CERTIFICATION TEST REPORT

Report Number. : 4790430333-E3V1

Applicant	:	SAMSUNG ELECTRONICS CO., LTD. 129 SAMSUNG-RO, YEONGTONG-GU, SUWON-SI, GYEONGGI-DO, 16677, KOREA
Model	:	SM-T638U
FCC ID	:	A3LSMT638U
IC	:	649E-SMT638U
EUT Description	:	WCDMA/LTE/5G NR Tablet + BT/BLE, DTS/UNII a/b/g/n/ac/ax and NFC
Test Standard(s)	:	FCC 47 CFR PART 15 SUBPART C INDUSTRY CANADA RSS-247 Issue 2 INDUSTRY CANADA RSS-GEN Issue 5

Date Of Issue:
2022-08-11

Prepared by:
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IAS ACCREDITED Testing Laboratory TL-637

Revision History

Rev.	Issue Date	Revisions	Revised By
V1	2022-08-11	Initial issue	SunGeun Lee

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UL Korea, Ltd. Suwon Laboratory FORM ID: FCC_15C(04)
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: WCDMA/LTE/5G NR Tablet + BT/BLE, DTS/UNII a/b/g/n/ac/ax and NFC

MODEL NUMBER: SM-T638U

SERIAL NUMBER: R32T50052FD, (CONDUCTED, Original);
R32T5002ZQH, R32T5003G0W (RADIATED, Original);
R32T6001FZK (RADIATED, Spot-check);

DATE TESTED: 2022-06-06 ~ 2022-07-26 (Original);
2022-07-06 ~ 2022-08-05 (Spot-check);

APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
CFR 47 Part 15 Subpart C	Complies
INDUSTRY CANADA RSS-247 Issue 2	Complies
INDUSTRY CANADA RSS-GEN Issue 5	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:

Sungeun Lee
Suwon Lab Engineer
UL Korea, Ltd.

1.1. INTRODUCTION OF TEST DATA DEVIATION

This report referenced from the FCC ID: A3LSMT636B 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 SM-T638U (IC: 649E-SMT638U) model shares the same enclosure and circuit board as SM-T636B. 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 SM-T638U (IC: 649E-SMT638U) remains representative of SM-T636B. The test data of SM-T636B 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-T636B Results	SM-T638U Results		
					FCC ID : A3LSMT636B	FCC ID : A3LSMT638U		
DTS WLAN (2.4GHz)	BANDEDGE	802.11b_2462_ANT1	2462 MHz	54 dBuV/m	45.91 dBuV/m	45.01 dBuV/m	-0.90 dB	
	RSE	802.11b_2437_ANT2	9755 MHz	54 dBuV/m	48.82 dBuV/m	48.90 dBuV/m	0.08 dB	Noise floor
	BANDEDGE	802.11g_2412_MIMO	2412 MHz	54 dBuV/m	51.46 dBuV/m	51.04 dBuV/m	-0.42 dB	
	RSE	802.11g_2457_MIMO	9832 MHz	54 dBuV/m	48.78 dBuV/m	47.87 dBuV/m	-0.91 dB	Noise floor
	BANDEDGE	802.11n_HT20_2462_MIMO	2462 MHz	54 dBuV/m	51.93 dBuV/m	47.26 dBuV/m	-4.67 dB	
	RSE	802.11n_HT20_2437_MIMO	9744 MHz	54 dBuV/m	48.77 dBuV/m	48.68 dBuV/m	-0.09 dB	Noise floor
DTS WLAN_ax (2.4GHz)	BANDEDGE	802.11ax_20_2457_SU_MIMO	2457 MHz	54 dBuV/m	51.88 dBuV/m	49.99 dBuV/m	-1.89 dB	
	RSE	802.11ax_20_2437_26T_RU0_MIMO	9743 MHz	54 dBuV/m	49.02 dBuV/m	48.78 dBuV/m	-0.24 dB	Noise floor

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	Spot-Check Test Report Number
DTS	A3LSMT636B	Original Grant	4790406759-E3 (802.11b/g/n/ax)	Test Report	4790430333-E3 (802.11b/g/n/ax)
DTS	A3LSMT636B	Original Grant	4790406759-E4 (BLE)	Test Report	4790430333-E4 (BLE)
DSS	A3LSMT636B	Original Grant	4790406759-E5 (Bluetooth)	Test Report	4790430333-E5 (Bluetooth)
NII	A3LSMT636B	Original Grant	4790406759-E6 (802.11a/n/ac/ax)	Test Report	4790430333-E6 (802.11a/n/ac/ax)
DXX	A3LSMT636B	Original Grant	4790406759-E7 (NFC)	Test Report	4790430333-E7 (NFC)

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. ANSI C63.10-2013.
6. IC RSS-GEN Issue 5.
7. IC RSS-247 Issue 2.
8. KDB 484596 D01 Referencing Test Data v01

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.

Used ISED Test Site Reg.(company number) : 2324L
CAB Identifier: KR0161

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

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	3.02 dB
Radiated Disturbance, 30 MHz to 1 GHz	4.05 dB
Radiated Disturbance, 1 GHz to 18 GHz	5.78 dB
Radiated Disturbance, 18 GHz to 40 GHz	5.58 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

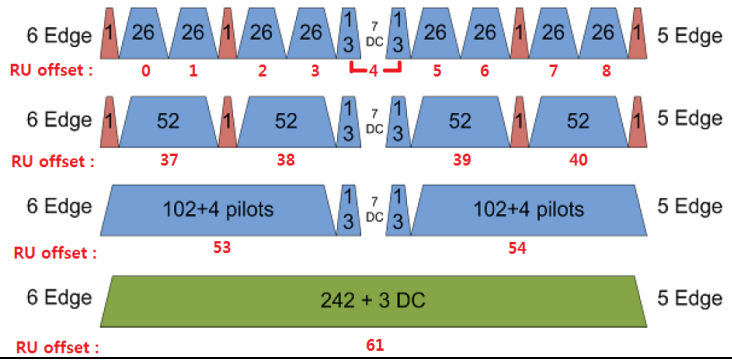
5.1. EUT DESCRIPTION

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

WiFi operating mode

Frequency rage	Mode	ANT 1	ANT 2
2.4GHz (2412 MHz ~ 2462 MHz)	802.11b SISO	TX/RX	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 - 2462	802.11b SISO	19.11	19.18	81.47	82.79
	802.11g MIMO	21.48		140.60	
	802.11n(HT20) MIMO	20.18		104.23	
	802.11ax(HE20) MIMO	20.49		111.94	

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 ~ 2 462	-2.5	-2.5	0.5

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[$(10^{-2.50/20} + 10^{-2.50/20})^2 / 2$] = 0.50 dBi

5.4. TESTED CHANNELS LIST

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

Note: Tested channels are applied to all test items.

5.5. 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.

Worst case of antenna axis:

ANT1	ANT2	MIMO
X	Z	X

Based on the baseline scan, the worst-case data rates were:
802.11b mode: 1 Mbps 1TX
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: Conducted, Radiated

SISO Target[dBm]						MIMO Target[dBm]				
Ch.	Freq.	802.11b	802.11g	802.11n HT20	802.11ax HE20	Ch.	Freq.	802.11g	802.11n HT20	802.11ax HE20
1	2412	19	16	14	14	1	2412	19	17	17
2	2417		18	17	17	2	2417	21	20	20
6	2437	19	18	17	17	6	2437	21	20	20
10	2457		18	17	17	10	2457	21	20	20
11	2462	19	15	14	14	11	2462	18	17	17

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

Note. 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	2	2417	26 T	0	-
				4	-
				8	**O**
	6	2437		0	-
				4	-
				8	**O**
	10	2457		**0**	**O**
				4	-
				8	-

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.

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5.6. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	**Manufacture**	**Model**	**Serial Number**	**FCC ID**
Charger	SAMSUNG	EP-TA200	R37N6K421B2SE3	N/A
Data Cable	SAMSUNG	EP-DT725BWE	GH39-02020A	N/A
Earphone	SAMSUNG	EP-TA800	R37N3MAH988DK3	N/A
Charger	SAMSUNG	EP-DN980	GH39-02115A	N/A
Data Cable	SAMSUNG	EP--DT725BWE	GH39-02020A	N/A

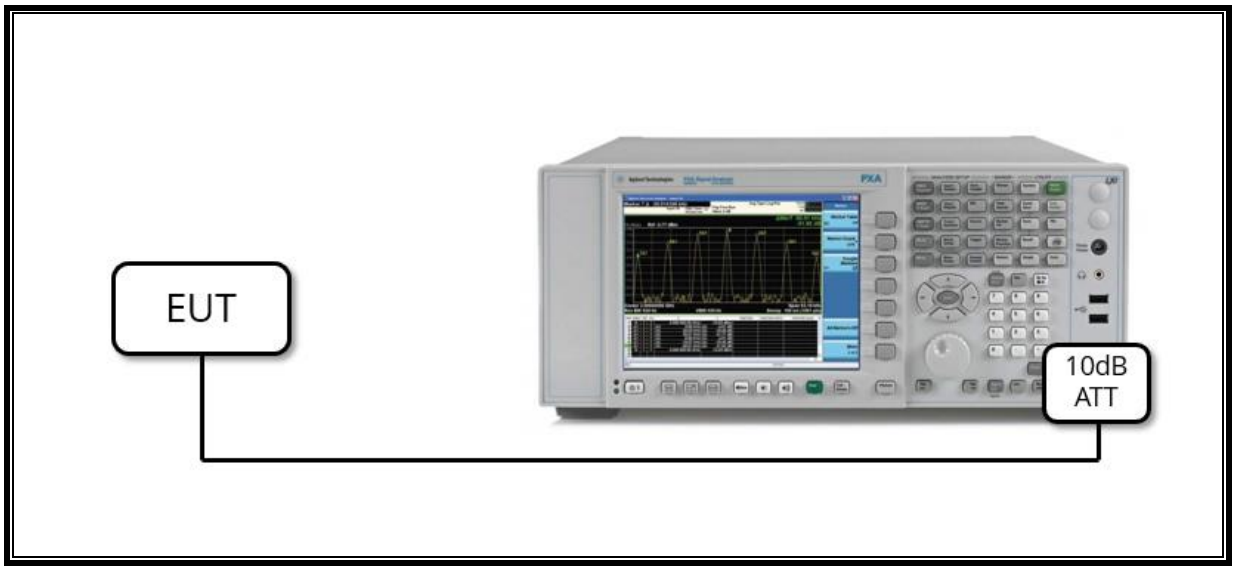
I/O CABLE

I/O Cable List						
Cable No.	**Port**	**# of identical ports**	**Connector Type**	**Cable Type**	**Cable Length (m)**	**Remarks**
1	DC Power	1	C to C Type	Shielded	1.0 m	N/A
2	DC Power	1	C to A Type	Shielded	1.0 m	N/A
3	Audio	2	Mini-jack	Unshielded	0.7 m	N/A

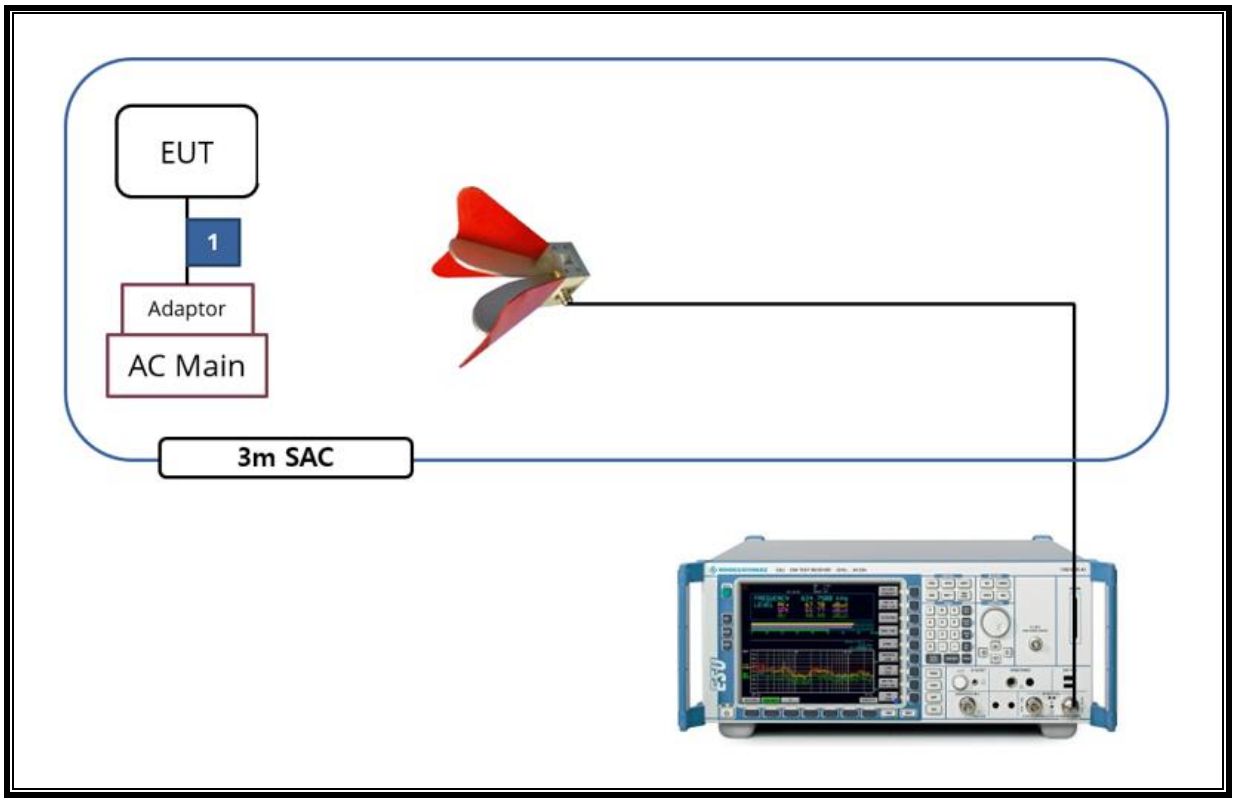
TEST SETUP

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

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	2022-08-19
Antenna, Bilog, 30MHz-1GHz	SCHWARZBECK	VULB9163	749	2022-08-13
Antenna, Bilog, 30MHz-1GHz	SCHWARZBECK	VULB9163	845	2022-08-13
Antenna, Horn, 18 GHz	ETS	3115	00167211	2022-07-27
Antenna, Horn, 18 GHz	ETS	3115	00161451	2022-08-15
Antenna, Horn, 18 GHz	ETS	3117	00168724	2022-07-27
Antenna, Horn, 18 GHz	ETS	3117	00168717	2022-08-15
Antenna, Horn, 40 GHz	ETS	3116C	00166155	2022-08-04
Preamplifier	ETS	3116C-PA	00168841	2022-08-04
Preamplifier, 1000 MHz	Sonoma	310N	341282	2022-08-02
Preamplifier, 1000 MHz	Sonoma	310N	351741	2022-08-02
Preamplifier, 1000 MHz	Sonoma	310N	370599	2022-08-02
Preamplifier, 18 GHz	Miteq	AFS42-00101800-25-S-42	1876511	2022-08-02
Preamplifier, 18 GHz	Miteq	AFS42-00101800-25-S-42	1896138	2022-08-02
Preamplifier, 18 GHz	Miteq	AFS42-00101800-25-S-42	2029168	2022-08-02
Spectrum Analyzer, 44 GHz	Agilent / HP	N9030A	MY54170614	2022-08-04
Spectrum Analyzer, 44 GHz	Agilent / HP	N9030A	MY54490312	2022-08-04
Spectrum Analyzer, 44 GHz	KEYSIGHT	N9030B	MY60070693	2023-01-18
Spectrum Analyzer, 44 GHz	KEYSIGHT	N9040B	MY60080268	2023-01-19
Average Power Sensor	Agilent / HP	U2000	MY54270007	2022-08-04
Average Power Sensor	Agilent / HP	U2000	MY54260010	2022-08-04
Attenuator	PASTERNACK	PE7087-10	A001	2022-08-03
Attenuator	PASTERNACK	PE7087-10	A008	2022-08-03
Attenuator	PASTERNACK	PE7004-10	2	2022-08-02
Attenuator	PASTERNACK	PE7087-10	A009	2022-08-03
EMI Test Receive, 40 GHz	R&S	ESU40	100439	2022-08-02
EMI Test Receive, 40 GHz	R&S	ESU40	100457	2022-08-02
EMI Test Receive, 3 GHz	R&S	ESR3	101832	2022-08-02
Low Pass Filter 5GHz	Micro-Tronics	LPS17541	009	2022-08-02
Low Pass Filter 5GHz	Micro-Tronics	LPS17541	015	2022-08-02
Low Pass Filter 5GHz	Micro-Tronics	LPS17541	019	2022-08-02
High Pass Filter 3GHz	Micro-Tronics	HPM17543	010	2022-08-02
High Pass Filter 3GHz	Micro-Tronics	HPM17543	015	2022-08-02
High Pass Filter 3GHz	Micro-Tronics	HPM17543	020	2022-08-02
High Pass Filter 6GHz	Micro-Tronics	HPS17542	009	2022-08-02
High Pass Filter 6GHz	Micro-Tronics	HPS17542	016	2022-08-02
High Pass Filter 6GHz	Micro-Tronics	HPS17542	020	2022-08-02
LISN	R&S	ENV-216	101837	2022-08-05
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	IC Section	Test Description	Test Limit	Test Condition	Test Result
15.247 (a)(2)	RSS-247 5.2(a)	Occupied Bandwidth (6dB & 99%)	> 500kHz	Conducted	PASS
2.1051, 15.247(d)	RSS-247 5.5	Band Edge / Conducted Spurious Emission	-30 dBc		PASS
15.247 (b)(3)	RSS-247 5.4(d)	TX conducted output power	< 30 dBm		PASS
15.247(e)	RSS-247 5.4(b)	PSD	< 8 dBm/3kHz		PASS
15.207(a)	RSS-GEN Clause 7&8.9	AC Power Line conducted emissions	Section 11	Power Line conducted	PASS
15.205, 15.209	RSS-GEN Clause 8.8	Radiated Spurious Emission	< 54dBuV/m(Av)	Radiated	PASS

For ISED, updated 99% Bandwidth data.

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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	17.000	17.110	0.99	99.36	0.03	0.06
802.11g SISO & MIMO	2.827	2.933	0.96	96.39	0.16	0.35
802.11n(HT20) SISO & MIMO	5.030	5.139	0.98	97.88	0.09	0.20
802.11ax(HE20) MIMO SU	5.445	5.458	1.00	99.76	0.01	0.18
802.11ax(HE20) MIMO 26T	2.595	2.619	0.99	99.08	0.04	0.39
802.11ax(HE20) MIMO 52T	2.589	2.613	0.99	99.08	0.04	0.39
802.11ax(HE20) MIMO 106T	2.427	2.454	0.99	98.90	0.05	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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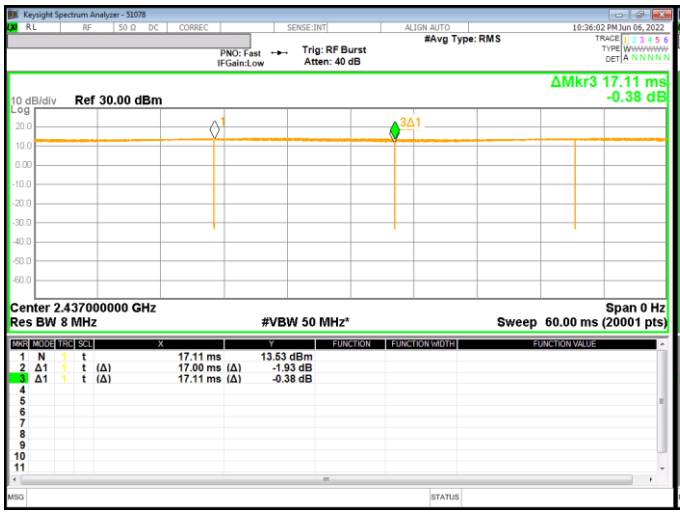
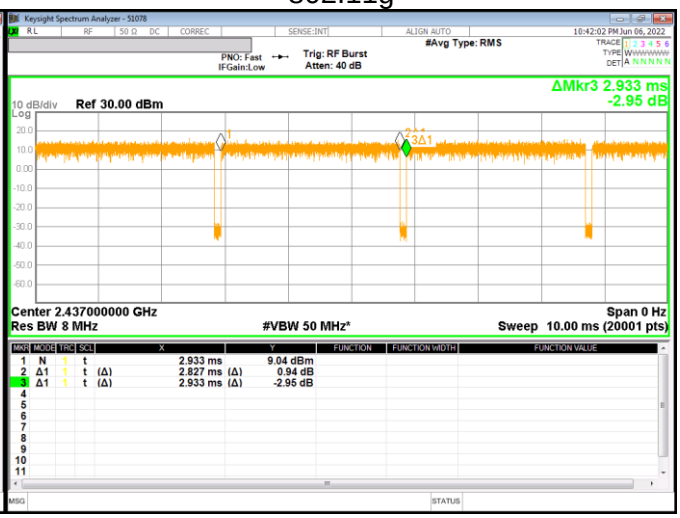
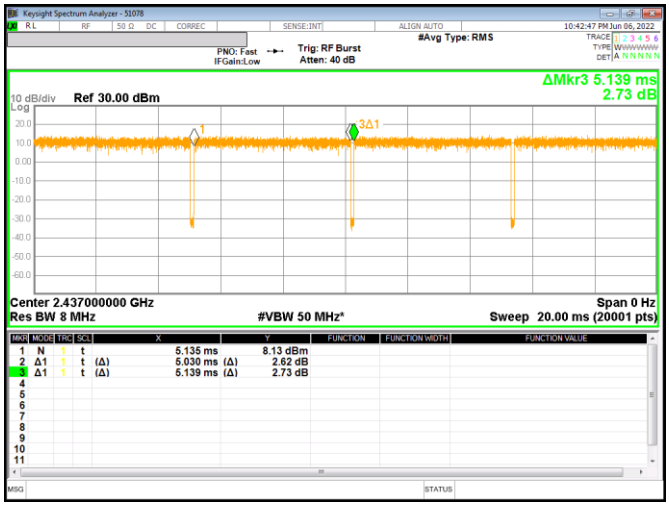
802.11b



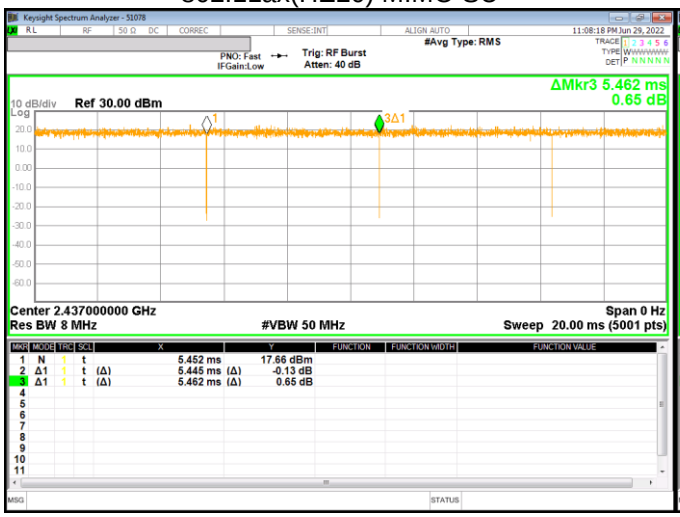
802.11g



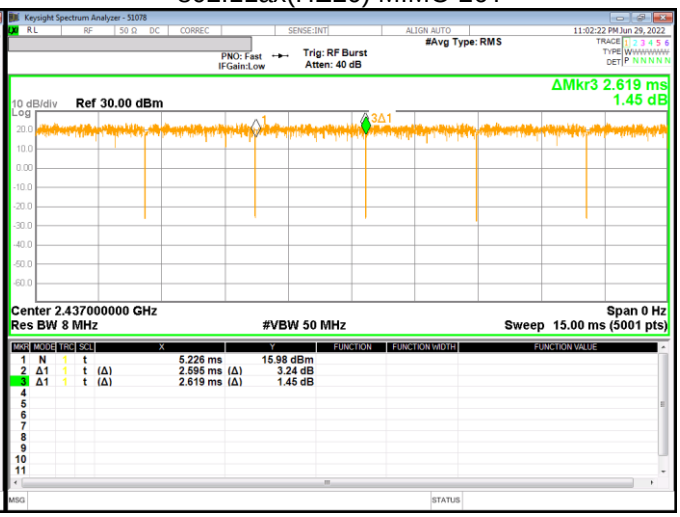
802.11n HT20



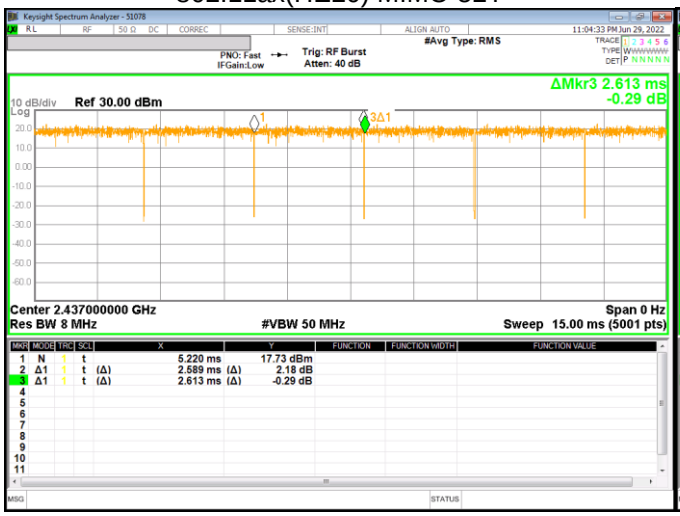
802.11ax(HE20) MIMO SU



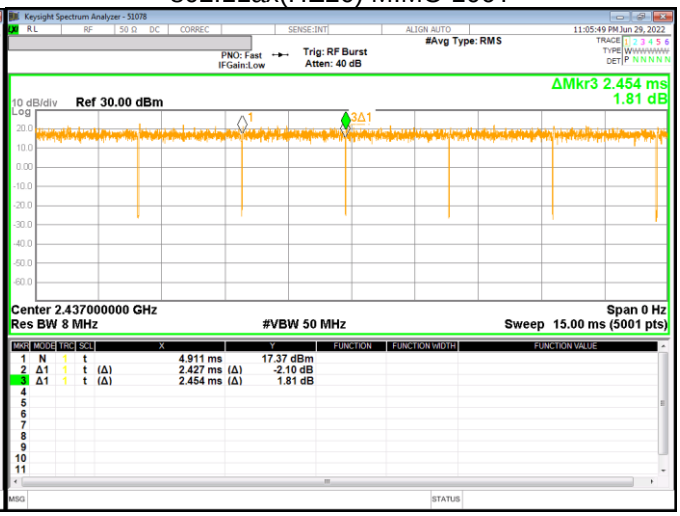
802.11ax(HE20) MIMO 26T



802.11ax(HE20) MIMO 52T



802.11ax(HE20) MIMO 106T



9.2. 6 dB BANDWIDTH & 99% BANDWIDTH

LIMITS

6dB Bandwidth:
FCC §15.247 (a) (2)
RSS-247 5.2 (a)
The minimum 6 dB bandwidth shall be at least 500 kHz.
Occupied Bandwidth:
None; for reporting purposes only.

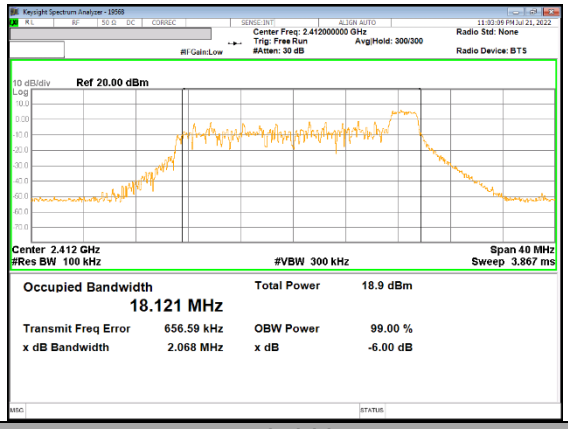
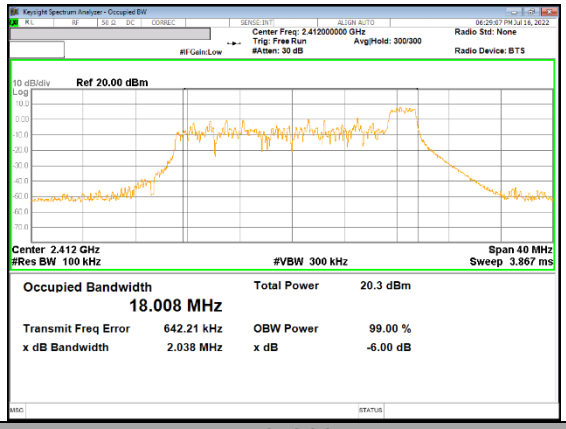
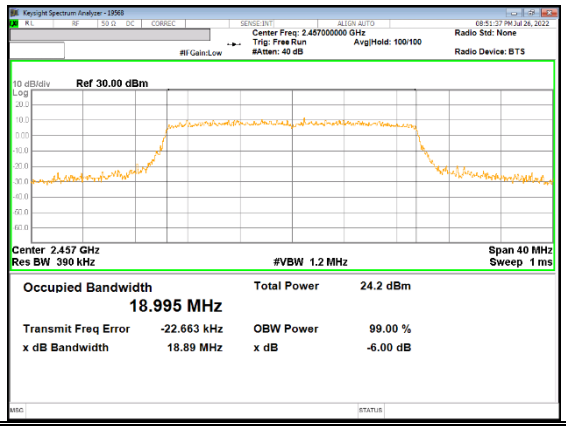
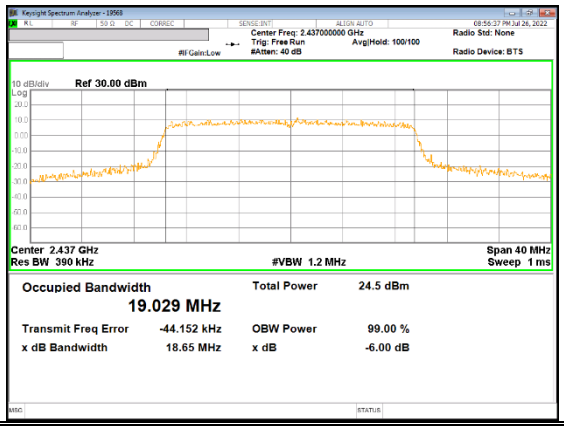
TEST PROCEDURE

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.
ANSI C63.10-2013, Section 11.8.1

RESULTS

- Please refer to the next page

WORST CASE TEST PLOTS

6dB Bandwidth_ANT1	6dB Bandwidth_ANT2
802.11ax HE20 26T / 1 CHANNEL	802.11ax HE20 26T / 1 CHANNEL
	
99% Bandwidth_ANT1	**99% Bandwidth_ANT2**
802.11ax HE20 SU / 10 CHANNEL	802.11ax HE20 SU / 6 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	**7.051**	**7.504**	0.5
6	2 437	8.533	8.041	
11	2 462	7.563	7.572	
Worst		**7.051**	**7.504**	

Channel	Frequency [MHz]	99% Bandwidth [MHz]		Minimum Limit [MHz]
		ANT 1	ANT 2	
1	2 412	13.001	13.061	N/A
6	2 437	**13.126**	**13.125**	
11	2 462	12.986	13.037	
Worst		**13.126**	**13.125**	

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	16.050	16.310	0.5
2	2 417	16.310	16.290	
6	2 437	16.270	**15.890**	
10	2 457	**16.040**	16.350	
11	2 462	16.300	16.330	
Worst		**16.040**	**15.890**	

Channel	Frequency [MHz]	99% Bandwidth [MHz]		Minimum Limit [MHz]
		ANT 1	ANT 2	
1	2 412	16.461	**16.460**	N/A
2	2 417	16.453	16.428	
6	2 437	**16.485**	16.442	
10	2 457	16.462	16.454	
11	2 462	16.430	16.436	
Worst		**16.485**	**16.460**	

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	17.170	**16.290**	0.5
2	2 417	16.890	17.180	
6	2 437	17.270	16.880	
10	2 457	17.540	17.550	
11	2 462	**16.870**	17.570	
Worst		**16.870**	**16.290**	

Channel	Frequency [MHz]	99% Bandwidth [MHz]		Minimum Limit [MHz]
		ANT 1	ANT 2	
1	2 412	17.613	17.641	N/A
2	2 417	17.624	17.641	
6	2 437	**17.676**	17.598	
10	2 457	17.622	17.645	
11	2 462	17.612	**17.649**	
Worst		**17.676**	**17.649**	

9.2.4. 802.11ax HE20 MIMO MODE IN THE 2.4 GHz BAND

Channel	Frequency [MHz]	6 dB Bandwidth [MHz]		Minimum Limit [MHz]
		ANT 1	ANT 2	
1 (26T)	2 412	**2.068**	**2.038**	0.5
2 (26T)	2 417	2.141	2.063	
6 (26T)	2 437	2.092	2.086	
10 (26T)	2 457	2.096	2.100	
11 (26T)	2 462	12.030	2.130	
Worst		**2.092**	**2.038**	

Channel	Frequency [MHz]	99% Bandwidth [MHz]		Minimum Limit [MHz]
		ANT 1	ANT 2	
1 (SU)	2 412	18.964	18.974	N/A
2 (SU)	2 417	18.905	18.960	
6 (SU)	2 437	18.979	**19.029**	
10 (SU)	2 457	**18.995**	18.999	
11 (SU)	2 462	18.954	18.984	
Worst		**18.995**	**19.029**	

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.

ANSI C63.10-2013, Section 11.9.2.3.1 Method AVGPM

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 ~ 2 462	0.40	0.30	3.36

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	19.10	19.07	Not Supported			30.00
	6	2 437	19.11	19.04				
	11	2 462	19.07	19.18				
Worst Case			**19.11**	**19.18**				
802.11g	1	2 412	16.62	16.76	16.62	16.76	19.70	
	2	2 417	18.17	18.48	18.17	18.48	21.34	
	6	2 437	17.80	18.24	17.80	18.24	21.04	
	10	2 457	18.32	18.61	18.32	18.61	21.48	
	11	2 462	15.14	15.67	15.14	15.67	18.42	
Worst Case			18.32	18.61			**21.48**	
802.11n HT20	1	2 412	14.27	14.68	14.27	14.68	17.49	
	2	2 417	16.90	17.12	16.90	17.12	20.02	
	6	2 437	16.70	17.25	16.70	17.25	19.99	
	10	2 457	16.90	17.42	16.90	17.42	20.18	
	11	2 462	14.06	14.51	14.06	14.51	17.30	
Worst Case			16.90	17.42			**20.18**	
802.11ax HE20(SU)	1	2 412	14.17	15.29	14.17	15.29	17.78	
	2	2 417	17.26	17.34	17.26	17.34	20.31	
	6	2 437	17.17	17.77	17.17	17.77	20.49	
	10	2 457	17.20	17.65	17.20	17.65	20.44	
	11	2 462	13.95	14.68	13.95	14.68	17.34	
Worst Case			17.26	17.77			**20.49**	

- 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	ANT1	ANT1	ANT2	Total Corr'd Power [dBm]	
1	2 412	26T	0	10.95	11.45	10.95	11.45	14.22	30.00
			4	11.14	11.43	11.14	11.43	14.30	
			8	10.92	11.84	10.92	11.84	14.41	
		52T	37	12.54	13.46	12.54	13.46	16.03	
			38	12.87	13.76	12.87	13.76	16.35	
			40	12.81	13.79	12.81	13.79	16.34	
		106T	53	13.83	14.82	13.83	14.82	17.36	
			54	13.51	14.54	13.51	14.54	17.07	
2	2 417	26T	0	10.73	10.54	10.73	10.54	13.65	
			4	11.29	11.26	11.29	11.26	14.29	
			8	11.37	11.84	11.37	11.84	14.62	
		52T	37	13.12	12.97	13.12	12.97	16.06	
			38	13.43	13.35	13.43	13.35	16.40	
			40	13.65	14.16	13.65	14.16	16.92	
		106T	53	14.32	14.04	14.32	14.04	17.19	
			54	14.67	14.92	14.67	14.92	17.81	
6	2 437	26T	0	11.03	11.51	11.03	11.51	14.29	
			4	10.91	11.40	10.91	11.40	14.17	
			8	10.98	11.26	10.98	11.26	14.13	
		52T	37	12.97	13.51	12.97	13.51	16.26	
			38	13.00	13.53	13.00	13.53	16.28	
			40	12.94	13.74	12.94	13.74	16.37	
		106T	53	13.61	14.57	13.61	14.57	17.13	
			54	13.86	14.51	13.86	14.51	17.21	
10	2 457	26T	0	10.74	11.36	10.74	11.36	14.07	
			4	10.78	11.16	10.78	11.16	13.98	
			8	11.39	11.66	11.39	11.66	14.54	
		52T	37	13.40	13.97	13.40	13.97	16.70	
			38	13.45	13.92	13.45	13.92	16.70	
			40	13.42	13.85	13.42	13.85	16.65	
		106T	53	14.03	14.50	14.03	14.50	17.28	
			54	14.04	14.45	14.04	14.45	17.26	
11	2 462	26T	0	10.93	11.86	10.93	11.86	14.43	
			4	10.98	11.76	10.98	11.76	14.40	
			8	10.86	11.72	10.86	11.72	14.32	
		52T	37	12.85	13.70	12.85	13.70	16.31	
			38	12.94	13.74	12.94	13.74	16.37	
			40	12.83	13.62	12.83	13.62	16.25	
		106T	53	13.77	14.75	13.77	14.75	17.30	
			54	13.82	14.72	13.82	14.72	17.30	
Worst Case				14.67	14.92			**17.81**	

9.4. POWER SPECTRAL DENSITY

LIMITS

FCC §15.247 (e)

RSS-247 (5.2) (b)

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

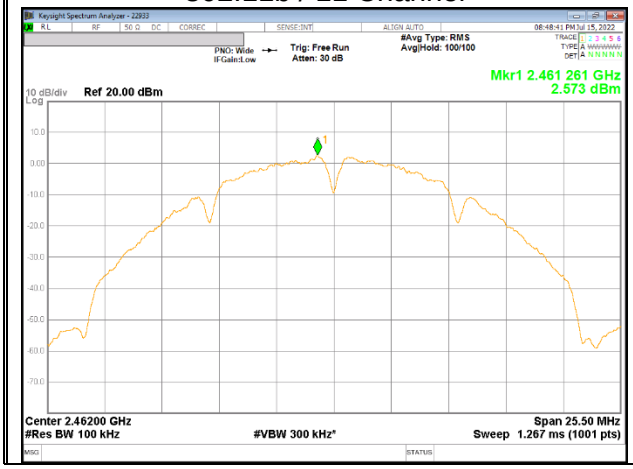
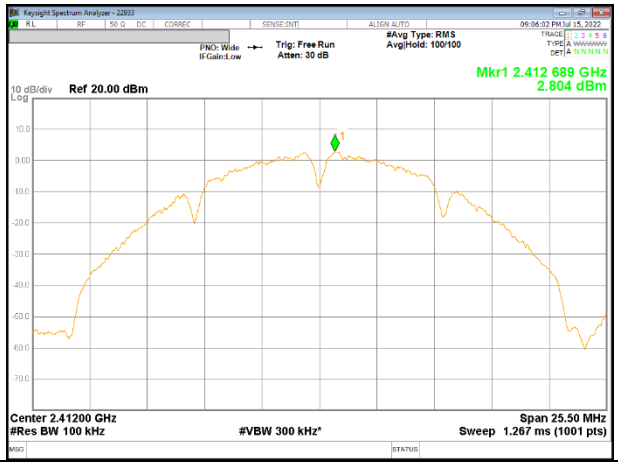
Power Spectral Density was performed utilizing the section8.4 under KDB558074 D01 15.247 Meas Guidance.

ANSI C63.10-2013, Section 11.10.3 & 11.10.5

RESULTS

- Please refer to the next page

WORST CASE TEST PLOTS

ANT 1	ANT 2
802.11b / 11 Channel	802.11b / 1 Channel
	

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

- SISO Mode

Mode	Channel	Frequency [MHz]	Meas PSD [dBm/100kHz]		DCCF	Total Corr'd PSD [dBm/100kHz]		PSD Limit [dBm/3kHz]
			ANT1	ANT2		ANT1	ANT2	
802.11b	1	2 412	2.178	2.804	-	2.178	**2.804**	8.00Note
	6	2 437	2.141	2.605	-	2.141	2.605	
	11	2 462	2.573	2.802	-	**2.573**	2.802	

- MIMO Mode (Ant1 + Ant2)

Mode	Channel	Frequency [MHz]	Meas PSD [dBm/100kHz]		DCCF	Total Corr'd PSD [dBm/100kHz]	PSD Limit [dBm/3kHz]
			ANT1	ANT2			
802.11g	2	2 417	-1.395	-1.242	0.16	1.852	8.00 Note
	6	2 437	-1.932	-1.553	0.16	1.432	
	10	2 457	-1.728	-1.092	0.16	1.772	
802.11ax HE20	2	2 417	-3.187	-2.934	0.09	0.042	
	6	2 437	-3.376	-2.656	0.09	0.099	
	10	2 457	-3.179	-2.539	0.09	0.253	

- MIMO Mode (802.11ax HE20) (Ant1 + Ant2)

Channel	Frequency [MHz]	Tones	RU Offset	Meas PPSD [dBm/100kHz]		DCCF	Total Corr'd PSD [dBm/100kHz]	PSD Limit [dBm/3kHz]
				ANT1	ANT2			
2	2 417	26T	0	-1.482	-2.125	-	1.379	8.00 Note
			4	-1.058	-1.667	-	1.818	
			8	-0.718	-0.751	-	2.436	
6	2 437	26T	0	-1.967	-1.425	-	1.413	
			4	-2.071	-1.652	-	1.244	
			8	-1.483	-1.321	-	1.699	
10	2 457	26T	0	-1.274	-1.464	-	1.642	
			4	-1.366	-1.655	-	1.502	
			8	-0.759	-0.721	-	2.270	

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

Note1. RBW 100kHz measurement data is lower than 3kHz limit.
Note2. 12,13ch's PSD test was omitted (Channel 12&13's target is much lower than other channels)

9.5. CONDUCTED SPURIOUS EMISSIONS

LIMITS

FCC §15.247 (d)

RSS-247 5.5

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

TEST PROCEDURE

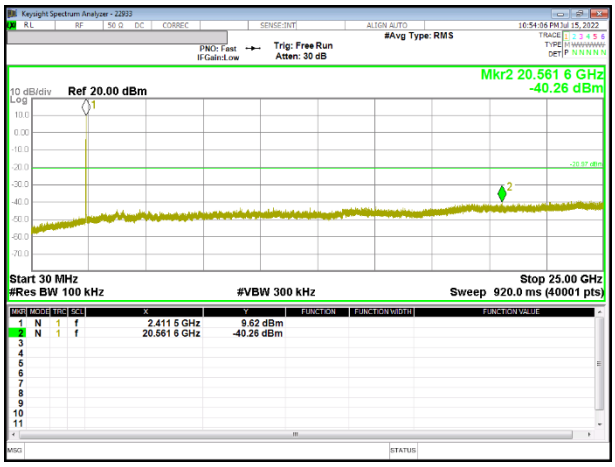
KDB 558074 D01 v05r02, Section 8.5
ANSI C63.10-2013, Section 11.11.3

RESULTS

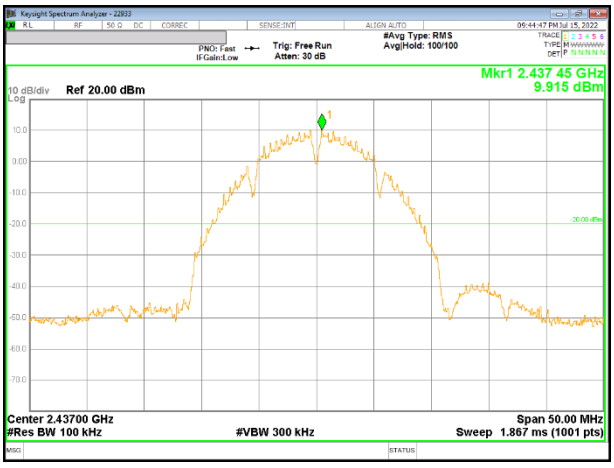
9.5.1. 802.11b MODE

1TX Antenna 1

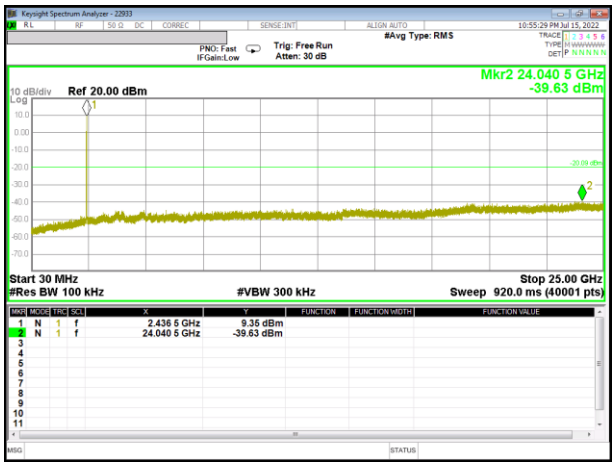
1 Channel Band-edge



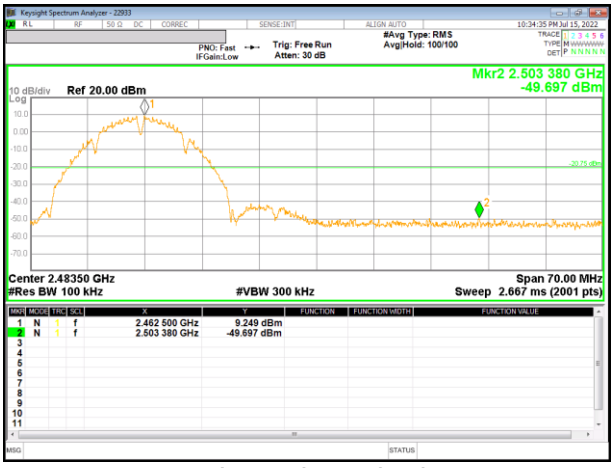
Out-Of-Band 1 Channel



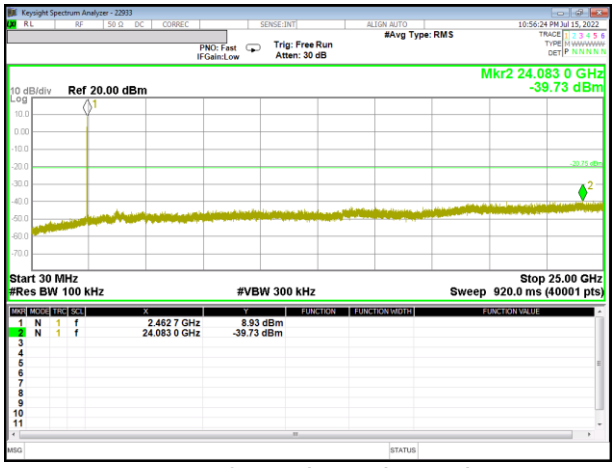
In-Band Reference Level



Out-Of-Band 6 Channel

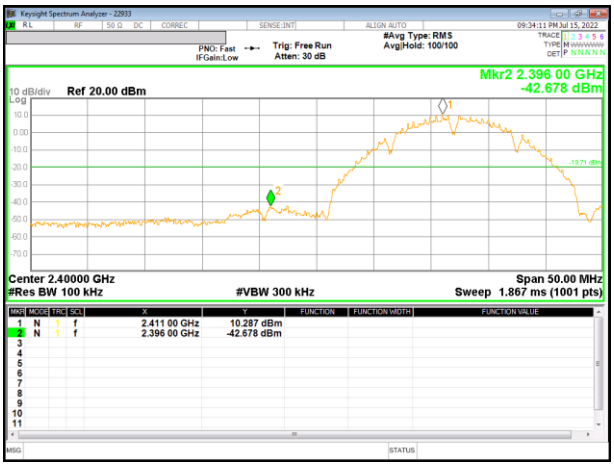


11 Channel Band-edge

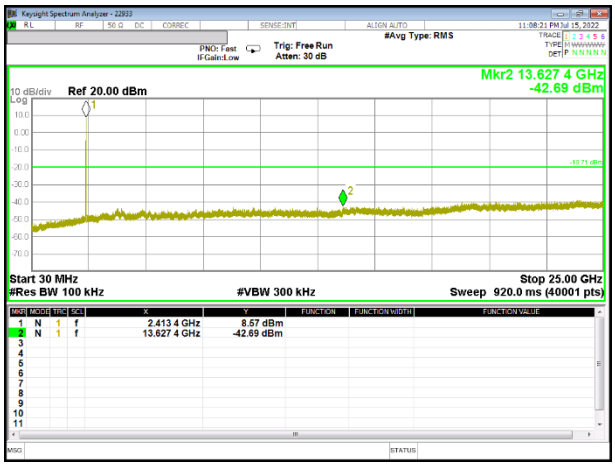


Out-Of-Band 11 Channel

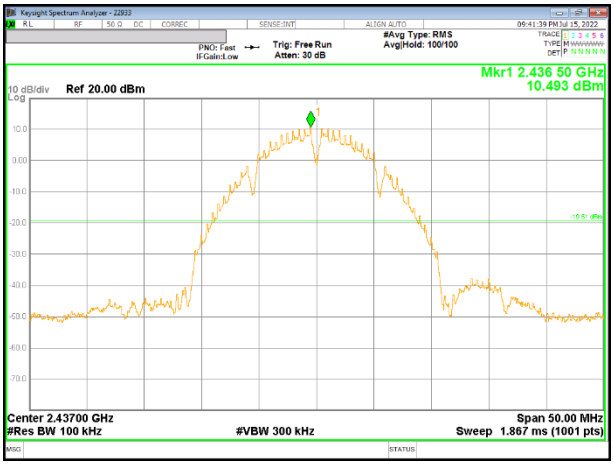
1TX Antenna 2



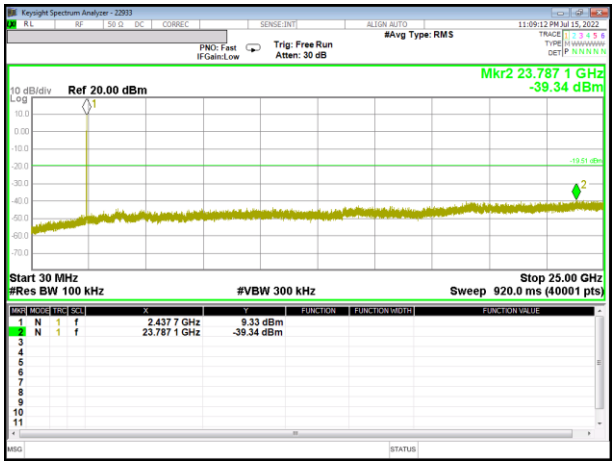
1 Channel Band-edge



Out-Of-Band 1 Channel

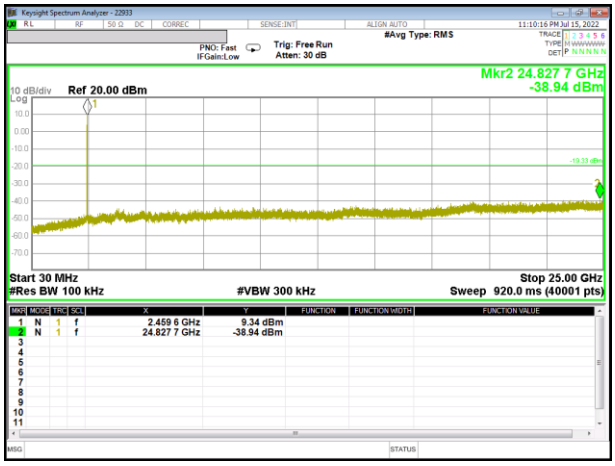


In-Band Reference Level



Out-Of-Band 6 Channel

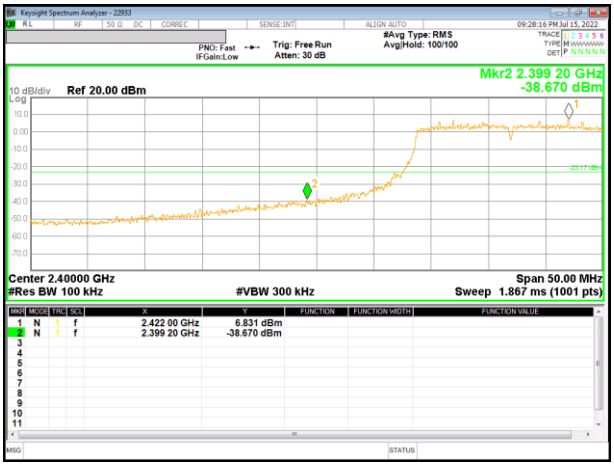
11 Channel Band-edge



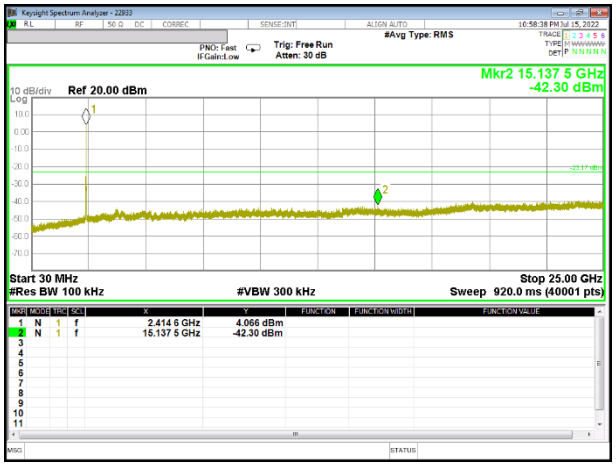
Out-Of-Band 11 Channel

9.5.2. 802.11g MODE

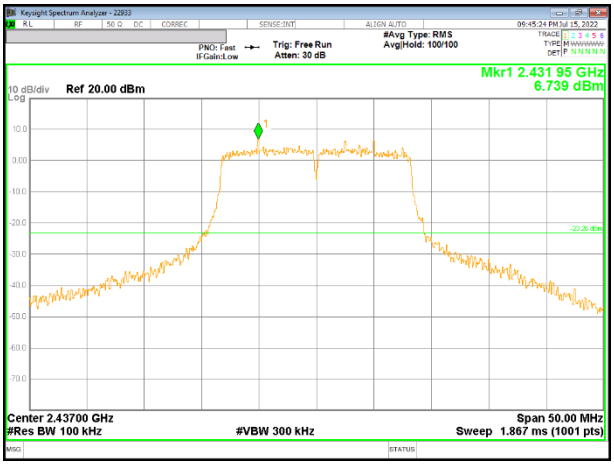
1TX Antenna 1



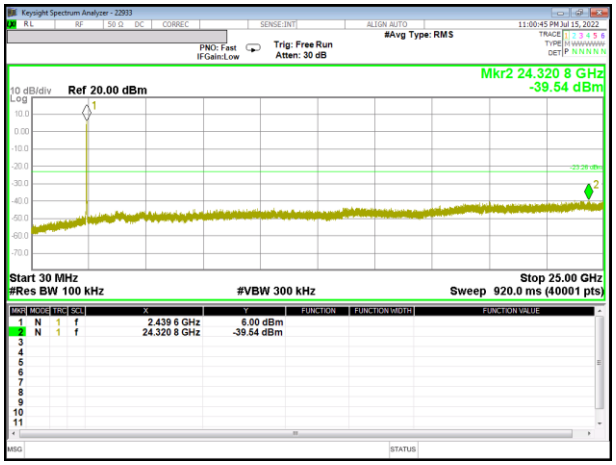
2 Channel Band-edge



Out-Of-Bandn 2 Channel

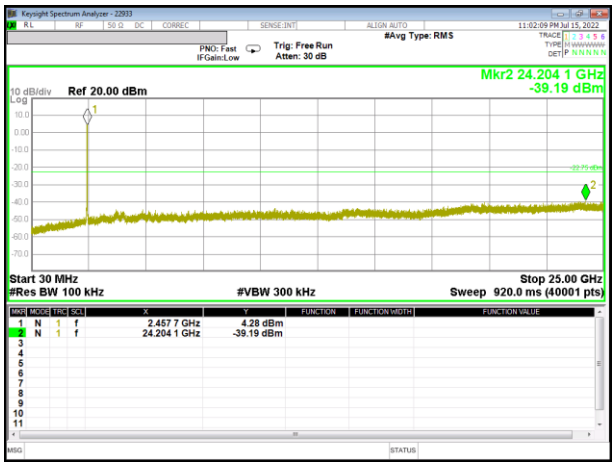


In-Band Reference Level

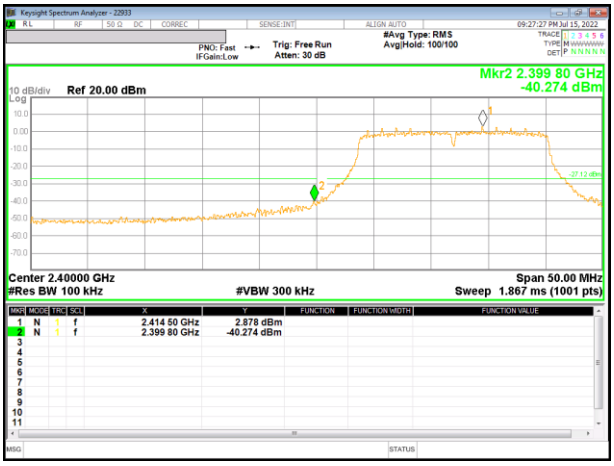


Out-Of-Band 6 Channel

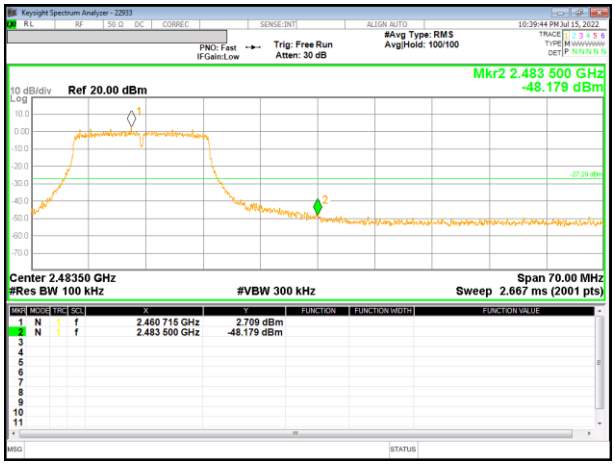
10 Channel Band-edge



Out-Of-Band 10 Channel



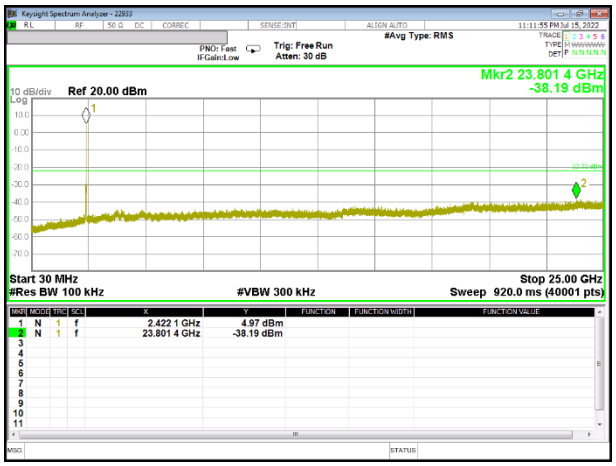
1 Channel Band-edge



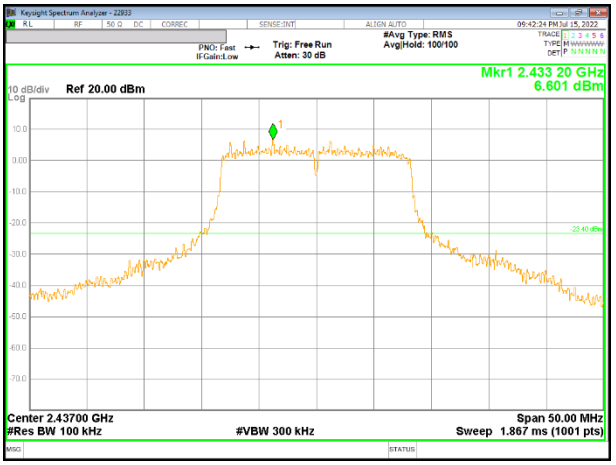
11 Channel Band-edge

1TX Antenna 2

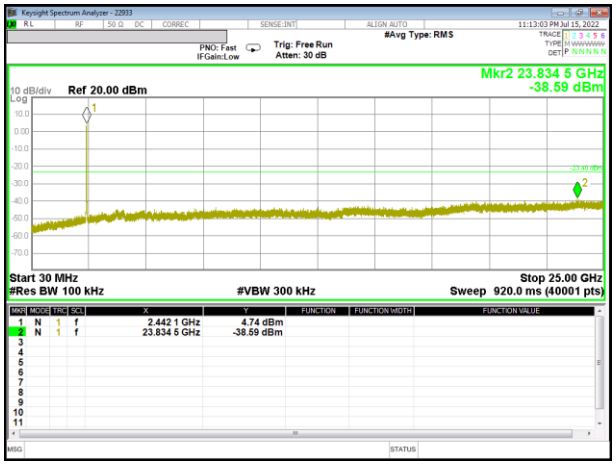
2 Channel Band-edge



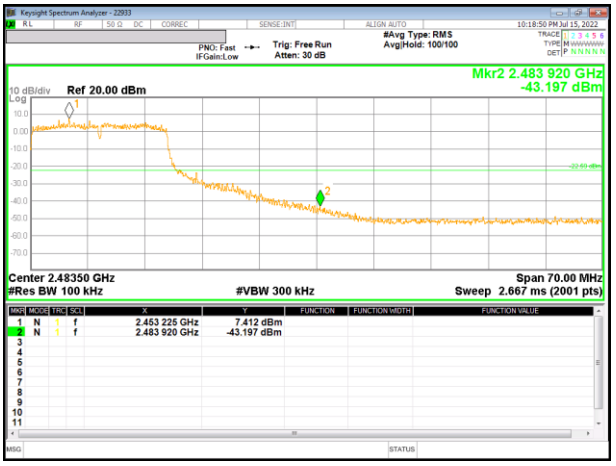
Out-Of-Band 2 Channel



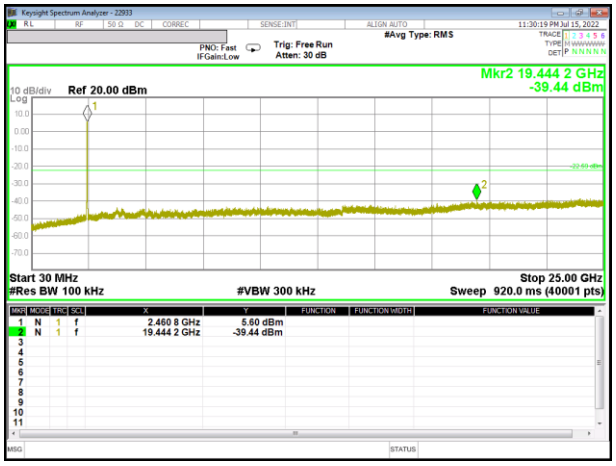
In-Band Reference Level



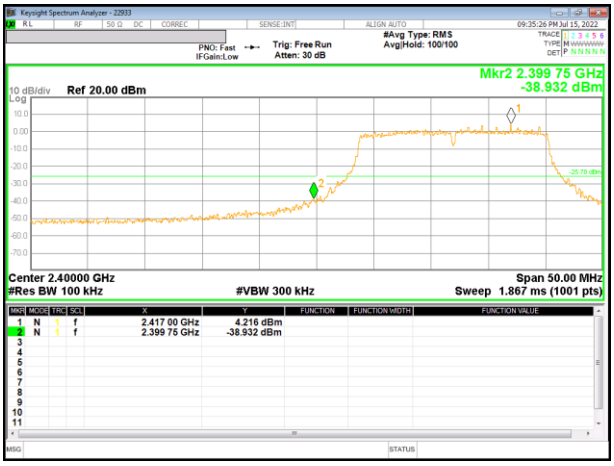
Out-Of-Band 6 Channel



10 Channel Band-edge



Out-Of-Band 10 Channel

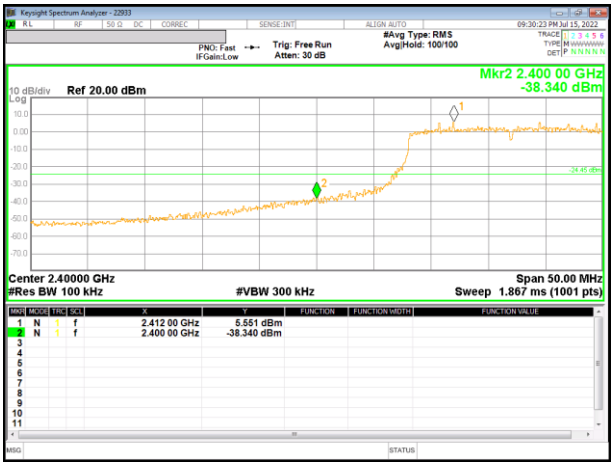


1 Channel Band-edge

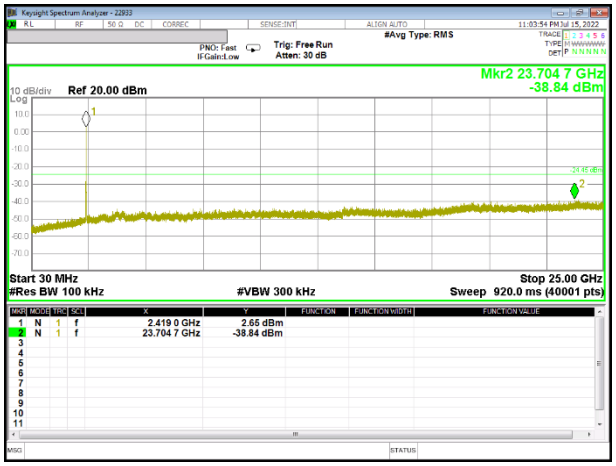
11 Channel Band-edge

9.5.3. 802.11n HT20 MODE

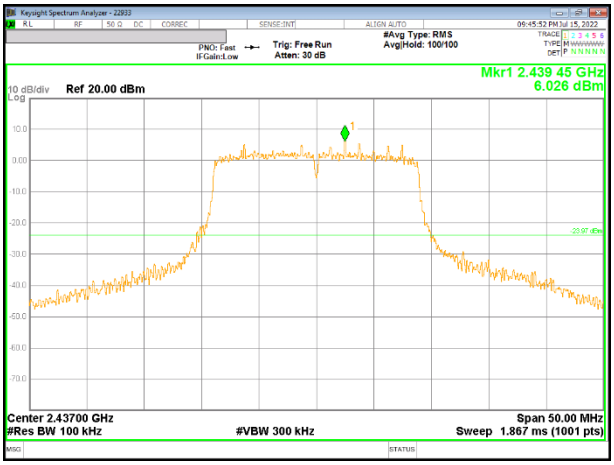
1TX Antenna 1



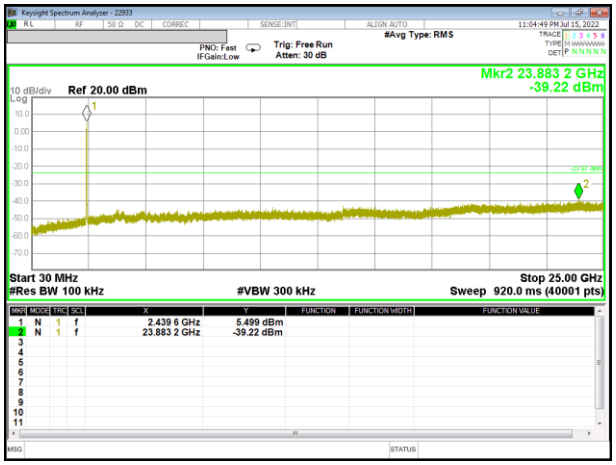
2 Channel Band-edge



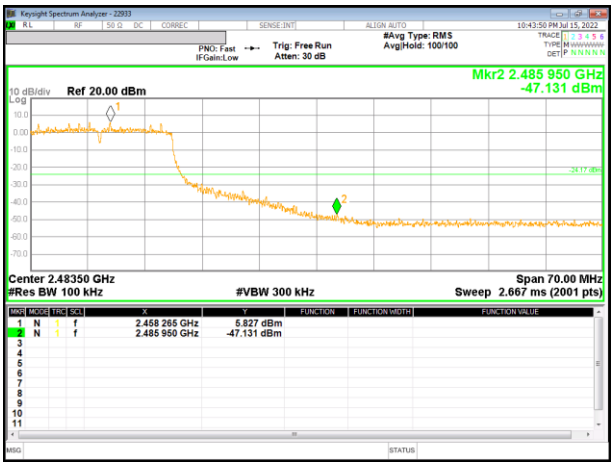
Out-Of-Band 2 Channel



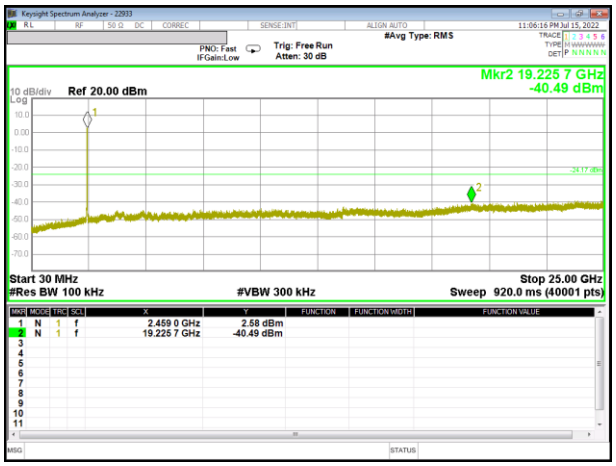
In-Band Reference Level



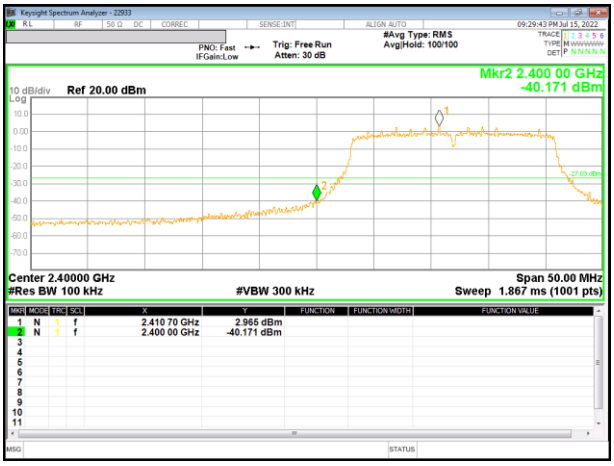
Out-Of-Band 6 Channel



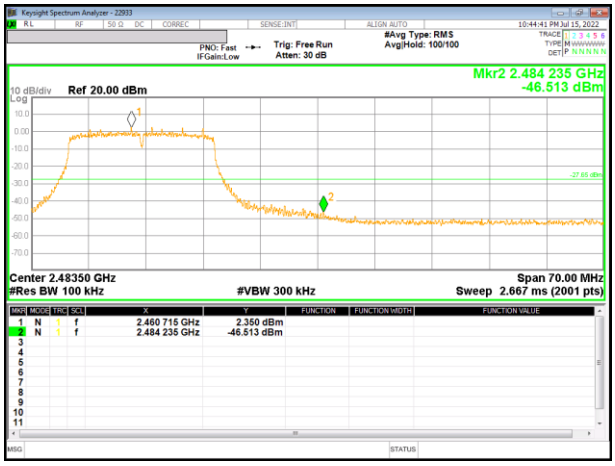
10 Channel Band-edge



Out-Of-Band 10 Channel

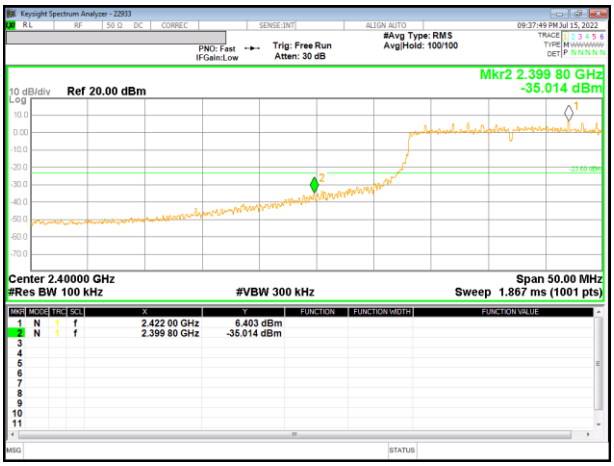


1 Channel Band-edge

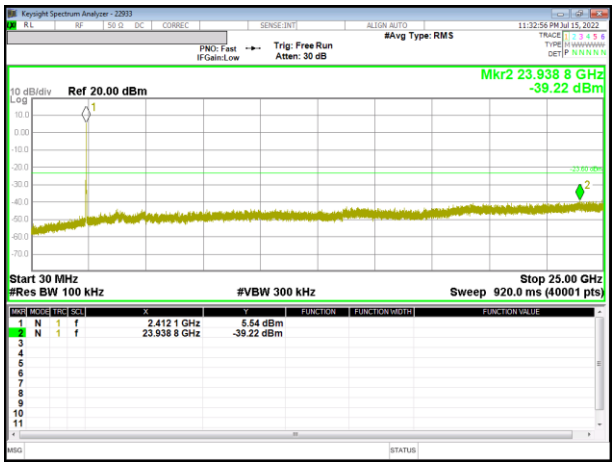


11 Channel Band-edge

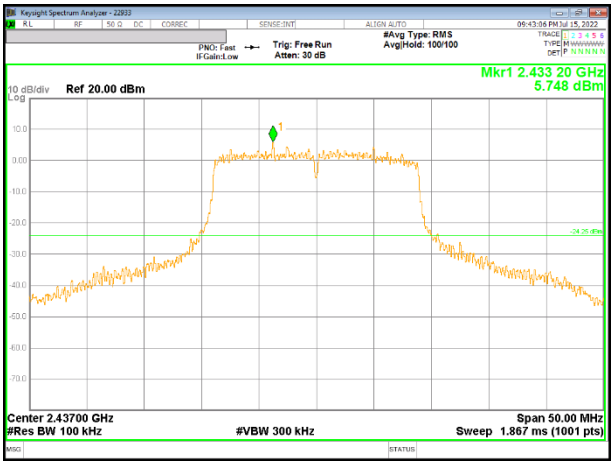
1TX Antenna 2



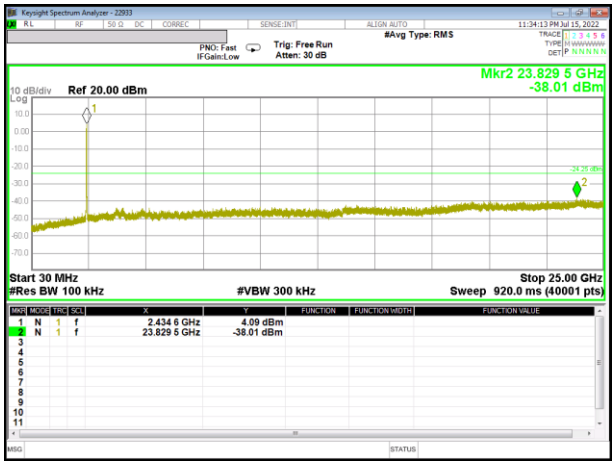
2 Channel Band-edge



Out-Of-Band 2 Channel

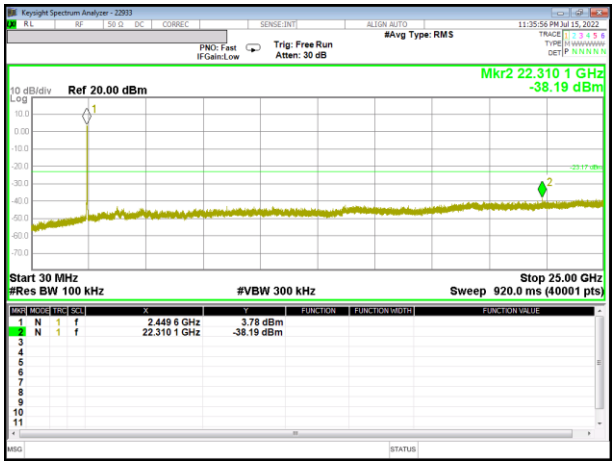


In-Band Reference Level

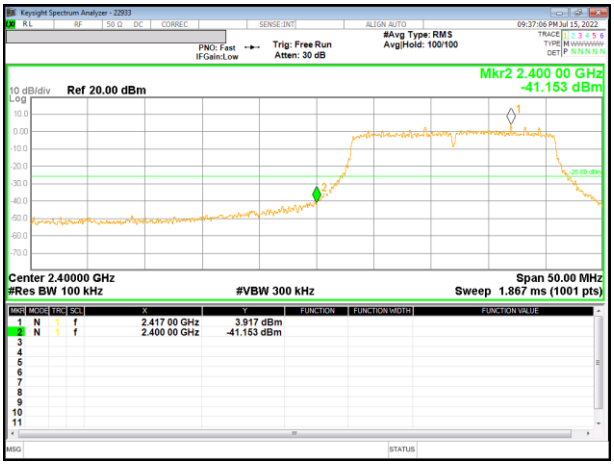


Out-Of-Band 6 Channel

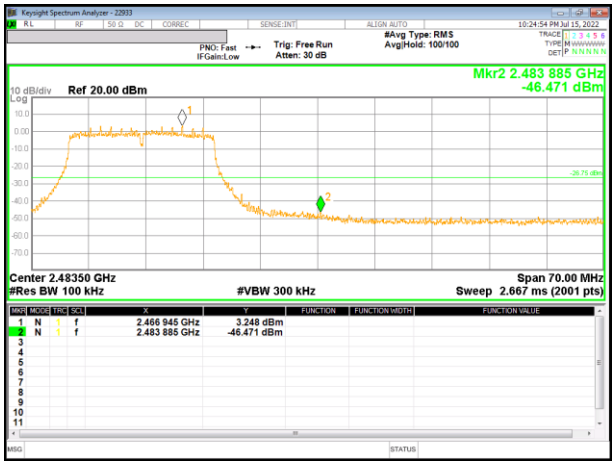
10 Channel Band-edge



Out-Of-Band 10 Channel



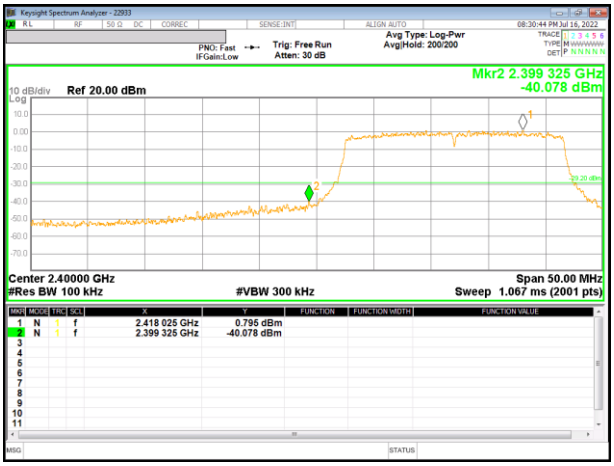
1 Channel Band-edge



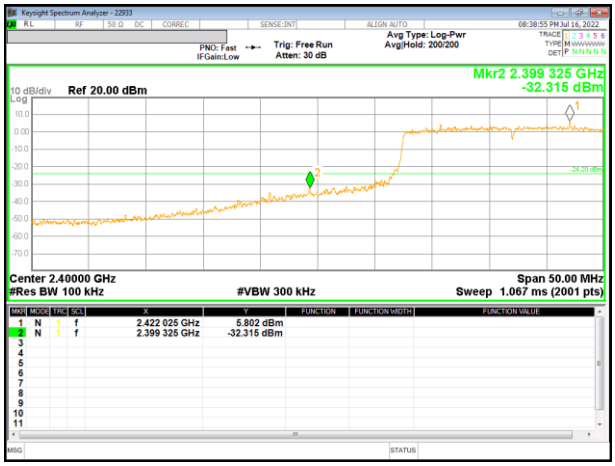
11 Channel Band-edge

9.5.4. 802.11ax HE20(SU) MODE

1TX Antenna 1

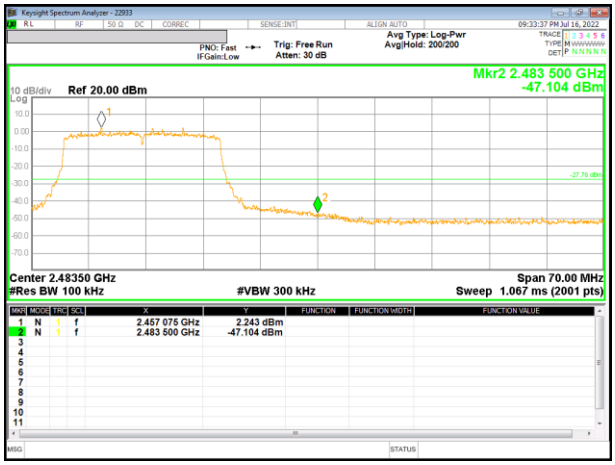


1 Channel Band-edge



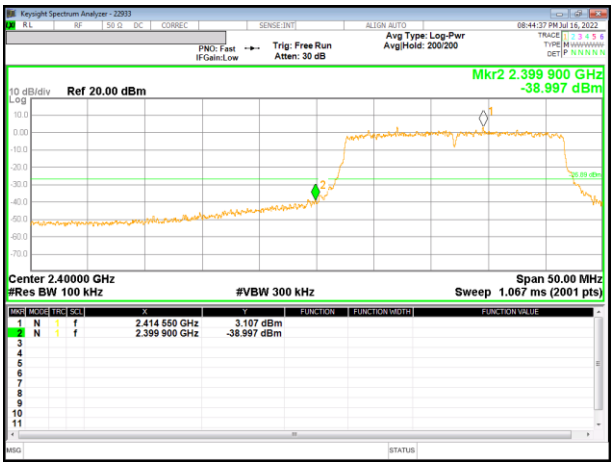
2 Channel Band-edge

10 Channel Band-edge



11 Channel Band-edge

1TX Antenna 2



1 Channel Band-edge

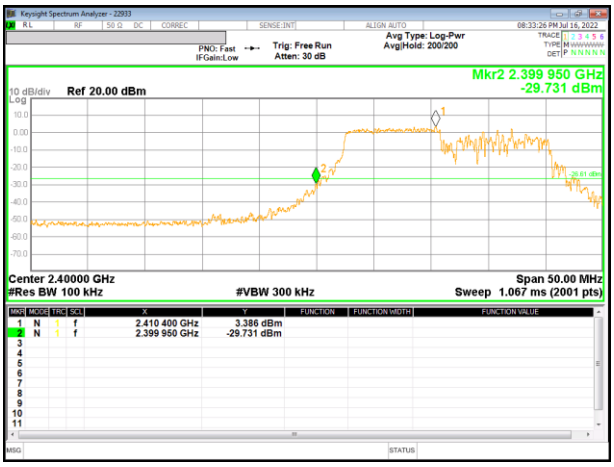
2 Channel Band-edge

10 Channel Band-edge

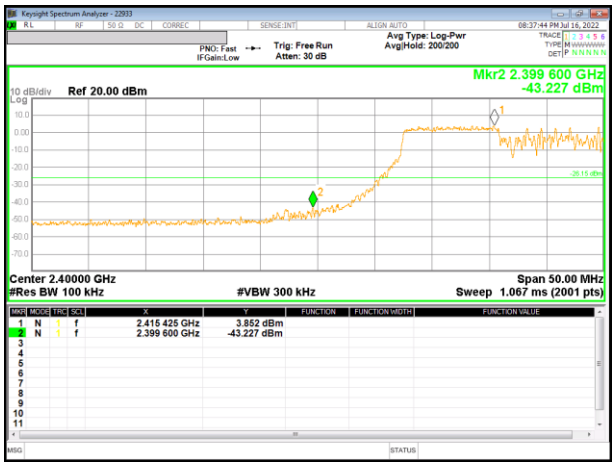
11 Channel Band-edge

9.5.5. 802.11ax HE20(RU) MODE

1TX Antenna 1 MODE



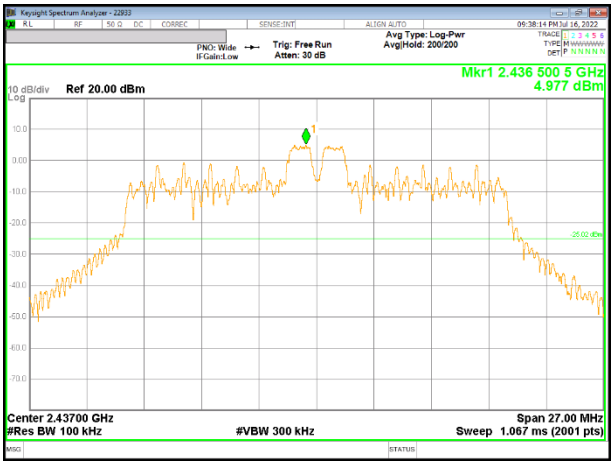
1 Channel Band-edge (106T 53RU)



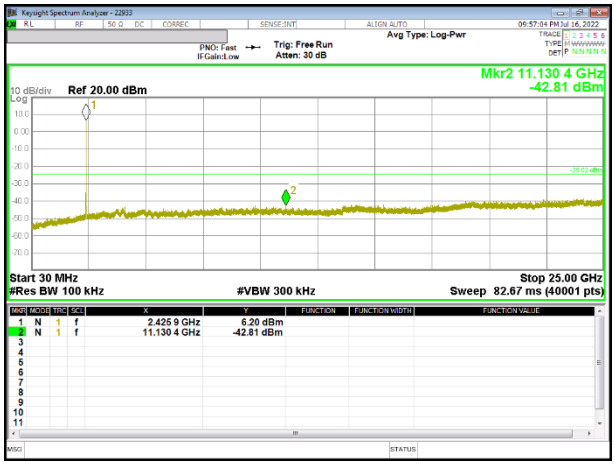
2 Channel Band-edge (106T 53RU)

10 Channel Band-edge (26T 8RU)

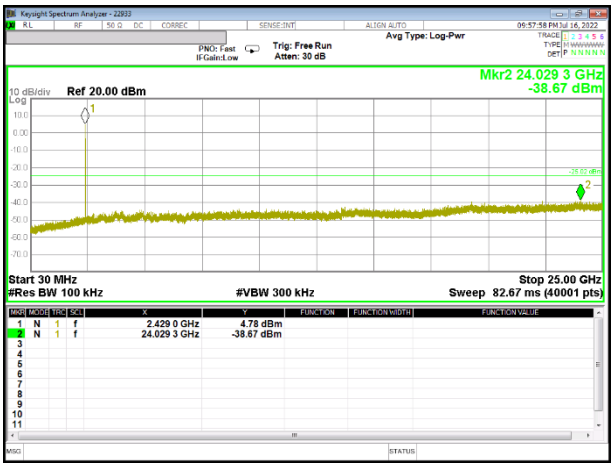
11 Channel Band-edge (106T 54RU)



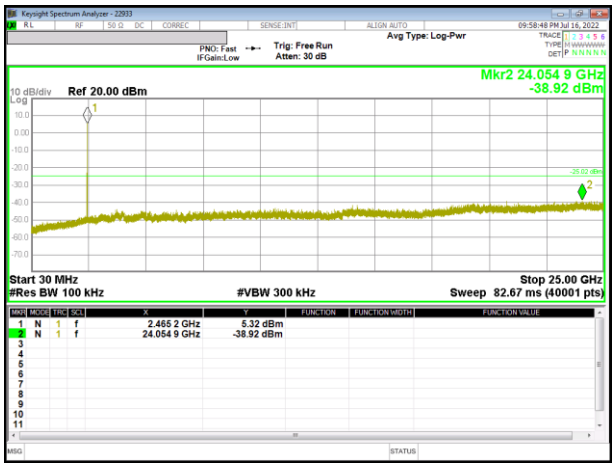
In-Band Reference Level



Out-Of-Band 2 Channel(8RU)

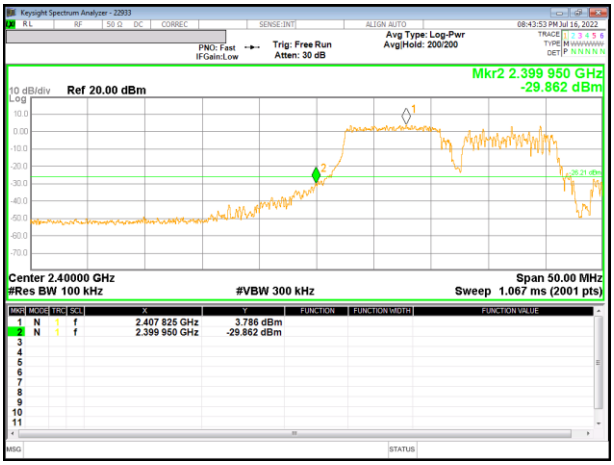


Out-Of-Band 6 Channel(0RU)

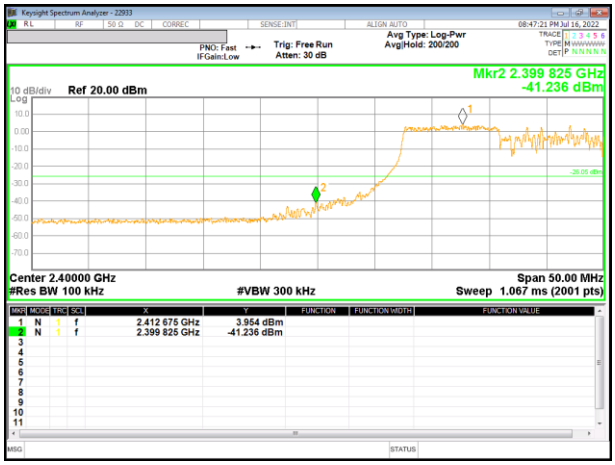


Out-Of-Band 10 Channel(8RU)

1TX Antenna 2 MODE

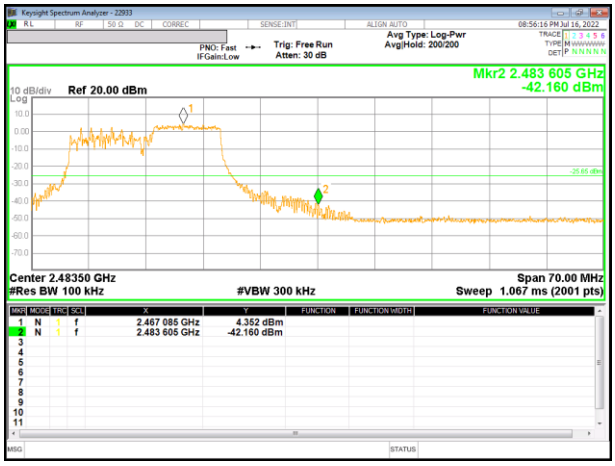


1 Channel Band-edge (106T 53RU)

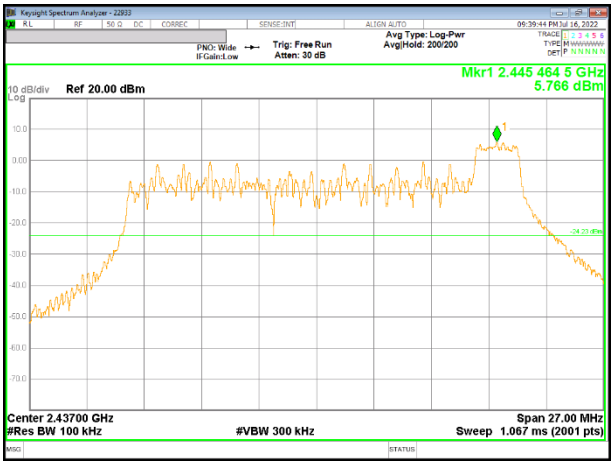


2 Channel Band-edge (106T 53RU)

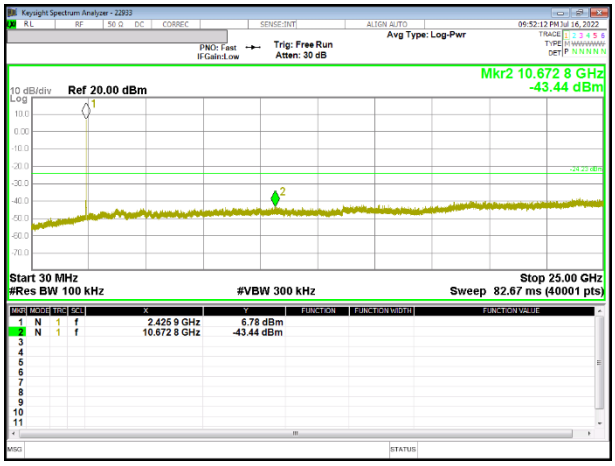
10 Channel Band-edge (26T 8RU)



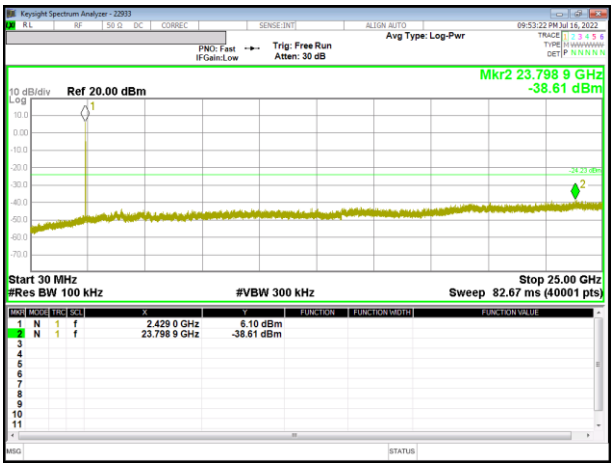
11 Channel Band-edge (106T 54RU)



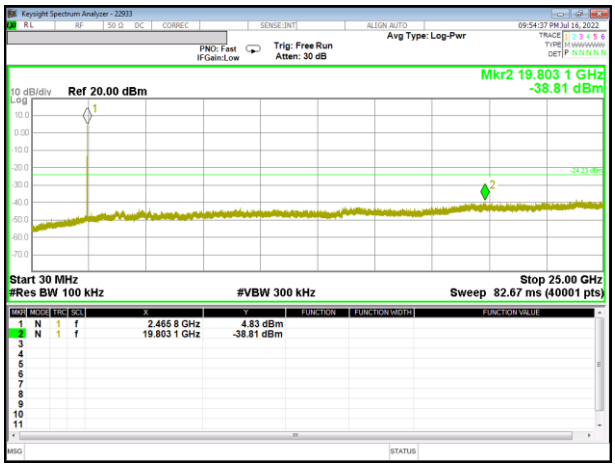
In-Band Reference Level



Out-Of-Band 2 Channel(8RU)



Out-Of-Band 6 Channel(0RU)



Out-Of-Band 10 Channel(8RU)

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 dB (duty cycle > 98%);
802.11g MIMO mode = 0.16 dB (duty cycle = 96.39%);
802.11n(HT20) MIMO mode = 0.09 dB (duty cycle = 97.89%);
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.

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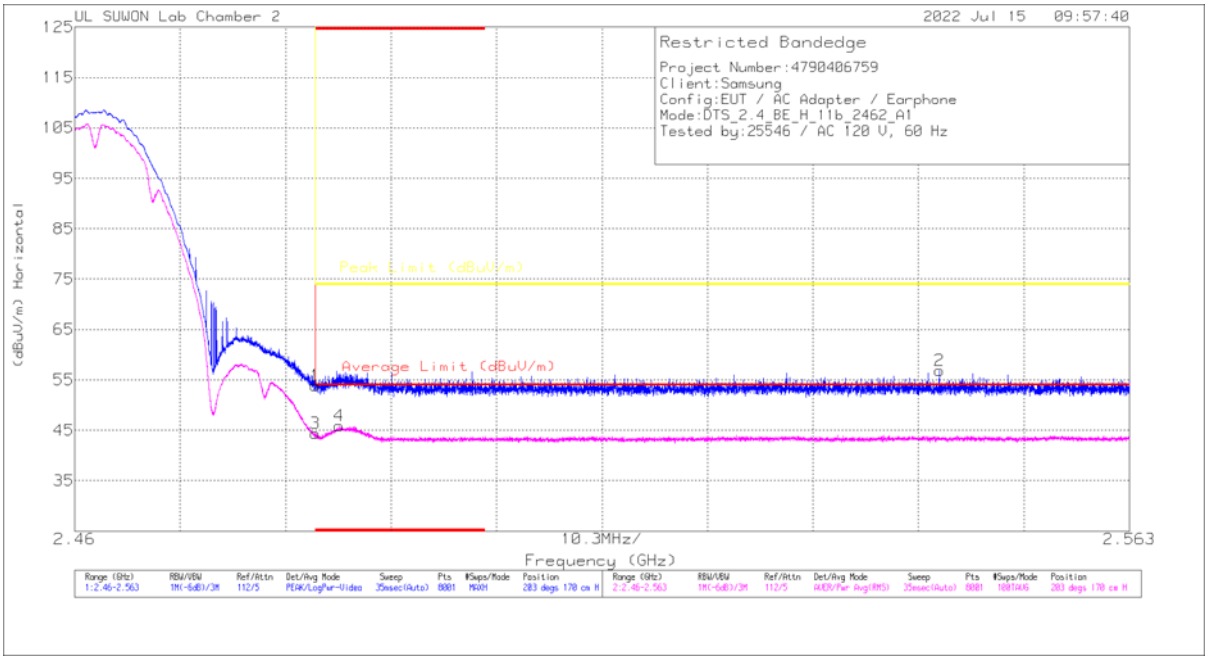
10.1. TRANSMITTER ABOVE 1 GHz

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

BAND EDGE (ANT1 WORST CASE: 11 CHANNEL)

HORIZONTAL RESULT



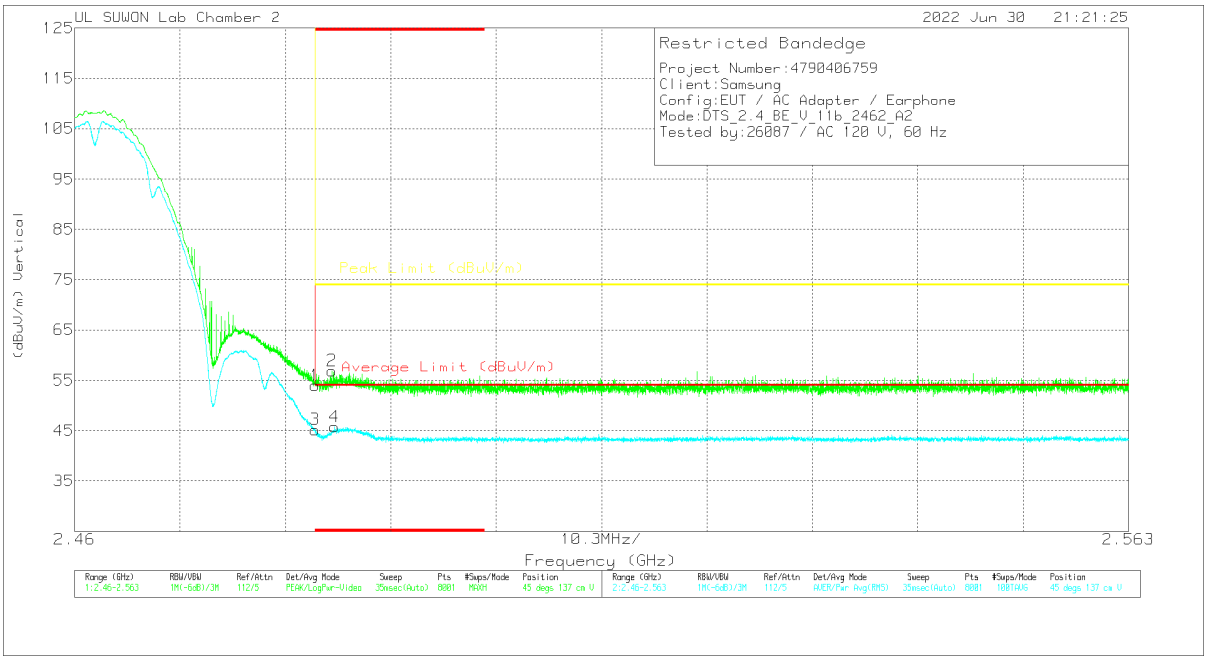
Trace Markers

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	41.44	Pk	32	-19.6	0	53.84	-	-	74	-20.16	203	170	H
2	2.54443	44.27	Pk	32.1	-19.5	0	56.87	-	-	74	-17.13	203	170	H
3	* 2.48351	32.02	RMS	32	-19.6	0	44.42	54	-9.58	-	-	203	170	H
4	* 2.4858	33.51	RMS	32	-19.6	0	45.91	54	-8.09	-	-	203	170	H

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

BAND EDGE (ANT2 WORST CASE: 11 CHANNEL)

VERTICAL 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	41.61	Pk	32	-19.6	0	54.01	-	-	74	-19.99	45	137	V
2	* 2.48513	44.52	Pk	32	-19.6	0	56.92	-	-	74	-17.08	45	137	V
3	* 2.48351	32.81	RMS	32	-19.6	0	45.21	54	-8.79	-	-	45	137	V
4	* 2.48538	33.34	RMS	32	-19.6	0	45.74	54	-8.26	-	-	45	137	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	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	41.15	Pk	31.90	-19.70	0.00	53.35	-	-	74.00	-20.65	54	109	H
		* 2.38719	44.02	Pk	31.90	-19.60	0.00	56.32	-	-	74.00	-17.68	54	109	H
		* 2.39	31.22	RMS	31.90	-19.70	0.00	43.42	54.00	-10.58	-	-	54	109	H
		* 2.38714	32.28	RMS	31.90	-19.60	0.00	44.58	54.00	-9.42	-	-	54	109	H
		* 2.39	40.92	Pk	31.90	-19.70	0.00	53.12	-	-	74.00	-20.88	74	371	V
		* 2.35491	43.58	Pk	31.80	-19.60	0.00	55.78	-	-	74.00	-18.22	74	371	V
		* 2.39	30.98	RMS	31.90	-19.70	0.00	43.18	54.00	-10.82	-	-	74	371	V
		* 2.38767	31.49	RMS	31.90	-19.50	0.00	43.89	54.00	-10.11	-	-	74	371	V
2462	ANT1	* 2.48351	41.44	Pk	32.00	-19.60	0.00	53.84	-	-	74.00	-20.16	203	170	H
		2.544	44.27	Pk	32.10	-19.50	0.00	56.87	-	-	74.00	**-17.13**	203	170	H
		* 2.48351	32.02	RMS	32.00	-19.60	0.00	44.42	54.00	-9.58	-	-	203	170	H
		* 2.4858	33.51	RMS	32.00	-19.60	0.00	45.91	54.00	**-8.09**	-	-	203	170	H
		* 2.48351	40.48	Pk	32.00	-19.60	0.00	52.88	-	-	74.00	-21.12	166	346	V
		2.543	43.87	Pk	32.10	-19.50	0.00	56.47	-	-	74.00	-17.53	166	346	V
		* 2.48351	31.10	RMS	32.00	-19.60	0.00	43.50	54.00	-10.50	-	-	166	346	V
		* 2.48596	32.00	RMS	32.00	-19.60	0.00	44.40	54.00	-9.60	-	-	166	346	V

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	ANT2	* 2.39	41.71	Pk	31.90	-19.70	0.00	53.91	-	-	74.00	-20.09	240	125	H
		* 2.38707	43.91	Pk	31.90	-19.60	0.00	56.21	-	-	74.00	-17.79	240	125	H
		* 2.39	30.68	RMS	31.90	-19.70	0.00	42.88	54.00	-11.12	-	-	240	125	H
		* 2.38758	31.98	RMS	31.90	-19.50	0.00	44.38	54.00	-9.62	-	-	240	125	H
		* 2.39	40.89	Pk	31.90	-19.70	0.00	53.09	-	-	74.00	-20.91	45	100	V
		* 2.38639	43.86	Pk	31.90	-19.60	0.00	56.16	-	-	74.00	-17.84	45	100	V
		* 2.39	31.33	RMS	31.90	-19.70	0.00	43.53	54.00	-10.47	-	-	45	100	V
		* 2.38749	32.85	RMS	31.90	-19.50	0.00	45.25	54.00	-8.75	-	-	45	100	V
2462	ANT2	* 2.48351	41.36	Pk	32.00	-19.60	0.00	53.76	-	-	74.00	-20.24	238	142	H
		2.562	44.46	Pk	32.20	-19.50	0.00	57.16	-	-	74.00	**-16.84**	238	142	H
		* 2.48351	31.23	RMS	32.00	-19.60	0.00	43.63	54.00	-10.37	-	-	238	142	H
		* 2.48769	31.72	RMS	32.10	-19.60	0.00	44.22	54.00	-9.78	-	-	238	142	H
		* 2.48351	41.61	Pk	32.00	-19.60	0.00	54.01	-	-	74.00	-19.99	45	137	V
		* 2.48513	44.52	Pk	32.00	-19.60	0.00	56.92	-	-	74.00	-17.08	45	137	V
		* 2.48351	32.81	RMS	32.00	-19.60	0.00	45.21	54.00	-8.79	-	-	45	137	V
		* 2.48538	33.34	RMS	32.00	-19.60	0.00	45.74	54.00	**-8.26**	-	-	45	137	V

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

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