CERTIFICATION TEST REPORT

Report Number. : 4790101669-E5V3

Applicant	:	SAMSUNG ELECTRONICS CO., LTD. 129 SAMSUNG-RO, YEONGTONG-GU, SUWON-SI, GYEONGGI-DO, 16677, KOREA
Model	:	SM-X900
FCC ID	:	A3LSMX900
IC	:	649E-SMX900
EUT Description	:	DTS/UNII a/b/g/n/ac/ax Tablet + BT/BLE and WPT
Test Standard(s)	:	FCC 47 CFR PART 15 SUBPART E INDUSTRY CANADA RSS-247 Issue 2 INDUSTRY CANADA RSS-GEN Issue 5

Date Of Issue:
2021-12-15

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IAS ACCREDITED
Testing Laboratory
TL-637

Revision History

Rev.	Issue Date	Revisions	Revised By
V1	2021-11-30	Initial issue	Hyunsik Yun
V2	2021-12-13	Updated to address TCB's question	Hyunsik Yun
V3	2021-12-15	Updated to address TCB's question	Hyunsik Yun

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: SAMSUNG ELECTRONICS CO., LTD.

EUT DESCRIPTION: DTS/UNII a/b/g/n/ac/ax Tablet + BT/BLE and WPT

MODEL NUMBER: SM-X900

SERIAL NUMBER: R32RA0033ST (CONDUCTED, ORIGINAL);
R32RA0036VV, R32RA0034NV, R32RB006W3E, R32RB006XEP, R32RB006X0H (RADIATED, ORIGINAL);
6e356103, R32RB00B40E, R32RB00B3WH (RADIATED, SPOT-CHECK)

DATE TESTED: 2021-09-23 ~ 2021-11-24 (Original);
2021-11-22 ~ 2021-11-30 (Spot-Check)

APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
CFR 47 Part 15 Subpart E	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:

Hyunsik Yun
Suwon Lab Engineer
UL Korea, Ltd.

1.1. INTRODUCTION OF TEST DATA REUSE

This report referenced from the FCC ID: A3LSMX906B DTS(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 FCC ID: A3LSMX900 (Model number : SM-X900) shares the same enclosure and circuit board as FCC ID: A3LSMX906B (Model number : SM-X906B). The WLAN antennas and surrounding circuitry and layout are identical between these two units for re-used bands.

In SM-X900 model, all of the RF parts(5G/LTE/WCDMA/GSM) are removed from the PCB.

After confirming through preliminary radiated emissions that the performance of the FCC ID: A3LSMX906B (Model number : SM-X906B) remains representative of FCC ID: A3LSMX900 (Model number : SM-X900). The test data of FCC ID: A3LSMX906B (Model number : SM-X906B) being submitted for this application to cover WLAN features.

Model number, SM-X906B, is not certified for ISED certification.

1.3. SPOT CHECK VERIFICATION DATA

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

Band	Test Item	Mode	Frequency	Test Limit	Original model	Spot check model	Deviation	Remark
					SM-X906B Results	SM-X900 Results		
					FCC ID : A3LSMX906B	FCC ID : A3LSMX900		
U-NII 1	Band Edge	802.11ac VHT160	5250 MHz	54 dBuV/m	51.23 dBuV/m	47.49 dBuV/m	-3.74 dB	
	RSE	802.11a	5180 MHz	68.2 dBuV/m	59.88 dBuV/m	60.43 dBuV/m	0.55 dB	Noise Floor
	Band Edge	802.11ax HE160 SU	5250 MHz	54 dBuV/m	50.12 dBuV/m	45.67 dBuV/m	-4.45 dB	
	RSE	802.11ax HE20 4RU	5180 MHz	68.2 dBuV/m	59.78 dBuV/m	60.75 dBuV/m	0.97 dB	
U-NII 2A	Band Edge	802.11ac VHT160	5250 MHz	54 dBuV/m	49.04 dBuV/m	51.30 dBuV/m	2.26 dB	
	RSE	802.11a	5320 MHz	54 dBuV/m	45.46 dBuV/m	38.96 dBuV/m	-6.50 dB	Noise Floor
	Band Edge	802.11ax HE160 SU	5250 MHz	54 dBuV/m	48.71 dBuV/m	45.43 dBuV/m	-3.28 dB	
	RSE	802.11ax HE20 4RU	5320 MHz	68.2 dBuV/m	58.73 dBuV/m	55.82 dBuV/m	-2.91 dB	
U-NII 2C	Band Edge	802.11n HT40	5510 MHz	74 dBuV/m	65.42 dBuV/m	55.83 dBuV/m	-9.59 dB	
	RSE	802.11n HT20	5500 MHz	68.2 dBuV/m	61.68 dBuV/m	60.63 dBuV/m	-1.05 dB	
	Band Edge	802.11ax HE80 SU	5530 MHz	54 dBuV/m	51.33 dBuV/m	46.54 dBuV/m	-4.79 dB	
	RSE	802.11ax HE20 4RU	5500 MHz	68.2 dBuV/m	57.60 dBuV/m	56.73 dBuV/m	-0.87 dB	
U-NII 3	Band Edge	802.11ac VHT80	5775 MHz	-27 dBm	-35.90 dBm	-36.03 dBm	-0.13 dB	
	RSE	802.11a	5825 MHz	68.2 dBuV/m	51.09 dBuV/m	52.61 dBuV/m	1.52 dB	
	Band Edge	802.11ax HE160 SU	5815 MHz	-27 dBm	-34.42 dBm	-36.10 dBm	-1.68 dB	
	RSE	802.11ax HE20 4RU	5785 MHz	68.2 dBuV/m	56.49 dBuV/m	56.27 dBuV/m	-0.22 dB	
U-NII 4	Band Edge	802.11n HT20	5885 MHz	89.97 dBuV/m	74.48 dBuV/m	75.27 dBuV/m	0.79 dB	
	RSE	802.11a	5845 MHz	68.2 dBuV/m	51.12 dBuV/m	51.56 dBuV/m	0.44 dB	
	Band Edge	802.11ax HE20 SU	5885 MHz	90.00 dBuV/m	82.65 dBuV/m	81.39 dBuV/m	-1.26 dB	
	RSE	802.11ax HE20 4RU	5865 MHz	68.2 dBuV/m	52.00 dBuV/m	49.51 dBuV/m	-2.49 dB	

Note1: ISED not supported U-NII 4 Band (include U-NII 4 160 MHz)
Note2: Update U-NII 3 High channel band-edge data for ISED.

1.4. REFERENCE DETAIL

Reference application that contains the re-used reference data.

Equipment Class	Reference FCC ID	Type Grant/Permissive Change	Reference Application	Folder Test/RF Exposure	Report Title / Section
DTS	A3LSMX906B	Grant	4790101660-E4	Test	Report DTS [b, g, n ax] WLAN / All sections
			4790101660-E5	Test	Report BLE / All sections
DSS	A3LSMX906B	Grant	4790101660-E6	Test	Report BT / All sections
NII	A3LSMX906B	Grant	4790101660-E7	Test	Report UNII [a, n, ac, ax] WLAN / All sections
NII 6E (FCC)	A3LSMX906B	Grant	4790101660-E8	Test	Report UNII 6E [a, ax] WLAN / All sections
WPT	A3LSMX906B	Grant	4790101660-E9	Test	Report WPT / All sections

Note: ISED not supported U-NII 6E.

2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with following methods.

1. FCC CFR 47 Part 2.
2. FCC CFR 47 Part 15.
3. IC RSS-GEN Issue 5.
4. IC RSS-247 Issue 2.
5. KDB 789033 D02 General UNII Test Procedures New Rules v02r01
6. KDB 905462 D02 UNII DFS Compliance Procedures New Rules v02
7. KDB 905462 D03 UNII Clients Without Radar Detection New Rules v01r02
8. KDB 662911 D01 v02r01
9. KDB 291071 DR01-44460(Sept 21, 2021)
10. ANSI C63.10-2013.
11. 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
☒ Chamber 2
☒ Chamber 3

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)

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

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 115:2007.

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5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The EUT is a DTS/UNII a/b/g/n/ac/ax Tablet + BT/BLE and WPT.
This test report addresses the NII (WLAN) operational mode.

WiFi operating mode

Frequency rage	Mode	ANT1	ANT2
5GHz (5180 MHz ~ 5885 MHz)	802.11a MIMO	TX/RX	TX/RX
	802.11n MIMO	TX/RX	TX/RX
	802.11ac MIMO	TX/RX	TX/RX
	802.11ax MIMO	TX/RX	TX/RX

Simultaneous TX Condition

Simultaneous Tx Condition: RSDB

Mode	# of TX	5GHz WLAN		2.4GHz WLAN		Test Case
		ANT1	ANT2	ANT1	ANT2	
2.4GHz SISO + 5GHz MIMO	**3**	**O**	**O**	**O**	**-**	**-**
2.4GHz MIMO + 5GHz MIMO	**4**	**O**	**O**	**O**	**O**	**O(Worst)**

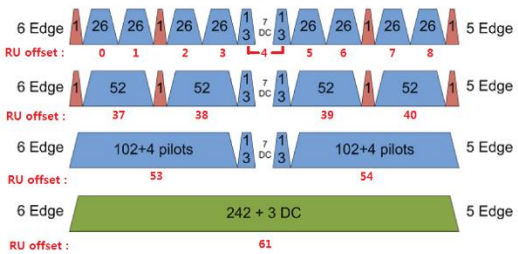
Simultaneous Tx Condition: RSDB + Bluetooth

Mode	# of TX	5GHz WLAN		2.4GHz Bluetooth	2.4GHz WLAN	Test Case
		ANT1	ANT2	ANT1	ANT2	
2.4GHz ANT2 + Bluetooth ANT1 + 5GHz MIMO	**4**	**O**	**O**	**O**	**O**	**O(Worst)**

802.11ax RU allocations

- HE 20 Mode -

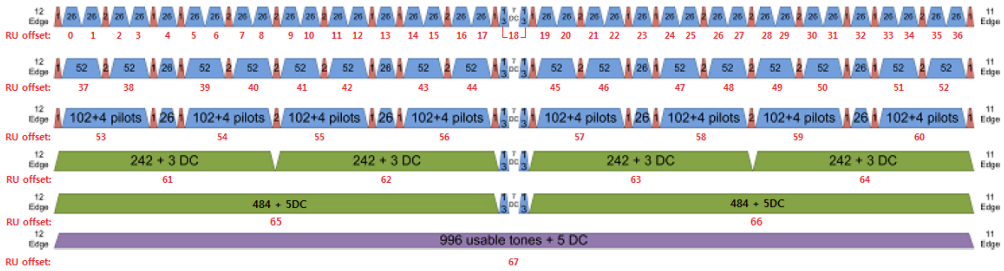
20 MHz



- HE 40 Mode -

40 MHz

- HE 80(996T) & 160 Mode(996T + 996T) -



Test RU offset for tones in each modes

Mode	Tones	RU offset
HE20	26T	0
		4
		8
	52T	37
		38
		40
	106T	53
		54
	242T / SU Note	61 / -
HE40	26T	0
		9
		17
	52T	37
		41
		44
	106T	53
		54
		56
	242T	61
		62
	484T / SU Note	63 / -
HE80	26T	0
		18
		36
	52T	37
		45
		52
	106T	53
		57
		60
	242T	61
		62
		64
	484T	65
		66
	996T / SU Note	67 / -

Note: Full RU(Resource Unit) 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.

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Mode	Position	Tones	RU offset
HE160	Lower 80 MHz	26T	0
			18
			36
	Upper 80 MHz		0
			18
			36
	Lower 80 MHz	52T	37
			45
			52
	Upper 80 MHz		37
			45
			52
	Lower 80 MHz	106T	53
			57
			60
	Upper 80 MHz		53
			57
			60
	Lower 80 MHz	242T	61
			62
			64
	Upper 80 MHz		61
			62
			64
	Lower 80 MHz	484T	65
			66
	Upper 80 MHz		65
			66
	Lower 80 MHz	996T	67
	Upper 80 MHz		67
	-	SU Note	-

Note: Full RU(Resource Unit) 996T + 996T 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.

Band portion of RU allocation about straddle channels

Mode	Channel	Tones	RU offset	Portion
HE20	Straddle 5720 MHz	26T	6	UNII 2C & UNII 3
		242T / SU	61 / -	
HE40	Straddle 5710 MHz	26T	15	UNII 2C & UNII 3
		484T / SU	65 / -	
HE80	Straddle 5690 MHz	26T	34	UNII 2C & UNII 3
		996T / SU	67 / -	

Note: In case of RU straddle channel, test was performed overlapping RU position.

MAXIMUM OUTPUT POWER

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

Band	Frequency Range [MHz]	Mode	Output Power [dBm]	Output Power [mW]
UNII-1	5180 - 5240	802.11a MIMO	19.32	85.51
		802.11n(HT20) MIMO	18.96	78.70
		802.11ax(HE20) MIMO	19.07	80.72
	5190 - 5230	802.11n(HT40) MIMO	19.20	83.18
		802.11ax(HE40) MIMO	19.22	83.56
	5210	802.11ac(VHT80) MIMO	17.93	62.09
		802.11ax(HE80) MIMO	17.22	52.72
UNII-2A	5260 - 5320	802.11a MIMO	19.12	81.66
		802.11n(HT20) MIMO	18.77	75.34
		802.11ax(HE20) MIMO	18.88	77.27
	5190 - 5230	802.11n(HT40) MIMO	19.01	79.62
		802.11ax(HE40) MIMO	19.05	80.35
	5270 - 5310	802.11ac(VHT80) MIMO	17.71	59.02
		802.11ax(HE80) MIMO	18.48	70.47
	5250[Note1]	802.11ac(VHT160) MIMO	17.30	53.70
		802.11ax(HE160) MIMO	17.34	54.20
UNII-2C	5500 - 5720	802.11a MIMO	19.17	82.60
		802.11n(HT20) MIMO	18.83	76.38
		802.11ax(HE20) MIMO	19.11	81.47
	5510 - 5710	802.11n(HT40) MIMO	19.14	82.04
		802.11ax(HE40) MIMO	19.39	86.90
	5530 - 5690	802.11ac(VHT80) MIMO	17.84	60.81
		802.11ax(HE80) MIMO	18.57	71.94
	5570	802.11ac(VHT160) MIMO	16.92	49.20
		802.11ax(HE160) MIMO	17.04	50.58
UNII-3	5745 - 5825	802.11a MIMO	19.16	82.41
		802.11n(HT20) MIMO	18.79	75.68
		802.11ax(HE20) MIMO	19.05	80.35
	5755 - 5795	802.11n(HT40) MIMO	19.06	80.54
		802.11ax(HE40) MIMO	19.52	89.54
	5775	802.11ac(VHT80) MIMO	17.59	57.41
		802.11ax(HE80) MIMO	18.41	69.34
UNII-4	5845 - 5885	802.11a MIMO	19.01	79.62
		802.11n(HT20) MIMO	18.64	73.11
		802.11ax(HE20) MIMO	19.08	80.91
	5835 - 5875	802.11n(HT40) MIMO	18.64	73.11
		802.11ax(HE40) MIMO	19.10	81.28
	5855	802.11ac(VHT80) MIMO	17.36	54.45
		802.11ax(HE80) MIMO	18.10	64.57
	5815[Note2]	802.11ac(VHT160) MIMO	16.66	46.34
		802.11ax(HE160) MIMO	17.21	52.60

Note1. Overlap channel(UNII-1 & 2A)
Note2. Overlap channel(UMNII-3 & 4)

5.2. DESCRIPTION OF AVAILABLE ANTENNAS

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

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

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

Frequency Band [MHz]	ANT1 Gain [dBi]	ANT2 Gain [dBi]	Correlated Chains Directional Gain [dBi]
UNII 1 5150 - 5250	-3.5	-4.3	-0.88
UNII 2A 5250 - 5350	-3.4	-3.3	-0.34
UNII 2C 5470 - 5725	-3.5	-2.3	0.13
UNII 3 5725 - 5850	-3.5	-2.6	-0.03
UNII 4 5850 - 5925	-3.5	-2.6	-0.03

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[$(10^{-3.5/20} + 10^{-7.1/20})^2 / 2$] = -2.1 dBi

5.3. 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**
802.11a	MIMO	802.11a 2TX	
802.11n HT20		802.11n HT20 2TX	
802.11ac VHT20		802.11ac VHT20 2TX	802.11n HT20 2TX
802.11ax HE20(SU)		802.11ax HE20 RU(242T) 2TX	802.11ax HE20 SU 2TX
802.11n HT40		802.11n HT40 2TX	
802.11ac VHT40		802.11ac VHT40 2TX	802.11n HT40 2TX
802.11ax HE40(SU)		802.11ax HE40 RU(484T) 2TX	802.11ax HE40 SU 2TX
802.11ac VHT80		802.11ac VHT80 2TX	
802.11ax HE80(SU)		802.11ax HE80 RU(996T) 2TX	802.11ax HE80 SU 2TX
802.11ac VHT160		802.11ac VHT160 2TX	
802.11ax HE160(SU)		802.11ax HE160 RU(996T*2) 2TX	802.11ax HE160 SU 2TX

5.4. 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.

For MIMO, the fundamental of the EUT was investigated in three orthogonal orientations X, Y and Z it was determined that Z orientation was worst-case orientation; therefore, all final radiated testing was performed with the EUT in Z orientation.

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

802.11a mode: 6 Mbps 2Tx	802.11n HT20 mode: MCS0 2Tx	802.11ax HE20 mode: MCS0 2Tx
	802.11n HT40 mode: MCS0 2Tx	802.11ax HE40 mode: MCS0 2Tx
	802.11ac VHT80 mode: MCS0 2Tx	802.11ax HE80 mode: MCS0 2Tx
	802.11ac VHT160 mode: MCS0 2Tx	802.11ax HE160 mode: MCS0 2Tx

Radiation test for 802.11a / n HT20 & HT40 / ac VHT80 & VHT160 / ax HE20 & HE40 & HE80 & HE160 were evaluated at MIMO mode.

Note : All radiated and power line conducted tests were performed connected with charger for evaluation of worst case mode.

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.

Note : All radiated and power line conducted tests were performed connected with charger for evaluation of worst case mode.

Test case configuration for 802.11a, 802.11n HT20 & 40, 802.11ac VHT20 & 40 & 80 & 160, 802.11ax HE20 & 40 & 80 & 160(SU) modes :

Mode	Band	SISO Target[dBm]				MIMO Target[dBm]			
		802.11a	802.11n	802.11ac	802.11ax (SU)	802.11a	802.11n	802.11ac	802.11ax (SU)
5GHz (20 MHz)	UNII-1					19	19	19	19
	5240 MHz					16	17	17	19
	UNII-2A					19	19	19	19
	UNII-2C					19	19	19	19
	UNII-3					19	19	19	19
	UNII-4					19	19	19	19 Ch177: 15
5GHz (40 MHz)	UNII-1						19	19	19 Ch38: 18
	UNII-2A						19	19	19
	UNII-2C						19	19	19
	UNII-3						19	19	19
	UNII-4						19	19	19
5GHz (80 MHz)	UNII-1							18	18 Ch42: 17
	UNII-2A							18	18
	UNII-2C							18	18
	UNII-3							18	18
	UNII-4							18	18
5GHz (160 MHz)	UNII-1 & 2A							17	17
	UNII-2C							17	17
	UNII-3 & 4							17	17

Band-Edge & Spurious Emission
Band-Edge & Spurious Emission Spot-Check
Band-Edge
Change Target Power and retest

Note. Compared to the 802.11a mode, target power is the same or lower and the density is low, so only the spot-check test was performed in the 802.11n & 802.11ac & 802.11ax mode. Spot check test was performed in the worst tested band of 802.11a mode.

Test case configuration for 802.11ax HE20 & 40 & 80 & 160 (RU) modes :

Band	Mode	Freq.	Tone	RU offset	Test Case		
					ANT1	ANT2	MIMO
UNII-1	HE20	5180	26 T	0			
				4			O
				8			
		5200		0			
				4			
				8			
		5240		0			
				4			
				8			
UNII-2A	HE20	5260	26 T	0			
				4			
				8			
		5300		0			
				4			
				8			
		5320		0			
				4			O
				8			
UNII-2C	HE20	5500	26 T	0			
				4			O
				8			
		5580		0			
				4			
				8			
		5700		0			
				4			
				8			
UNII-3	HE20	5745	26 T	0			
				4			
				8			
		5785		0			
				4			O
				8			
		5825		0			
				4			
				8			
UNII-4	HE20	5845	26 T	0			
				4			
				8			
		5865		0			
				4			O
				8			
		5885		0			
				4			
				8			

Note1. Radiated spurious test was performed on the lower tone(26T) with worst average power.
Note2. Since the target of 26 tones are all the same, spurious test was performed once in each UNII band.

5.5. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	**Manufacturer**	**Model**	**Serial Number**	**FCC ID**
Charger	SAMSUNG	EP-TA800	R37R8YN0CD1RC3	N/A
Data Cable	SAMSUNG	EP-DW767JWE	N/A	N/A

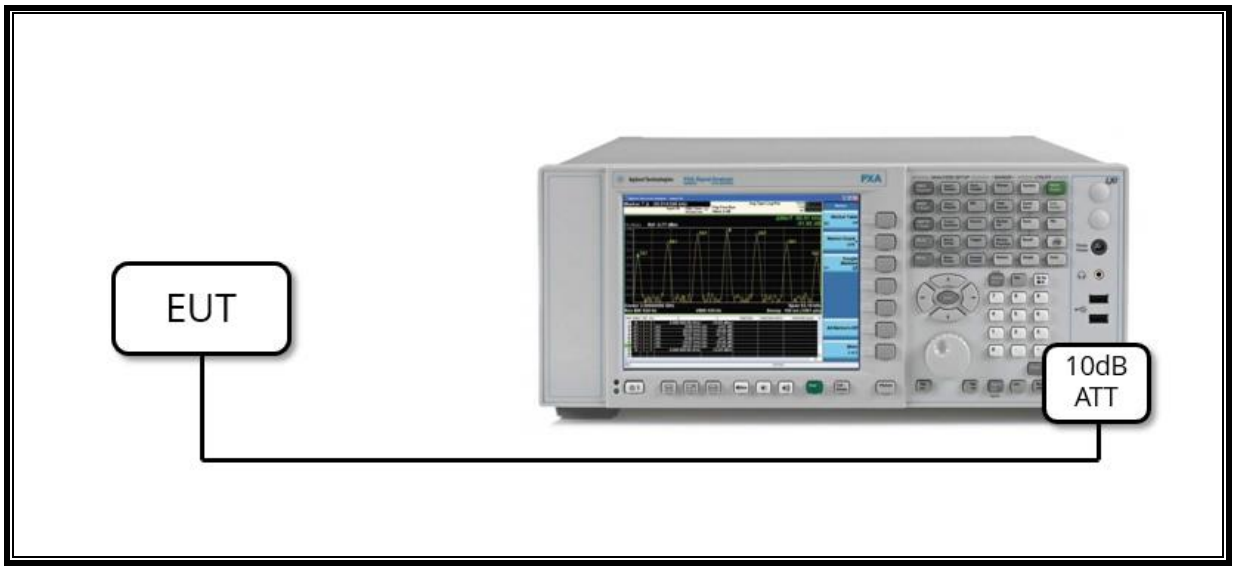
I/O CABLE

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

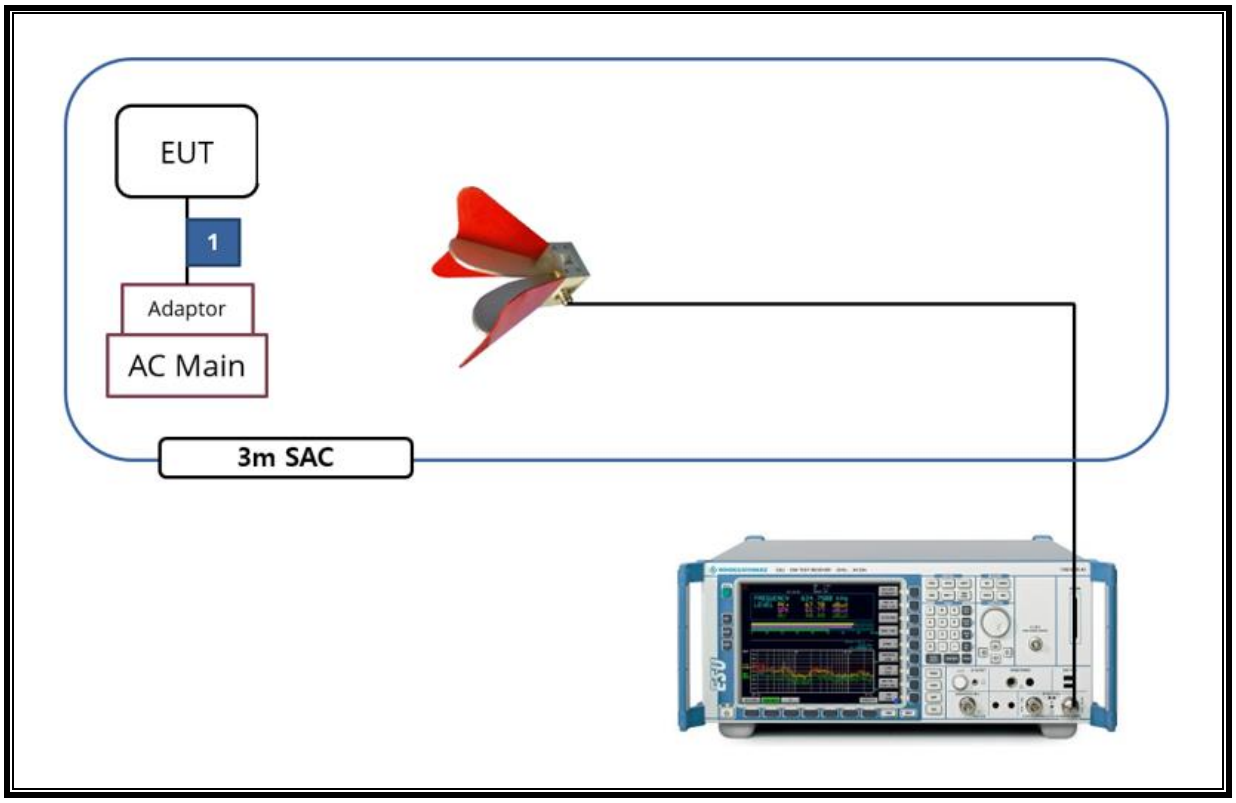
TEST SETUP

The EUT is a stand-alone unit during the tests.
Test software exercised the EUT to enable NII mode.

SETUP DIAGRAM FOR TESTS (CONDUCTED TEST SETUP)



SETUP DIAGRAM FOR TESTS (RADIATED TEST SETUP)



6. 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, 18 GHz	ETS	3117	00218957	2023-01-15
Antenna, Horn, 40 GHz	ETS	3116C	00166155	2023-01-15
Antenna, Horn, 40 GHz	ETS	3116C	00168645	2023-10-13
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
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
Notch Filter	Micro-Tronics	BRM50702-02	G037	2022-08-03
Notch Filter	Micro-Tronics	BRM50716-2	006	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
Termination	WEINSCHEL	M1406A	T09	2022-08-03
Attenuator	WEINSCHEL	WA76-30-21	A015	2022-08-03
UL Software				
Description	**Manufacturer**	**Model**	**Version**	
Radiated software	UL	UL EMC	Ver 9.5	
AC Line Conducted software	UL	UL EMC	Ver 9.5	

7. SUMMARY TABLE

FCC Part Section	Test Description	Test Limit	Test Condition	Test Result
15.407(e)	6dB Band width (5.8GHz)	> 500kHz	Conducted	Complies
15.407 (a)(1)(iv)	TX Cond. Power (5.150-5.250)	< 24dBm		Complies
15.407 (a)(2)	TX Cond. Power (5.250-5.350 & 5.470-5.725)	< 24dBm or 11+10Log(26dB BW)		Complies
15.407 (a)(3)(i)	TX Cond. Power (5.725-5.850)	< 30dBm		Complies
15.407 (a)(3)(iii)	TX Cond. Power (5.850-5.895)	< 30dBm e.i.r.p.		Complies
15.407 (a)(1)(iv) & (a)(2)	PSD (5.150-5.250 5.250-5.350 & 5.470-5.725)	< 11dBm/MHz		Complies
15.407 (a)(3)	PSD (5.725-5.850)	< 30dBm/500kHz		Complies
15.407 (a)(3)(iii)	PSD (5.850-5.895)	< 14dBm/MHz e.i.r.p.		Complies
15.207 (a)	AC Power Line conducted emissions	Section 13	Radiated	Complies
15.407 (b) & 15.209	Radiated Spurious Emission	< 74dBuV/m PK < 54dBuV/m AV		Complies
15.407 (h)(2)	Dynamic Frequency Selection	N/A	Condcuted	Complies[Note]

IC Part Section	Test Description	Test Limit	Test Condition	Test Result
RSS-247 6.2.4.1	6dB Band width (5.8GHz)	> 500 kHz	Condcuted	PASS
RSS-247 6.2.1.1 6.2.2.1 6.2.3.1	TX Cond. Power 5.15-2.25, 5.25-5.35 & 5.47-5.725	Section 10.2		PASS
RSS-247 6.2.4.1	TX Cond. Power 5.725-5.825	Section 10.2		PASS
RSS-247 6.2.1.1 6.2.2.1 6.2.3.1	PSD (5.2,5.3,5.5GHz)	Section 10.2		PASS
RSS-247 6.2.4.1	PSD (5.8GHz)	Section 10.2		PASS
RSS-GEN Clause 8.8	AC Power Line conducted emissions	Section 13	Radiated	PASS
RSS-GEN Clause 7 & 8.9	Radiated Spurious Emission	< 54dBuV/m		PASS
RSS-247 6.3	Dynamic Frequency Selection	N/A	Condcuted	PASS

Note. This EUT does not support channel puncturing.

8. MEASUREMENT METHODS

On-Time and Duty Cycle : KDB 789033 D02 v02r01, Section II.B.

6dB Emission BW : KDB 789033 D02 v02r01, Section II.C.2.

26dB Emission BW : KDB 789033 D02 v02r01, Section II.C.1.

99% Occupied BW : KDB 789033 D02 v02r01, Section II.D.

Conducted Output Power : KDB 789033 D02 v02r01, Section II.E.3.b(Method PM-G)

Conducted Output Power for Straddle Channel (ch144/142/138 for 20/40/80MHz BW):

KDB 789033 D02 v02r01, Section II.E.2.b(Method SA-1)

Power Spectral Density : KDB 789033 D02 v02r01, Section II.F.

Unwanted emissions in restricted bands : KDB 789033 D02 v02r01, Section II.G.3 – II.G.6.

Unwanted emissions in non-restricted bands : KDB 789033 D02 v02r01, Section II.G.3 – II.G.6.

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

UL Korea, Ltd. Suwon Laboratory FORM ID: FCC_15E(04)
218 Maeyeong-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16675, Korea TEL: (031) 337-9902 FAX: (031) 213-5433

9. REFERENCE MEASUREMENTS RESULTS

9.1. ON TIME AND DUTY CYCLE RESULTS

Mode	On Time [ms]	Period [ms]	Duty Cycle X [Linear]	Duty Cycle X [%]	Duty Cycle Correction Factor[dB]
802.11a MIMO	2.764	2.862	0.966	96.576	0.15
802.11n(HT20) MIMO	2.452	2.550	0.962	96.157	0.17
802.11n(HT40) MIMO	2.384	2.481	0.961	96.090	0.17
802.11ac(VHT80) MIMO	1.680	1.776	0.946	94.595	0.24
802.11ac(VHT160) MIMO	1.406	1.504	0.935	93.484	0.29

Mode	ANT.	Tone	On Time [ms]	Period [ms]	Duty Cycle X [Linear]	Duty Cycle X [%]	Duty Cycle Correction Factor[dB]
802.11ax HE20	MIMO	26T	2.595	2.612	0.993	99.349	-
		52T	2.590	2.608	0.993	99.310	-
		106T	2.433	2.450	0.993	99.306	-
		SU	5.451	5.470	0.997	99.653	-
802.11ax HE40	MIMO	26T	2.558	2.610	0.980	98.008	-
		52T	2.560	2.608	0.982	98.160	-
		106T	2.415	2.455	0.984	98.371	-
		242T	2.385	2.403	0.993	99.251	-
		SU	5.443	5.465	0.996	99.597	-
802.11ax HE80	MIMO	26T	2.563	2.611	0.982	98.162	-
		52T	2.558	2.607	0.981	98.120	-
		106T	2.412	2.451	0.984	98.409	-
		242T	2.386	2.403	0.993	99.293	-
		484T	2.381	2.399	0.992	99.250	-
		SU	5.435	5.456	0.996	99.615	-
802.11ax HE160	MIMO	26T	2.564	2.611	0.982	98.200	-
		52T	2.559	2.606	0.982	98.196	-
		106T	2.399	2.452	0.978	97.838	0.09
		242T	2.355	2.387	0.987	98.659	-
		484T	2.379	2.405	0.989	98.919	-
		996T	2.416	2.435	0.992	99.220	-
		SU	5.439	5.462	0.996	99.579	-

Note. If the duty cycle is over 98%, compensation is not included in average measurement.

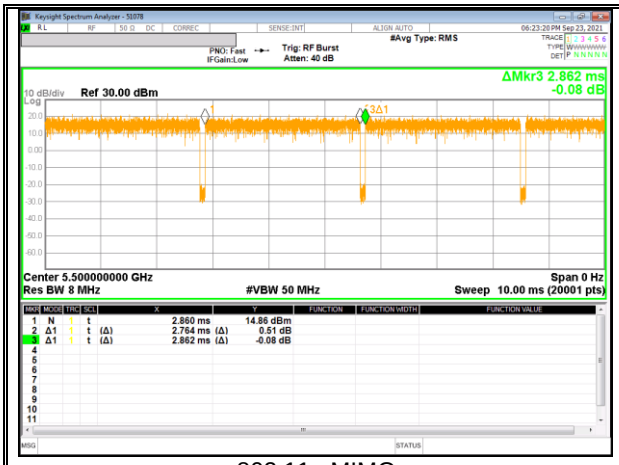
LIMITS

None; for reporting purposes only.

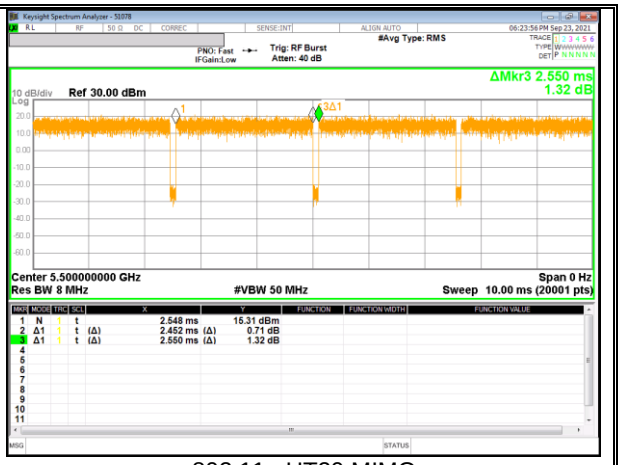
PROCEDURE

KDB 789033 D02 v02r01 Zero-Span Spectrum Analyzer Method.

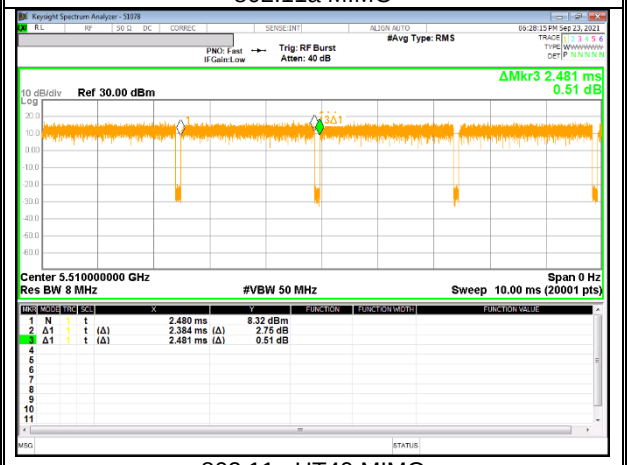
9.2. DUTY CYCLE PLOTS



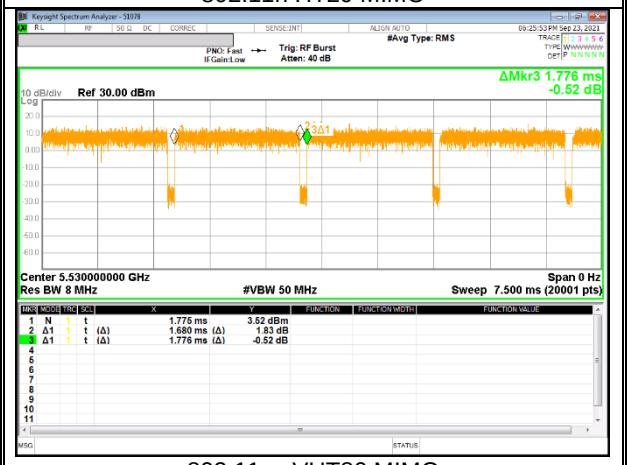
802.11a MIMO



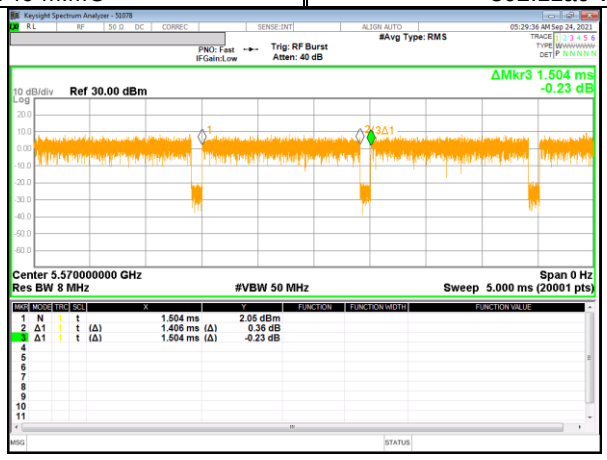
802.11n HT20 MIMO



802.11n HT40 MIMO



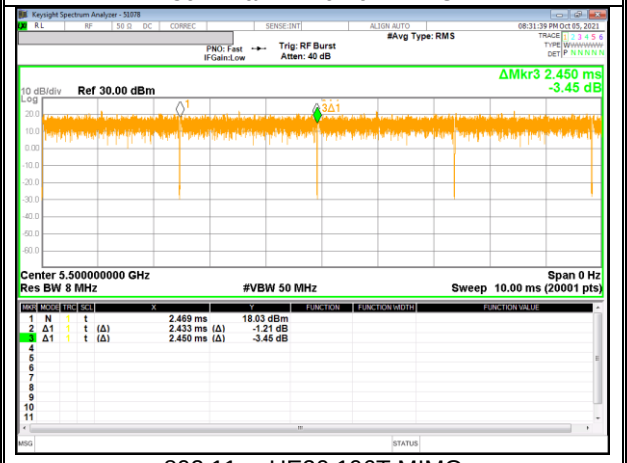
802.11ac VHT80 MIMO



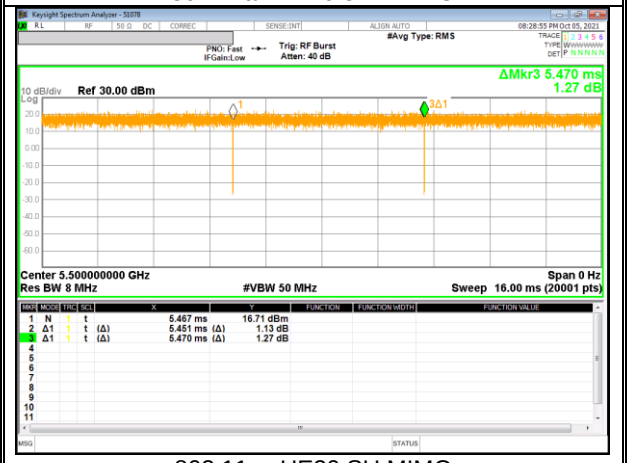
802.11ac VHT160 MIMO

802.11ax HE20 26T MIMO

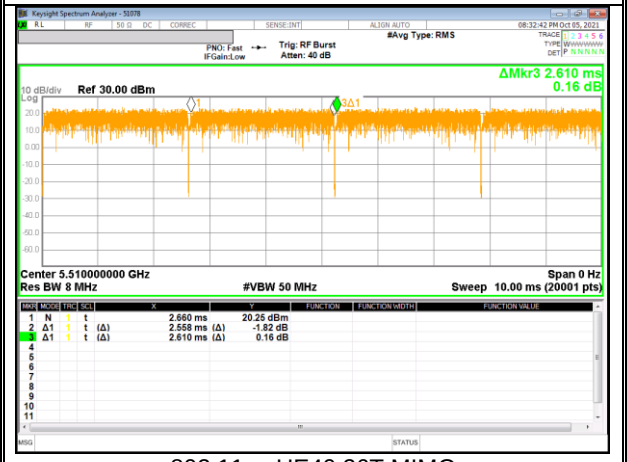
802.11ax HE20 52T MIMO



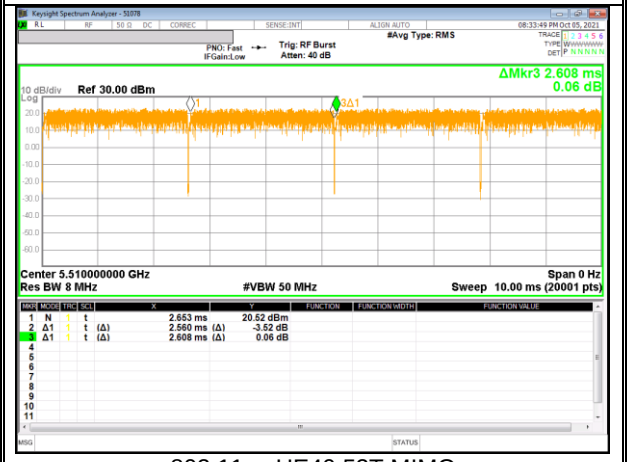
802.11ax HE20 106T MIMO



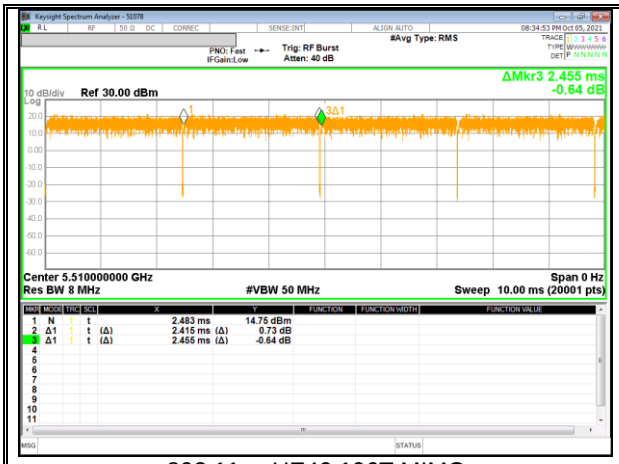
802.11ax HE20 SU MIMO



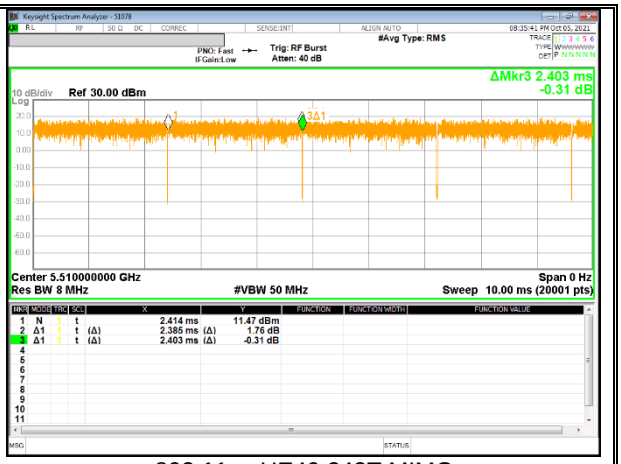
802.11ax HE40 26T MIMO



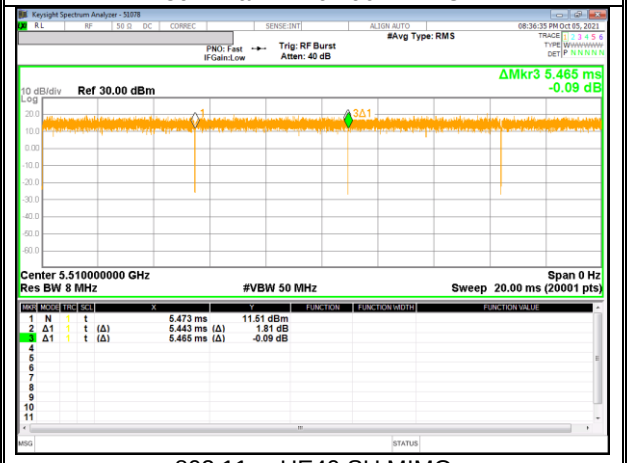
802.11ax HE40 52T MIMO



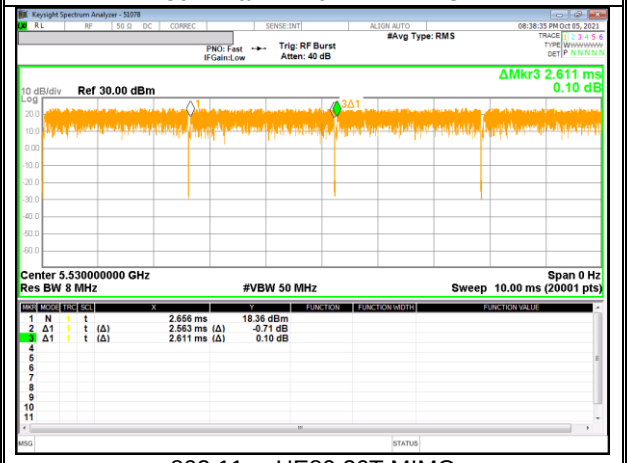
802.11ax HE40 106T MIMO



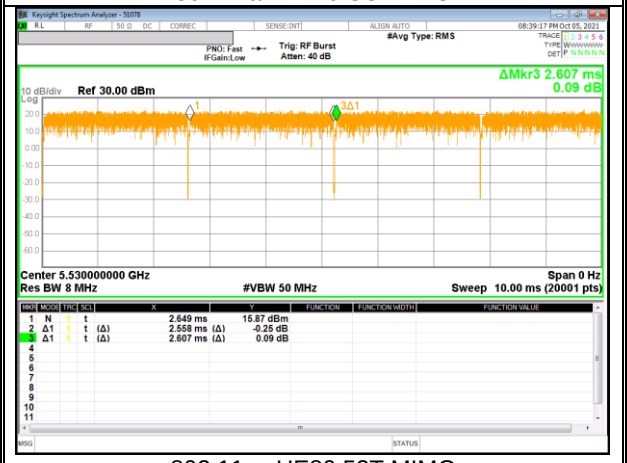
802.11ax HE40 242T MIMO



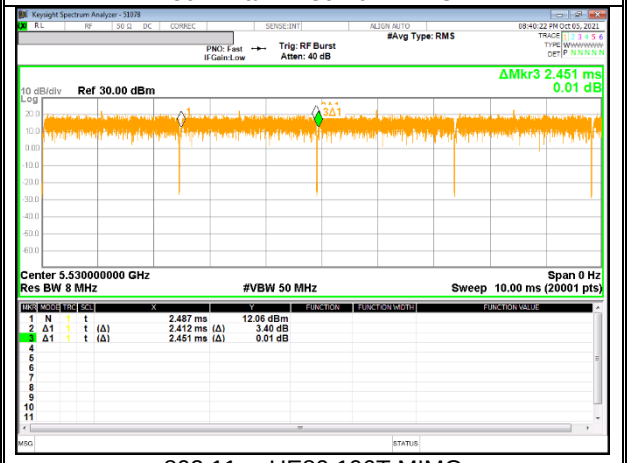
802.11ax HE40 SU MIMO



802.11ax HE80 26T MIMO



802.11ax HE80 52T MIMO

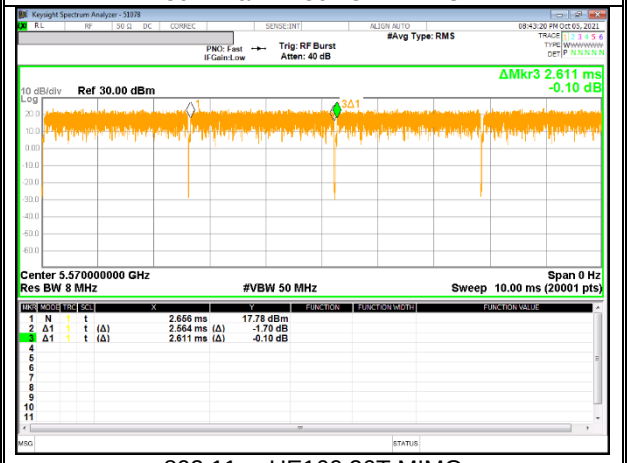


802.11ax HE80 106T MIMO

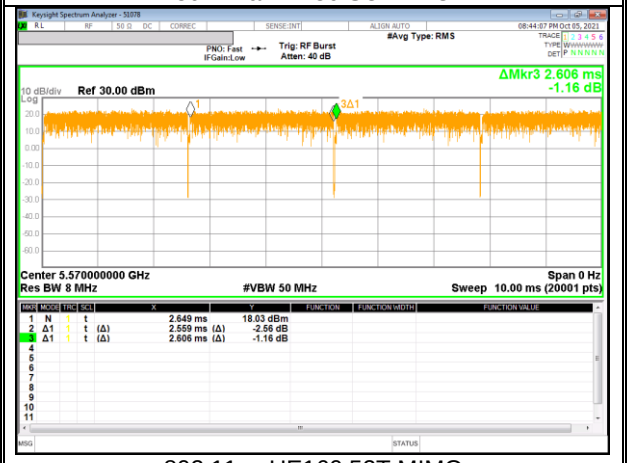
802.11ax HE80 242T MIMO

802.11ax HE80 484T MIMO

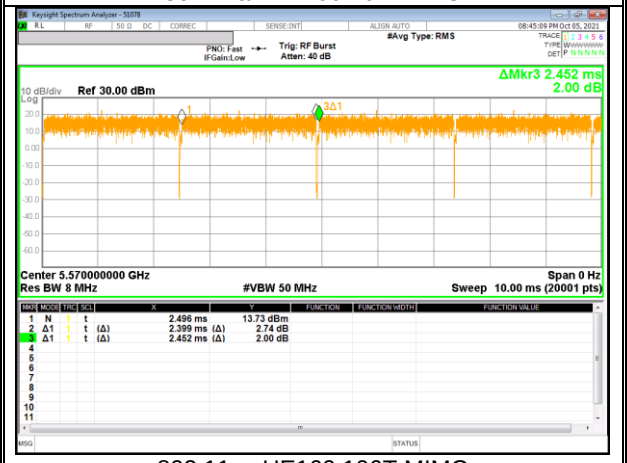
802.11ax HE80 SU MIMO



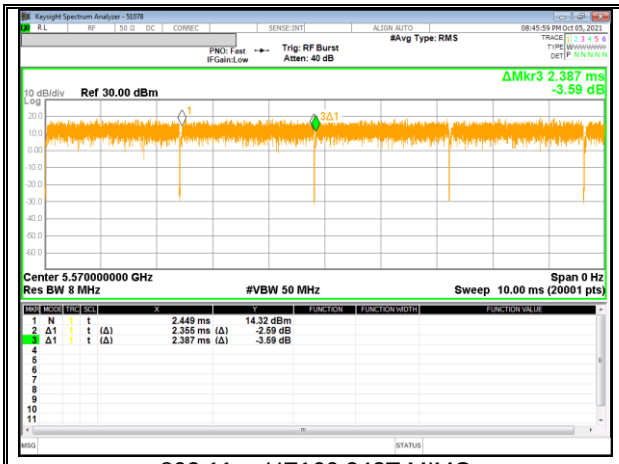
802.11ax HE160 26T MIMO



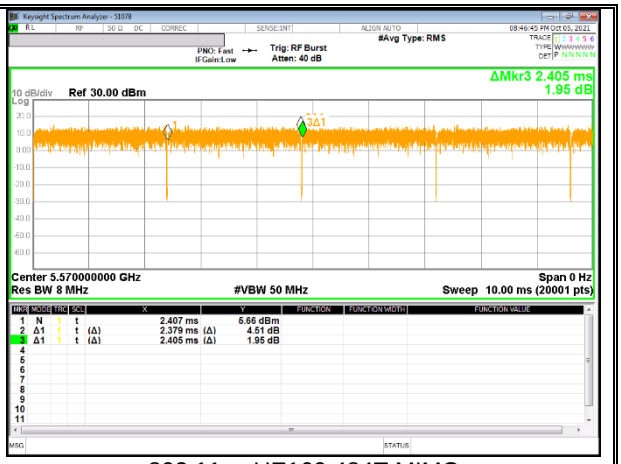
802.11ax HE160 52T MIMO



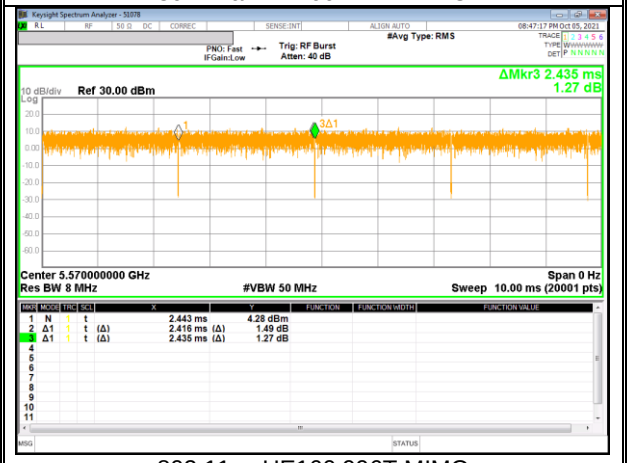
802.11ax HE160 106T MIMO



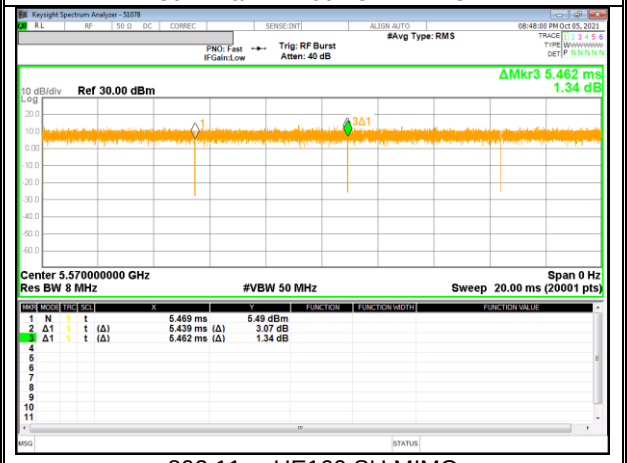
802.11ax HE160 242T MIMO



802.11ax HE160 484T MIMO



802.11ax HE160 996T MIMO



802.11ax HE160 SU MIMO

9.3. 26 dB BANDWIDTH & 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

Reference to 789033 D02 General UNII Test Procedures New Rules v02r01: The transmitter output is connected to a spectrum analyzer with the RBW set to approximately 1% of EBW, the VBW > RBW, peak detector and max hold.

- 26 dB Bandwidth
  RBW set to approximately 1% of EBW, the VBW > RBW, peak detector and max hold.
- 99% Bandwidth
  RBW: 1 ~ 5% of 99% Bandwidth, VBW >= 3 x RBW, sample detector.

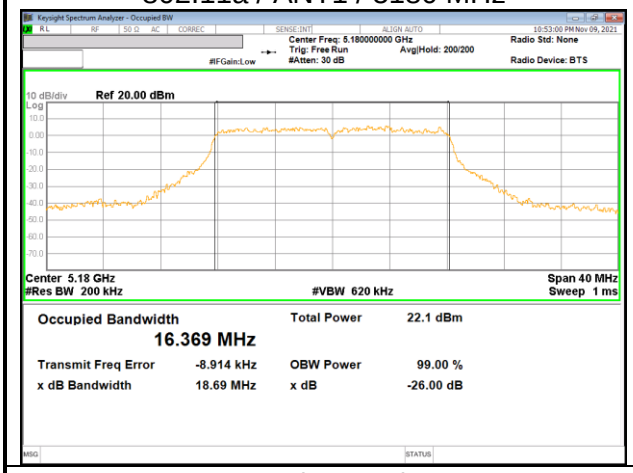
RESULTS

- Please refer to the next page

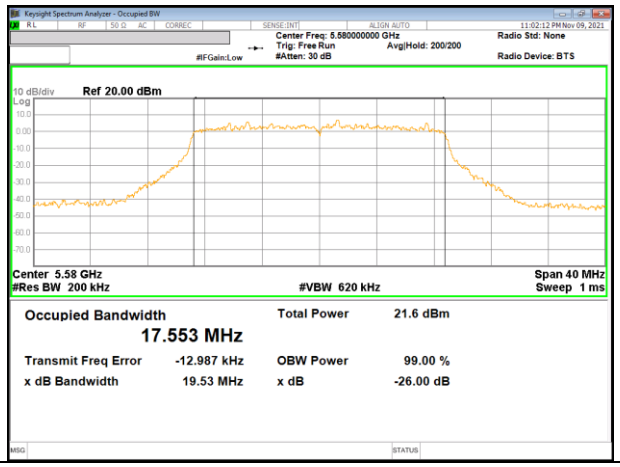
WORST CASE TEST PLOTS

- 26 dB BANDWIDTH

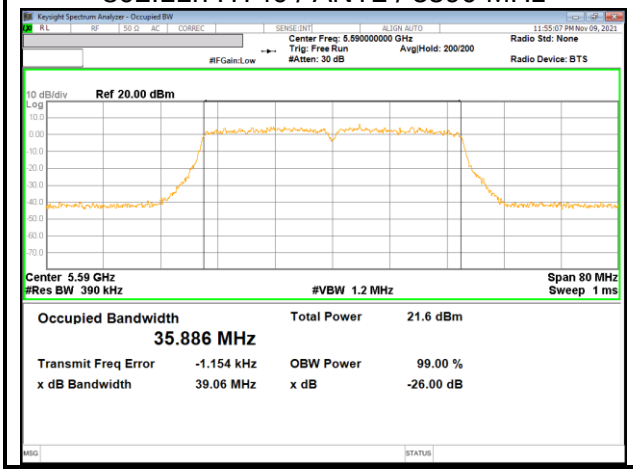
802.11a / ANT1 / 5180 MHz



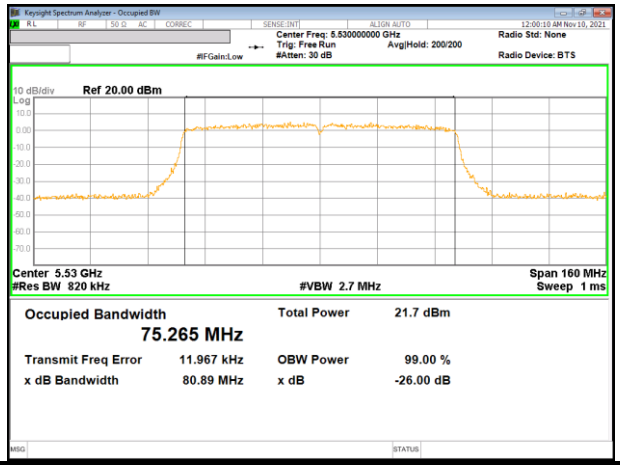
802.11n HT20 / ANT1 / 5580 MHz



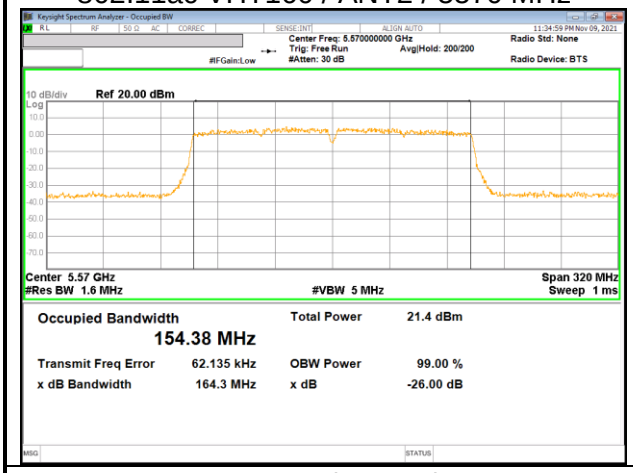
802.11n HT40 / ANT2 / 5590 MHz



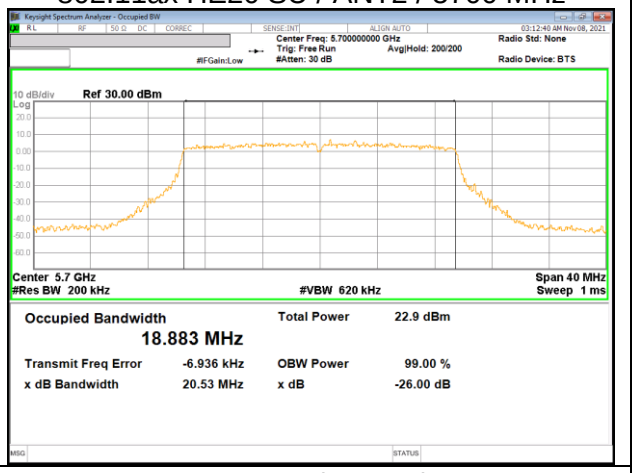
802.11ac VHT80 / ANT2 / 5530 MHz



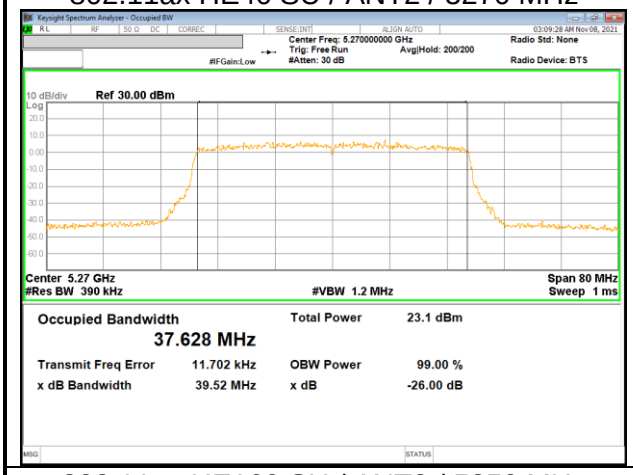
802.11ac VHT160 / ANT2 / 5570 MHz



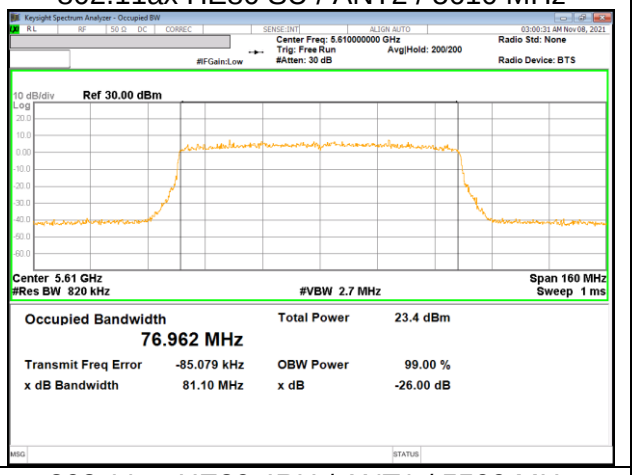
802.11ax HE20 SU / ANT2 / 5700 MHz



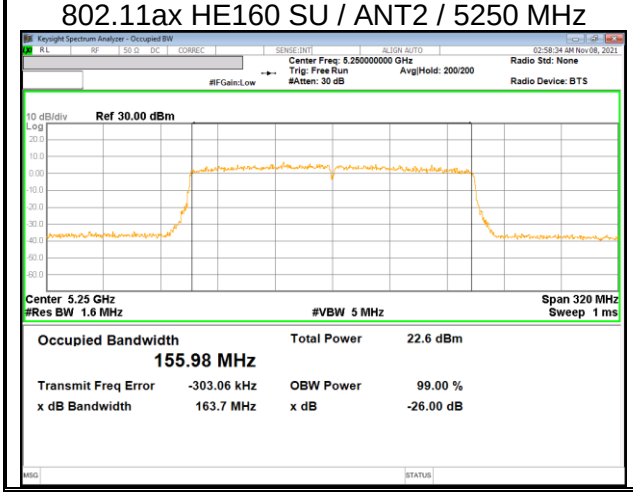
802.11ax HE40 SU / ANT2 / 5270 MHz



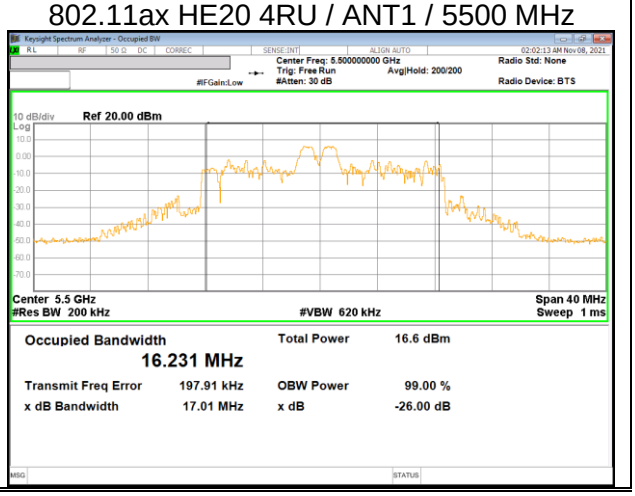
802.11ax HE80 SU / ANT2 / 5610 MHz



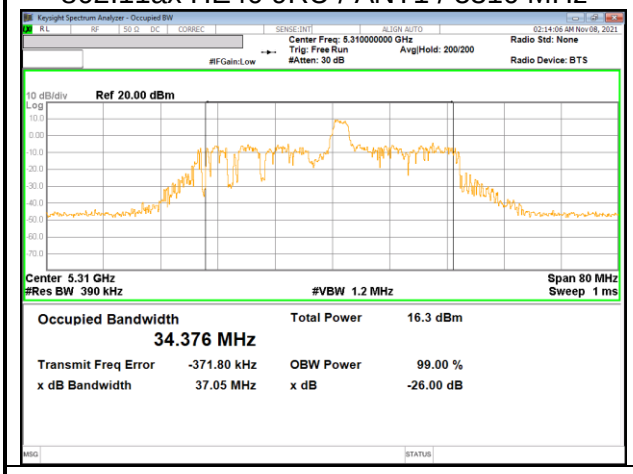
802.11ax HE160 SU / ANT2 / 5250 MHz



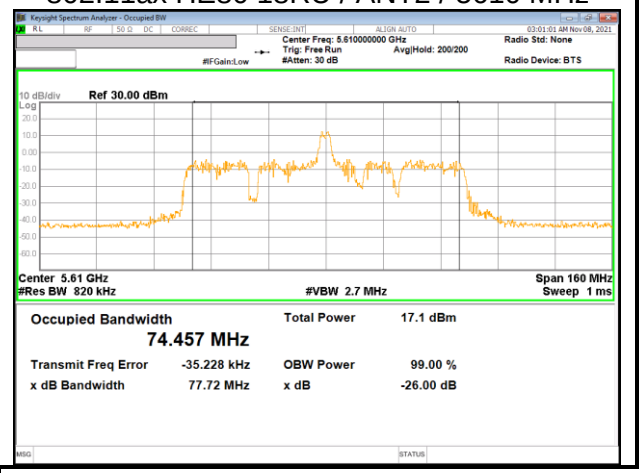
802.11ax HE20 4RU / ANT1 / 5500 MHz



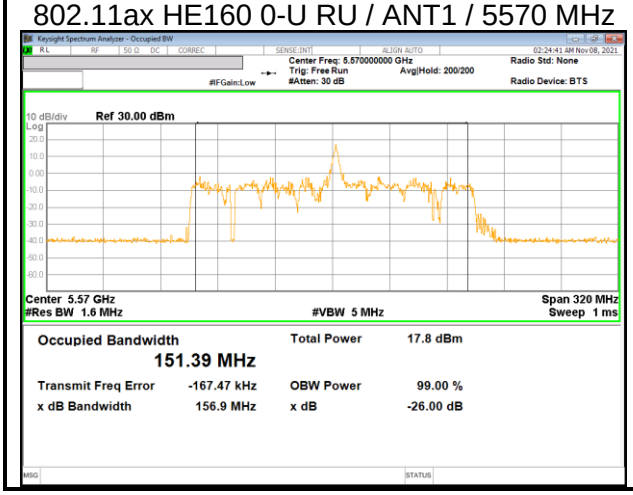
802.11ax HE40 9RU / ANT1 / 5310 MHz



802.11ax HE80 18RU / ANT2 / 5610 MHz

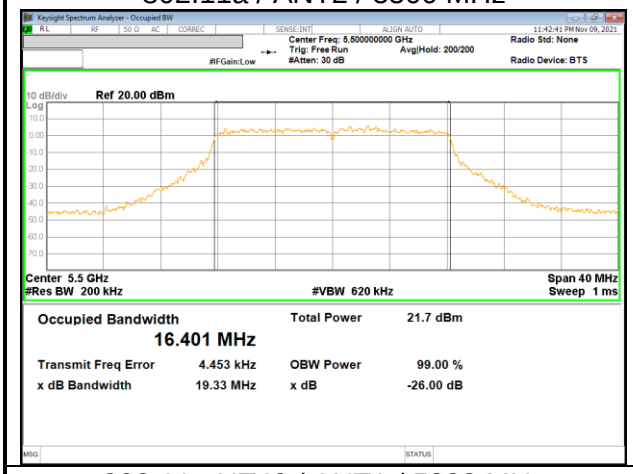


802.11ax HE160 0-U RU / ANT1 / 5570 MHz

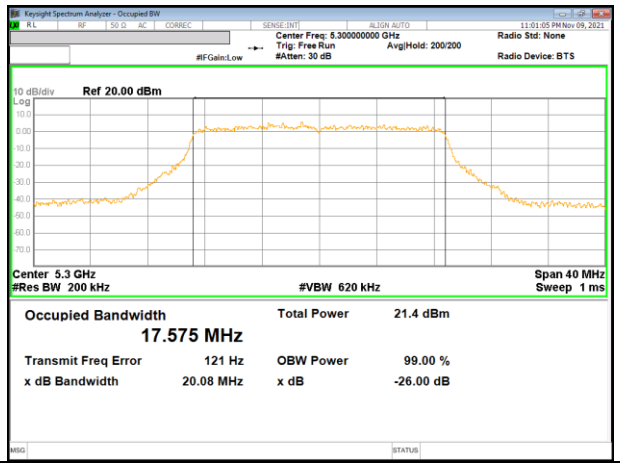


- 99% BANDWIDTH

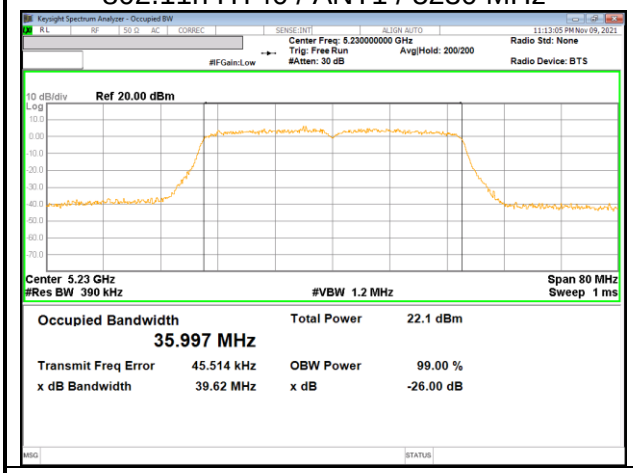
802.11a / ANT2 / 5500 MHz



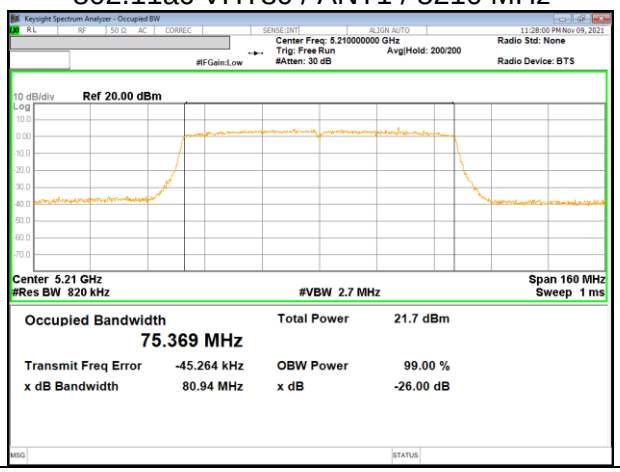
802.11n HT20 / ANT1 / 5300 MHz



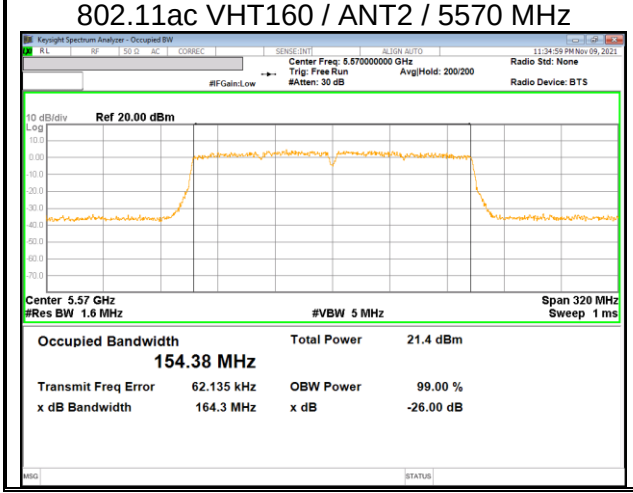
802.11n HT40 / ANT1 / 5230 MHz



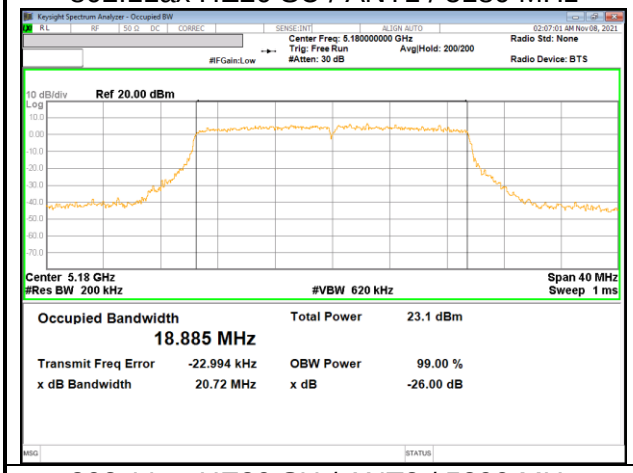
802.11ac VHT80 / ANT1 / 5210 MHz



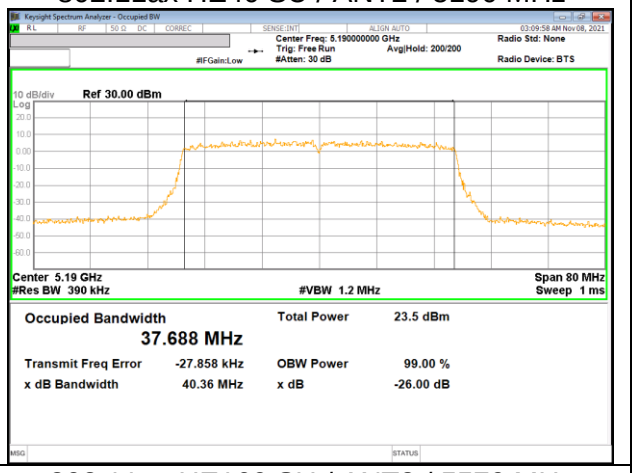
802.11ac VHT160 / ANT2 / 5570 MHz



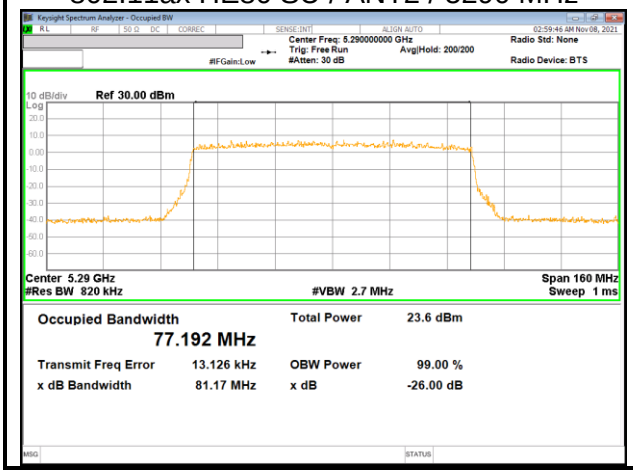
802.11ax HE20 SU / ANT1 / 5180 MHz



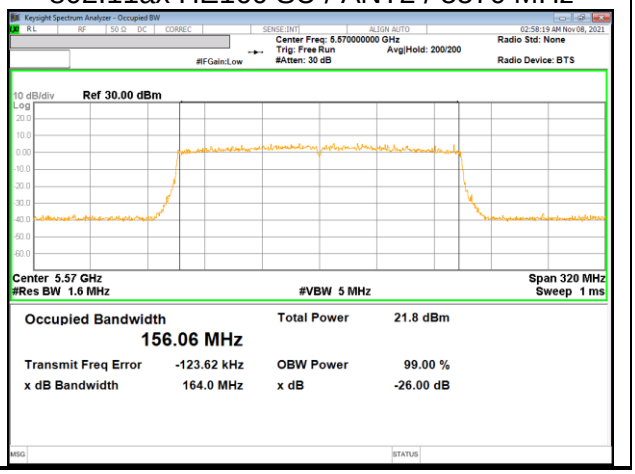
802.11ax HE40 SU / ANT2 / 5190 MHz



802.11ax HE80 SU / ANT2 / 5290 MHz



802.11ax HE160 SU / ANT2 / 5570 MHz



9.3.1. 802.11a

Band	Channel	Center Freq. [MHz]	26 dB BW [MHz]		Worst	99% BW [MHz]	
			ANT1	ANT2		ANT1	ANT2
UNII-1Note	36	5180	18.69	19.46	18.69	16.37	16.37
	40	5200	19.02	19.05		16.35	16.36
	48	5240	19.09	19.53		16.36	16.37
UNII-2A Note	52	5260	18.89	19.37	18.79	16.35	16.39
	60	5300	18.79	19.27		16.34	16.38
	64	5320	19.93	19.20		16.38	16.39
UNII-2C	100	5500	19.89	19.33	18.96	16.35	16.40
	116	5580	18.96	19.23		16.35	16.38
	140	5700	19.01	19.63		16.36	16.38

Note. As a result of 99% bandwidth test, the bandwidth of UNII-1 does not interfere with UNII-2A.

9.3.2. 802.11n HT20

Band	Channel	Center Freq. [MHz]	26 dB BW [MHz]		Worst	99% BW [MHz]	
			ANT1	ANT2		ANT1	ANT2
UNII-1 Note	36	5180	20.11	20.00	19.89	17.53	17.53
	40	5200	20.29	20.04		17.54	17.54
	48	5240	20.17	19.89		17.55	17.53
UNII-2A Note	52	5260	19.92	19.93	19.85	17.54	17.54
	60	5300	20.08	20.11		17.58	17.54
	64	5320	19.85	19.96		17.53	17.52
UNII-2C	100	5500	20.07	20.17	19.53	17.55	17.53
	116	5580	19.53	20.23		17.55	17.53
	140	5700	20.00	19.72		17.56	17.53

Note. As a result of 99% bandwidth test, the bandwidth of UNII-1 does not interfere with UNII-2A.

9.3.3. 802.11n HT40

Band	Channel	Center Freq. [MHz]	26 dB BW [MHz]		Worst	99% BW [MHz]	
			ANT1	ANT2		ANT1	ANT2
UNII-1 Note	38	5190	39.87	39.59	39.59	35.94	35.91
	46	5230	39.62	39.77		36.00	35.91
UNII-2A Note	54	5270	39.56	39.47	39.47	35.99	35.91
	62	5310	39.86	39.55		35.96	35.91
UNII-2C	102	5510	39.72	39.55	39.06	35.99	35.91
	118	5590	40.04	39.06		35.98	35.89
	134	5670	39.53	39.33		35.98	35.93

Note. As a result of 99% bandwidth test, the bandwidth of UNII-1 does not interfere with UNII-2A.

9.3.4. 802.11ac VHT80

Band	Channel	Center Freq. [MHz]	26 dB BW [MHz]		Worst	99% BW [MHz]	
			ANT1	ANT2		ANT1	ANT2
UNII-1 Note	42	5210	80.94	81.24	80.94	75.37	75.30
UNII-2A Note	58	5290	81.91	80.95	80.95	75.29	75.09
UNII-2C	106	5530	81.67	80.89	80.89	75.36	75.27
	122	5610	81.49	81.05		75.32	75.17

Note. As a result of 99% bandwidth test, the bandwidth of UNII-1 does not interfere with UNII-2A.

9.3.5. 802.11ac VHT160

Band	Channel	Center Freq. [MHz]	26 dB BW [MHz]		Worst	99% BW [MHz]	
			ANT1	ANT2		ANT1	ANT2
UNII-1&2A	50	5250	164.60	164.50	164.50	154.17	154.13
UNII-2C	114	5570	165.00	164.30	164.30	154.36	154.38

Note. As a result of 99% bandwidth test, the bandwidth of UNII-1 does not interfere with UNII-2A.

9.3.6. 802.11ax HE20

Band	Channel	Center Freq. [MHz]	26 dB BW [MHz]		Worst	99% BW [MHz](Note)	
			ANT1	ANT2		ANT1	ANT2
UNII-1 Note	36	5180	20.72	21.06	20.66	18.89	18.89
	40	5200	20.71	20.66		18.86	18.86
	48	5240	20.93	20.81		18.85	18.87
UNII-2A Note	52	5260	20.80	20.85	20.59	18.87	18.87
	60	5300	20.88	20.88		18.88	18.86
	64	5320	20.59	20.72		18.88	18.86
UNII-2C	100	5500	21.09	20.88	20.53	18.88	18.88
	116	5580	20.87	20.74		18.88	18.88
	140	5700	21.04	20.53		18.88	18.88

Note. As a result of 99% bandwidth test, the bandwidth of UNII-1 does not interfere with UNII-2A.

9.3.7. 802.11ax HE40

Band	Channel	Center Freq. [MHz]	26 dB BW [MHz]		Worst	99% BW [MHz](Note)	
			ANT1	ANT2		ANT1	ANT2
UNII-1 Note	38	5190	40.10	40.36	39.93	37.62	37.69
	46	5230	39.93	40.10		37.60	37.65
UNII-2A Note	54	5270	40.05	39.52	39.52	37.58	37.63
	62	5310	40.44	39.97		37.59	37.66
UNII-2C	102	5510	39.98	40.39	39.98	37.63	37.68
	118	5590	40.05	40.15		37.62	37.60
	134	5670	40.01	40.03		37.57	37.58

Note. As a result of 99% bandwidth test, the bandwidth of UNII-1 does not interfere with UNII-2A.

9.3.8. 802.11ax HE80

Band	Channel	Center Freq. [MHz]	26 dB BW [MHz]		Worst	99% BW [MHz](Note)	
			ANT1	ANT2		ANT1	ANT2
UNII-1 Note	42	5210	81.86	81.45	81.45	76.94	76.81
UNII-2A Note	58	5290	81.38	81.17	81.17	76.97	77.19
UNII-2C	106	5530	81.45	81.21	81.10	76.86	77.02
	122	5610	82.27	81.10		76.94	76.96

Note. As a result of 99% bandwidth test, the bandwidth of UNII-1 does not interfere with UNII-2A.

9.3.9. 802.11ax HE160

Band	Channel	Center Freq. [MHz]	26 dB BW [MHz]		Worst	99% BW [MHz](Note)	
			ANT1	ANT2		ANT1	ANT2
UNII-1&2A	50	5250	164.10	163.70	163.70	155.80	155.98
UNII-2C	114	5570	164.20	164.00	164.00	155.94	156.06

Note. As a result of 99% bandwidth test, the bandwidth of UNII-1 does not interfere with UNII-2A.

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9.3.10. STRADDLE CHANNEL

Mode	Channel	Center Freq. [MHz]	26 dB BW [MHz]			
			ANT1		ANT2	
			UNII-2C	UNII-3	UNII-2C	UNII-3
802.11a	Straddle	5720	14.58	4.70	14.66	4.51
802.11n HT20	Straddle	5720	15.25	5.30	15.27	5.21
802.11n HT40	Straddle	5710	34.41	4.38	34.49	4.49
802.11ac VHT80	Straddle	5690	74.97	4.71	74.65	5.16
802.11ax HE20(SU)	Straddle	5720	15.39	5.74	15.31	5.45
802.11ax HE40(SU)	Straddle	5710	35.34	5.05	34.84	4.88
802.11ax HE80(SU)	Straddle	5690	75.91	6.00	75.61	5.66

9.3.11. 802.11ax HE20(RU)

Band Mode	Center Freq. [MHz]	Tones	RU offset	26 dB BW [MHz]		99% BW [MHz]	
				ANT1	ANT2	ANT1	ANT2
UNII-1 Note	5180	26T	0	20.15	20.05	18.23	18.40
			4	17.52	18.12	16.53	16.49
			8	20.37	19.90	17.70	18.24
	5200		0	20.39	20.34	18.46	18.38
			4	18.43	17.98	16.88	16.99
			8	20.42	19.63	17.54	18.29
	5240		0	20.43	19.97	18.47	17.65
			4	18.44	18.27	17.31	15.85
			8	19.84	20.01	18.35	18.05
UNII-2A Note	5260	26T	0	20.15	18.93	18.40	17.74
			4	18.00	18.00	16.82	17.12
			8	20.10	19.76	18.26	18.34
	5300		0	20.53	19.84	18.31	18.37
			4	18.64	17.94	17.30	16.87
			8	20.22	20.21	18.37	18.20
	5320		0	20.73	19.80	18.19	18.36
			4	18.69	18.12	16.59	16.81
			8	19.80	19.77	17.95	17.62
UNII-2C	5500	26T	0	19.97	19.47	18.17	18.08
			4	17.01	18.36	16.23	16.90
			8	20.35	19.96	17.42	18.20
	5580		0	20.01	19.19	18.43	18.01
			4	18.82	17.51	17.22	16.58
			8	20.10	19.77	18.45	18.37
	5700		0	17.99	19.85	16.69	18.01
			4	18.46	18.28	16.82	16.92
			8	20.33	20.11	18.37	18.38

Note. As a result of 99% bandwidth test, the bandwidth of UNII-1 does not interfere with UNII-2A.

9.3.12. 802.11ax HE40(RU)

Band	Center Freq. [MHz]	Tones	RU offset	26 dB BW [MHz]		99% BW [MHz]	
				ANT1	ANT2	ANT1	ANT2
UNII-1 Note	5190	26T	0	40.19	39.76	37.93	37.43
			9	37.29	37.70	35.73	35.68
			17	40.45	39.67	37.92	37.81
	5230		0	40.22	39.83	37.96	37.73
			9	38.01	37.31	36.04	35.04
			17	40.00	40.04	38.00	37.72
UNII-2A Note	5270	26T	0	40.41	40.05	38.08	37.79
			9	38.20	37.21	36.02	35.33
			17	39.93	38.54	37.97	36.96
	5310		0	40.17	38.12	37.68	36.00
			9	37.05	37.50	34.38	35.76
			17	39.85	40.03	37.88	37.77
UNII-2C	5510	26T	0	40.53	38.58	38.13	36.86
			9	38.32	37.92	36.31	36.18
			17	40.07	39.53	37.92	37.18
	5590		0	40.37	40.03	37.48	37.65
			9	37.86	38.00	35.69	35.91
			17	40.29	39.24	37.37	37.32
	5670		0	39.55	39.81	37.49	37.19
			9	37.99	37.88	36.03	35.82
			17	38.75	39.65	36.99	37.93

Note. As a result of 99% bandwidth test, the bandwidth of UNII-1 does not interfere with UNII-2A.

9.3.13. 802.11ax HE80(RU)

Band	Center Freq. [MHz]	Tones	RU offset	26 dB BW [MHz]		99% BW [MHz]	
				ANT1	ANT2	ANT1	ANT2
UNII-1 Note	5210	26T	0	81.08	81.35	77.96	76.81
			18	77.92	77.84	74.89	74.62
			36	81.64	77.93	78.13	75.08
UNII-2A Note	5290	26T	0	82.13	80.74	77.75	78.01
			18	78.11	77.84	74.81	74.75
			36	81.91	82.54	78.79	78.52
UNII-2C	5530	26T	0	81.42	81.40	74.39	77.67
			18	78.15	78.16	70.94	74.45
			36	81.57	80.99	78.10	78.02
	5610	26T	0	77.88	80.90	74.62	77.34
			18	78.79	77.72	75.13	74.46
			36	81.69	81.12	78.61	78.00

Note. As a result of 99% bandwidth test, the bandwidth of UNII-1 does not interfere with UNII-2A.

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9.3.14. 802.11ax HE160(RU)

Band	Center Freq. [MHz]	Tones	RU offset	26 dB BW [MHz]		99% BW [MHz]	
				ANT1	ANT2	ANT1	ANT2
UNII-1&2A	5250	26T	0 L	164.00	162.30	158.07	156.73
			0 U	157.60	157.40	152.33	152.70
			36 U	162.30	163.30	158.53	157.98
UNII-2C	5570	26T	0 L	163.20	163.50	157.61	158.02
			0 U	156.90	157.40	151.39	151.95
			36 U	163.20	162.80	155.60	158.57

9.3.15. 802.11ax STRADDLE CHANNEL(RU)

Band	Mode	Center Freq. [MHz]	Tones	RU offset	26 dB BW [MHz]			
					ANT1		ANT2	
					UNII-2C	UNII-3	UNII-2C	UNII-3
Straddle Channel	HE20	5720	26T	6	14.34	3.25	14.17	4.05
	HE40	5710		15	34.08	3.07	34.07	2.12
	HE80	5690		34	74.20	4.38	73.38	3.53

10. ANTENNA PORT TEST RESULTS

10.1. 6 dB BANDWIDTH & 99% BANDWIDTH

LIMITS

FCC §15.407 / RSS-247 6.2.4.1
The minimum 6 dB bandwidth shall be at least 500 kHz.

TEST PROCEDURE

Reference to 789033 D02 General UNII Test Procedures New Rules v02r01: The transmitter output is connected to a spectrum analyzer with the RBW set to100KHz, the VBW >= 3 x RBW, peak detector and max hold.

- 99% Bandwidth
RBW: 1 ~ 5% of 99% Bandwidth, VBW >= 3 x RBW, sample detector.

RESULTS

- Please refer to the next page

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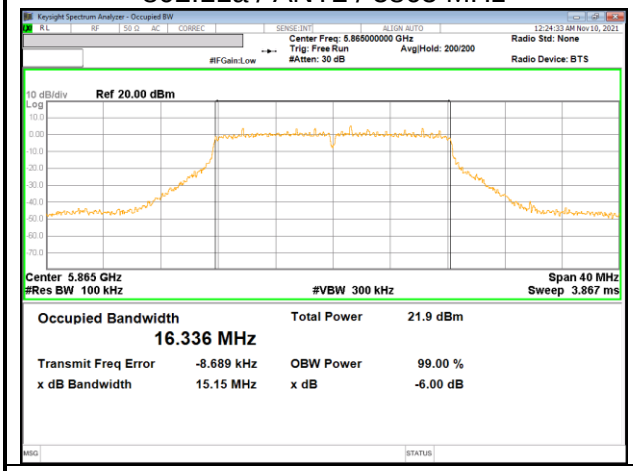
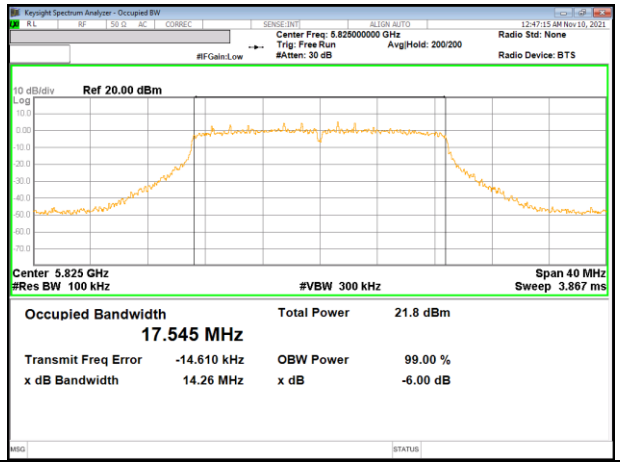
WORST CASE TEST PLOTS

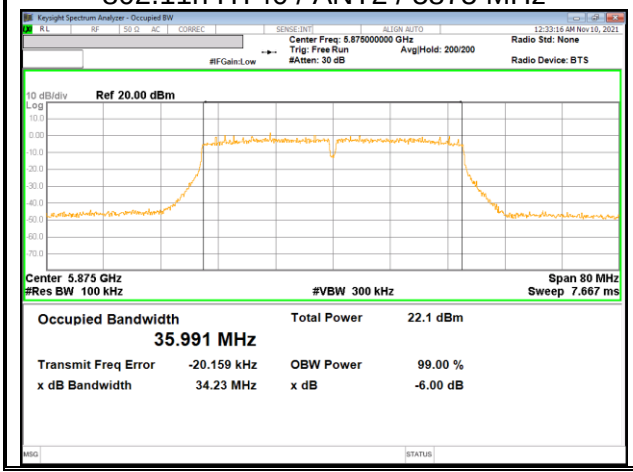
802.11a / ANT2 / 5865 MHz



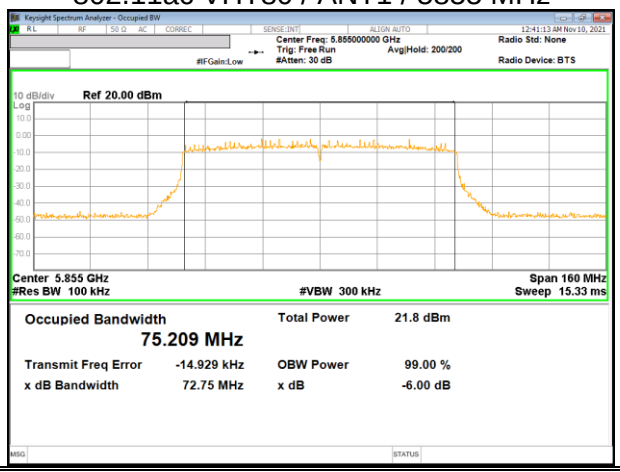
802.11n HT20 / ANT1 / 5825 MHz



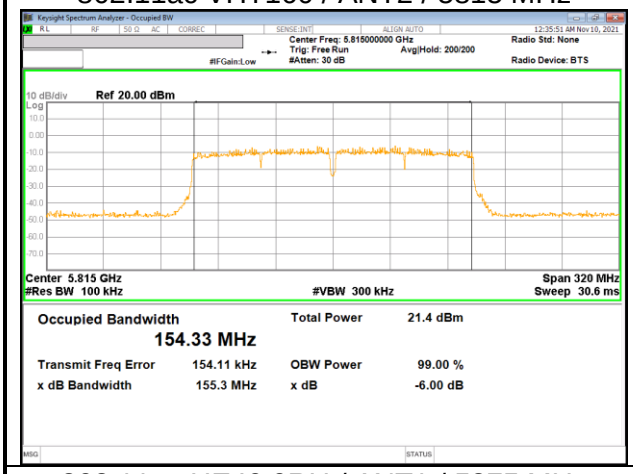
802.11n HT40 / ANT2 / 5875 MHz



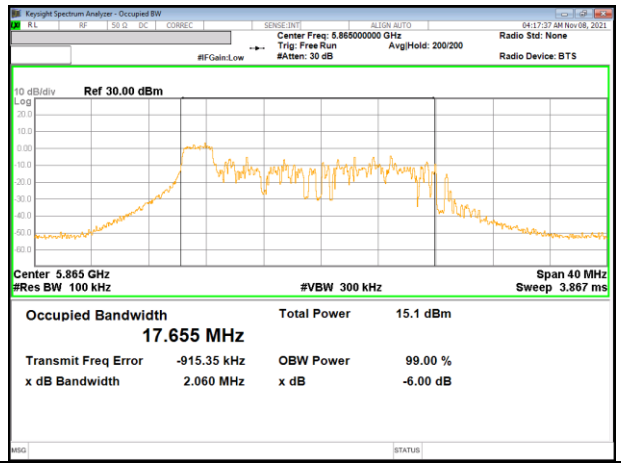
802.11ac VHT80 / ANT1 / 5855 MHz



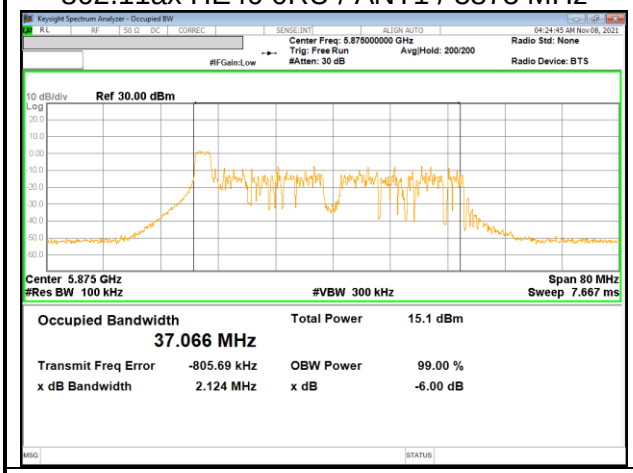
802.11ac VHT160 / ANT2 / 5815 MHz



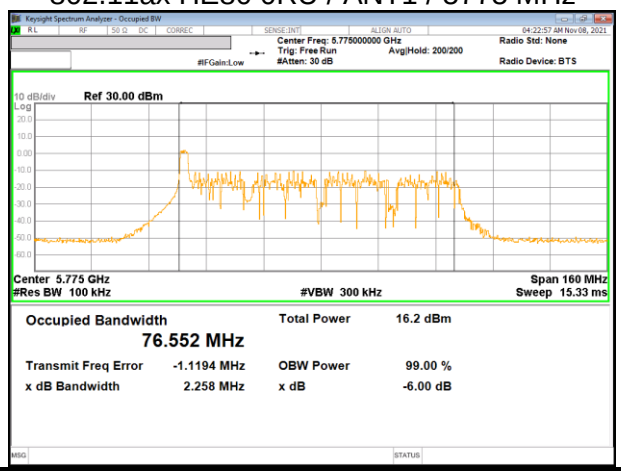
802.11ax HE20 0RU / ANT2 / 5865 MHz



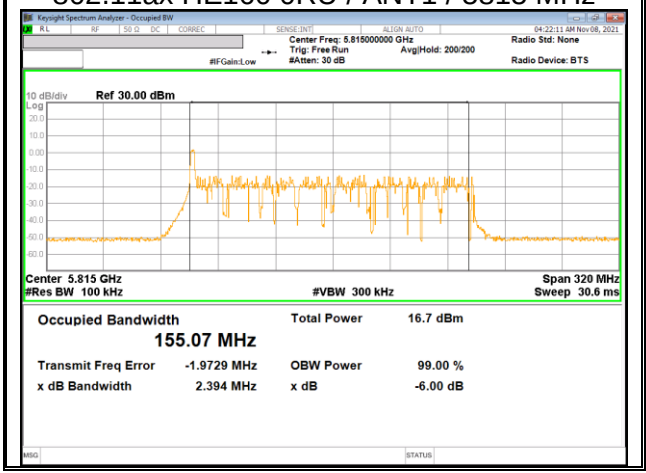
802.11ax HE40 0RU / ANT1 / 5875 MHz



802.11ax HE80 0RU / ANT1 / 5775 MHz

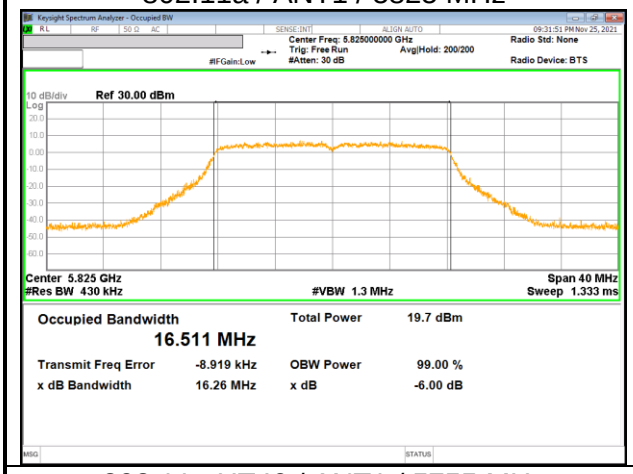


802.11ax HE160 0RU / ANT1 / 5815 MHz

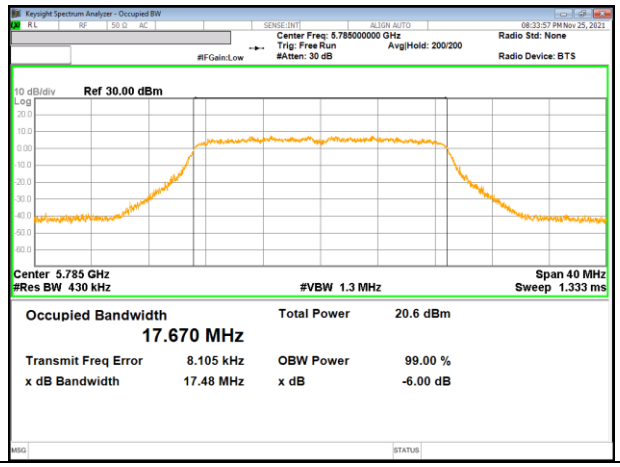


- 99% Bandwidth

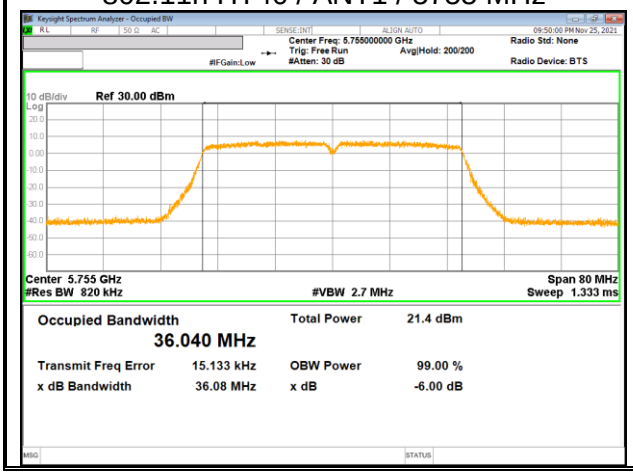
802.11a / ANT1 / 5825 MHz



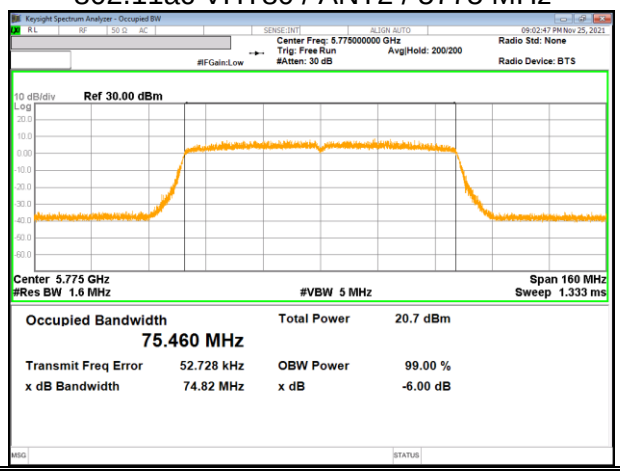
802.11n HT20 / ANT2 / 5785 MHz



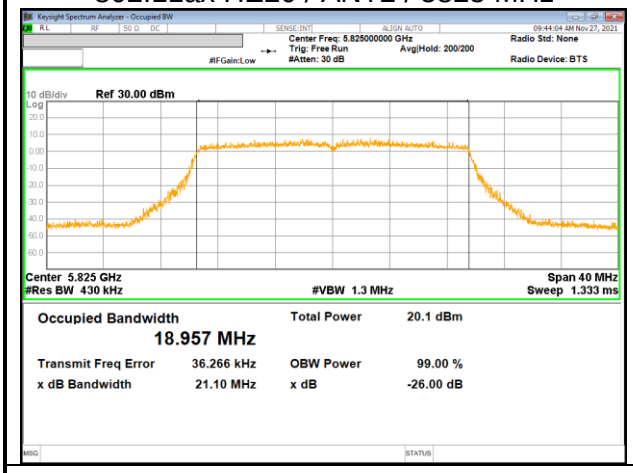
802.11n HT40 / ANT1 / 5755 MHz



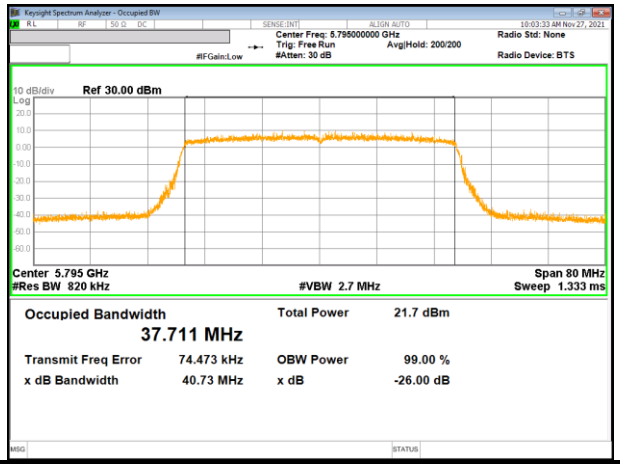
802.11ac VHT80 / ANT2 / 5775 MHz



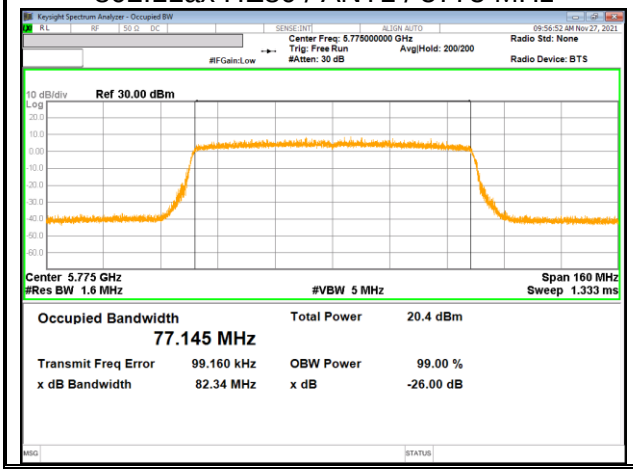
802.11ax HE20 / ANT2 / 5825 MHz



802.11ax HE40 / ANT2 / 5795 MHz



802.11ax HE80 / ANT1 / 5775 MHz



10.1.1. UNII-3 & 4 BAND (6dB BANDWIDTH)

Mode	Channel	Center Freq. [MHz]	6 dB BW [MHz]		Worst	Minimum Limit [MHz]
			ANT1	ANT2		
802.11a	149	5745	15.60	15.97	15.15	0.5
	157	5785	15.76	16.07		
	165	5825	16.30	15.80		
	169	5845	15.69	16.04		
	173	5865	15.56	15.15		
	177	5885	15.81	16.01		
802.11n HT20	149	5745	16.53	15.42	14.26	
	157	5785	16.33	16.30		
	165	5825	14.26	16.22		
	169	5845	16.82	16.80		
	173	5865	15.67	16.85		
	177	5885	15.36	16.06		
802.11n HT40	151	5755	34.49	35.53	34.23	
	159	5795	35.42	35.23		
	167	5835	35.21	35.11		
	175	5875	35.71	34.23		
802.11ac VHT80	155	5775	73.95	75.37	72.75	
	171	5855	72.75	75.24		
802.11ac VHT160	163	5815	155.30	155.30	155.30	

Note. The 6dB bandwidth test was performed in worst case mode(RU)

10.1.2. UNII-3 & 4 BAND(RU) (6dB BANDWIDTH)

Mode	Channel	Center Freq. [MHz]	Tones	RU offset	6 dB BW [MHz]		Minimum Limit [MHz]
					ANT1	ANT2	
HE20	149	5745	26T	0	12.06	2.08	0.5
	157	5785			2.13	2.11	
	165	5825			17.04	2.10	
	169	5845			2.13	2.08	
	173	5865			2.10	2.06	
	177	5885			2.09	2.12	
	Minimum 6dB Bandwidth				2.06		
HE40	151	5755	26T	0	2.13	2.15	
	159	5795			2.13	2.14	
	167	5835			2.13	2.19	
	175	5875			2.12	2.15	
	Minimum 6dB Bandwidth				2.12		
HE80	155	5775	26T	0	2.26	2.27	
	171	5855			2.29	2.29	
	Minimum 6dB Bandwidth				2.26		
HE160	163	5815	26T	0	2.39	2.39	
	Minimum 6dB Bandwidth				2.39		

10.1.3. UNII-3 & 4 BAND (99% BANDWIDTH)

Mode	Channel	Center Freq. [MHz]	99% BW [MHz]		Worst	Minimum Limit [MHz]
			ANT1	ANT2		
802.11a	149	5745	16.50	16.49	16.51	-
	157	5785	16.50	16.50		
	165	5825	16.51	16.48		
802.11n HT20	149	5745	17.65	17.64	17.67	
	157	5785	17.66	17.67		
	165	5825	17.65	17.65		
802.11n HT40	151	5755	36.04	36.02	36.04	
	159	5795	36.04	36.01		
802.11ac VHT80	155	5775	75.44	75.46	75.46	

10.1.4. UNII-3 & 4 BAND(SU) (99% BANDWIDTH)

Mode	Channel	Center Freq. [MHz]	99% BW [MHz]		Worst	Minimum Limit [MHz]
			ANT1	ANT2		
802.11ax HE20	149	5745	18.95	18.92	18.96	-
	157	5785	18.93	18.96		
	165	5825	18.96	18.96		
802.11ax HE40	151	5755	37.66	37.68	37.71	
	159	5795	37.70	37.71		
802.11ax HE80	155	5775	77.15	77.14	77.15	

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10.2. OUTPUT POWER AND PPSD

LIMITS

FCC §15.407 (a)(1)(iv), (a)(2), (a)(3)(i), (a)(3)(iii), RSS-247

FCC

For client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in megahertz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

For the band 5.725-5.850 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

For client devices operating under the control of an indoor access point in the 5.850-5.895 GHz band, the maximum power spectral density must not exceed 14 dBm e.i.r.p. in any 1-megahertz band, and the maximum e.i.r.p. over the frequency band of operation must not exceed 30 dBm. Client devices operating on a channel that spans the 5.725-5.850 GHz and 5.850-5.895 GHz bands must not exceed an e.i.r.p. of 30 dBm.

IC

For client devices in the 5.15-5.25 GHz band,
For other devices, the maximum e.i.r.p. shall not exceed 200 mW or 10 + 10 log10B, dBm, whichever power is less. B is the 99% emission bandwidth in megahertz.
The e.i.r.p. spectral density shall not exceed 10 dBm in any 1.0 MHz band.

For the 5.25-5.35 GHz and 5.47-5.725 GHz bands,
The maximum conducted output power shall not exceed 250 mW or 11 + 10 log10B, dBm, whichever is less. The power spectral density shall not exceed 11 dBm in any 1.0 MHz band. The maximum e.i.r.p. shall not exceed 1.0 W or 17 + 10 log10B, dBm, whichever is less. B is the 99% emission bandwidth in megahertz. Note that devices with a maximum e.i.r.p. greater than 500 mW shall implement TPC in order to have the capability to operate at least 6 dB below the maximum permitted e.i.r.p. of 1 W.

For the band 5.725-5.850 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

For client devices operating under the control of an indoor access point in the 5.850-5.895 GHz band, the maximum power spectral density must not exceed 14 dBm e.i.r.p. in any 1-megahertz band, and the maximum e.i.r.p. over the frequency band of operation must not exceed 30 dBm. Client devices operating on a channel that spans the 5.725-5.850 GHz and 5.850-5.895 GHz bands must not exceed an e.i.r.p. of 30 dBm.

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TEST PROCEDURE

KDB 789033 Method PM is used for output power.

KDB 789033 Method SA-2 is used for only power of straddle Ch. and PPSD. RBW set to 1MHz(500kHz for the band 5.725-5.85 GHz, the VBW >= 3 x RBW, RMS detector and trace averaging). Band power function used for power and peak marker value of the spectrum is used for PSD. For the band 5.850-5.895 GHz, The correlated gain is added to the result to convert e.i.r.p.

DIRECTIONAL ANTENNA GAIN

For OUTPUT POWER and PSD: The TX chains are correlated and the antenna gains are unequal among the chains. The directional gain is:

Frequency Band [MHz]	ANT1 Gain [dBi]	ANT2 Gain [dBi]	Correlated Chains Directional Gain [dBi]
UNII 1 5150 - 5250	-3.5	-4.3	-0.88
UNII 2A 5250 - 5350	-3.4	-3.3	-0.34
UNII 2C 5470 - 5725	-3.5	-2.3	0.13
UNII 3 5725 - 5850	-3.5	-2.6	-0.03
UNII 4 5850 - 5925	-3.5	-2.6	-0.03

Note. Since the correrated gain does not exceed 6dBi, bands except for UNII-4 do not consider the antenna gain.

10.2.1. 802.11a MODE

Output Power Results

Band	Channel	Center Freq. [MHz]	Average Power [dBm]		Direct. Gain [dBi]	Corr'd Power [dBm]	Limit [dBm]
			ANT1	ANT2			
UNII-1	36	5180	16.15	16.02		19.10	23.98
	40	5200	16.14	16.12		19.14	
	48	5240	13.93	12.74		16.39	
UNII-2A	52	5260	16.02	16.10		19.07	23.74
	60	5300	16.01	16.20		19.12	
	64	5320	16.41	15.58		19.03	
UNII-2C	100	5500	16.42	15.89		19.17	23.78
	116	5580	16.10	15.92		19.02	
	140	5700	15.76	15.91		18.85	
UNII-3	149	5745	16.14	16.15		19.16	30.00
	157	5785	15.72	16.16		18.96	
	165	5825	15.83	15.59		18.72	
UNII-3&4	169	5845	15.77	15.66		18.73	30.00
		5845	15.77	15.66	-0.03	18.70	30.00(e.i.r.p)
UNII-4	173	5865	15.70	15.66	-0.03	18.66	30.00(e.i.r.p)
	177	5885	16.13	15.87	-0.03	18.98	

* Calculation of Output Power : Average Power = Meas Power + Duty CF[dB]
Corr'd Power = Ant1 Average Power + Ant2 Average Power(in case of UNII-4: added directional gain)

PSD Results

Band	Channel	Center Freq. [MHz]	Meas PSD [dBm/MHz]		DCCF.	Direct. Gain [dBi]	Corr'd PSD [dBm]	Limit [dBm/ MHz]
			ANT1	ANT2				
UNII-1	36	5180	4.89	4.83	0.15		8.02	11.00
	40	5200	4.70	4.86	0.15		7.94	
	48	5240	1.61	1.46	0.15		4.70	
UNII-2A	52	5260	5.05	4.85	0.15		8.11	11.00
	60	5300	4.83	4.77	0.15		7.96	
	64	5320	5.38	4.30	0.15		8.03	
UNII-2C	100	5500	5.20	4.69	0.15		8.11	11.00
	116	5580	5.02	4.81	0.15		8.08	
	140	5700	4.15	4.57	0.15		7.53	
UNII-3	149	5745	2.04	1.87	0.15		5.11	30.00/500kHz
	157	5785	1.76	1.94	0.15		5.01	
	165	5825	1.45	1.22	0.15		4.50	
UNII-3&4	169	5845	1.44	1.13	0.15		4.44	30.00/500kHz
		5845	3.87	3.88	0.15	-0.03	7.01	14.00(e.i.r.p.)
UNII-4	173	5865	4.41	4.09	0.15	-0.03	7.38	14.00(e.i.r.p.)
	177	5885	4.87	4.64	0.15	-0.03	7.89	

* Calculation of PSD: Corr'd PSD = Ant1 PSD + Ant2 PSD + Duty CF [dB] (in case of UNII-4: added directional gain)

10.2.2. 802.11n HT20 MODE

Output Power Results

Band	Channel	Center Freq. [MHz]	Average Power [dBm]		Direct. Gain [dBi]	Corr'd Power [dBm]	Limit [dBm]
			ANT1	ANT2			
UNII-1	36	5180	15.78	15.71		18.76	23.98
	40	5200	15.73	15.82		18.79	
	48	5240	13.50	12.43		16.01	
UNII-2A	52	5260	15.67	15.78		18.74	23.98
	60	5300	15.61	15.91		18.77	
	64	5320	16.02	15.25		18.66	
UNII-2C	100	5500	16.06	15.56		18.83	23.91
	116	5580	15.72	15.58		18.66	
	140	5700	15.36	15.63		18.51	
UNII-3	149	5745	15.76	15.79		18.79	30.00
	157	5785	15.34	15.87		18.62	
	165	5825	15.47	15.21		18.35	
UNII-3&4	169	5845	15.39	15.29		18.35	30.00
		5845	15.39	15.29	-0.03	18.32	30.00(e.i.r.p)
UNII-4	173	5865	15.33	15.37	-0.03	18.33	30.00(e.i.r.p)
	177	5885	15.75	15.50	-0.03	18.61	

* Calculation of Output Power : Average Power = Meas Power + Duty CF[dB]
Corr'd Power = Ant1 Average Power + Ant2 Average Power(in case of UNII-4: added directional gain)

PSD Results

Band	Channel	Center Freq. [MHz]	Meas PSD [dBm/MHz]		DCCF.	Direct. Gain [dBi]	Corr'd PSD [dBm]	Limit [dBm/ MHz]
			ANT1	ANT2				
UNII-1	36	5180	4.36	4.06	0.17		7.39	11.00
	40	5200	4.14	4.00	0.17		7.25	
	48	5240	2.13	1.98	0.17		5.24	
UNII-2A	52	5260	4.27	4.62	0.17		7.63	11.00
	60	5300	4.11	4.40	0.17		7.44	
	64	5320	4.77	3.91	0.17		7.54	
UNII-2C	100	5500	4.88	4.23	0.17		7.75	11.00
	116	5580	4.52	4.67	0.17		7.78	
	140	5700	3.84	4.01	0.17		7.10	
UNII-3	149	5745	1.42	1.18	0.17		4.48	30.00/500kHz
	157	5785	1.03	1.61	0.17		4.51	
	165	5825	1.08	0.60	0.17		4.02	
UNII-3&4	169	5845	0.86	0.90	0.17		4.06	30.00/500kHz
		5845	3.77	3.10	0.17	-0.03	6.60	14.00(e.i.r.p.)
UNII-4	173	5865	4.15	4.13	0.17	-0.03	7.29	14.00(e.i.r.p.)
	177	5885	4.30	3.99	0.17	-0.03	7.30	

* Calculation of PSD: Corr'd PSD = Ant1 PSD + Ant2 PSD + Duty CF [dB] (in case of UNII-4: added directional gain)

10.2.3. 802.11n HT40 MODE

Output Power Results

Band	Channel	Center Freq. [MHz]	Average Power [dBm]		Direct. Gain [dBi]	Corr'd Power [dBm]	Limit [dBm]
			ANT1	ANT2			
UNII-1	38	5190	16.02	15.95		19.00	23.98
	46	5230	16.00	16.37		19.20	
UNII-2A	54	5270	15.97	16.03		19.01	23.98
	62	5310	16.29	15.56		18.95	
UNII-2C	102	5510	16.36	15.89		19.14	23.98
	118	5590	16.08	15.66		18.89	
	134	5670	15.20	15.82		18.53	
UNII-3	151	5755	16.05	16.05		19.06	30.00
	159	5795	15.70	16.07		18.90	
UNII-3&4	167	5835	15.70	15.56		18.64	30.00
		5835	15.70	15.56	-0.03	18.61	30.00(e.i.r.p)
UNII-4	175	5875	15.58	15.65	-0.03	18.60	30.00(e.i.r.p)

* Calculation of Output Power : Average Power = Meas Power + Duty CF[dB]
Corr'd Power = Ant1 Average Power + Ant2 Average Power(in case of UNII-4: added directional gain)

PSD Results

Band	Channel	Center Freq. [MHz]	Meas PSD [dBm/MHz]		DCCF.	Direct. Gain [dBi]	Corr'd PSD [dBm]	Limit [dBm/ MHz]
			ANT1	ANT2				
UNII-1	38	5190	1.35	1.25	0.17		4.48	11.00
	46	5230	1.65	1.69	0.17		4.85	
UNII-2A	54	5270	1.66	1.75	0.17		4.89	11.00
	62	5310	1.84	1.12	0.17		4.68	
UNII-2C	102	5510	2.11	1.90	0.17		5.19	11.00
	118	5590	1.61	1.32	0.17		4.65	
	134	5670	0.65	1.11	0.17		4.07	
UNII-3	151	5755	-1.17	-1.39	0.17		1.90	30.00/500kHz
	159	5795	-1.62	-1.53	0.17		1.61	
UNII-3&4	167	5835	-1.75	-2.34	0.17		1.14	30.00/500kHz
		5835	-0.19	-0.49	0.17	-0.03	2.81	14.00(e.i.r.p.)
UNII-4	175	5875	1.17	1.09	0.17	-0.03	4.28	14.00(e.i.r.p.)

* Calculation of PSD: Corr'd PSD = Ant1 PSD + Ant2 PSD + Duty CF [dB] (in case of UNII-4: added directional gain)

10.2.4. 802.11ac VHT80 MODE

Output Power Results

Band	Channel	Center Freq. [MHz]	Average Power [dBm]		Direct. Gain [dBi]	Corr'd Power [dBm]	Limit [dBm]
			ANT1	ANT2			
UNII-1	42	5210	14.77	15.07		17.93	23.98
UNII-2A	58	5290	14.65	14.74		17.71	23.98
UNII-2C	106	5530	15.10	14.54		17.84	23.98
	122	5610	14.69	14.32		17.52	
UNII-3	155	5775	14.43	14.72		17.59	30.00
UNII-3&4	171	5855	14.45	14.25		17.36	30.00
		5855	14.45	14.25	-0.03	17.33	30.00(e.i.r.p)

* Calculation of Output Power : Average Power = Meas Power + Duty CF[dB]
Corr'd Power = Ant1 Average Power + Ant2 Average Power(in case of UNII-4: added directional gain)

PSD Results

Band	Channel	Center Freq. [MHz]	Meas PSD [dBm/MHz]		DCCF.	Direct. Gain [dBi]	Corr'd PSD [dBm]	Limit [dBm/ MHz]
			ANT1	ANT2				
UNII-1	42	5210	-2.99	-2.99	0.24		0.26	11.00
UNII-2A	58	5290	-2.95	-3.07	0.24		0.24	11.00
UNII-2C	106	5530	-2.27	-3.92	0.24		0.23	11.00
	122	5610	-3.07	-3.85	0.24		-0.19	
UNII-3	155	5775	-5.93	-5.88	0.24		-2.65	30.00/500kHz
UNII-3&4	171	5855	-6.27	-6.78	0.24		-3.27	30.00/500kHz
		5855	-3.20	-3.57	0.24	-0.03	-0.16	14.00(e.i.r.p.)

* Calculation of PSD: Corr'd PSD = Ant1 PSD + Ant2 PSD + Duty CF [dB] (in case of UNII-4: added directional gain)

10.2.5. 802.11ac VHT160 MODE

Output Power Results

Band	Channel	Center Freq. [MHz]	Average Power [dBm]		Direct. Gain [dBi]	Corr'd Power [dBm]	Limit [dBm]
			ANT1	ANT2			
UNII-1&2A	50	5250	14.02	14.55		17.30	23.98
UNII-2C	114	5570	14.14	13.66		16.92	23.98
UNII-3&4	163	5815	13.79	13.50		16.66	30.00
	163	5815	13.79	13.50	-0.03	16.63	30.00(e.i.r.p)

* Calculation of Output Power : Average Power = Meas Power + Duty CF[dB]
Corr'd Power = Ant1 Average Power + Ant2 Average Power

PSD Results

Band	Channel	Center Freq. [MHz]	Meas PSD [dBm/MHz]		DCCF.	Direct. Gain [dBi]	Corr'd PSD [dBm]	Limit [dBm/ MHz]
			ANT1	ANT2				
UNII-1&2A	50	5250	-6.62	-6.22	0.29		-3.12	11.00
UNII-2C	114	5570	-6.46	-7.13	0.29		-3.48	11.00
UNII-3&4	163	5815	-9.69	-10.03	0.29		-6.56	30.00/500kHz
	163	5815	-7.27	-7.54	0.29	-0.03	-4.13	14.00(e.i.r.p.)

* Calculation of PSD: Corr'd PSD = Ant1 PSD + Ant2 PSD + Duty CF [dB]

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10.2.6. STRADDLE CHANNEL

Output Power Results

Mode	Band	Center Freq. [MHz]	Meas Power [dBm]		DCCF.	Corr'd Power [dBm]	Limit [dBm]
			ANT1	ANT2			
802.11a	UNII-2C	5720	15.47	15.74	0.15	18.77	22.64
	UNII-3		8.91	9.38	0.15	12.31	30.00
802.11n HT20	UNII-2C	5720	15.18	15.34	0.17	18.44	22.83
	UNII-3		9.01	8.97	0.17	12.17	30.00
802.11n HT40	UNII-2C	5710	15.50	15.66	0.17	18.76	23.98
	UNII-3		4.09	4.24	0.17	7.34	30.00
802.11ac VHT80	UNII-2C	5690	14.58	14.13	0.24	17.61	23.98
	UNII-3		-0.47	-0.76	0.24	2.64	30.00

* Calculation of Output Power : Corr'd Power = Ant1 meas. Power + Ant2 meas. Power + Duty CF [dB]

PSD Results

Mode	Band	Center Freq. [MHz]	Meas PSD [dBm/MHz]		DCCF.	Corr'd PSD [dBm]	Limit [dBm/ MHz]
			ANT1	ANT2			
802.11a	UNII-2C	5720	4.43	4.61	0.15	7.68	11.00
	UNII-3		0.78	1.13	0.15	4.12	30.00/500kHz
802.11n HT20	UNII-2C	5720	3.57	4.08	0.17	7.01	11.00
	UNII-3		0.26	0.44	0.17	3.53	30.00/500kHz
802.11n HT40	UNII-2C	5710	1.06	1.26	0.17	4.34	11.00
	UNII-3		-3.45	-3.29	0.17	-0.19	30.00/500kHz
802.11ac VHT80	UNII-2C	5690	-3.81	-3.39	0.24	-0.34	11.00
	UNII-3		-8.56	-8.67	0.24	-5.37	30.00/500kHz

* Calculation of PSD: Corr'd PSD = Ant1 PSD + Ant2 PSD + Duty CF [dB]

10.2.7. 802.11ax HE20 MODE

Output Power Results

Band	Channel	Center Freq. [MHz]	Tones	RU offset	Average Power [dBm]		Corr'd Power [dBm]	Limit [dBm]
					ANT1	ANT2		
UNII-1	36	5180	26T	0	7.82	7.88	10.86	23.98
				4	7.89	7.90	10.91	
				8	7.77	7.76	10.78	
			52T	37	9.64	9.98	12.82	
				38	9.70	10.03	12.88	
				40	9.57	9.87	12.73	
			106T	53	13.16	13.13	16.16	
				54	13.12	13.07	16.11	
			SU	-	15.87	15.82	18.86	
	40	5200	26T	0	7.33	7.51	10.43	
				4	7.38	7.53	10.47	
				8	7.24	7.38	10.32	
			52T	37	9.60	10.06	12.85	
				38	9.68	10.16	12.94	
				40	9.54	9.94	12.75	
			106T	53	13.14	13.22	16.19	
				54	13.10	13.18	16.15	
			SU	-	15.85	15.93	18.90	
	48	5240	26T	0	7.26	7.85	10.58	
				4	7.31	7.87	10.61	
				8	7.22	7.74	10.50	
			52T	37	9.55	10.35	12.98	
				38	9.65	10.44	13.07	
				40	9.49	10.25	12.90	
			106T	53	12.83	13.57	16.23	
				54	12.78	13.51	16.17	
			SU	-	15.75	16.35	19.07	

* Calculation of Output Power : Average Power = Meas Power + Duty CF[dB]
Corr'd Power = Ant1 Average Power + Ant2 Average Power

Band	Channel	Center Freq. [MHz]	Tones	RU offset	Average Power [dBm]		Corr'd Power [dBm]	Limit [dBm]
					ANT1	ANT2		
UNII-2A	52	5260	26T	0	7.20	7.41	10.32	23.54
				4	7.24	7.45	10.36	
				8	7.12	7.28	10.21	
			52T	37	9.45	9.78	12.63	
				38	9.53	9.87	12.71	
				40	9.41	9.70	12.57	
			106T	53	12.76	13.15	15.97	
				54	12.70	13.12	15.93	
			SU	-	15.73	15.90	18.83	
	60	5300	26T	0	7.13	7.47	10.31	
				4	7.22	7.51	10.38	
				8	7.11	7.40	10.27	
			52T	37	9.43	9.89	12.68	
				38	9.51	9.97	12.76	
				40	9.35	9.81	12.60	
			106T	53	12.71	13.27	16.01	
				54	12.67	13.20	15.95	
			SU	-	15.70	16.03	18.88	
	64	5320	26T	0	7.50	6.88	10.21	
				4	7.55	6.90	10.25	
				8	7.43	6.81	10.14	
			52T	37	10.03	9.24	12.66	
				38	10.09	9.34	12.74	
				40	9.95	9.16	12.58	
			106T	53	13.25	12.43	15.87	
				54	13.22	12.39	15.84	
			SU	-	16.08	15.41	18.77	

* Calculation of Output Power : Average Power = Meas Power + Duty CF[dB]
Corr'd Power = Ant1 Average Power + Ant2 Average Power

Band	Channel	Center Freq. [MHz]	Tones	RU offset	Average Power [dBm]		Corr'd Power [dBm]	Limit [dBm]
					ANT1	ANT2		
UNII-2C	100	5500	26T	0	7.56	7.29	10.44	23.31
				4	7.62	7.35	10.50	
				8	7.52	7.24	10.39	
			52T	37	10.22	9.60	12.93	
				38	10.27	9.69	13.00	
				40	10.15	9.55	12.87	
			106T	53	13.86	13.23	16.57	
				54	13.84	13.21	16.55	
			SU	-	16.09	15.72	18.92	
	116	5580	26T	0	7.31	7.06	10.20	
				4	7.30	7.10	10.21	
				8	7.18	6.97	10.09	
			52T	37	9.58	9.46	12.53	
				38	9.62	9.54	12.59	
				40	9.45	9.39	12.43	
			106T	53	13.51	13.18	16.36	
				54	13.44	13.15	16.31	
			SU	-	15.83	15.74	18.80	
	140	5700	26T	0	6.79	7.27	10.05	
				4	6.85	7.34	10.11	
				8	6.78	7.25	10.03	
			52T	37	9.55	9.66	12.62	
				38	9.64	9.76	12.71	
				40	9.52	9.64	12.59	
			106T	53	13.06	13.49	16.29	
				54	13.05	13.48	16.28	
			SU	-	15.93	16.27	19.11	

* Calculation of Output Power : Average Power = Meas Power + Duty CF[dB]
Corr'd Power = Ant1 Average Power + Ant2 Average Power

Band	Channel	Center Freq. [MHz]	Tones	RU offset	Average Power [dBm]		Corr'd Power [dBm]	Limit [dBm]
					ANT1	ANT2		
UNII-3	149	5745	26T	0	7.29	7.44	10.38	30.00
				4	7.36	7.53	10.46	
				8	7.25	7.45	10.36	
			52T	37	9.52	9.84	12.69	
				38	9.61	9.96	12.80	
				40	9.50	9.89	12.71	
			106T	53	13.41	13.48	16.46	
				54	13.39	13.53	16.47	
			SU	-	15.88	15.95	18.93	
	157	5785	26T	0	6.84	7.44	10.16	
				4	6.95	7.56	10.28	
				8	6.84	7.55	10.22	
			52T	37	9.34	9.89	12.63	
				38	9.44	10.02	12.75	
				40	9.33	9.99	12.68	
			106T	53	13.02	13.61	16.34	
				54	13.01	13.67	16.36	
			SU	-	15.44	16.00	18.74	
	165	5825	26T	0	6.87	6.80	9.85	
				4	6.95	6.96	9.97	
				8	6.87	6.93	9.91	
			52T	37	9.52	9.22	12.38	
				38	9.61	9.35	12.49	
				40	9.50	9.31	12.42	
			106T	53	13.03	13.00	16.03	
				54	13.03	13.04	16.05	
			SU	-	16.05	16.02	19.05	

* Calculation of Output Power : Average Power = Meas Power + Duty CF[dB]
Corr'd Power = Ant1 Average Power + Ant2 Average Power

Band	Channel	Center Freq. [MHz]	Tones	RU offset	Average Power [dBm]		Direct. Gain [dBi]	Corr'd Power [dBm]	Limit [dBm]
					ANT1	ANT2			
UNII-3&4	169 Overlap	5845	26T	0	7.21	7.29		10.26	30.00 or 30.00 e.i.r.p[Note]
				4	7.30	7.44		10.38	
				8	7.25	7.39		10.33	
			52T	37	10.01	9.80		12.92	
				38	10.11	9.97		13.05	
				40	10.01	9.91		12.97	
			106T	53	13.49	13.53		16.52	
				54	13.50	13.59		16.56	
			SU	-	16.00	16.08		19.05	
UNII-4	173	5865	26T	0	7.13	7.35	-0.03	10.25	30.00 e.i.r.p.
				4	7.26	7.50	-0.03	10.39	
				8	7.20	7.45	-0.03	10.34	
			52T	37	9.95	9.87	-0.03	12.92	
				38	10.05	10.01	-0.03	13.04	
				40	9.96	9.98	-0.03	12.98	
			106T	53	13.42	13.55	-0.03	16.50	
				54	13.44	13.62	-0.03	16.54	
			SU	-	15.94	16.13	-0.03	19.05	
	177	5885	26T	0	7.20	7.10	-0.03	10.16	
				4	7.33	7.25	-0.03	10.30	
				8	7.30	7.21	-0.03	10.27	
			52T	37	10.45	10.05	-0.03	13.26	
				38	10.55	10.21	-0.03	13.39	
				40	10.49	10.15	-0.03	13.33	
			106T	53	12.65	12.28	-0.03	15.48	
				54	12.69	12.35	-0.03	15.53	
			SU	-	11.80	11.42	-0.03	14.62	

* Calculation of Output Power : Average Power = Meas Power + Duty CF[dB]
Corr'd Power = Ant1 Average Power + Ant2 Average Power(in case of UNII-4: added directional gain)

Note. Since the correrated antenna gain is less than 0 dBi, it satisfies both the limits of UNII-3 and UNII-4.

PSD Results

Band	Channel	Center Freq. [MHz]	Tones	RU offset	Meas PSD [dBm/MHz]		Corr'd PSD [dBm/MHz]	PSD Limit [dBm/MHz]
					ANT1	ANT2		
UNII-1	36	5180	26T	0	4.96	5.44	8.22	11.00
				4	4.53	4.25	7.40	
				8	5.06	5.19	8.13	
			SU	-	4.26	4.29	7.29	
	40	5200	26T	0	4.16	4.86	7.53	
				4	3.60	3.58	6.60	
				8	4.27	4.90	7.61	
			SU	-	4.28	4.70	7.51	
	48	5240	26T	0	4.62	4.75	7.69	
				4	3.47	3.90	6.70	
				8	4.50	4.65	7.59	
			SU	-	4.32	4.66	7.51	
UNII-2A	52	5260	26T	0	4.44	4.71	7.59	11.00
				4	3.61	3.21	6.42	
				8	4.18	4.32	7.26	
			SU	-	4.30	4.22	7.27	
	60	5300	26T	0	4.39	4.52	7.46	
				4	3.33	3.54	6.45	
				8	4.43	4.42	7.44	
			SU	-	4.57	4.28	7.43	
	64	5320	26T	0	4.66	4.09	7.39	
				4	3.67	3.21	6.45	
				8	4.80	3.98	7.42	
			SU	-	4.60	3.91	7.28	
UNII-2C	100	5500	26T	0	4.81	4.42	7.63	11.00
				4	3.85	3.92	6.89	
				8	5.02	4.34	7.70	
			SU	-	4.70	4.22	7.48	
	116	5580	26T	0	4.54	4.15	7.36	
				4	3.37	3.10	6.24	
				8	4.49	4.23	7.37	
			SU	-	4.55	4.40	7.49	
	140	5700	26T	0	4.03	4.31	7.18	
				4	3.10	3.52	6.33	
				8	4.25	4.49	7.38	
			SU	-	4.38	4.88	7.65	

* Calculation of PSD: Corr'd PSD = Ant1 PSD + Ant2 PSD + Duty CF [dB]

Band	Channel	Center Freq. [MHz]	Tones	RU offset	Meas PSD [dBm]		Direct. Gain [dBi]	Corr'd PSD [dBm]	PSD Limit [dBm]
					ANT1	ANT2			
UNII-3	149	5745	26T	0	1.50	2.38		4.97	30.00 /500kHz
				4	2.00	2.01		5.01	
				8	1.77	2.02		4.91	
			SU	-	1.87	1.63		4.76	
	157	5785	26T	0	1.44	2.19		4.84	
				4	1.20	2.00		4.63	
				8	1.47	1.99		4.74	
			SU	-	1.28	1.77		4.54	
	165	5825	26T	0	1.45	1.37		4.42	
				4	1.34	1.57		4.46	
				8	1.41	1.70		4.57	
			SU	-	2.01	1.29		4.67	
UNII-3&4	169	5845	26T	0	1.74	1.57		4.67	30.00 /500kHz
				4	1.81	1.30		4.57	
				6(L)	2.03	2.48		5.27	
				6(U)	3.10	3.32	-0.03	6.19	14.00 /MHz e.i.r.p.
				8	4.64	4.80	-0.03	7.70	
			SU(L)	-	1.68	1.69		4.69	30.00 /500kHz
			SU(U)	-	3.64	3.86	-0.03	6.73	14.00 /MHz e.i.r.p
UNII-4	173	5865	26T	0	4.35	4.45	-0.03	7.38	14.00 /MHz e.i.r.p
				4	3.45	3.95	-0.03	6.69	
				8	4.45	4.91	-0.03	7.67	
			SU	-	4.30	4.91	-0.03	7.60	
	177	5885	26T	0	4.24	4.53	-0.03	7.37	
				4	3.36	3.74	-0.03	6.53	
				8	4.41	4.41	-0.03	7.39	
			SU	-	-0.03	-0.12	-0.03	2.91	

* Calculation of PSD: Corr'd PSD = Ant1 PSD + Ant2 PSD + Duty CF [dB] (in case of UNII-4: added directional gain)

10.2.8. 802.11ax HE40 MODE

Output Power Results

Band	Channel	Center Freq. [MHz]	Tones	RU offset	Average Power [dBm]		Corr'd Power [dBm]	Limit [dBm]
					ANT1	ANT2		
UNII-1	38	5190	26T	0	7.14	7.25	10.21	23.98
				9	7.52	7.59	10.57	
				17	6.97	7.00	10.00	
			52T	37	9.61	10.04	12.84	
				41	9.93	10.28	13.12	
				44	9.42	9.77	12.61	
			106T	53	12.04	12.15	15.11	
				54	12.26	12.36	15.32	
				56	11.90	11.91	14.92	
			242T	61	12.13	12.12	15.14	
				62	12.02	12.05	15.05	
			SU	-	15.53	15.49	18.52	
	46	5230	26T	0	7.10	7.57	10.35	
				9	7.46	7.90	10.70	
				17	6.91	7.31	10.12	
			52T	37	9.58	10.29	12.96	
				41	9.36	10.00	12.70	
				44	8.90	9.51	12.23	
			106T	53	11.86	12.58	15.25	
				54	12.07	12.78	15.45	
				56	11.71	12.36	15.06	
			242T	61	11.93	12.63	15.30	
				62	11.83	12.51	15.19	
			SU	-	15.98	16.43	19.22	

* Calculation of Output Power : Average Power = Meas Power + Duty CF[dB]
Corr'd Power = Ant1 Average Power + Ant2 Average Power

Band	Channel	Center Freq. [MHz]	Tones	RU offset	Average Power [dBm]		Corr'd Power [dBm]	Limit [dBm]
					ANT1	ANT2		
UNII-2A	54	5270	26T	0	6.99	7.24	10.13	23.98
				9	7.37	7.57	10.48	
				17	6.82	6.98	9.91	
			52T	37	9.45	9.82	12.65	
				41	9.77	10.08	12.94	
				44	9.27	9.57	12.43	
			106T	53	11.70	12.09	14.91	
				54	11.91	12.28	15.11	
				56	11.52	11.84	14.69	
			242T	61	11.76	12.17	14.98	
				62	11.66	12.01	14.85	
			SU	-	15.98	16.09	19.05	
	62	5310	26T	0	7.36	6.60	10.01	
				9	7.75	6.94	10.37	
				17	7.16	6.40	9.81	
			52T	37	10.06	9.21	12.67	
				41	10.34	9.49	12.95	
				44	9.87	8.98	12.46	
			106T	53	12.41	11.49	14.98	
				54	12.61	11.68	15.18	
				56	12.12	11.19	14.69	
			242T	61	12.44	11.50	15.01	
				62	12.33	11.37	14.89	
			SU	-	16.29	15.59	18.96	

* Calculation of Output Power : Average Power = Meas Power + Duty CF[dB]
Corr'd Power = Ant1 Average Power + Ant2 Average Power

Band	Channel	Center Freq. [MHz]	Tones	RU offset	Average Power [dBm]		Corr'd Power [dBm]	Limit [dBm]
					ANT1	ANT2		
UNII-2C	102	5510	26T	0	7.35	7.05	10.21	23.98
				9	7.75	7.47	10.62	
				17	7.25	6.94	10.11	
			52T	37	9.41	9.10	12.27	
				41	9.77	9.45	12.62	
				44	9.30	9.00	12.16	
			106T	53	12.31	11.57	14.97	
				54	12.58	11.80	15.22	
				56	12.27	11.53	14.93	
			242T	61	12.42	11.66	15.07	
				62	12.35	11.61	15.01	
			SU	-	16.31	15.97	19.15	
	118	5590	26T	0	7.48	7.32	10.41	
				9	7.81	7.71	10.77	
				17	7.22	7.18	10.21	
			52T	37	10.10	9.99	13.06	
				41	10.32	10.28	13.31	
				44	9.81	9.83	12.83	
			106T	53	12.56	12.07	15.33	
				54	12.76	12.30	15.55	
				56	12.31	11.99	15.16	
			242T	61	12.65	12.15	15.42	
				62	12.48	12.04	15.28	
			SU	-	16.42	16.34	19.39	
	134	5670	26T	0	6.55	7.42	10.02	
				9	6.95	7.86	10.44	
				17	6.34	7.32	9.87	
			52T	37	9.12	10.04	12.61	
				41	9.43	10.43	12.97	
				44	8.94	9.99	12.51	
			106T	53	11.55	12.35	14.98	
				54	11.75	12.55	15.18	
				56	11.38	12.26	14.85	
			242T	61	11.58	12.39	15.01	
				62	11.47	12.35	14.94	
			SU	-	15.51	16.25	18.91	

* Calculation of Output Power : Average Power = Meas Power + Duty CF[dB]
Corr'd Power = Ant1 Average Power + Ant2 Average Power

Band	Channel	Center Freq. [MHz]	Tones	RU offset	Average Power [dBm]		Corr'd Power [dBm]	Limit [dBm]
					ANT1	ANT2		
UNII-3	151	5755	26T	0	7.05	7.16	10.12	30.00
				9	7.45	7.63	10.55	
				17	6.95	7.21	10.09	
			52T	37	9.03	9.26	12.16	
				41	9.41	9.69	12.56	
				44	8.97	9.33	12.16	
			106T	53	12.37	12.38	15.39	
				54	12.60	12.67	15.65	
				56	12.26	12.40	15.34	
			242T	61	12.42	12.44	15.44	
				62	12.37	12.52	15.46	
			SU	-	16.47	16.55	19.52	
	159	5795	26T	0	6.57	7.12	9.86	
				9	7.02	7.71	10.39	
				17	6.53	7.33	9.96	
			52T	37	9.29	9.79	12.56	
				41	9.68	10.30	13.01	
				44	9.23	9.94	12.61	
			106T	53	12.02	12.53	15.29	
				54	12.19	12.79	15.51	
				56	11.88	12.61	15.27	
			242T	61	12.09	12.65	15.39	
				62	12.04	12.75	15.42	
			SU	-	16.04	16.62	19.35	

* Calculation of Output Power : Average Power = Meas Power + Duty CF[dB]
Corr'd Power = Ant1 Average Power + Ant2 Average Power

Band	Channel	Center Freq. [MHz]	Tones	RU offset	Average Power [dBm]		Direct. Gain [dBi]	Corr'd Power [dBm]	Limit [dBm]
					ANT1	ANT2			
UNII-3&4	167 Overlap	5835	26T	0	7.06	6.99		10.04	30.00 or 30.00 e.i.r.p[Note]
				9	7.51	7.54		10.54	
				17	7.00	7.16		10.09	
			52T	37	9.49	9.14		12.33	
				41	9.85	9.66		12.77	
				44	9.45	9.35		12.41	
			106T	53	11.95	12.00		14.99	
				54	12.22	12.32		15.28	
				56	11.84	12.10		14.98	
			242T	61	12.02	12.13		15.09	
				62	12.01	12.27		15.15	
			SU	-	16.13	16.04		19.10	
UNII-4	175	5875	26T	0	6.86	7.10	-0.03	9.99	30.00 e.i.r.p.
				9	7.36	7.71	-0.03	10.55	
				17	6.88	7.29	-0.03	10.10	
			52T	37	9.33	9.30	-0.03	12.33	
				41	9.72	9.79	-0.03	12.77	
				44	9.36	9.44	-0.03	12.41	
			106T	53	11.80	12.14	-0.03	14.98	
				54	11.98	12.38	-0.03	15.19	
				56	11.80	12.25	-0.03	15.04	
			242T	61	11.87	12.19	-0.03	15.04	
				62	11.90	12.32	-0.03	15.13	
			SU	-	16.01	16.08	-0.03	19.06	

* Calculation of Output Power : Average Power = Meas Power + Duty CF[dB]
Corr'd Power = Ant1 Average Power + Ant2 Average Power(in case of UNII-4: added directional gain)

Note. Since the correrated antenna gain is less than 0 dBi, it satisfies both the limits of UNII-3 and UNII-4.

PSD Results

Band	Channel	Center Freq. [MHz]	Tones	RU offset	Meas PSD [dBm/MHz]		Corr'd PSD [dBm/MHz]	PSD Limit [dBm/MHz]
					ANT1	ANT2		
UNII-1	38	5190	26T	0	4.47	4.45	7.47	11.00
				9	4.76	4.70	7.74	
				17	4.35	3.95	7.16	
			SU	-	1.72	1.01	4.39	
	46	5230	26T	0	4.51	4.72	7.63	
				9	4.96	5.08	8.03	
				17	4.28	4.40	7.35	
			SU	-	1.78	1.93	4.87	
UNII-2A	54	5270	26T	0	4.41	4.30	7.36	11.00
				9	4.65	5.10	7.89	
				17	3.95	4.00	6.99	
			SU	-	1.81	1.52	4.68	
	62	5310	26T	0	4.51	3.79	7.18	
				9	5.20	4.11	7.70	
				17	4.36	3.57	6.99	
			SU	-	1.99	1.05	4.56	
UNII-2C	102	5510	26T	0	4.68	3.97	7.35	11.00
				9	5.31	4.58	7.97	
				17	4.54	4.35	7.46	
			SU	-	2.00	1.40	4.72	
	118	5590	26T	0	4.69	4.71	7.71	
				9	5.21	4.44	7.85	
				17	4.61	4.37	7.50	
			SU	-	2.30	1.20	4.80	
	134	5670	26T	0	3.91	4.51	7.23	
				9	4.40	5.13	7.79	
				17	3.88	4.60	7.26	
			SU	-	1.51	1.40	4.47	

* Calculation of PSD: Corr'd PSD = Ant1 PSD + Ant2 PSD + Duty CF [dB]

Band	Channel	Center Freq. [MHz]	Tones	RU offset	Meas PSD [dBm]		Direct. Gain [dBi]	Corr'd PSD [dBm]	PSD Limit [dBm]
					ANT1	ANT2			
UNII-3	151	5755	26T	0	1.94	1.92		4.94	30.00 /500kHz
				9	2.36	2.03		5.21	
				17	1.49	2.06		4.79	
			SU	-	-0.52	-0.69		2.41	
	159	5795	26T	0	1.21	1.77		4.51	
				9	1.90	2.14		5.03	
				17	1.28	1.98		4.65	
			SU	-	-1.07	-0.60		2.18	
UNII-3&4	167	5835	26T	0	1.62	1.57		4.60	30.00 /500kHz
				9	2.20	2.25		5.24	
				16(L)	0.13	0.41		3.28	
				16(U)	4.58	4.50	-0.03	7.52	14.00 /MHz e.i.r.p.
				17	4.49	4.09	-0.03	7.28	
			SU(L)	-	-0.85	-1.10		2.04	30.00 /500kHz
			SU(U)	-	0.25	-0.13	-0.03	3.04	14.00 /MHz e.i.r.p
UNII-4	175	5875	26T	0	4.22	4.81	-0.03	7.50	14.00 /MHz e.i.r.p
				9	4.79	5.03	-0.03	7.89	
				17	4.28	4.51	-0.03	7.38	
			SU	-	1.83	1.78	-0.03	4.78	

* Calculation of PSD: Corr'd PSD = Ant1 PSD + Ant2 PSD + Duty CF [dB] (in case of UNII-4: added directional gain)

10.2.9. 802.11ax HE80 MODE

Output Power Results

Band	Channel	Center Freq. [MHz]	Tones	RU offset	Average Power [dBm]		Corr'd Power [dBm]	Limit [dBm]
					ANT1	ANT2		
UNII-1	42	5210	26T	0	6.95	7.35	10.16	23.98
				18	7.11	7.40	10.27	
				36	6.57	6.77	9.68	
			52T	37	9.33	9.85	12.61	
				45	9.46	9.87	12.68	
				52	8.96	9.30	12.14	
			106T	53	10.99	11.65	14.34	
				57	11.08	11.56	14.34	
				60	10.60	11.06	13.85	
			242T	61	11.07	11.69	14.40	
				62	11.14	11.70	14.44	
				64	10.76	11.21	14.00	
			484T	65	11.08	11.70	14.41	
				66	10.87	11.37	14.14	
			SU	-	14.01	14.41	17.22	
UNII-2A	58	5290	26T	0	6.88	7.15	10.03	23.98
				18	7.01	7.20	10.12	
				36	6.41	6.54	9.49	
			52T	37	9.25	9.59	12.43	
				45	9.37	9.62	12.51	
				52	8.80	9.00	11.91	
			106T	53	10.88	11.05	13.98	
				57	10.90	10.99	13.96	
				60	10.45	10.55	13.51	
			242T	61	10.95	11.15	14.06	
				62	10.99	11.18	14.10	
				64	10.60	10.70	13.66	
			484T	65	10.94	11.17	14.07	
				66	10.68	10.87	13.79	
			SU	-	15.36	15.58	18.48	

* Calculation of Output Power : Average Power = Meas Power + Duty CF[dB]
Corr'd Power = Ant1 Average Power + Ant2 Average Power

Band	Channel	Center Freq. [MHz]	Tones	RU offset	Average Power [dBm]		Corr'd Power [dBm]	Limit [dBm]
					ANT1	ANT2		
UNII-2C	106	5530	26T	0	7.69	7.28	10.50	23.98
				18	7.90	7.50	10.71	
				36	7.40	7.11	10.27	
			52T	37	9.65	9.21	12.45	
				45	9.82	9.39	12.62	
				52	9.34	8.99	12.18	
			106T	53	11.40	10.77	14.11	
				57	11.51	10.90	14.23	
				60	11.12	10.63	13.89	
			242T	61	11.50	10.93	14.23	
				62	11.61	10.94	14.30	
				64	11.27	10.68	14.00	
			484T	65	11.53	10.93	14.25	
				66	11.38	10.92	14.17	
			SU	-	15.70	15.41	18.57	
	122	5610	26T	0	7.52	7.11	10.33	
				18	7.53	7.28	10.42	
				36	6.90	6.78	9.85	
			52T	37	9.43	9.10	12.28	
				45	9.42	9.24	12.34	
				52	8.81	8.80	11.82	
			106T	53	11.02	10.48	13.77	
				57	10.96	10.48	13.74	
				60	10.45	10.17	13.32	
			242T	61	11.10	10.47	13.81	
				62	11.07	10.58	13.84	
				64	10.59	10.25	13.43	
			484T	65	11.08	10.51	13.81	
				66	10.74	10.36	13.56	
			SU	-	15.47	15.16	18.33	

* Calculation of Output Power : Average Power = Meas Power + Duty CF[dB]
Corr'd Power = Ant1 Average Power + Ant2 Average Power

Band	Channel	Center Freq. [MHz]	Tones	RU offset	Average Power [dBm]		Corr'd Power [dBm]	Limit [dBm]
					ANT1	ANT2		
UNII-3	155	5775	26T	0	7.04	7.32	10.19	30.00
				18	7.31	7.73	10.54	
				36	6.83	7.53	10.20	
			52T	37	9.56	9.78	12.68	
				45	9.81	10.20	13.02	
				52	9.40	10.02	12.73	
			106T	53	11.18	11.43	14.32	
				57	11.36	11.78	14.59	
				60	11.01	11.61	14.33	
			242T	61	11.30	11.53	14.43	
				62	11.41	11.71	14.57	
				64	11.15	11.69	14.44	
			484T	65	11.32	11.62	14.48	
				66	11.22	11.74	14.50	
			SU	-	15.21	15.59	18.41	
UNII-3&4	171	5855	26T	0	7.30	7.03	10.18	30.00 or 30.00 e.i.r.p[Note]
				18	7.58	7.61	10.61	
				36	7.26	7.44	10.36	
			52T	37	9.59	9.10	12.36	
				45	9.87	9.65	12.77	
				52	9.56	9.46	12.52	
			106T	53	11.06	10.92	14.00	
				57	11.25	11.41	14.34	
				60	11.01	11.26	14.15	
			242T	61	11.15	11.09	14.13	
				62	11.29	11.35	14.33	
				64	11.12	11.37	14.26	
			484T	65	11.19	11.24	14.23	
				66	11.19	11.40	14.31	
			SU	-	15.01	15.17	18.10	

* Calculation of Output Power : Average Power = Meas Power + Duty CF[dB]
Corr'd Power = Ant1 Average Power + Ant2 Average Power(in case of UNII-4: added directional gain)

Note. Since the correrated antenna gain is less than 0 dBi, it satisfies both the limits of UNII-3 and UNII-4.

PSD Results

Band	Channel	Center Freq. [MHz]	Tones	RU offset	Meas PSD [dBm/MHz]		Corr'd PSD [dBm/MHz]	PSD Limit [dBm/MHz]
					ANT1	ANT2		
UNII-1	42	5210	26T	0	4.73	4.28	7.52	11.00
				18	3.66	3.57	6.63	
				36	4.14	3.90	7.03	
			SU	-	-3.12	-3.24	-0.17	
UNII-2A	58	5290	26T	0	4.51	4.45	7.49	11.00
				18	3.19	3.03	6.12	
				36	3.62	3.12	6.38	
			SU	-	-1.93	-2.20	0.95	
UNII-2C	106	5530	26T	0	4.95	4.27	7.63	11.00
				18	4.41	3.56	7.02	
				36	4.57	4.01	7.31	
			SU	-	-1.52	-2.10	1.21	
	122	5610	26T	0	4.58	4.18	7.40	
				18	3.66	3.27	6.48	
				36	4.46	3.59	7.05	
			SU	-	-1.54	-2.52	1.01	

Band	Channel	Center Freq. [MHz]	Tones	RU offset	Meas PSD [dBm]		Direct. Gain [dBi]	Corr'd PSD [dBm]	PSD Limit [dBm]
					ANT1	ANT2			
UNII-3	155	5775	26T	0	1.82	1.47		4.66	30.00 /500kHz
				18	1.91	1.49		4.71	
				36	1.48	1.72		4.61	
			SU	-	-4.67	-4.76		-1.70	
UNII-3&4	171	5855	26T	0	2.16	1.39		4.80	30.00 /500kHz
				16(L)	2.07	2.25		5.17	
				16(U)	5.03	5.05	-0.03	8.02	14.00 /MHz e.i.r.p.
				18	3.97	3.72	-0.03	6.82	
				36	4.52	4.57	-0.03	7.52	
			SU(L)	-	-4.62	-5.20		-1.89	30.00 /500kHz
			SU(U)	-	-2.08	-2.31	-0.03	0.79	14.00 /MHz e.i.r.p

* Calculation of PSD: Corr'd PSD = Ant1 PSD + Ant2 PSD + Duty CF [dB] (in case of UNII-4: added directional gain)

10.2.10. 802.11ax HE160 MODE

Output Power Results

Band	Channel	Center Freq. [MHz]	Tones	RU offset	Average Power [dBm]		Corr'd Power [dBm]	Limit [dBm]
					ANT1	ANT2		
UNII-1&2A	50	5250	26T	0(LB)	7.01	7.64	10.35	23.98
				0(UB)	7.12	7.57	10.36	
				36(BU)	6.74	7.04	9.90	
			52T	37(LB)	9.33	10.12	12.75	
				37(UB)	9.44	9.98	12.73	
				52(UB)	9.05	9.64	12.37	
			106T	53(LB)	9.83	10.67	13.28	
				53(UB)	9.85	10.48	13.19	
				60(UB)	9.56	10.22	12.91	
			242T	61(LB)	9.96	10.80	13.41	
				61(UB)	9.86	10.50	13.20	
				64(UB)	9.21	9.76	12.50	
			484T	65(LB)	9.95	10.73	13.37	
				65(UB)	9.73	10.32	13.05	
				66(UB)	9.28	9.87	12.60	
			996T	67(LB)	9.91	10.65	13.31	
				67(UB)	9.47	10.08	12.80	
			SU	-	14.02	14.61	17.34	
UNII-2C	114	5570	26T	0(LB)	7.63	6.88	10.28	23.98
				0(UB)	7.58	7.25	10.43	
				36(UB)	7.05	7.22	10.15	
			52T	37(LB)	10.40	9.30	12.90	
				37(UB)	10.36	9.59	13.00	
				52(UB)	9.35	9.16	12.27	
			106T	53(LB)	10.38	9.26	12.87	
				53(UB)	10.85	9.97	13.44	
				60(UB)	9.94	9.59	12.78	
			242T	61(LB)	10.50	9.38	12.99	
				61(UB)	10.84	9.97	13.44	
				64(UB)	10.09	9.72	12.92	
			484T	65(LB)	10.48	9.42	12.99	
				65(UB)	10.68	9.91	13.32	
				66(UB)	10.19	9.75	12.99	
			996T	67(LB)	10.41	9.40	12.94	
				67(UB)	10.41	9.78	13.12	
			SU	-	14.20	13.85	17.04	

* Calculation of Output Power : Average Power = Meas Power + Duty CF[dB]
Corr'd Power = Ant1 Average Power + Ant2 Average Power

Band	Channel	Center Freq. [MHz]	Tones	RU offset	Average Power [dBm]		Corr'd Power [dBm]	Limit [dBm]
					ANT1	ANT2		
UNII-3&4	163	5815	26T	0(LB)	7.38	6.80	10.11	30.00 or 30.00 e.i.r.p[Note]
				0(UB)	7.72	7.59	10.67	
				36(UB)	7.25	7.51	10.39	
			52T	37(LB)	9.67	8.78	12.26	
				37(UB)	9.99	9.52	12.77	
				52(UB)	9.51	9.47	12.50	
			106T	53(LB)	10.23	9.33	12.81	
				53(UB)	10.47	10.04	13.27	
				60(UB)	10.05	10.00	13.04	
			242T	61(LB)	10.34	9.45	12.93	
				61(UB)	10.51	10.09	13.32	
				64(UB)	10.17	10.08	13.14	
			484T	65(LB)	10.38	9.56	13.00	
				65(UB)	10.40	10.08	13.25	
				66(UB)	10.20	10.10	13.16	
			996T	67(LB)	10.40	9.67	13.06	
				67(UB)	10.27	10.03	13.16	
			SU	-	14.28	14.12	17.21	

* Calculation of Output Power : Average Power = Meas Power + Duty CF[dB]
Corr'd Power = Ant1 Average Power + Ant2 Average Power(in case of UNII-4: added directional gain)

Note. Since the corrected antenna gain is less than 0 dBi, it satisfies both the limits of UNII-3 and UNII-4.

PSD Results

Band	Channel	Center Freq. [MHz]	Tones	RU offset	Meas PSD [dBm/MHz]		Corr'd PSD [dBm/MHz]	PSD Limit [dBm/MHz]
					ANT1	ANT2		
UNII-1&2A	50	5250	26T	0(LB)	3.90	4.27	7.10	11.00
				0(UB)	4.08	4.35	7.23	
				36(UB)	3.76	4.14	6.97	
			SU	-	-6.31	-5.66	-2.96	
UNII-2C	114	5570	26T	0(LB)	5.06	4.03	7.59	11.00
				0(UB)	4.35	3.69	7.05	
				36(UB)	4.04	3.73	6.90	
			SU	-	-5.50	-6.18	-2.82	

Band	Channel	Center Freq. [MHz]	Tones	RU offset	Meas PSD [dBm]		Direct. Gain [dBi]	Corr'd PSD [dBm]	PSD Limit [dBm]
					ANT1	ANT2			
UNII-3&4	171	5815	26T	0(LB)	1.61	1.18		4.41	30.00 /500kHz
				0(UB)	2.14	1.78		4.97	
				16(UB,L)	1.37	1.92		4.66	
				16(UB,U)	5.14	5.07	-0.03	8.08	14.00 /MHz e.i.r.p.
				36(U)	4.03	4.67	-0.03	7.34	
			SU(L)	-	-8.74	-9.16		-5.93	30.00 /500kHz
			SU(U)	-	-6.61	-6.68	-0.03	-3.67	14.00 /MHz e.i.r.p

* Calculation of PSD: Corr'd PSD = Ant1 PSD + Ant2 PSD + Duty CF [dB] (in case of UNII-4: added directional gain)
Note. LB=Lower band(Lower 996T),UB=Upper band(Upper 996T), L=Lower side, U=Upper side

10.2.11. STRADDLE CHANNEL(802.11ax)

Output Power Results(SU)

Mode	Band	Center Freq. [MHz]	Meas Power [dBm]		Corr'd Power [dBm]	Limit [dBm]
			ANT1	ANT2		
HE20	UNII-2C	5720	15.04	15.90	18.50	22.85
	UNII-3		9.33	10.23	12.81	30.00
HE40	UNII-2C	5710	16.27	16.22	19.25	23.98
	UNII-3		5.74	5.76	8.76	30.00
HE80	UNII-2C	5690	15.14	15.25	18.20	23.98
	UNII-3		0.82	1.02	3.93	30.00

* Calculation of Output Power : Corr'd Power = Ant1 meas. Power + Ant2 meas. Power + Duty CF [dB]

PSD Results(SU)

Mode	Band	Center Freq. [MHz]	Meas PSD [dBm/MHz]		DCCF.	Corr'd PSD [dBm]	Limit [dBm/ MHz]
			ANT1	ANT2			
HE20	UNII-2C	5720	5.24	5.51	0.00	8.38	11.00
	UNII-3		1.70	2.22	0.00	4.98	30.00/500kHz
HE40	UNII-2C	5710	2.79	3.35	0.00	6.09	11.00
	UNII-3		-1.87	-1.30	0.00	1.43	30.00/500kHz
HE80	UNII-2C	5690	-1.03	-0.27	0.00	2.38	11.00
	UNII-3		-6.65	-5.81	0.00	-3.20	30.00/500kHz

* Calculation of PSD: Corr'd PSD = Ant1 PSD + Ant2 PSD + Duty CF [dB]

Output Power Results(RU)

Mode	Band	Center Freq. [MHz]	Meas Power [dBm]		Corr'd Power [dBm]	Limit [dBm]
			ANT1	ANT2		
HE20	UNII-2C	5720 (6RU)	7.12	7.23	10.18	22.51
	UNII-3		0.55	0.66	3.62	30.00
HE40	UNII-2C	5710 (15RU)	7.58	7.31	10.46	23.98
	UNII-3		-6.40	-7.00	-3.68	30.00
HE80	UNII-2C	5690 (34RU)	7.24	7.17	10.22	23.98
	UNII-3		-7.03	-7.08	-4.04	30.00

* Calculation of Output Power : Corr'd Power = Ant1 meas. Power + Ant2 meas. Power + Duty CF [dB]

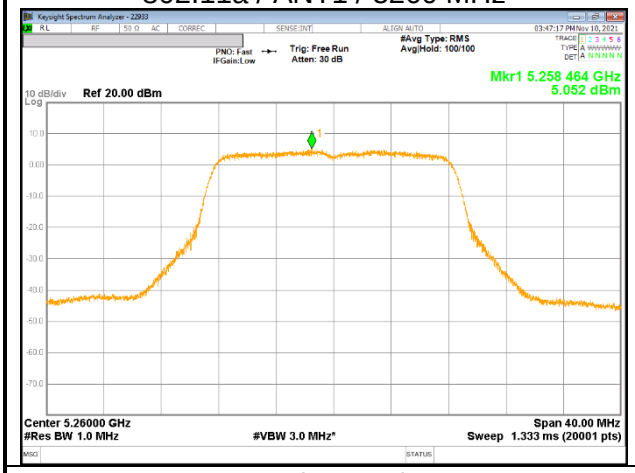
PSD Results(RU)

Mode	Band	Center Freq. [MHz]	Meas PSD [dBm/MHz]		DCCF.	Corr'd PSD [dBm]	Limit [dBm/ MHz]
			ANT1	ANT2			
HE20	UNII-2C	5720 (6RU)	4.79	5.87	0.00	8.38	11.00
	UNII-3		1.35	2.59	0.00	5.02	30.00/500kHz
HE40	UNII-2C	5710 (15RU)	5.57	6.08	0.00	8.84	11.00
	UNII-3		-6.96	-6.36	0.00	-3.64	30.00/500kHz
HE80	UNII-2C	5690 (34RU)	5.39	5.81	0.00	8.61	11.00
	UNII-3		-6.75	-5.80	0.00	-3.24	30.00/500kHz

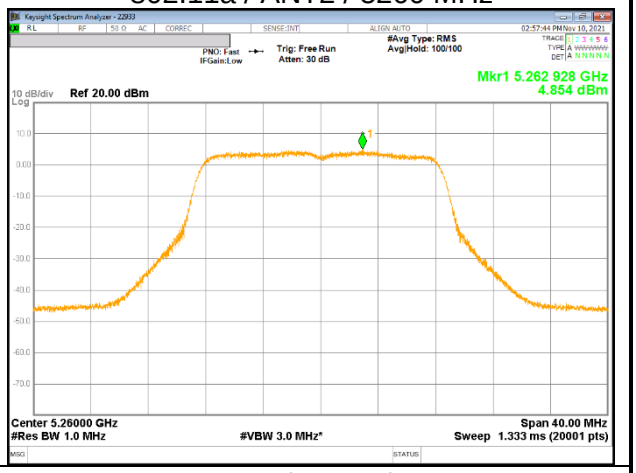
* Calculation of PSD: Corr'd PSD = Ant1 PSD + Ant2 PSD + Duty CF [dB]

10.2.12. OUTPUT POWER AND PPSD PLOTS(WORST CASE)

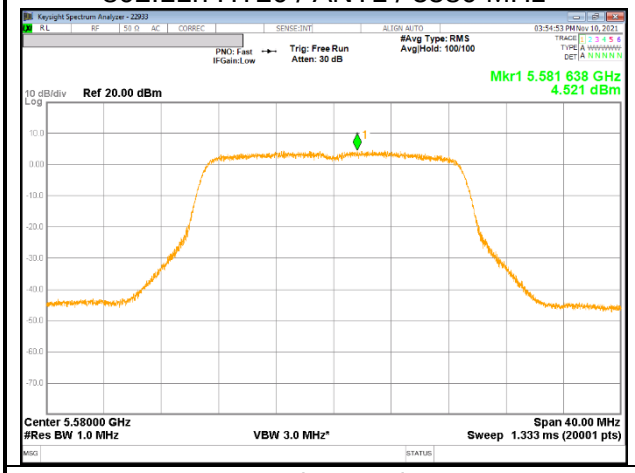
802.11a / ANT1 / 5260 MHz



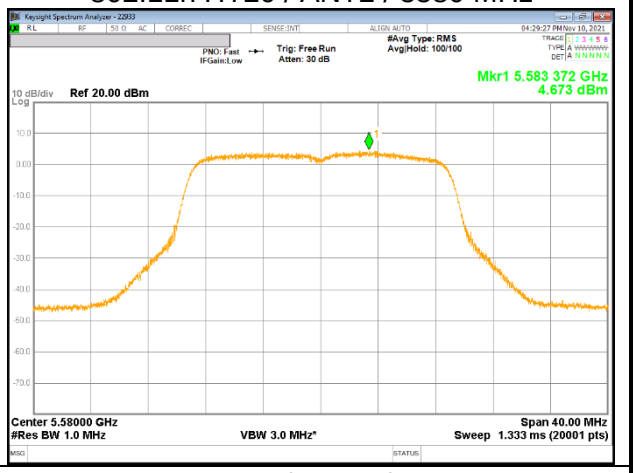
802.11a / ANT2 / 5260 MHz



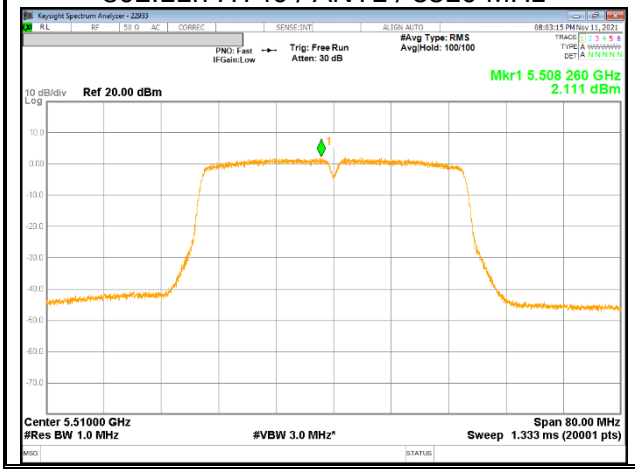
802.11n HT20 / ANT1 / 5580 MHz



802.11n HT20 / ANT2 / 5580 MHz



802.11n HT40 / ANT1 / 5510 MHz



802.11n HT40 / ANT2 / 5510 MHz