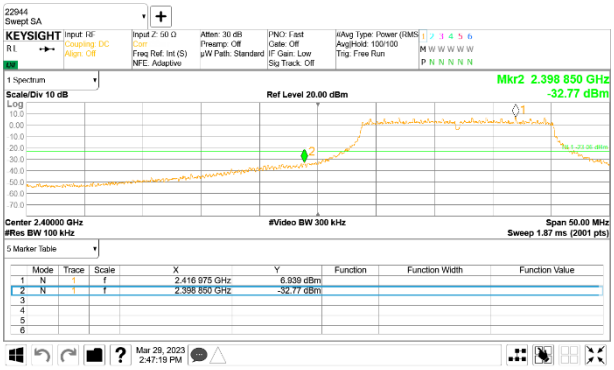
Out-Of-Band 11 Channel



12 Channel Band-edge

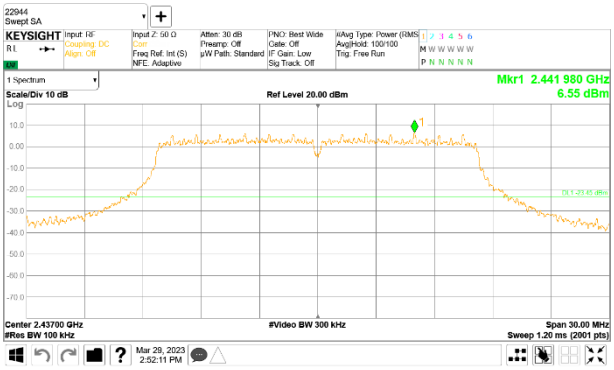
13 Channel Band-edge

2TX Antenna 2



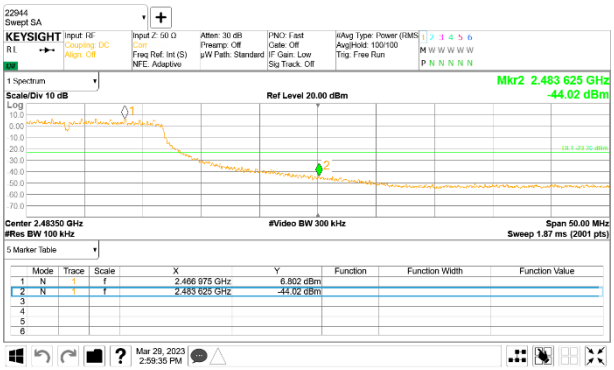
1 Channel Band-edge

Out-Of-Band 1 Channel

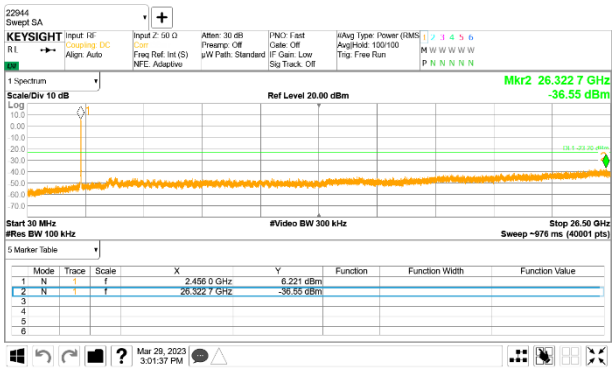


6 Channel Band-edge

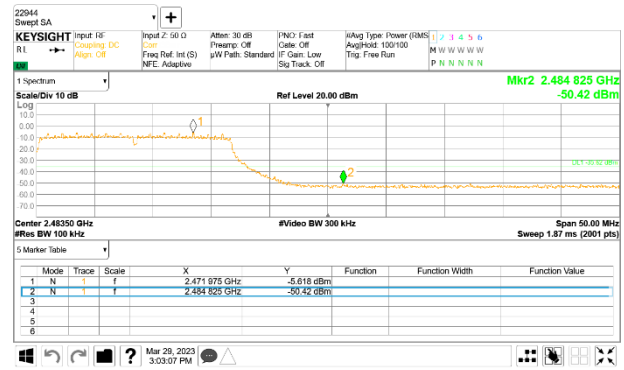
Out-Of-Band 6 Channel



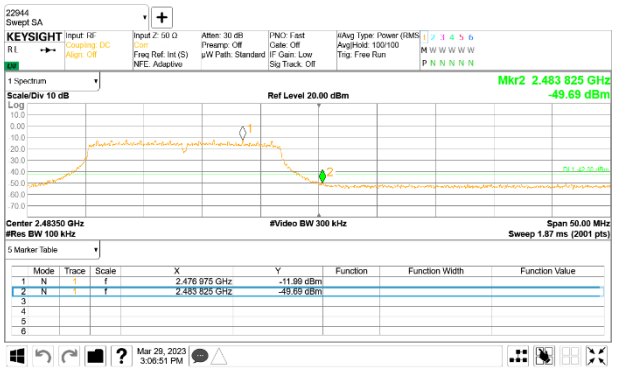
11 Channel Band-edge



Out-Of-Band 11 Channel



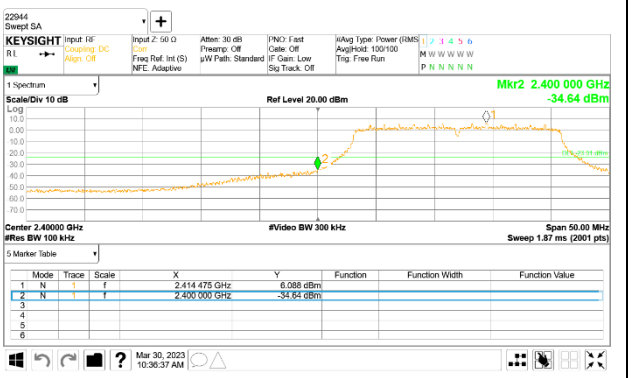
12 Channel Band-edge



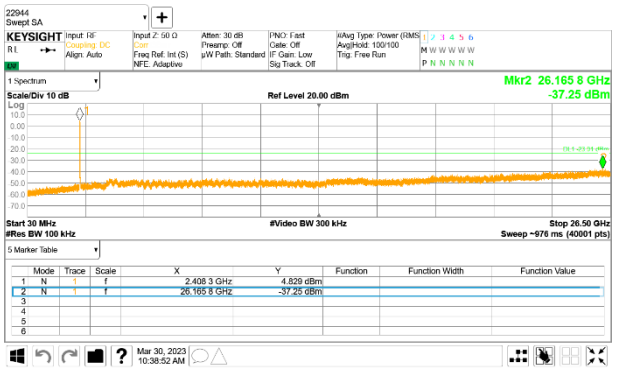
13 Channel Band-edge

9.5.3. 802.11n HT20 MODE

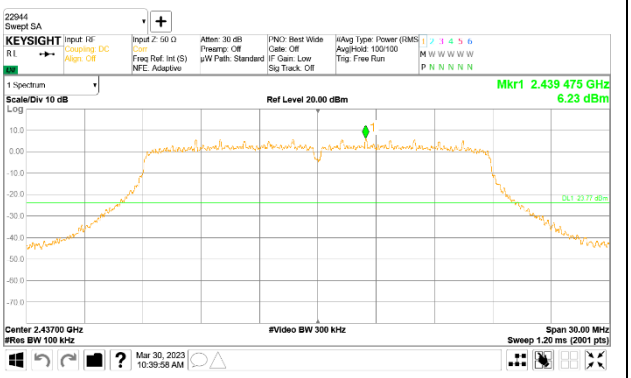
2TX Antenna 1



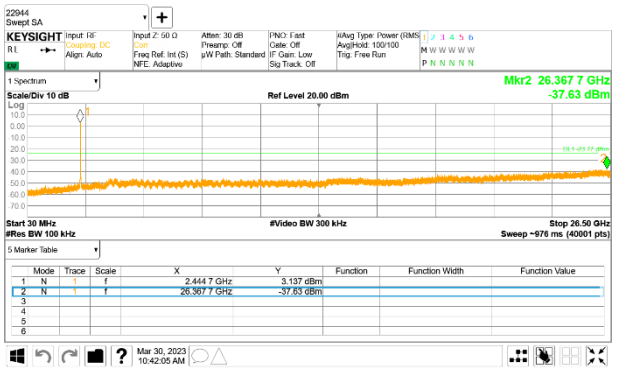
1 Channel Band-edge



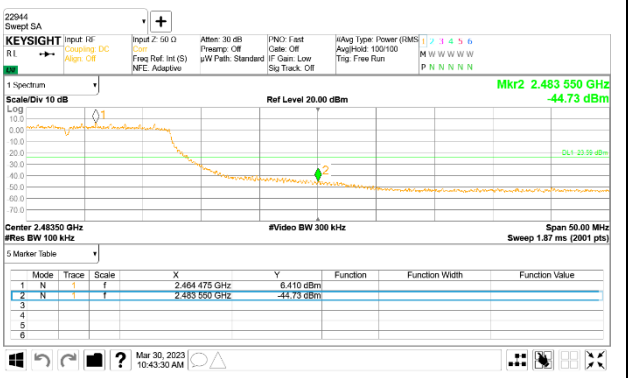
Out-Of-Band 1 Channel



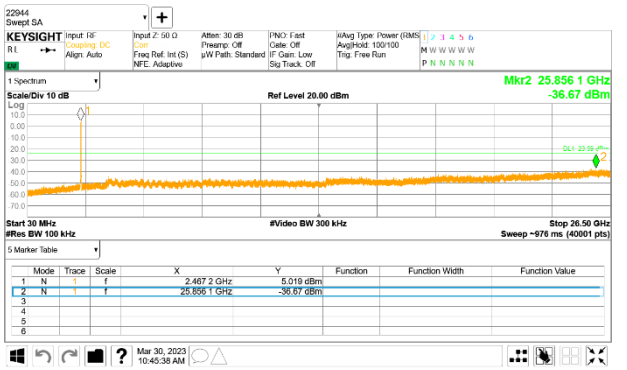
6 Channel Band-edge



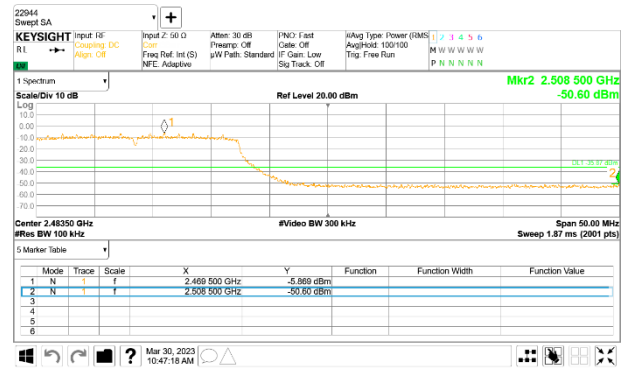
Out-Of-Band 6 Channel



11 Channel Band-edge



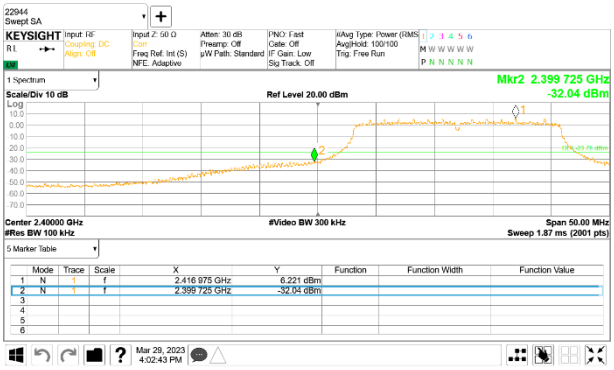
Out-Of-Band 11 Channel



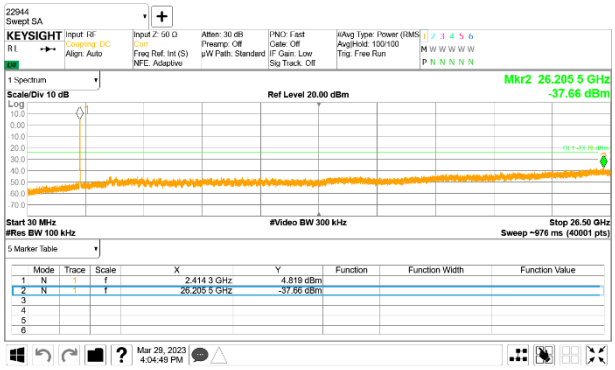
12 Channel Band-edge

13 Channel Band-edge

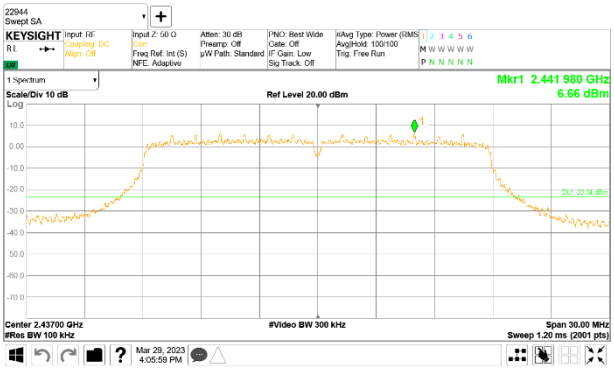
2TX Antenna 2



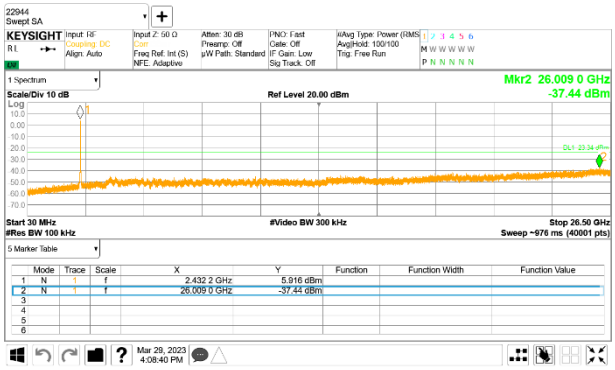
1 Channel Band-edge



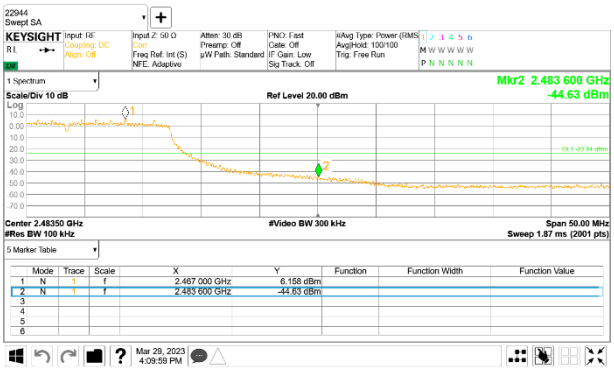
Out-Of-Band 1 Channel



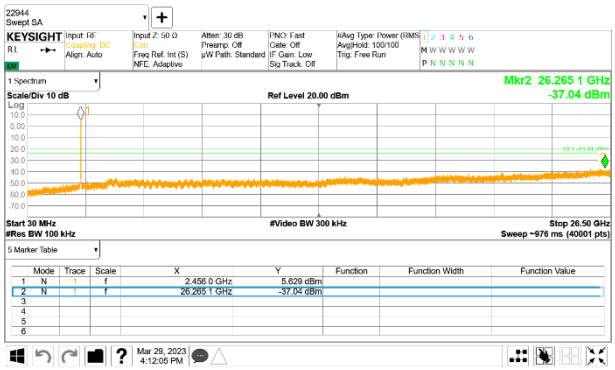
6 Channel Band-edge



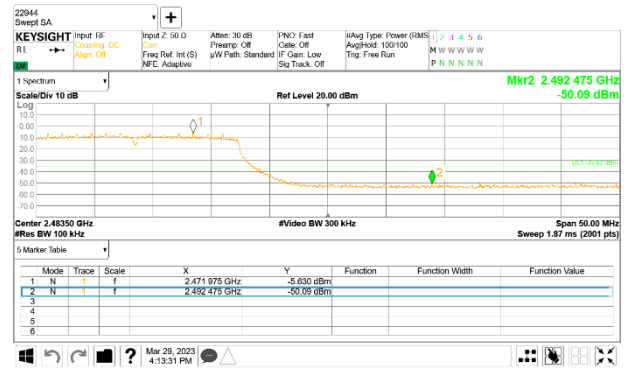
Out-Of-Band 6 Channel



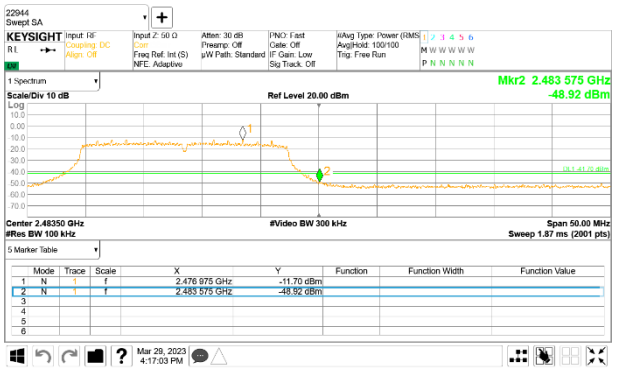
11 Channel Band-edge



Out-Of-Band 11 Channel



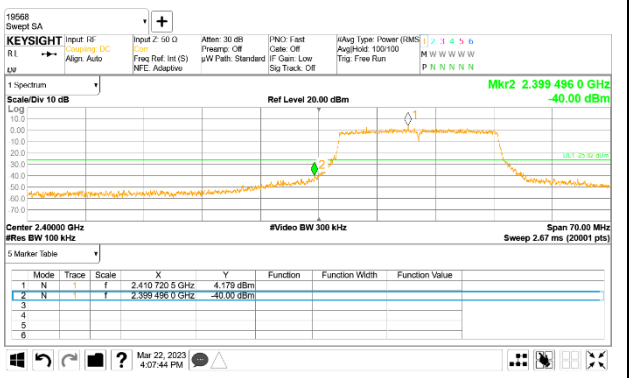
12 Channel Band-edge



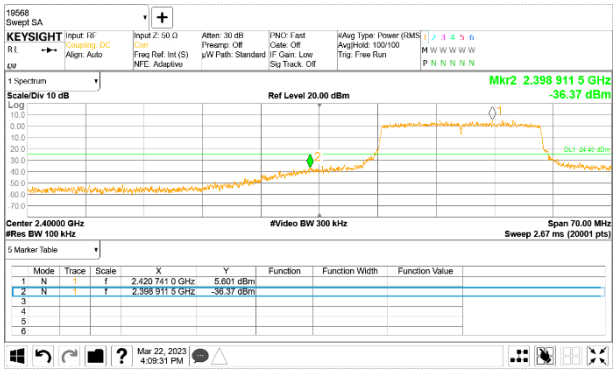
13 Channel Band-edge

9.5.4. 802.11ax HE20(SU) MODE

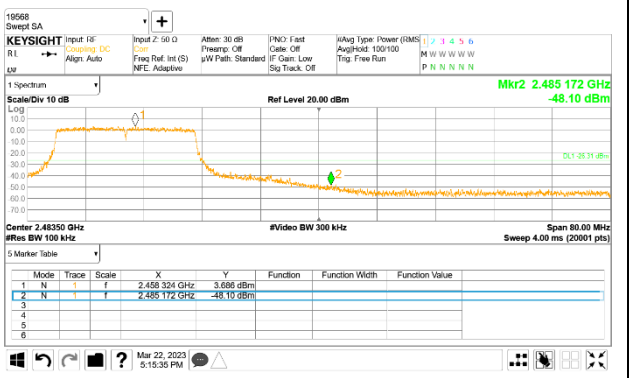
2TX Antenna 1



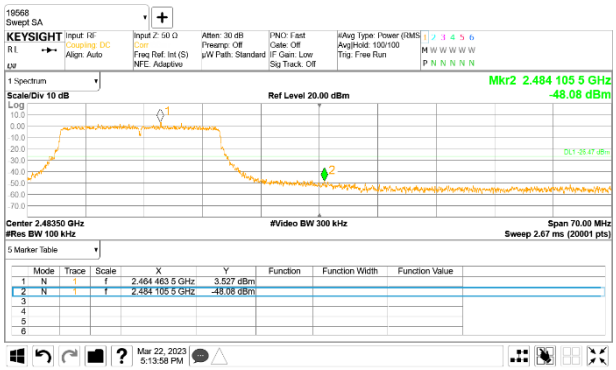
1 Channel Band-edge



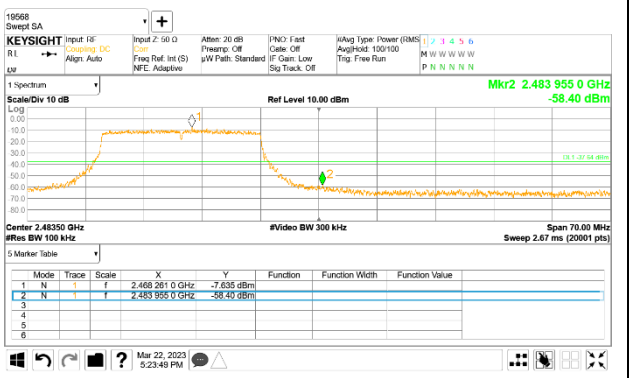
2 Channel Band-edge



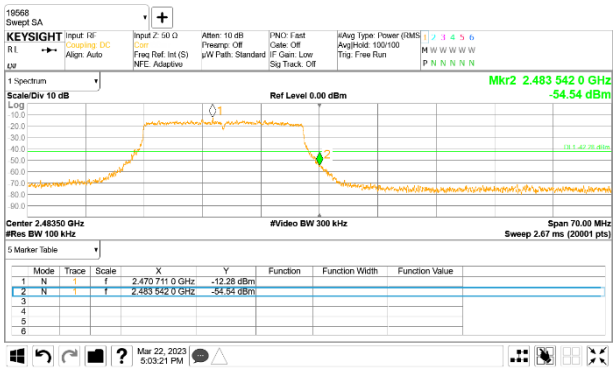
10 Channel Band-edge



11 Channel Band-edge

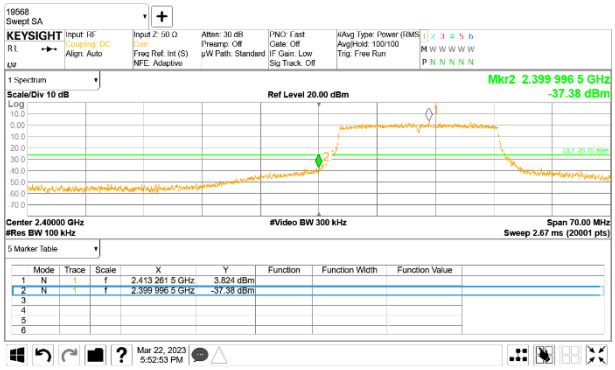


12 Channel Band-edge

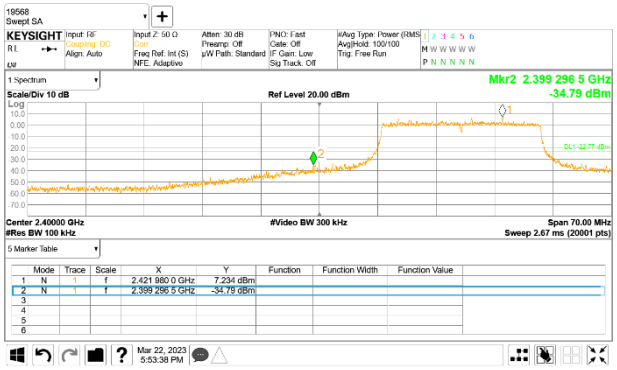


13 Channel Band-edge

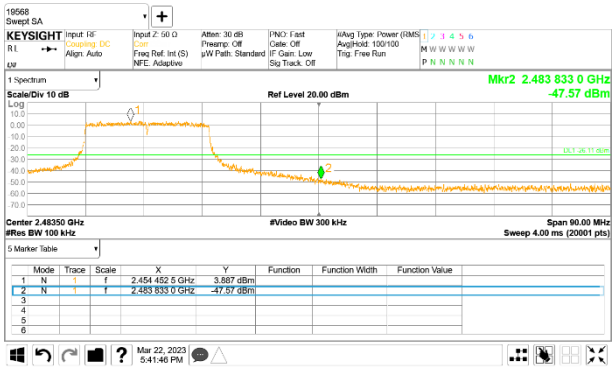
2TX Antenna 2



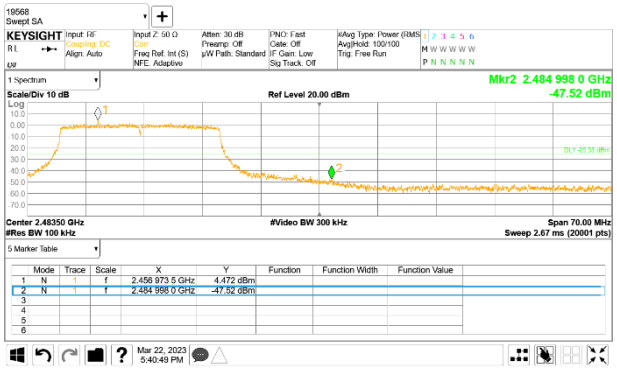
1 Channel Band-edge



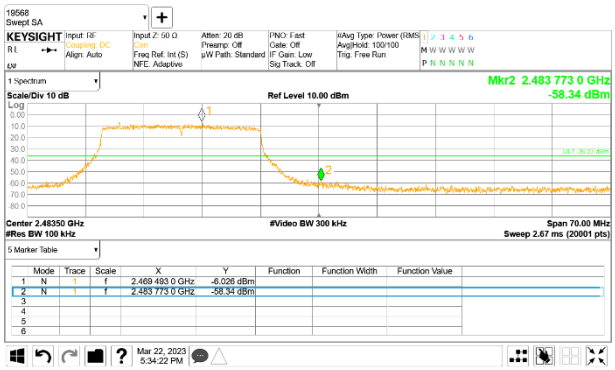
2 Channel Band-edge



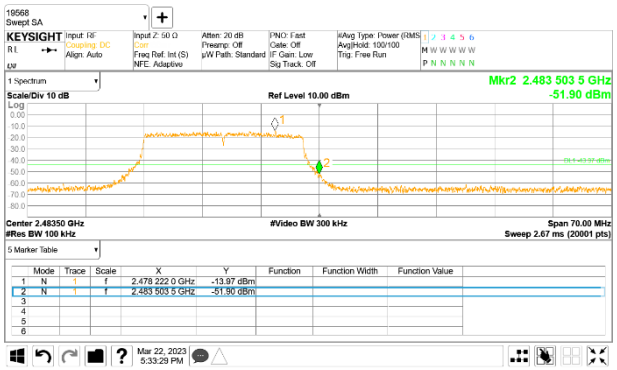
10 Channel Band-edge



11 Channel Band-edge



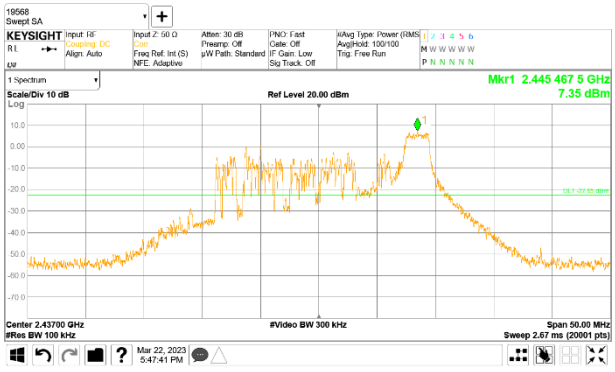
12 Channel Band-edge



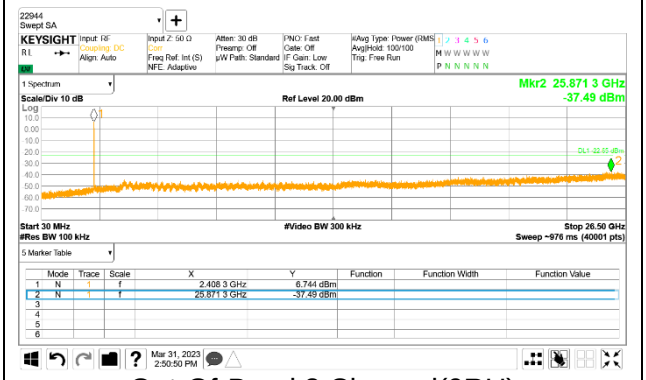
13 Channel Band-edge

9.5.5. 802.11ax HE20(RU) MODE

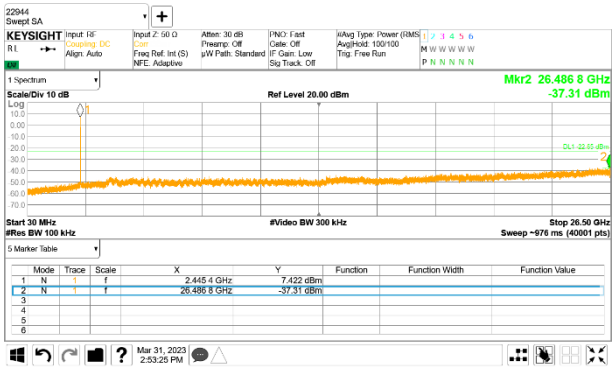
2TX Antenna 1 MODE



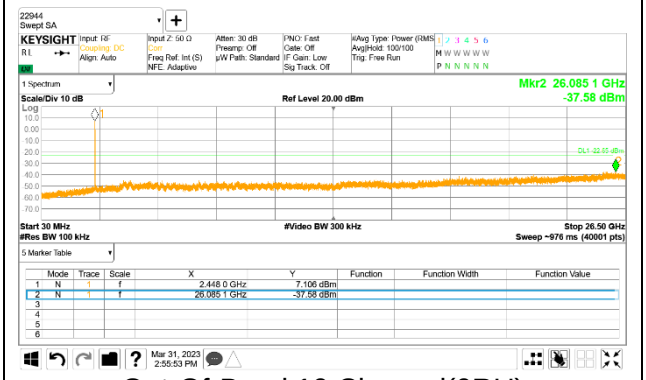
In-Band Reference Level



Out-Of-Band 2 Channel(0RU)

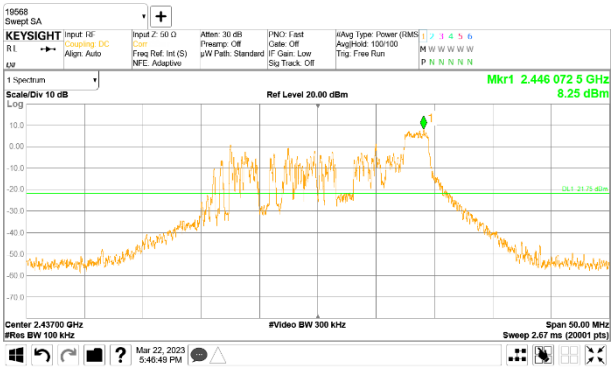


Out-Of-Band 6 Channel(8RU)

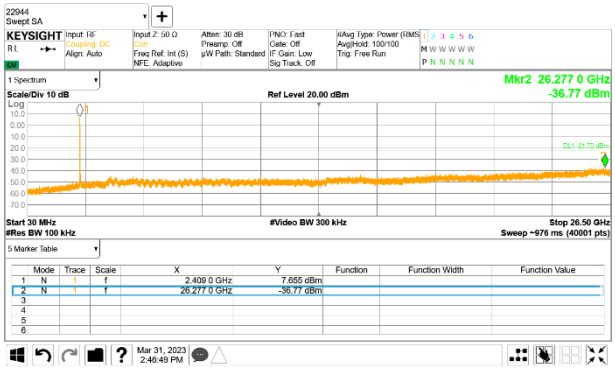


Out-Of-Band 10 Channel(0RU)

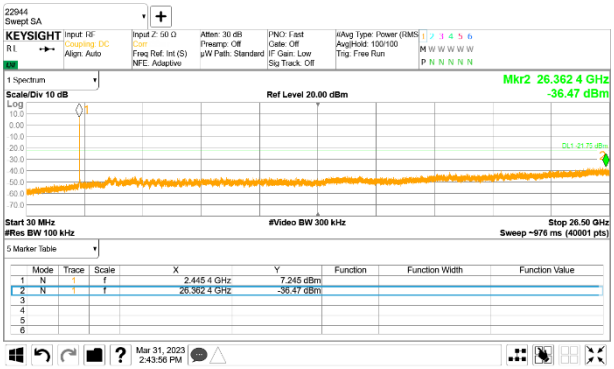
2TX Antenna 2 MODE



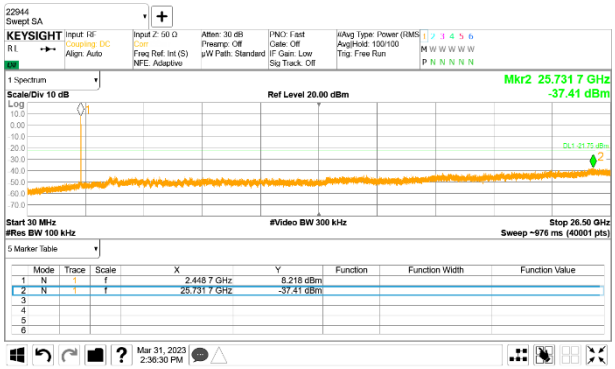
In-Band Reference Level



Out-Of-Band 2 Channel(0RU)



Out-Of-Band 6 Channel(8RU)



Out-Of-Band 10 Channel(0RU)

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 MIMO mode = 0 dB (duty cycle > 98%);
802.11g MIMO mode = 0.16 dB (96.39%);
802.11n(HT20) MIMO mode = 0 dB (duty cycle > 98%);
802.11ax(HE20) MIMO SU mode = 0 dB (duty cycle > 98%);
802.11ax(HE20) MIMO 26 Tone mode = 0 dB (duty cycle > 98%).

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.

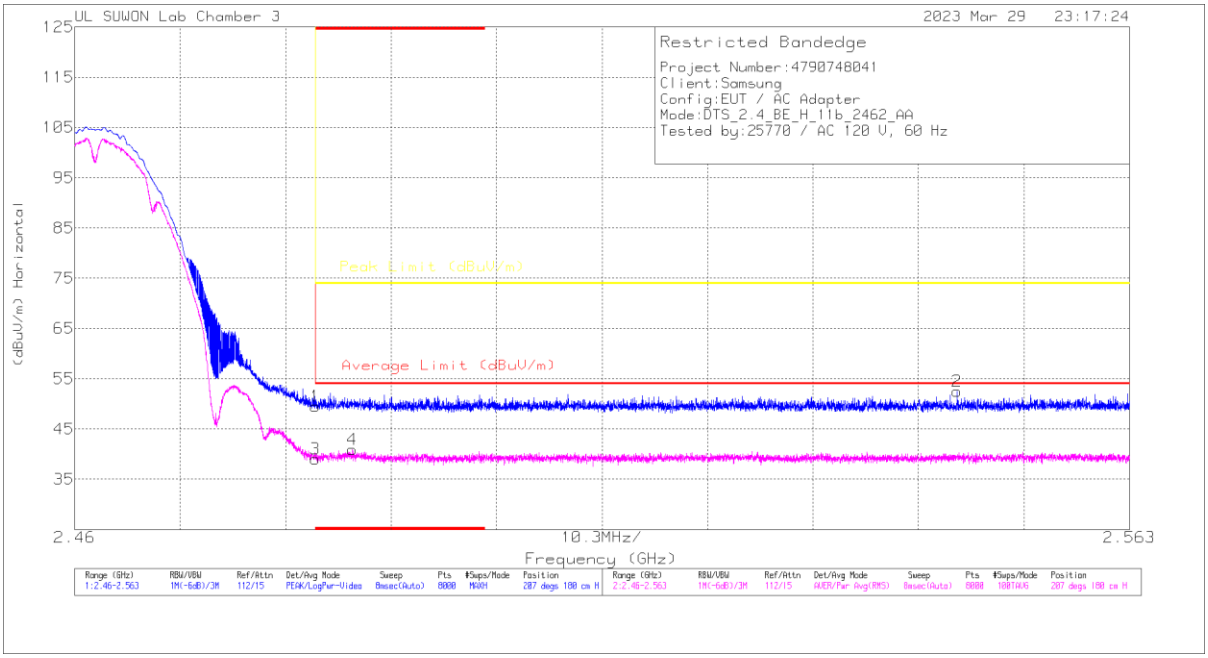
10.1. TRANSMITTER ABOVE 1 GHz

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

2TX Antenna 1 + Antenna 2

BANDEDGE(WORST CASE: 11 CHANNEL)

HORIZONTAL RESULT



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00218957	10dB_ATT(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	42.1	Pk	32.4	-25	0	49.5	-	-	74	-24.5	207	180	H
2	2.54617	44.96	Pk	32.4	-24.9	0	52.46	-	-	74	-21.54	207	180	H
3	* 2.4835	31.63	RMS	32.4	-25	0	39.03	54	-14.97	-	-	207	180	H
4	* 2.48713	33.56	RMS	32.4	-25	0	40.96	54	-13.04	-	-	207	180	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	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	MIMO	* 2.39	41.63	Pk	32.10	-25.10	0.00	48.63	-	-	74.00	-25.37	283	138	H
		* 2.38545	44.77	Pk	32.10	-25.10	0.00	51.77	-	-	74.00	-22.23	283	138	H
		* 2.39	32.11	RMS	32.10	-25.10	0.00	39.11	54.00	-14.89	-	-	283	138	H
		* 2.38669	33.92	RMS	32.10	-25.10	0.00	40.92	54.00	-13.08	-	-	283	138	H
		* 2.39	42.57	Pk	32.10	-25.10	0.00	49.57	-	-	74.00	-24.43	134	395	V
		* 2.37627	45.05	Pk	32.10	-25.10	0.00	52.05	-	-	74.00	-21.95	134	395	V
		* 2.39	32.33	RMS	32.10	-25.10	0.00	39.33	54.00	-14.67	-	-	134	395	V
		* 2.38611	33.38	RMS	32.10	-25.10	0.00	40.38	54.00	-13.62	-	-	134	395	V
2462	MIMO	* 2.4835	42.10	Pk	32.40	-25.00	0.00	49.50	-	-	74.00	-24.50	207	180	H
		2.546	44.96	Pk	32.40	-24.90	0.00	52.46	-	-	74.00	-21.54	207	180	H
		* 2.4835	31.63	RMS	32.40	-25.00	0.00	39.03	54.00	-14.97	-	-	207	180	H
		* 2.48713	33.56	RMS	32.40	-25.00	0.00	40.96	54.00	**-13.04**	-	-	207	180	H
		* 2.4835	42.12	Pk	32.40	-25.00	0.00	49.52	-	-	74.00	-24.48	136	367	V
		2.562	45.09	Pk	32.40	-25.00	0.00	52.49	-	-	74.00	-21.51	136	367	V
		* 2.4835	32.31	RMS	32.40	-25.00	0.00	39.71	54.00	-14.29	-	-	136	367	V
		2.520	32.97	RMS	32.40	-24.90	0.00	40.47	54.00	-13.53	-	-	136	367	V
2467	MIMO	* 2.4835	41.93	Pk	32.40	-25.00	0.00	49.33	-	-	74.00	-24.67	208	287	H
		2.520	44.78	Pk	32.40	-24.90	0.00	52.28	-	-	74.00	-21.72	208	287	H
		* 2.4835	30.70	RMS	32.40	-25.00	0.00	38.10	54.00	-15.90	-	-	208	287	H
		2.558	32.93	RMS	32.40	-24.80	0.00	40.53	54.00	-13.47	-	-	208	287	H
		* 2.4835	41.86	Pk	32.40	-25.00	0.00	49.26	-	-	74.00	-24.74	140	320	V
		2.535	45.62	Pk	32.40	-25.00	0.00	53.02	-	-	74.00	**-20.98**	140	320	V
		* 2.4835	31.50	RMS	32.40	-25.00	0.00	38.90	54.00	-15.10	-	-	140	320	V
		2.545	33.17	RMS	32.40	-24.90	0.00	40.67	54.00	-13.33	-	-	140	320	V
2472	MIMO	* 2.4835	43.18	Pk	32.40	-25.00	0.00	50.58	-	-	74.00	-23.42	25	154	H
		2.511	44.94	Pk	32.40	-24.90	0.00	52.44	-	-	74.00	-21.56	25	154	H
		* 2.4835	32.05	RMS	32.40	-25.00	0.00	39.45	54.00	-14.55	-	-	25	154	H
		2.520	33.16	RMS	32.40	-24.90	0.00	40.66	54.00	-13.34	-	-	25	154	H
		* 2.4835	43.44	Pk	32.40	-25.00	0.00	50.84	-	-	74.00	-23.16	139	360	V
		* 2.48367	45.41	Pk	32.40	-25.00	0.00	52.81	-	-	74.00	-21.19	139	360	V
		* 2.4835	32.38	RMS	32.40	-25.00	0.00	39.78	54.00	-14.22	-	-	139	360	V
		2.526	33.06	RMS	32.40	-24.90	0.00	40.56	54.00	-13.44	-	-	139	360	V

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

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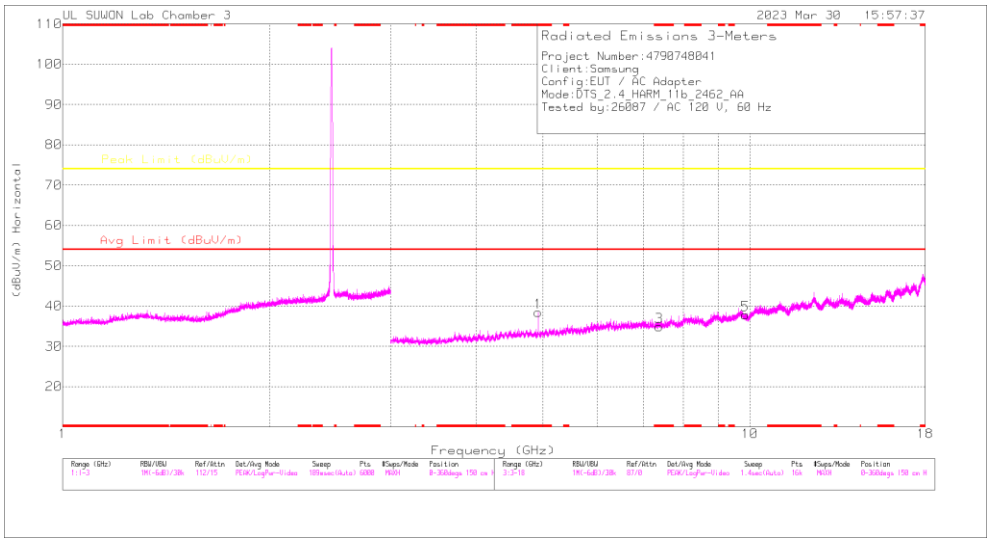
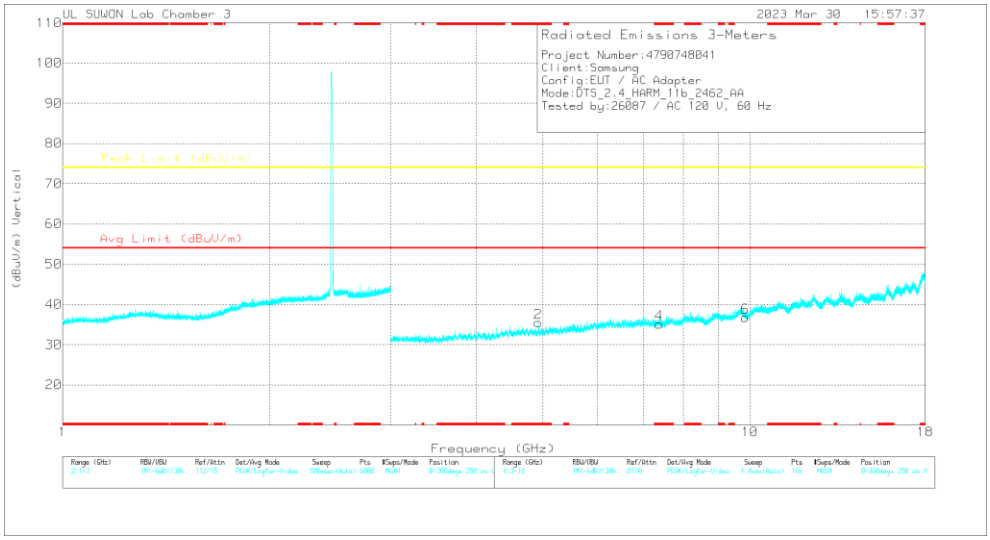
HARMONICS AND SPURIOUS EMISSIONS(WORST CASE: 11 CHANNEL)

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	3117_00218957	3GHz_HP(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
* 4.92387	42.69	PK2	34.2	-30.9	0	45.99	-	-	74	-28.01	216	254	H
* 4.92401	34.73	MAv1	34.2	-30.9	0	38.03	54	-15.97	-	-	216	254	H
* 4.92377	40.32	PK2	34.2	-30.9	0	43.62	-	-	74	-30.38	226	375	V
* 4.92401	29.5	MAv1	34.2	-30.9	0	32.8	54	-21.2	-	-	226	375	V
* 7.39088	34.6	PK2	35.7	-24.7	0	45.6	-	-	74	-28.4	0	100	H
* 7.38904	34.66	PK2	35.7	-24.8	0	45.56	-	-	74	-28.44	0	100	V
9.84397	31.52	PK2	37.1	-21.3	0	47.32	-	-	74	-26.68	0	100	H
9.84142	31.27	PK2	37.1	-21.3	0	47.07	-	-	74	-26.93	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	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	MIMO	* 4.8238	39.28	PK2	34.30	-30.20	0.00	43.38	-	-	74.00	-30.62	212	113	H
		* 4.82361	39.00	PK2	34.30	-30.20	0.00	43.10	-	-	74.00	-30.90	0	100	V
		7.236	35.55	PK2	35.80	-25.80	0.00	45.55	-	-	74.00	-28.45	0	100	H
		7.244	35.69	PK2	35.80	-25.80	0.00	45.69	-	-	74.00	-28.31	0	100	V
		9.648	32.54	PK2	36.80	-21.40	0.00	47.94	-	-	74.00	-26.06	0	100	H
		9.646	33.53	PK2	36.80	-21.30	0.00	49.03	-	-	74.00	**-24.97**	0	100	V
2437	MIMO	* 4.82501	38.97	PK2	34.20	-30.30	0.00	42.87	-	-	74.00	-31.13	0	100	H
		* 4.82466	38.68	PK2	34.30	-30.20	0.00	42.78	-	-	74.00	-31.22	0	100	V
		* 7.31035	35.28	PK2	35.80	-25.50	0.00	45.58	-	-	74.00	-28.42	0	100	H
		* 7.30498	35.12	PK2	35.80	-25.60	0.00	45.32	-	-	74.00	-28.68	0	100	V
		9.750	32.27	PK2	36.90	-21.20	0.00	47.97	-	-	74.00	-26.03	0	100	H
		9.758	32.70	PK2	36.90	-21.10	0.00	48.50	-	-	74.00	-25.50	0	100	V
2462	MIMO	* 4.92387	42.69	PK2	34.20	-30.90	0.00	45.99	-	-	74.00	-28.01	216	254	H
		* 4.92401	34.73	MAv1	34.20	-30.90	0.00	38.03	54.00	**-15.97**	-	-	216	254	H
		* 4.92377	40.32	PK2	34.20	-30.90	0.00	43.62	-	-	74.00	-30.38	226	375	V
		* 4.92401	29.50	MAv1	34.20	-30.90	0.00	32.80	54.00	-21.20	-	-	226	375	V
		* 7.39088	34.60	PK2	35.70	-24.70	0.00	45.60	-	-	74.00	-28.40	0	100	H
		* 7.38904	34.66	PK2	35.70	-24.80	0.00	45.56	-	-	74.00	-28.44	0	100	V
		9.844	31.52	PK2	37.10	-21.30	0.00	47.32	-	-	74.00	-26.68	0	100	H
		9.841	31.27	PK2	37.10	-21.30	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

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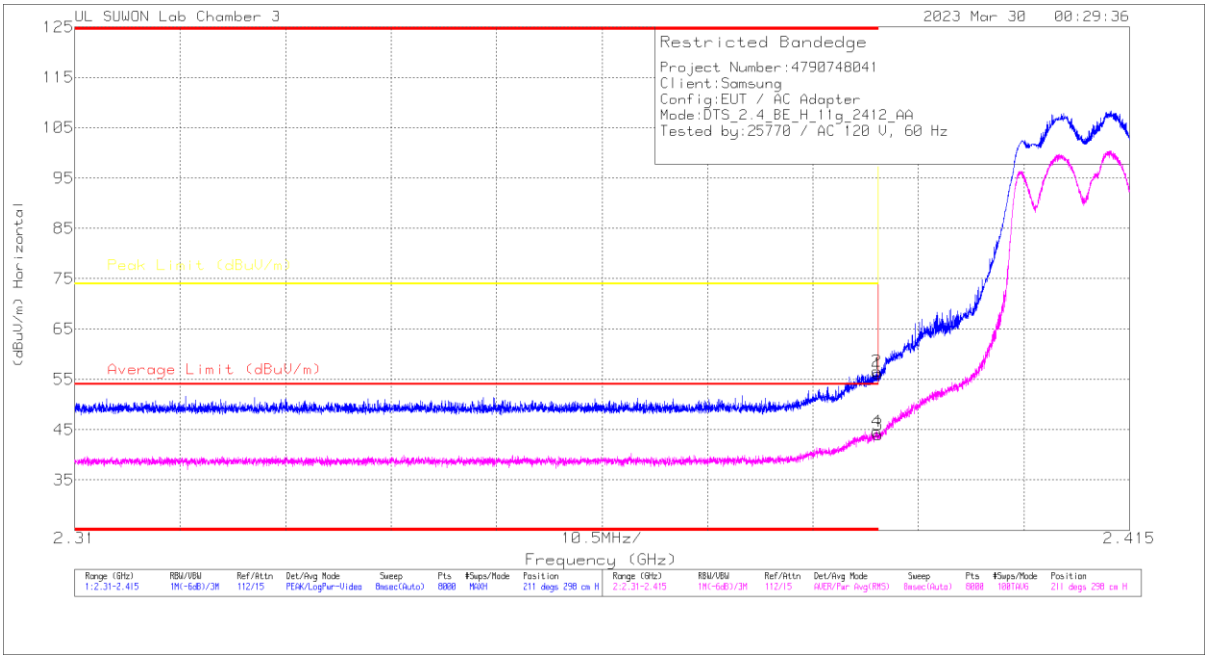
10.1.2. TX ABOVE 1 GHz 802.11g MODE IN THE 2.4 GHz BAND

2TX Antenna 1 + Antenna 2

BANDEDGE (WORST CASE: 1 CHANNEL)

HORIZONTAL RESULT



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00218957	10dB_ATT(dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 2.39	49.13	Pk	32.1	-25.1	0	56.13	-	-	74	-17.87	211	298	H
2	* 2.38986	49.65	Pk	32.1	-25.1	0	56.65	-	-	74	-17.35	211	298	H
3	* 2.39	36.86	RMS	32.1	-25.1	.16	44.02	54	-9.98	-	-	211	298	H
4	* 2.38986	37.51	RMS	32.1	-25.1	.16	44.67	54	-9.33	-	-	211	298	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	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	MIMO	* 2.39	49.13	Pk	32.10	-25.10	0.00	56.13	-	-	74.00	-17.87	211	298	H
		* 2.38986	49.65	Pk	32.10	-25.10	0.00	56.65	-	-	74.00	-17.35	211	298	H
		* 2.39	36.86	RMS	32.10	-25.10	0.16	44.02	54.00	-9.98	-	-	211	298	H
		* 2.38986	37.51	RMS	32.10	-25.10	0.16	44.67	54.00	**-9.33**	-	-	211	298	H
		* 2.39	48.15	Pk	32.10	-25.10	0.00	55.15	-	-	74.00	-18.85	136	388	V
		* 2.38976	50.12	Pk	32.10	-25.10	0.00	57.12	-	-	74.00	**-16.88**	136	388	V
		* 2.39	35.80	RMS	32.10	-25.10	0.16	42.96	54.00	-11.04	-	-	136	388	V
		* 2.38954	37.41	RMS	32.10	-25.10	0.16	44.57	54.00	-9.43	-	-	136	388	V
2462	MIMO	* 2.4835	44.70	Pk	32.40	-25.00	0.00	52.10	-	-	74.00	-21.90	210	107	H
		* 2.48458	46.06	Pk	32.40	-25.00	0.00	53.46	-	-	74.00	-20.54	210	107	H
		* 2.4835	34.54	RMS	32.40	-25.00	0.16	42.10	54.00	-11.90	-	-	210	107	H
		* 2.48519	34.74	RMS	32.40	-25.00	0.16	42.30	54.00	-11.70	-	-	210	107	H
		* 2.4835	47.40	Pk	32.40	-25.00	0.00	54.80	-	-	74.00	-19.20	138	368	V
		* 2.48351	47.74	Pk	32.40	-25.00	0.00	55.14	-	-	74.00	-18.86	138	368	V
		* 2.4835	35.37	RMS	32.40	-25.00	0.16	42.93	54.00	-11.07	-	-	138	368	V
		* 2.48373	35.72	RMS	32.40	-25.00	0.16	43.28	54.00	-10.72	-	-	138	368	V
2467	MIMO	* 2.4835	41.52	Pk	32.40	-25.00	0.00	48.92	-	-	74.00	-25.08	243	109	H
		2.533	45.36	Pk	32.40	-24.90	0.00	52.86	-	-	74.00	-21.14	243	109	H
		* 2.4835	32.07	RMS	32.40	-25.00	0.16	39.63	54.00	-14.37	-	-	243	109	H
		2.537	33.82	RMS	32.40	-25.00	0.16	41.38	54.00	-12.62	-	-	243	109	H
		* 2.4835	41.72	Pk	32.40	-25.00	0.00	49.12	-	-	74.00	-24.88	172	229	V
		2.546	45.08	Pk	32.40	-24.90	0.00	52.58	-	-	74.00	-21.42	172	229	V
		* 2.4835	32.09	RMS	32.40	-25.00	0.16	39.65	54.00	-14.35	-	-	172	229	V
		2.547	33.46	RMS	32.40	-24.90	0.16	41.12	54.00	-12.88	-	-	172	229	V
2472	MIMO	* 2.4835	47.70	Pk	32.40	-25.00	0.00	55.10	-	-	74.00	-18.90	289	177	H
		* 2.48356	48.07	Pk	32.40	-25.00	0.00	55.47	-	-	74.00	-18.53	289	177	H
		* 2.4835	34.07	RMS	32.40	-25.00	0.16	41.63	54.00	-12.37	-	-	289	177	H
		* 2.48359	35.09	RMS	32.40	-25.00	0.16	42.65	54.00	-11.35	-	-	289	177	H
		* 2.4835	44.70	Pk	32.40	-25.00	0.00	52.10	-	-	74.00	-21.90	126	361	V
		* 2.48354	46.38	Pk	32.40	-25.00	0.00	53.78	-	-	74.00	-20.22	126	361	V
		* 2.4835	33.70	RMS	32.40	-25.00	0.16	41.26	54.00	-12.74	-	-	126	361	V
		* 2.48355	34.26	RMS	32.40	-25.00	0.16	41.82	54.00	-12.18	-	-	126	361	V

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

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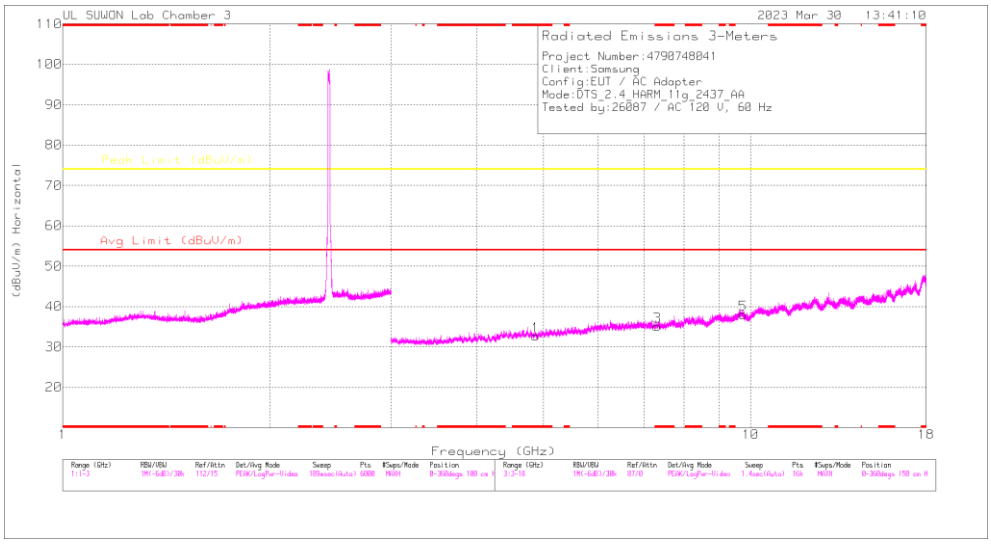
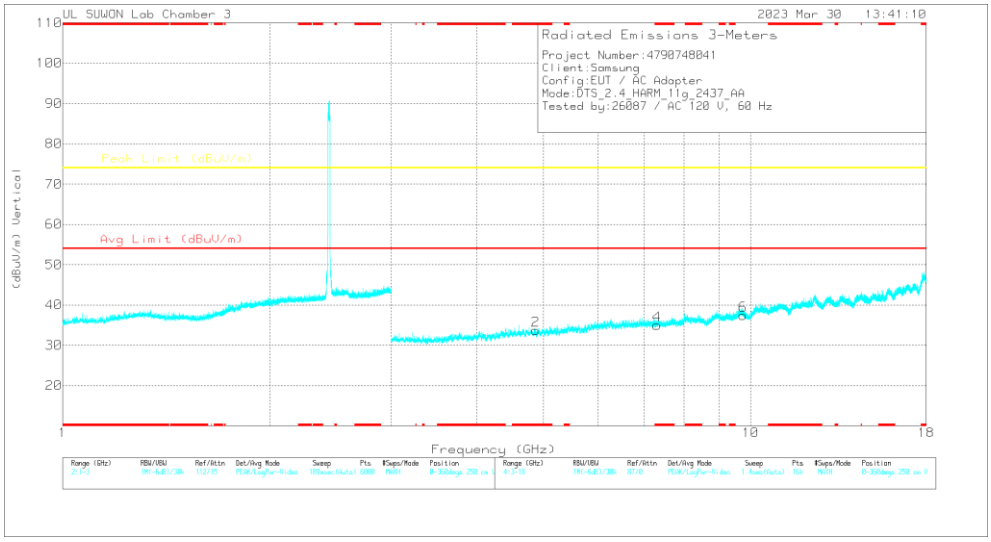
HARMONICS AND SPURIOUS EMISSIONS (WORST CASE: 6 CHANNEL)

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	3117_00218957	3GHz_HP(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
* 4.87326	39.69	PK2	34.2	-30.8	0	43.09	-	-	74	-30.91	0	100	H
* 4.87515	40.54	PK2	34.2	-30.8	0	43.94	-	-	74	-30.06	0	100	V
* 7.31282	35.57	PK2	35.8	-25.5	0	45.87	-	-	74	-28.13	0	100	H
* 7.31281	35.72	PK2	35.8	-25.5	0	46.02	-	-	74	-27.98	0	100	V
9.7468	32.19	PK2	36.9	-21.2	0	47.89	-	-	74	-26.11	0	100	H
9.74782	32.3	PK2	36.9	-21.2	0	48	-	-	74	-26	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	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	MIMO	* 4.82295	39.27	PK2	34.30	-30.20	0.00	43.37	-	-	74.00	-30.63	0	100	H
		* 4.82523	39.25	PK2	34.20	-30.30	0.00	43.15	-	-	74.00	-30.85	0	100	V
		7.236	35.78	PK2	35.80	-25.80	0.00	45.78	-	-	74.00	-28.22	0	100	H
		7.237	35.50	PK2	35.80	-25.90	0.00	45.40	-	-	74.00	-28.60	0	100	V
		* 9.46832	32.21	PK2	36.60	-21.80	0.00	47.01	-	-	74.00	-26.99	0	100	H
		* 9.46583	32.36	PK2	36.60	-21.70	0.00	47.26	-	-	74.00	-26.74	0	100	V
2437	MIMO	* 4.87326	39.69	PK2	34.20	-30.80	0.00	43.09	-	-	74.00	-30.91	0	100	H
		* 4.87515	40.54	PK2	34.20	-30.80	0.00	43.94	-	-	74.00	-30.06	0	100	V
		* 7.31282	35.57	PK2	35.80	-25.50	0.00	45.87	-	-	74.00	-28.13	0	100	H
		* 7.31281	35.72	PK2	35.80	-25.50	0.00	46.02	-	-	74.00	-27.98	0	100	V
		9.747	32.19	PK2	36.90	-21.20	0.00	47.89	-	-	74.00	-26.11	0	100	H
		9.748	32.30	PK2	36.90	-21.20	0.00	48.00	-	-	74.00	**-26.00**	0	100	V
2462	MIMO	* 4.92466	40.05	PK2	34.20	-30.90	0.00	43.35	-	-	74.00	-30.65	0	100	H
		* 4.92651	39.85	PK2	34.30	-30.90	0.00	43.25	-	-	74.00	-30.75	0	100	V
		* 7.38504	34.27	PK2	35.70	-24.90	0.00	45.07	-	-	74.00	-28.93	0	100	H
		* 7.38438	34.36	PK2	35.70	-24.90	0.00	45.16	-	-	74.00	-28.84	0	100	V
		9.849	31.72	PK2	37.10	-21.30	0.00	47.52	-	-	74.00	-26.48	0	100	H
		9.849	31.66	PK2	37.10	-21.30	0.00	47.46	-	-	74.00	-26.54	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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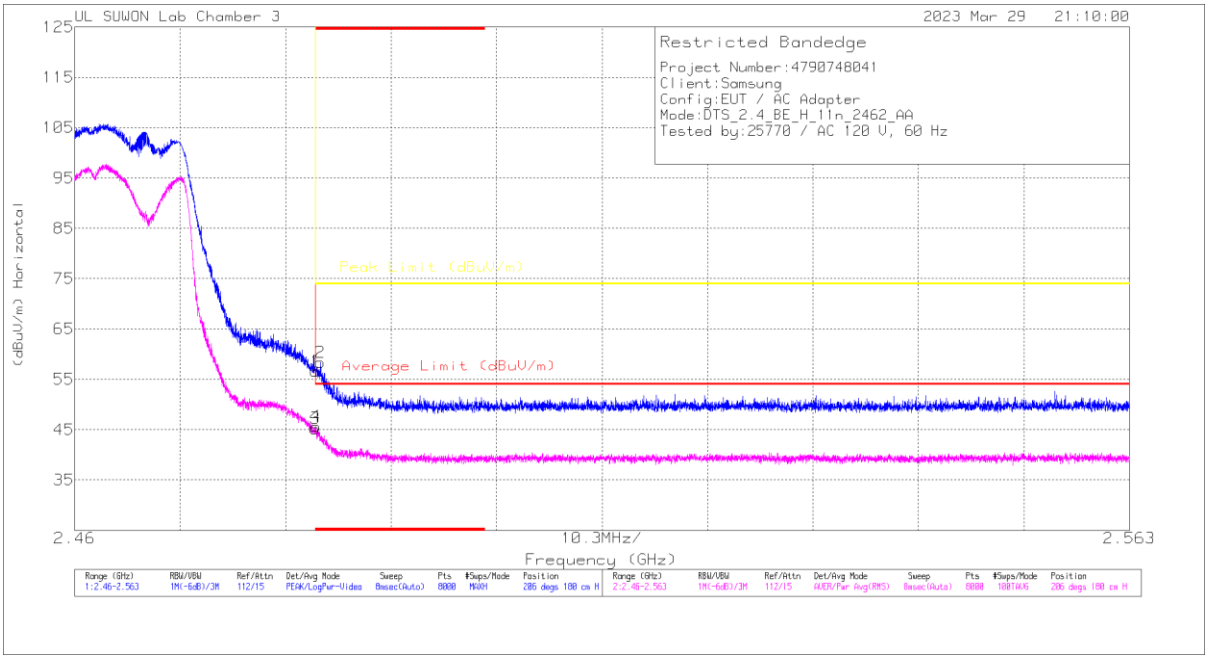
10.1.3. TX ABOVE 1 GHz 802.11n HT20 MODE IN THE 2.4 GHz BAND

2TX Antenna 1 + Antenna 2

BANDEDGE (WORST CASE: 11 CHANNEL)

HORIZONTAL RESULT



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00218957	10dB_ATT(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	49.26	Pk	32.4	-25	0	56.66	-	-	74	-17.34	206	180	H
2	* 2.48398	50.96	Pk	32.4	-25	0	58.36	-	-	74	-15.64	206	180	H
3	* 2.4835	37.81	RMS	32.4	-25	0	45.21	54	-8.79	-	-	206	180	H
4	* 2.48353	38.3	RMS	32.4	-25	0	45.7	54	-8.3	-	-	206	180	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	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	MIMO	* 2.39	48.04	Pk	32.10	-25.10	0.00	55.04	-	-	74.00	-18.96	209	138	H
		* 2.38983	50.28	Pk	32.10	-25.10	0.00	57.28	-	-	74.00	-16.72	209	138	H
		* 2.39	35.73	RMS	32.10	-25.10	0.00	42.73	54.00	-11.27	-	-	209	138	H
		* 2.38972	37.10	RMS	32.10	-25.10	0.00	44.10	54.00	-9.90	-	-	209	138	H
		* 2.39	47.58	Pk	32.10	-25.10	0.00	54.58	-	-	74.00	-19.42	138	391	V
		* 2.38904	49.08	Pk	32.10	-25.10	0.00	56.08	-	-	74.00	-17.92	138	391	V
		* 2.39	34.99	RMS	32.10	-25.10	0.00	41.99	54.00	-12.01	-	-	138	391	V
		* 2.3899	36.02	RMS	32.10	-25.10	0.00	43.02	54.00	-10.98	-	-	138	391	V
2462	MIMO	* 2.4835	49.26	Pk	32.40	-25.00	0.00	56.66	-	-	74.00	-17.34	206	180	H
		* 2.48398	50.96	Pk	32.40	-25.00	0.00	58.36	-	-	74.00	**-15.64**	206	180	H
		* 2.4835	37.81	RMS	32.40	-25.00	0.00	45.21	54.00	-8.79	-	-	206	180	H
		* 2.48353	38.30	RMS	32.40	-25.00	0.00	45.70	54.00	**-8.30**	-	-	206	180	H
		* 2.4835	49.00	Pk	32.40	-25.00	0.00	56.40	-	-	74.00	-17.60	136	368	V
		* 2.48351	50.30	Pk	32.40	-25.00	0.00	57.70	-	-	74.00	-16.30	136	368	V
		* 2.4835	37.09	RMS	32.40	-25.00	0.00	44.49	54.00	-9.51	-	-	136	368	V
		* 2.48368	37.41	RMS	32.40	-25.00	0.00	44.81	54.00	-9.19	-	-	136	368	V
2467	MIMO	* 2.4835	41.43	Pk	32.40	-25.00	0.00	48.83	-	-	74.00	-25.17	208	179	H
		2.525	44.92	Pk	32.40	-24.90	0.00	52.42	-	-	74.00	-21.58	208	179	H
		* 2.4835	31.87	RMS	32.40	-25.00	0.00	39.27	54.00	-14.73	-	-	208	179	H
		2.532	33.37	RMS	32.40	-24.90	0.00	40.87	54.00	-13.13	-	-	208	179	H
		* 2.4835	41.97	Pk	32.40	-25.00	0.00	49.37	-	-	74.00	-24.63	136	368	V
		* 2.49067	45.13	Pk	32.40	-25.00	0.00	52.53	-	-	74.00	-21.47	136	368	V
		* 2.4835	32.21	RMS	32.40	-25.00	0.00	39.61	54.00	-14.39	-	-	136	368	V
		2.547	33.36	RMS	32.40	-24.90	0.00	40.86	54.00	-13.14	-	-	136	368	V
2472	MIMO	* 2.4835	50.18	Pk	32.40	-25.00	0.00	57.58	-	-	74.00	-16.42	208	179	H
		* 2.4836	50.58	Pk	32.40	-25.00	0.00	57.98	-	-	74.00	-16.02	208	179	H
		* 2.4835	35.42	RMS	32.40	-25.00	0.00	42.82	54.00	-11.18	-	-	208	179	H
		* 2.48354	36.04	RMS	32.40	-25.00	0.00	43.44	54.00	-10.56	-	-	208	179	H
		* 2.4835	49.14	Pk	32.40	-25.00	0.00	56.54	-	-	74.00	-17.46	136	361	V
		* 2.48385	49.73	Pk	32.40	-25.00	0.00	57.13	-	-	74.00	-16.87	136	361	V
		* 2.4835	35.97	RMS	32.40	-25.00	0.00	43.37	54.00	-10.63	-	-	136	361	V
		* 2.48356	36.00	RMS	32.40	-25.00	0.00	43.40	54.00	-10.60	-	-	136	361	V

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

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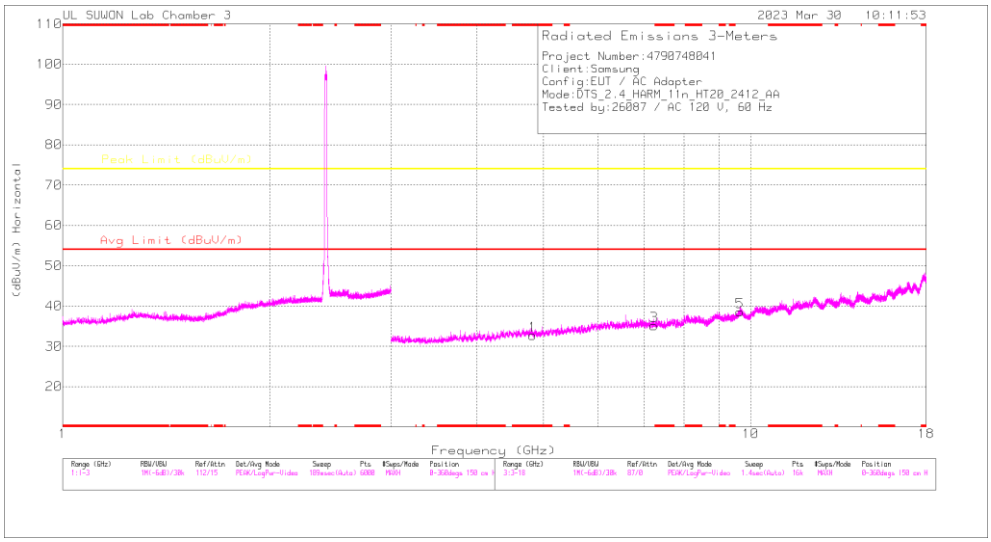
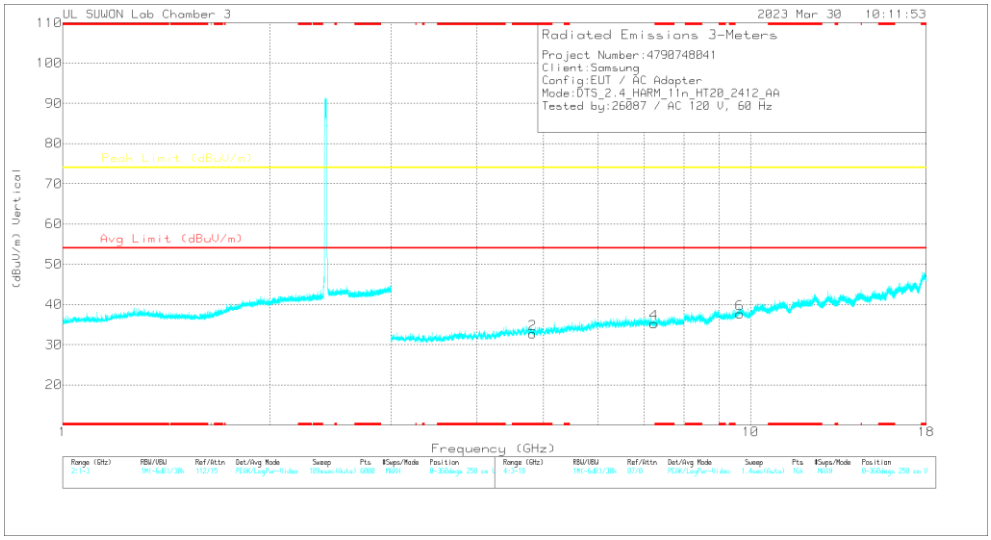
HARMONICS AND SPURIOUS EMISSIONS (WORST CASE: 1 CHANNEL)

CH 1 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	3117_00218957	3GHz_HP(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
* 4.81958	39.65	PK2	34.3	-30.2	0	43.75	-	-	74	-30.25	0	100	H
* 4.82336	38.92	PK2	34.3	-30.2	0	43.02	-	-	74	-30.98	0	100	V
7.23454	35.62	PK2	35.8	-25.8	0	45.62	-	-	74	-28.38	0	100	H
7.23366	35.54	PK2	35.8	-25.8	0	45.54	-	-	74	-28.46	0	100	V
9.65086	32.84	PK2	36.8	-21.3	0	48.34	-	-	74	-25.66	0	100	H
9.64889	32.93	PK2	36.8	-21.3	0	48.43	-	-	74	-25.57	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	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	MIMO	* 4.81958	39.65	PK2	34.30	-30.20	0.00	43.75	-	-	74.00	-30.25	0	100	H
		* 4.82336	38.92	PK2	34.30	-30.20	0.00	43.02	-	-	74.00	-30.98	0	100	V
		7.235	35.62	PK2	35.80	-25.80	0.00	45.62	-	-	74.00	-28.38	0	100	H
		7.234	35.54	PK2	35.80	-25.80	0.00	45.54	-	-	74.00	-28.46	0	100	V
		9.651	32.84	PK2	36.80	-21.30	0.00	48.34	-	-	74.00	-25.66	0	100	H
		9.649	32.93	PK2	36.80	-21.30	0.00	48.43	-	-	74.00	**-25.57**	0	100	V
2437	MIMO	* 4.86801	40.04	PK2	34.20	-30.80	0.00	43.44	-	-	74.00	-30.56	0	100	H
		* 4.87738	40.00	PK2	34.20	-30.80	0.00	43.40	-	-	74.00	-30.60	0	100	V
		* 7.31166	35.55	PK2	35.80	-25.50	0.00	45.85	-	-	74.00	-28.15	0	100	H
		* 7.3058	35.42	PK2	35.80	-25.60	0.00	45.62	-	-	74.00	-28.38	0	100	V
		9.748	32.28	PK2	36.90	-21.20	0.00	47.98	-	-	74.00	-26.02	0	100	H
		9.755	32.26	PK2	36.90	-21.20	0.00	47.96	-	-	74.00	-26.04	0	100	V
2462	MIMO	* 4.92487	40.31	PK2	34.20	-30.90	0.00	43.61	-	-	74.00	-30.39	0	100	H
		* 4.92485	39.77	PK2	34.20	-30.90	0.00	43.07	-	-	74.00	-30.93	0	100	V
		* 7.38665	34.59	PK2	35.70	-24.80	0.00	45.49	-	-	74.00	-28.51	0	100	H
		* 7.38686	34.80	PK2	35.70	-24.80	0.00	45.70	-	-	74.00	-28.30	0	100	V
		9.849	31.70	PK2	37.10	-21.30	0.00	47.50	-	-	74.00	-26.50	0	100	H
		9.849	31.94	PK2	37.10	-21.30	0.00	47.74	-	-	74.00	-26.26	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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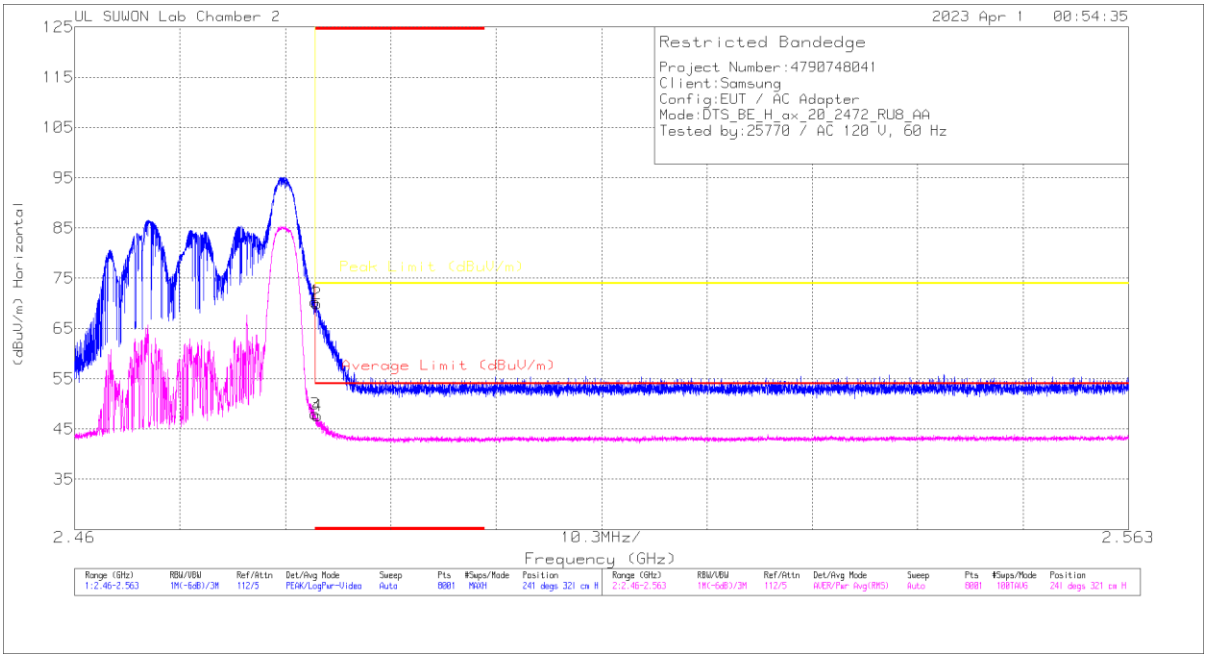
10.1.4. TX ABOVE 1 GHz 802.11ax HE20 MODE IN THE 2.4 GHz BAND

2TX Antenna 1 + Antenna 2

BANDEDGE (11 CHANNEL, 8RU)

HORIZONTAL RESULT



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168724	10dB_ATT(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	* 2.48351	58.08	Pk	31.9	-19.6	0	70.38	-	-	74	-3.62	241	321	H
2	* 2.48369	57.63	Pk	31.9	-19.6	0	69.93	-	-	74	-4.07	241	321	H
3	* 2.48351	35.74	RMS	31.9	-19.6	0	48.04	54	-5.96	-	-	241	321	H
4	* 2.48375	35.38	RMS	31.9	-19.6	0	47.68	54	-6.32	-	-	241	321	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	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 SU	MIMO	* 2.39	41.39	Pk	31.70	-19.80	0.00	53.29	-	-	74.00	-20.71	238	144	H
		* 2.38905	46.24	Pk	31.70	-19.80	0.00	58.14	-	-	74.00	-15.86	238	144	H
		* 2.39	32.39	RMS	31.70	-19.80	0.00	44.29	54.00	-9.71	-	-	238	144	H
		* 2.38928	33.02	RMS	31.70	-19.80	0.00	44.92	54.00	-9.08	-	-	238	144	H
		* 2.39	41.23	Pk	31.70	-19.80	0.00	53.13	-	-	74.00	-20.87	139	111	V
		* 2.38678	43.85	Pk	31.70	-19.80	0.00	55.75	-	-	74.00	-18.25	139	111	V
		* 2.39	31.78	RMS	31.70	-19.80	0.00	43.68	54.00	-10.32	-	-	139	111	V
		* 2.38945	31.99	RMS	31.70	-19.80	0.00	43.89	54.00	-10.11	-	-	139	111	V
2417 SU	MIMO	* 2.39	44.15	Pk	31.70	-19.80	0.00	56.05	-	-	74.00	-17.95	243	148	H
		* 2.38907	46.63	Pk	31.70	-19.80	0.00	58.53	-	-	74.00	-15.47	243	148	H
		* 2.39	33.34	RMS	31.70	-19.80	0.00	45.24	54.00	-8.76	-	-	243	148	H
		* 2.38983	33.79	RMS	31.70	-19.80	0.00	45.69	54.00	-8.31	-	-	243	148	H
		* 2.39	41.61	Pk	31.70	-19.80	0.00	53.51	-	-	74.00	-20.49	143	113	V
		* 2.3887	44.88	Pk	31.70	-19.80	0.00	56.78	-	-	74.00	-17.22	143	113	V
		* 2.39	32.11	RMS	31.70	-19.80	0.00	44.01	54.00	-9.99	-	-	143	113	V
		* 2.38876	32.38	RMS	31.70	-19.80	0.00	44.28	54.00	-9.72	-	-	143	113	V
2457 SU	MIMO	* 2.48351	42.92	Pk	31.90	-19.60	0.00	55.22	-	-	74.00	-18.78	235	157	H
		* 2.48366	44.95	Pk	31.90	-19.60	0.00	57.25	-	-	74.00	-16.75	235	157	H
		* 2.48351	32.25	RMS	31.90	-19.60	0.00	44.55	54.00	-9.45	-	-	235	157	H
		* 2.48366	33.14	RMS	31.90	-19.60	0.00	45.44	54.00	-8.56	-	-	235	157	H
		* 2.48351	40.66	Pk	31.90	-19.60	0.00	52.96	-	-	74.00	-21.04	138	132	V
		* 2.48817	43.73	Pk	31.90	-19.60	0.00	56.03	-	-	74.00	-17.97	138	132	V
		* 2.48351	31.58	RMS	31.90	-19.60	0.00	43.88	54.00	-10.12	-	-	138	132	V
		* 2.48396	31.92	RMS	31.90	-19.60	0.00	44.22	54.00	-9.78	-	-	138	132	V
2462 SU	MIMO	* 2.48351	41.31	Pk	31.90	-19.60	0.00	53.61	-	-	74.00	-20.39	240	113	H
		2.509	44.22	Pk	31.90	-19.50	0.00	56.62	-	-	74.00	-17.38	240	113	H
		* 2.48351	31.92	RMS	31.90	-19.60	0.00	44.22	54.00	-9.78	-	-	240	113	H
		* 2.48355	32.45	RMS	31.90	-19.60	0.00	44.75	54.00	-9.25	-	-	240	113	H
		* 2.48351	41.29	Pk	31.90	-19.60	0.00	53.59	-	-	74.00	-20.41	202	382	V
		2.543	43.30	Pk	32.00	-19.40	0.00	55.90	-	-	74.00	-18.10	202	382	V
		* 2.48351	31.45	RMS	31.90	-19.60	0.00	43.75	54.00	-10.25	-	-	202	382	V
		* 2.48363	31.69	RMS	31.90	-19.60	0.00	43.99	54.00	-10.01	-	-	202	382	V
2467 SU	MIMO	* 2.48351	39.80	Pk	31.90	-19.60	0.00	52.10	-	-	74.00	-21.90	241	115	H
		2.546	43.90	Pk	32.00	-19.50	0.00	56.40	-	-	74.00	-17.60	241	115	H
		* 2.48351	30.70	RMS	31.90	-19.60	0.00	43.00	54.00	-11.00	-	-	241	115	H
		2.549	31.26	RMS	32.00	-19.40	0.00	43.86	54.00	-10.14	-	-	241	115	H
		* 2.48351	40.01	Pk	31.90	-19.60	0.00	52.31	-	-	74.00	-21.69	199	325	V
		2.545	43.21	Pk	32.00	-19.40	0.00	55.81	-	-	74.00	-18.19	199	325	V
		* 2.48351	30.41	RMS	31.90	-19.60	0.00	42.71	54.00	-11.29	-	-	199	325	V
		2.518	31.51	RMS	31.90	-19.50	0.00	43.91	54.00	-10.09	-	-	199	325	V
2472 SU	MIMO	* 2.48351	43.36	Pk	31.90	-19.60	0.00	55.66	-	-	74.00	-18.34	243	283	H
		* 2.48365	45.55	Pk	31.90	-19.60	0.00	57.85	-	-	74.00	-16.15	243	283	H
		* 2.48351	31.83	RMS	31.90	-19.60	0.00	44.13	54.00	-9.87	-	-	243	283	H
		* 2.49323	31.45	RMS	31.90	-19.60	0.00	43.75	54.00	-10.25	-	-	243	283	H
		* 2.48351	43.11	Pk	31.90	-19.60	0.00	55.41	-	-	74.00	-18.59	146	323	V
		* 2.49573	43.58	Pk	31.90	-19.60	0.00	55.88	-	-	74.00	-18.12	146	323	V
		* 2.48351	31.30	RMS	31.90	-19.60	0.00	43.60	54.00	-10.40	-	-	146	323	V
		2.518	31.43	RMS	31.90	-19.50	0.00	43.83	54.00	-10.17	-	-	146	323	V
2472 8RU	MIMO	* 2.48351	58.08	Pk	31.90	-19.60	0.00	70.38	-	-	74.00	**-3.62**	241	321	H
		* 2.48369	57.63	Pk	31.90	-19.60	0.00	69.93	-	-	74.00	-4.07	241	321	H
		* 2.48351	35.74	RMS	31.90	-19.60	0.00	48.04	54.00	**-5.96**	-	-	241	321	H
		* 2.48375	35.38	RMS	31.90	-19.60	0.00	47.68	54.00	-6.32	-	-	241	321	H
		* 2.48351	53.79	Pk	31.90	-19.60	0.00	66.09	-	-	74.00	-7.91	141	111	V
		* 2.48357	53.53	Pk	31.90	-19.60	0.00	65.83	-	-	74.00	-8.17	141	111	V
		* 2.48351	32.83	RMS	31.90	-19.60	0.00	45.13	54.00	-8.87	-	-	141	111	V
		* 2.48368	33.68	RMS	31.90	-19.60	0.00	45.98	54.00	-8.02	-	-	141	111	V

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