

CERTIFICATION TEST REPORT

Report Number. : 4791196642-E8V1

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

Model : SC-55E, SCG28

FCC ID : A3LSMF956JPN

EUT Description : GSM/WCDMA/LTE/5G NR Phone + BT/BLE, DTS/UNII a/b/g/n/ac/ax,
NFC, WPT and UWB

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

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: SAMSUNG ELECTRONICS CO., LTD.

EUT DESCRIPTION: GSM/WCDMA/LTE/5G NR Phone + BT/BLE, DTS/UNII a/b/g/n/ac/ax, NFC, WPT and UWB

MODEL NUMBER: SC-55E, SCG28

SERIAL NUMBER: R3CX30KWKL R, R3CX30KWVVR (CONDUCTED);
R3CX30KWPEF, R3CX30KW SGL, R3CX30KWSPF (RADIATED);

DATE TESTED: 2024-05-09 ~ 2024-05-31

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
CFR 47 Part 15 Subpart E	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
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UL KOREA LTD.

Tested By:



Dexter(Hyunsik) Yun
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UL KOREA LTD.

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. KDB 789033 D02 General UNII Test Procedures New Rules v02r01
4. KDB 905462 D02 UNII DFS Compliance Procedures New Rules v02
5. KDB 905462 D03 UNII Clients Without Radar Detection New Rules v01r02
6. KDB 662911 D01 v02r01
7. KDB 291074 D02 v01
8. ANSI C63.10-2013.

3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 218 Maeyeong-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16675, Korea. Line conducted emissions are measured only at the 218 address. The following table identifies which facilities were utilized for radiated emission measurements documented in this report. Specific facilities are also identified in the test results sections.

218 Maeyeong-ro	
☒	Chamber 1(3m semi-anechoic chamber)
☒	Chamber 2(3m semi-anechoic chamber)
☒	Chamber 3(3m semi-anechoic chamber)
☐	Chamber 4(3m Full-anechoic chamber)
☐	Chamber 5(3m Full-anechoic chamber)

UL KOREA LTD. is accredited by IAS, Laboratory Code TL-637. The full scope of accreditation can be viewed at <https://www.iasonline.org/wp-content/uploads/2017/05/TL-637-cert-New.pdf>.

4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations, and is traceable to recognized national standards.

4.2. SAMPLE CALCULATION

Where relevant, the following sample calculation is provided:

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

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

4.3. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

PARAMETER	UNCERTAINTY
Conducted Disturbance, 0.15 to 30 MHz	2.79 dB
Radiated Disturbance, 9 kHz to 30 MHz	1.69 dB
Radiated Disturbance, 30 MHz to 1 GHz	4.07 dB
Radiated Disturbance, 1 GHz to 18 GHz	4.99 dB
Radiated Disturbance, Above 18 GHz	5.96 dB

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

4.4. DECISION RULE

Decision rule for statement(s) of conformity is based on Clause 4.4.3 in IEC Guide 115:2023.

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

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

Representative model	Difference	Derivative model
		SCG28
SC-55E	Hardware	Same as SC-55E
	Software	Different UI

The model SC-55E was used for final testing and is representative of the test results in this report.

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 MIMO + 5GHz MIMO	4	O	O	O	O	O
2.4GHz MIMO + 6GHz MIMO	4	O	O	O	O	O

Note. Simultaneous transmission with the Bluetooth and Wi-Fi were investigated, and no noticeable emission was found

Test RU offset for tones in each modes

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

Mode	80 + 80 MHz	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	
		65	
Upper 80 MHz		66	
		66	
		66	
Lower 80 MHz	996T	67	
		67	
		67	
Upper 80 MHz		67	
		67	
		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 except UNII-4 listed is based on EIRP as noted:

Band	Frequency Range [MHz]	Mode	Output Power [dBm]	Output Power [mW]
UNII-1	5180 - 5240	802.11a MIMO	20.48	111.69
		802.11n(HT20) MIMO	20.53	112.98
		802.11ax(HE20) MIMO	20.00	100.00
	5190 - 5230	802.11n(HT40) MIMO	19.99	99.77
		802.11ax(HE40) MIMO	20.24	105.68
	5210	802.11ac(VHT80) MIMO	18.60	72.44
		802.11ax(HE80) MIMO	17.87	61.24
UNII-2A	5260 - 5320	802.11a MIMO	20.56	113.76
		802.11n(HT20) MIMO	20.52	112.72
		802.11ax(HE20) MIMO	20.03	100.69
	5190 - 5230	802.11n(HT40) MIMO	20.04	100.93
		802.11ax(HE40) MIMO	20.25	105.93
	5270 - 5310	802.11ac(VHT80) MIMO	18.52	71.12
		802.11ax(HE80) MIMO	18.39	69.02
	5250 ^{Note1}	802.11ac(VHT160) MIMO	18.49	70.63
		802.11ax(HE160) MIMO	18.47	70.31
UNII-2C	5500 - 5720	802.11a MIMO	20.36	108.64
		802.11n(HT20) MIMO	20.34	108.14
		802.11ax(HE20) MIMO	20.09	102.09
	5510 - 5710	802.11n(HT40) MIMO	20.32	107.65
		802.11ax(HE40) MIMO	20.27	106.41
	5530 - 5690	802.11ac(VHT80) MIMO	20.28	106.66
		802.11ax(HE80) MIMO	19.87	97.05
	5570	802.11ac(VHT160) MIMO	16.77	47.53
		802.11ax(HE160) MIMO	16.72	46.99
UNII-3	5745 - 5825	802.11a MIMO	20.40	109.65
		802.11n(HT20) MIMO	20.37	108.89
		802.11ax(HE20) MIMO	20.02	100.46
	5755 - 5795	802.11n(HT40) MIMO	20.41	109.90
		802.11ax(HE40) MIMO	20.25	105.93
	5775	802.11ac(VHT80) MIMO	20.16	103.75
		802.11ax(HE80) MIMO	19.98	99.54
UNII-4	5845 - 5885	802.11a MIMO	20.57	114.02
		802.11n(HT20) MIMO	20.56	113.76
		802.11ax(HE20) MIMO	20.46	111.17
	5835 - 5875	802.11n(HT40) MIMO	20.64	115.88
		802.11ax(HE40) MIMO	20.44	110.66
	5855	802.11ac(VHT80) MIMO	20.47	111.43
		802.11ax(HE80) MIMO	20.31	107.40
	5815 ^{Note2}	802.11ac(VHT160) MIMO	18.74	74.82
		802.11ax(HE160) MIMO	18.73	74.64

Note1. Overlap channel(UNII-1 & 2A)

Note2. Overlap channel(UNII-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:

UNII Band	Frequency Range[MHz]	ANT1 Gain [dBi]	ANT2 Gain [dBi]	Correlated Chains Directional Gain[dBi]
UNII 1	5150 - 5250	-4.21	-2.40	-0.25
UNII 2A	5250 - 5350	-3.21	-2.21	0.31
UNII 2C	5470 - 5725	-2.64	-2.41	0.49
UNII 3	5725 - 5850	-2.41	-3.16	0.23
UNII 4	5850 - 5925	-2.33	-2.95	0.38

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 = $10 \log[(10^{G_1/20} + 10^{G_2/20} + \dots + 10^{G_N/20})^2 / N_{ANT}]$ dBi.

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

UNII-1 band's Directional gain = $10 \log[(10^{-4.21/20} + 10^{-2.40/20})^2 / 2] = -0.25$ dBi

“SUB4” and “SUB1” as indicated in antenna specification are written as ANT1 and ANT2 in this report.

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

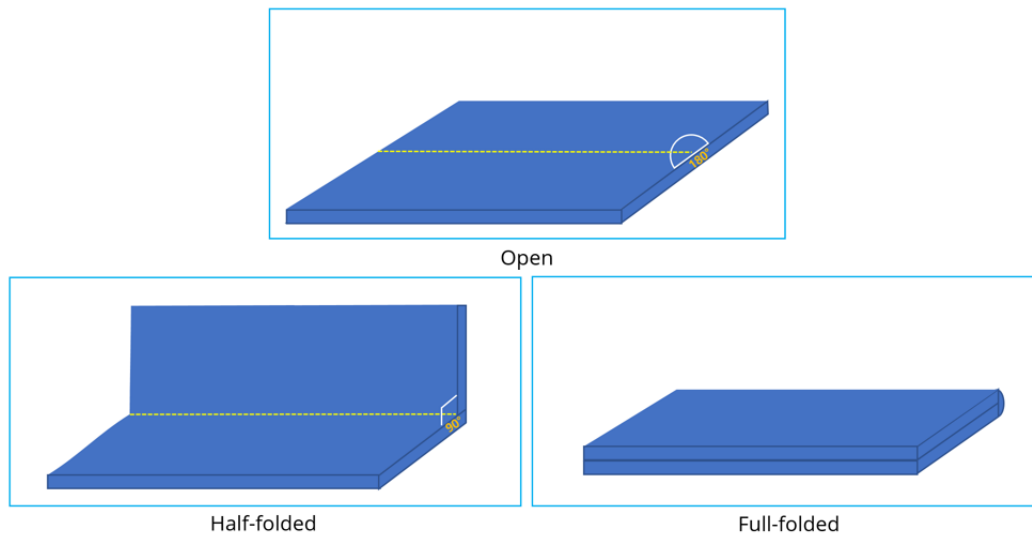
The output power on covered modes is equal to or less than one referenced.

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

Both SISO and MIMO have been investigated and confirmed MIMO was the worst case set for radiated band edge and spurious emission tests.

- i. Worst case of antenna axis: X
- ii. Foldable condition: Open



The fundamentals of the EUT were investigated in three orthogonal orientations X, Y and Z on 2TX MIMO mode. It was determined that X orientation and Open condition were the worst-case for 2TX MIMO mode.

Radiated and power line conducted tests were performed with EUT connected to AC power adapter as the worst-case configuration. Radiated harmonics spurious 1~18 GHz Low/Mid/High channels, 18~40GHz were performed with the EUT set at the 2TX MIMO 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.

For Radiated spurious test, 802.11a 2TX mode has equal or higher output power and PSD results than other modes and therefore, it was set for full test. Spot-check was performed in 802.11n 2TX, 802.11ac 2TX or 802.11ax 2TX.

For Radiated band-edge test, 802.11a 2TX, 802.11n 2TX, 802.11ac 2TX, 802.11ax 2TX SU mode were fully tested except 802.11ax 2TX partial RU modes. 802.11ax SU mode resulted in radiated band-edge test is worse than partial RU modes; therefore, only SU mode was reported.

Simultaneous transmission with the Bluetooth and Wi-Fi were investigated, and no noticeable emission was found.

For 802.11ax mode, output power and PSD tests were investigated between all different tones and found that SU mode had the highest output power and RU 26T has the highest PSD readings; and therefore, conducted tests were performed on SU mode and RU 26T mode.

In case of 6dB Bandwidth, it was tested at the RU allocation with lowest tones number, RU 26Tones as the worst-case scenario.

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

802.11a mode: 6 Mbps 2Tx

802.11n HT20 mode: MCS0 2Tx

802.11n HT40 mode: MCS0 2Tx

802.11ac VHT80 mode: MCS0 2Tx

802.11ac VHT160 mode: MCS0 2Tx

802.11ax HE20 mode: MCS0 2Tx

802.11ax HE40 mode: MCS0 2Tx

802.11ax HE80 mode: MCS0 2Tx

802.11ax HE160 mode: MCS0 2Tx

5.5. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	Manufacturer	Model	Serial Number	FCC ID
Charger	SAMSUNG	EP-TA800	R37N9QP6H09DK3	N/A
Data Cable	SAMSUNG	EP-DN980	GH39-02111A	N/A

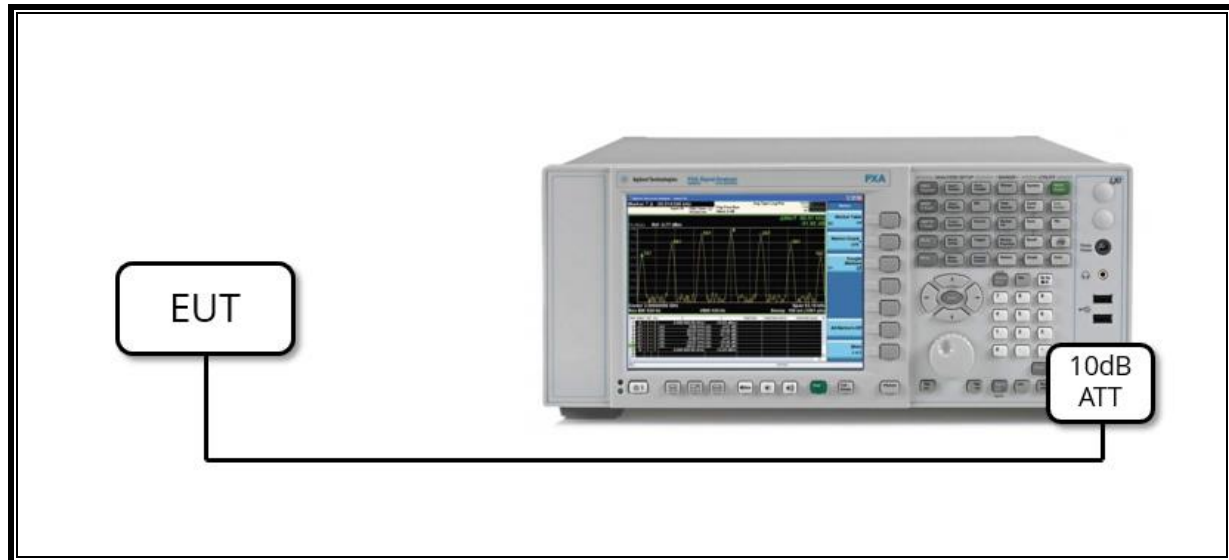
I/O CABLE

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

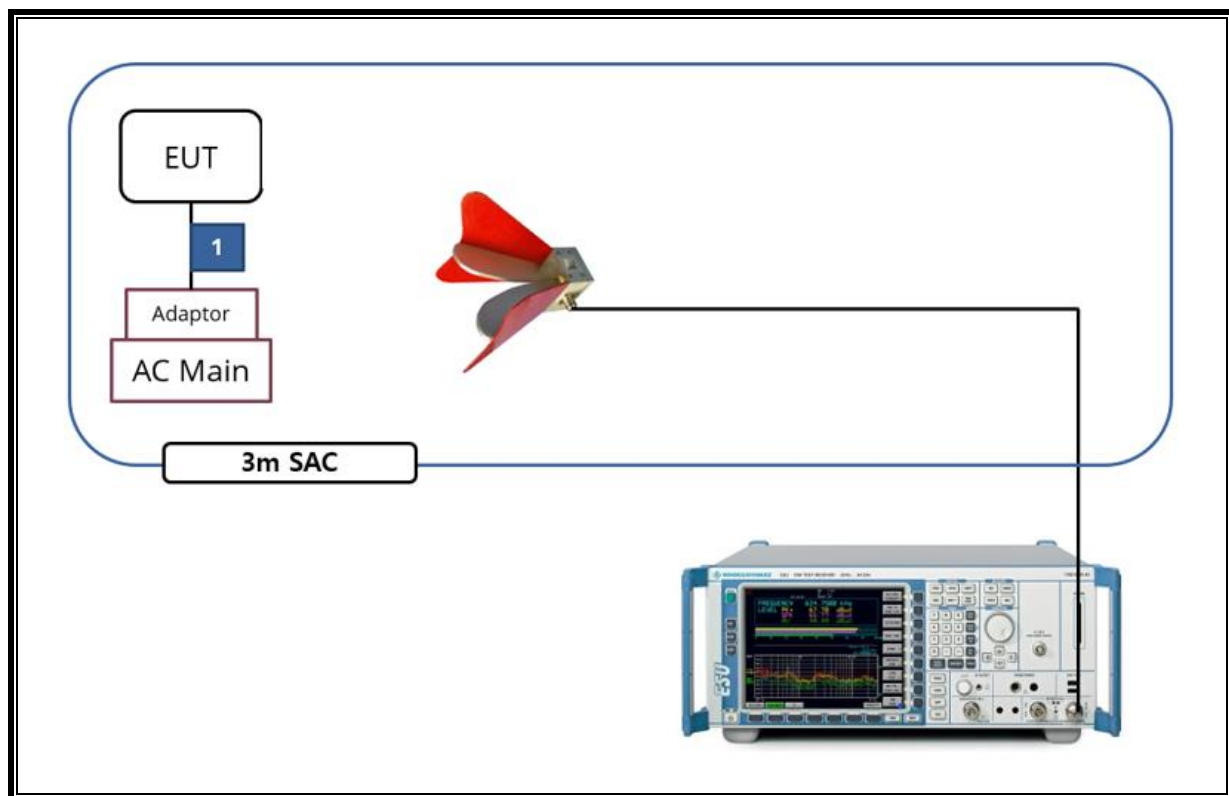
TEST SETUP

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	749	2024-08-15
Antenna, Horn, 18 GHz	ETS	3117	00168717	2024-08-21
Antenna, Horn, 18 GHz	ETS	3117	00218957	2025-01-08
Antenna, Horn, 40 GHz	ETS	3116C	00166155	2024-08-02
Preamplifier	ETS	3115-PA	00167475	2024-07-25
Preamplifier	ETS	3116C-PA	00168841	2024-07-25
Preamplifier, 1000 MHz	Sonoma	310N	341282	2024-07-24
Preamplifier, 18 GHz	Miteq	AFS42-00101800-25-S-42	1896138	2024-07-25
Preamplifier, 18 GHz	Miteq	AFS42-00101800-25-S-42	2029169	2024-07-24
Spectrum Analyzer, 44 GHz	Agilent / HP	N9030A	MY54170614	2024-07-25
Spectrum Analyzer, 44 GHz	KEYSIGHT	N9040B	MY60080268	2025-01-03
Average Power Sensor	Agilent / HP	U2000	MY54270007	2024-07-23
Average Power Sensor	Agilent / HP	U2000	MY54260010	2024-07-24
Attenuator	PASTERNAK	PE7087-10	A001	2024-07-23
Attenuator	PASTERNAK	PE7087-10	A008	2024-07-27
Attenuator	PASTERNAK	PE7004-10	2	2024-07-23
Attenuator	PASTERNAK	PE7087-10	A009	2024-07-24
EMI Test Receive, 40 GHz	R&S	ESU40	100439	2024-07-23
EMI Test Receive, 40 GHz	R&S	ESU40	100457	2024-07-24
EMI Test Receive, 3 GHz	R&S	ESR3	101832	2024-07-23
Notch Filter	Micro-Tronics	BRM50702-02	G037	2024-07-24
Notch Filter	Micro-Tronics	BRM50716-2	006	2024-07-24
Low Pass Filter 5GHz	Micro-Tronics	LPS17541	020	2024-07-24
High Pass Filter 3GHz	Micro-Tronics	HPM17543	020	2024-07-24
High Pass Filter 6GHz	Micro-Tronics	HPS17542	009	2024-07-23
LISN	R&S	ENV-216	101836	2024-07-23
Antenna, Loop, 9kHz-30MHz	R&S	HFH2-Z2	100418	2025-09-06
Termination	WEINSCHL	M1406A	T09	2024-07-23
Attenuator	WEINSCHL	WA76-30-21	A015	2024-07-24
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}

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.a(Method PM)

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.

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	2.828	2.927	0.966	96.618	0.15
802.11n(HT20) MIMO	5.026	5.126	0.980	98.049	-
802.11n(HT40) MIMO	5.346	5.446	0.982	98.164	-
802.11ac(VHT80) MIMO	1.680	1.778	0.945	94.488	0.25
802.11ac(VHT160) MIMO	1.752	1.850	0.947	94.703	0.24

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	2.596	2.616	0.992	99.235	-
		SU	5.451	5.470	0.997	99.653	-
802.11ax HE40	MIMO	26T	2.595	2.613	0.993	99.311	-
		SU	5.452	5.470	0.997	99.671	-
802.11ax HE80	MIMO	26T	2.596	2.614	0.993	99.311	-
		SU	5.450	5.468	0.997	99.671	-
802.11ax HE160	MIMO	26T	2.596	2.614	0.993	99.311	-
		SU	5.450	5.470	0.996	99.634	-

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.

DUTY CYCLE SAMPLE PLOTS



9.2. 26 dB BANDWIDTH

LIMITS

None; for reporting purposes only.

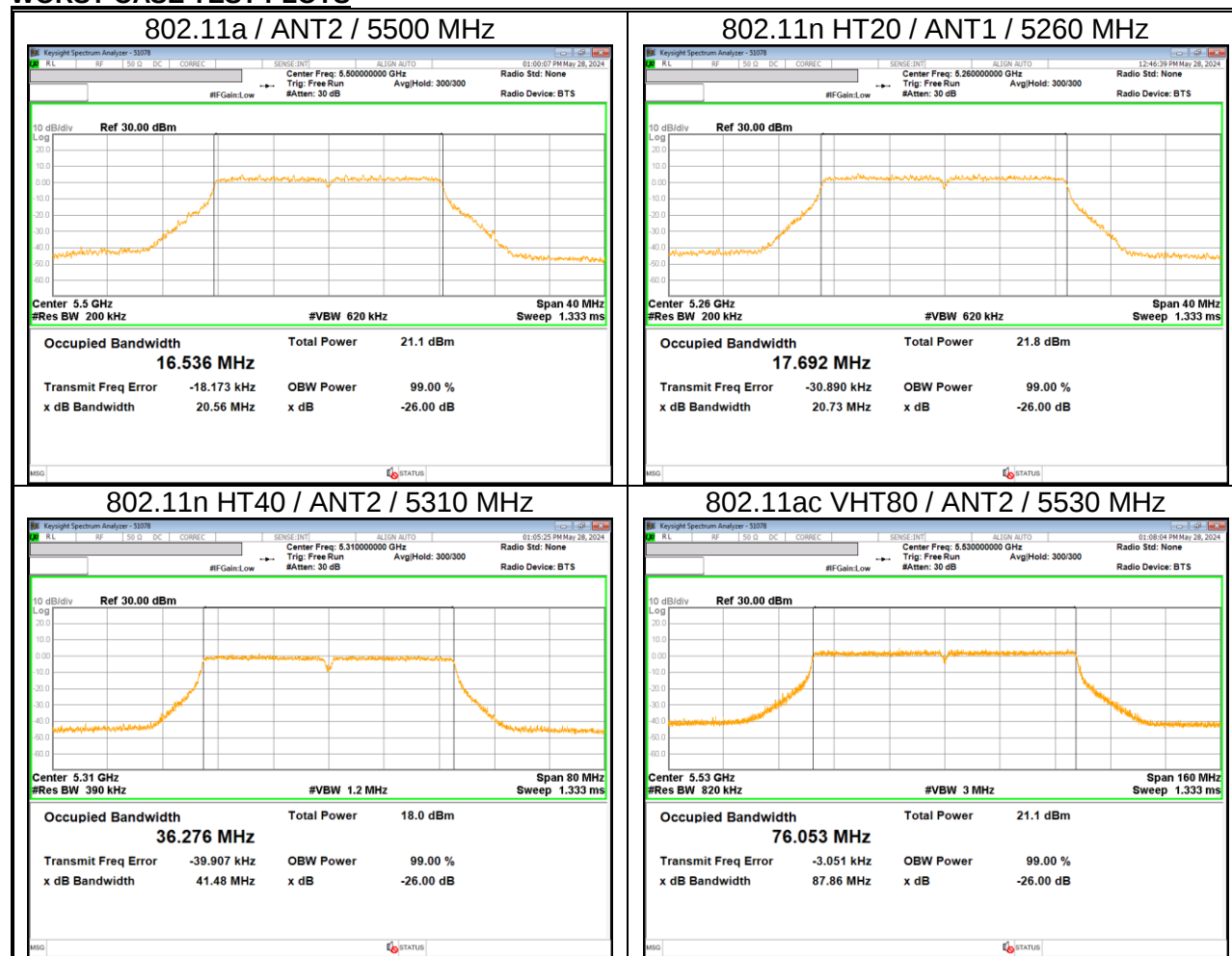
TEST PROCEDURE

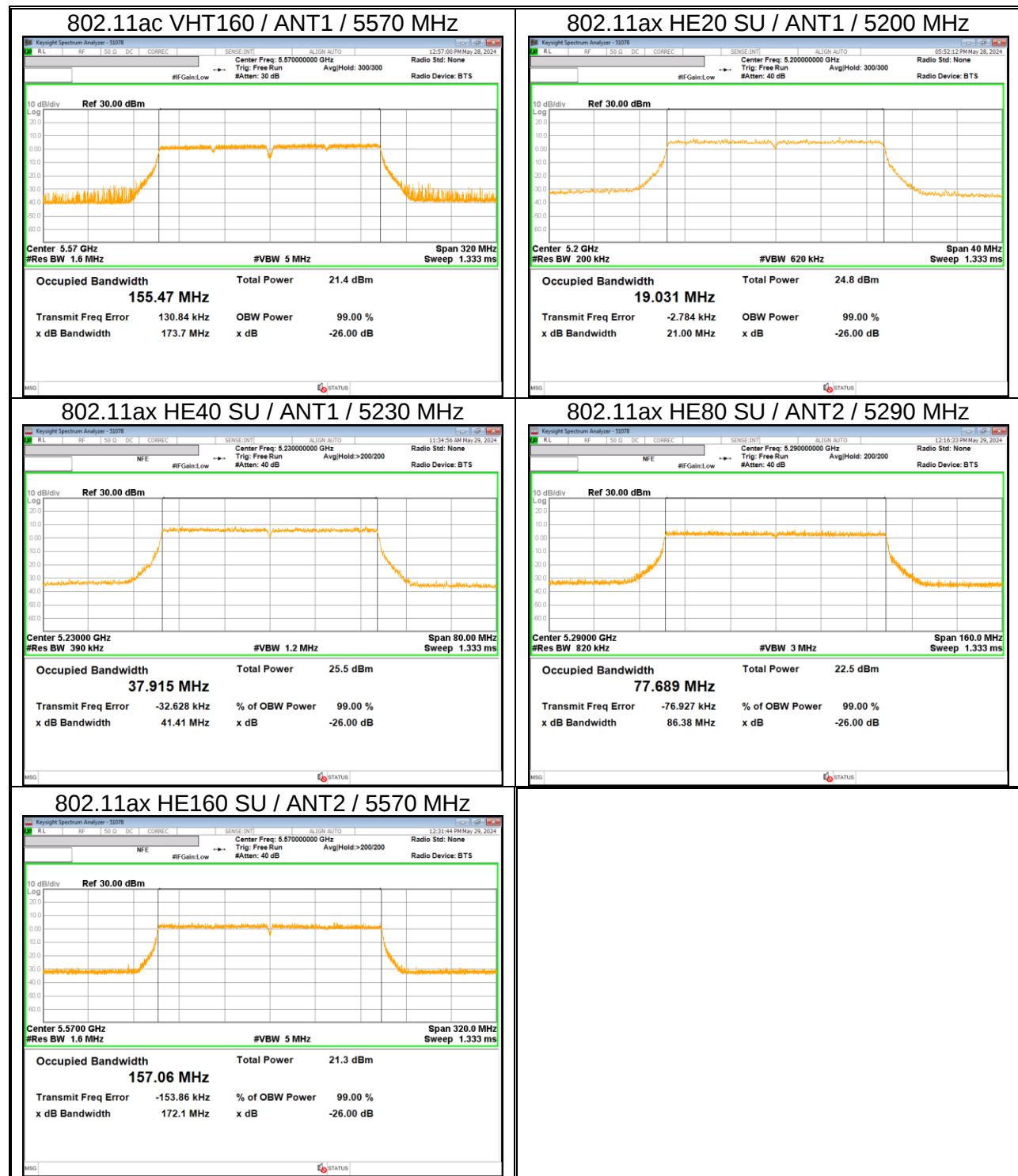
Reference to 789033 D02 General UNII Test Procedures New Rules v02r01: The transmitter output is connected to a spectrum analyzer with the RBW set to approximately 1% of EBW, the VBW > RBW, peak detector and max hold.

RESULTS

- Please refer to the next page

WORST CASE TEST PLOTS





9.2.1. 802.11a

Band	Channel	Center Freq. [MHz]	26 dB BW [MHz]		Worst	99% BW [MHz]	
			ANT1	ANT2		ANT1	ANT2
UNII-1 ^{Note}	36	5180	20.83	21.13	20.82	16.55	16.54
	40	5200	20.82	20.82		16.57	16.55
	48	5240	21.27	21.20		16.58	16.58
UNII-2A ^{Note}	52	5260	20.87	21.07	20.67	16.57	16.54
	60	5300	20.78	21.07		16.60	16.54
	64	5320	20.67	21.03		16.57	16.57
UNII-2C	100	5500	20.96	20.56	20.56		
	116	5580	20.98	20.79			
	140	5700	20.61	21.03			

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

9.2.2. 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	21.06	20.86	20.86	17.70	17.71
	40	5200	21.09	20.95		17.71	17.70
	48	5240	21.09	21.05		17.70	17.70
UNII-2A ^{Note}	52	5260	20.73	21.01	20.73	17.69	17.70
	60	5300	20.96	21.01		17.68	17.70
	64	5320	21.27	21.08		17.71	17.70
UNII-2C	100	5500	21.12	21.47	21.02		
	116	5580	21.02	21.18			
	140	5700	21.16	21.02			

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

9.2.3. 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	42.04	41.67	41.61	36.35	36.33
	46	5230	41.61	41.73		36.33	36.31
UNII-2A ^{Note}	54	5270	41.87	42.00	41.48	36.32	36.29
	62	5310	41.97	41.48		36.33	36.28
UNII-2C	102	5510	42.38	41.72	41.72		
	110	5550	42.11	42.15			
	134	5670	42.14	41.84			

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

9.2.4. 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	91.39	90.00	90.00	76.17	76.08
UNII-2A ^{Note}	58	5290	90.39	90.06	90.06	76.17	76.05
UNII-2C	106	5530	90.93	87.86	87.86		
	122	5610	90.88	89.10			

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

9.2.5. 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	174.60	176.60	174.60		
UNII-2C	114	5570	173.70	174.00	173.70		

9.2.6. 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	21.45	21.51	21.00	19.00	19.05
	40	5200	21.00	21.49		19.03	19.02
	48	5240	21.39	21.13		19.04	19.02
UNII-2A ^{Note}	52	5260	21.60	21.61	21.28	19.04	19.03
	60	5300	21.54	21.52		19.02	19.02
	64	5320	21.35	21.28		19.02	19.03
UNII-2C	100	5500	21.41	21.49	21.28		
	116	5580	21.68	21.43			
	140	5700	21.38	21.28			

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

9.2.7. 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	41.68	41.50	41.41	37.95	37.96
	46	5230	41.41	42.03		37.92	37.95
UNII-2A ^{Note}	54	5270	42.33	41.52	41.52	37.91	37.93
	62	5310	41.73	41.88		37.91	37.93
UNII-2C	102	5510	41.96	42.13	41.53		
	110	5550	42.43	41.53			
	134	5670	42.30	42.49			

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

9.2.8. 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	87.61	86.84	86.84	77.77	77.66
UNII-2A ^{Note}	58	5290	87.63	86.38	86.38	77.71	77.69
UNII-2C	106	5530	87.33	87.28	87.28		
	122	5610	88.12	87.67			

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

9.2.9. 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	172.50	172.40	172.40		
UNII-2C	114	5570	172.90	172.10	172.10		

9.2.10. 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	15.84	5.65	15.84	5.55
802.11n HT20	Straddle	5720	15.42	5.71	15.64	5.72
802.11n HT40	Straddle	5710	36.22	6.22	36.50	6.15
802.11ac VHT80	Straddle	5690	81.77	11.05	81.32	9.66
802.11ax HE20(SU)	Straddle	5720	15.96	5.79	15.76	5.77
802.11ax HE40(SU)	Straddle	5710	36.06	6.10	35.66	5.94
802.11ax HE80(SU)	Straddle	5690	80.28	8.90	78.33	8.18

9.2.11. 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	20.10	19.63	18.41	18.16
			4	18.37	18.17	17.22	17.10
			8	19.70	19.59	18.22	18.25
	5200		0	19.83	19.48	18.34	18.22
			4	18.61	18.11	17.05	17.12
			8	19.69	19.63	18.23	18.23
	5240		0	19.92	19.59	18.23	18.20
			4	18.63	18.18	17.19	17.03
			8	19.79	19.62	18.24	18.28
UNII-2A ^{Note}	5260	26T	0	20.02	19.61	18.26	18.22
			4	18.59	18.18	16.97	17.11
			8	19.70	19.62	18.23	18.28
	5300		0	19.61	19.78	18.32	18.23
			4	18.61	18.16	17.22	17.03
			8	19.75	19.52	18.27	18.24
	5320		0	20.03	19.61	18.37	18.21
			4	18.48	18.17	17.23	17.09
			8	19.84	19.63	18.27	18.21
UNII-2C	5500	26T	0	19.90	19.68		
			4	18.48	18.09		
			8	19.70	19.53		
	5580		0	19.92	19.48		
			4	18.57	18.13		
			8	19.73	19.56		
	5700		0	20.08	19.63		
			4	18.41	18.13		
			8	19.87	19.63		

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

9.2.12. 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	19.96	19.82	18.35	18.17
			9	22.17	21.37	20.27	19.21
			17	20.77	20.14	18.43	18.27
	5230		0	20.23	19.63	18.37	18.10
			9	22.77	21.65	20.38	19.37
			17	20.96	20.09	18.52	18.37
UNII-2A ^{Note}	5270	26T	0	20.12	19.80	18.29	18.15
			9	21.94	21.16	20.14	19.08
			17	21.02	20.07	18.64	18.26
	5310		0	20.00	19.73	18.35	18.06
			9	22.49	21.22	20.34	19.21
			17	19.65	20.01	18.34	18.31
UNII-2C	5510	26T	0	20.37	19.68		
			9	22.51	21.10		
			17	20.38	19.95		
	5550		0	20.00	19.73		
			9	23.18	21.03		
			17	20.84	20.00		
	5670		0	19.94	19.71		
			9	22.68	21.42		
			17	20.39	20.17		

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

9.2.13. 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	23.31	21.84	20.16	19.46
			18	78.41	77.87	75.23	75.04
			36	23.03	22.31	20.24	19.66
UNII-2A ^{Note}	5290	26T	0	23.35	21.19	20.45	19.20
			18	78.29	78.04	75.23	74.95
			36	23.68	22.21	20.66	19.51
UNII-2C	5530	26T	0	22.63	21.12		
			18	78.63	78.00		
			36	23.14	21.98		
	5610	26T	0	22.74	20.97		
			18	78.32	77.87		
			36	23.52	21.87		

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

9.2.14. 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	27.31	24.51	27.27	21.85
			0 U	31.91	26.36	28.73	25.07
			36 U	30.29	24.78	29.30	21.82
UNII-2C	5570	26T	0 L	27.94	23.65		
			0 U	28.45	25.82		
			36 U	27.62	25.70		

9.2.15. 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	14.22	4.36	14.11	4.09
	HE40	5710		15	14.37	4.08	14.19	4.13
	HE80	5690		34	16.26	5.21	14.57	4.46

10. ANTENNA PORT TEST RESULTS

10.1. 6 dB BANDWIDTH

LIMITS

FCC §15.407

The minimum 6 dB bandwidth shall be at least 500 kHz.

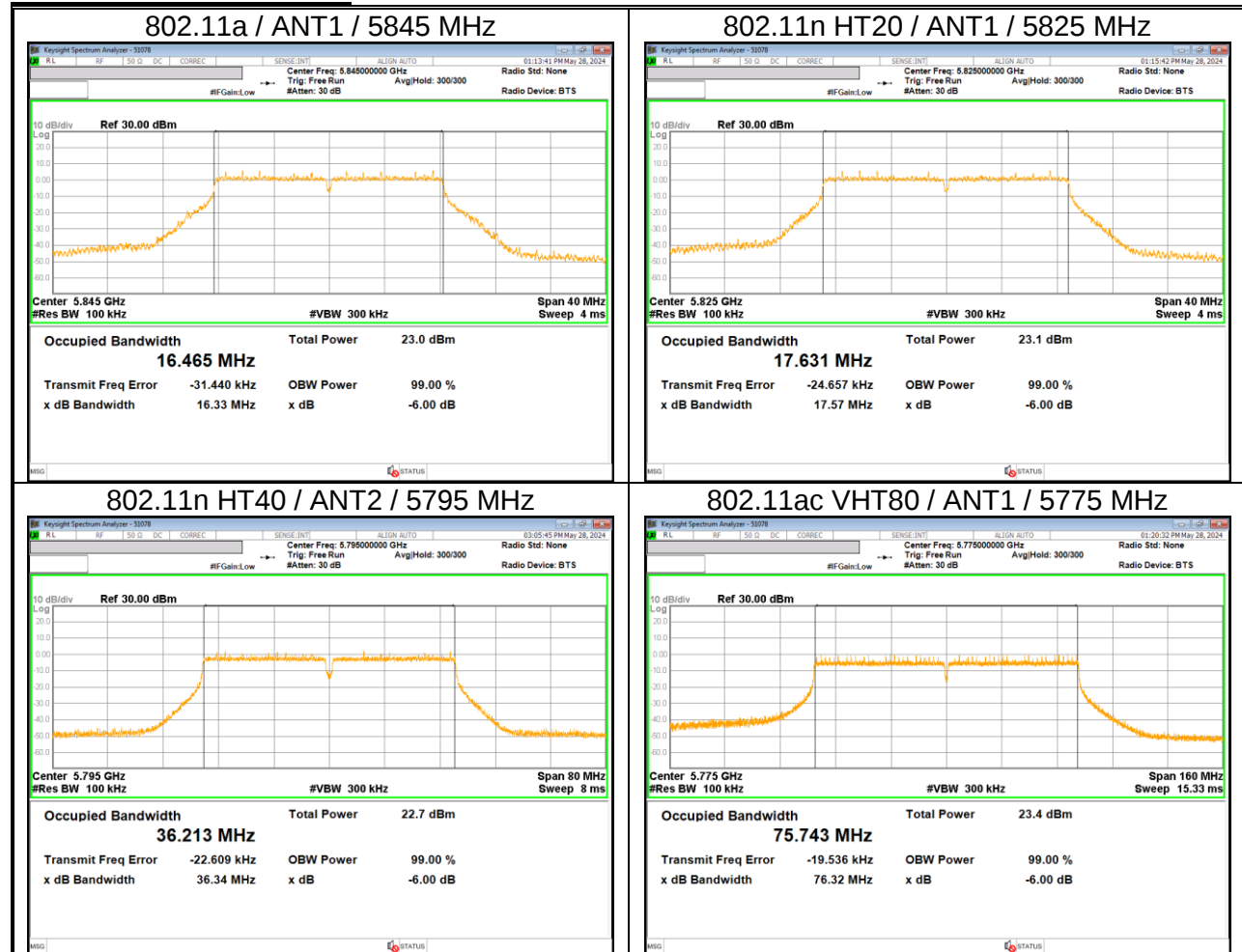
TEST PROCEDURE

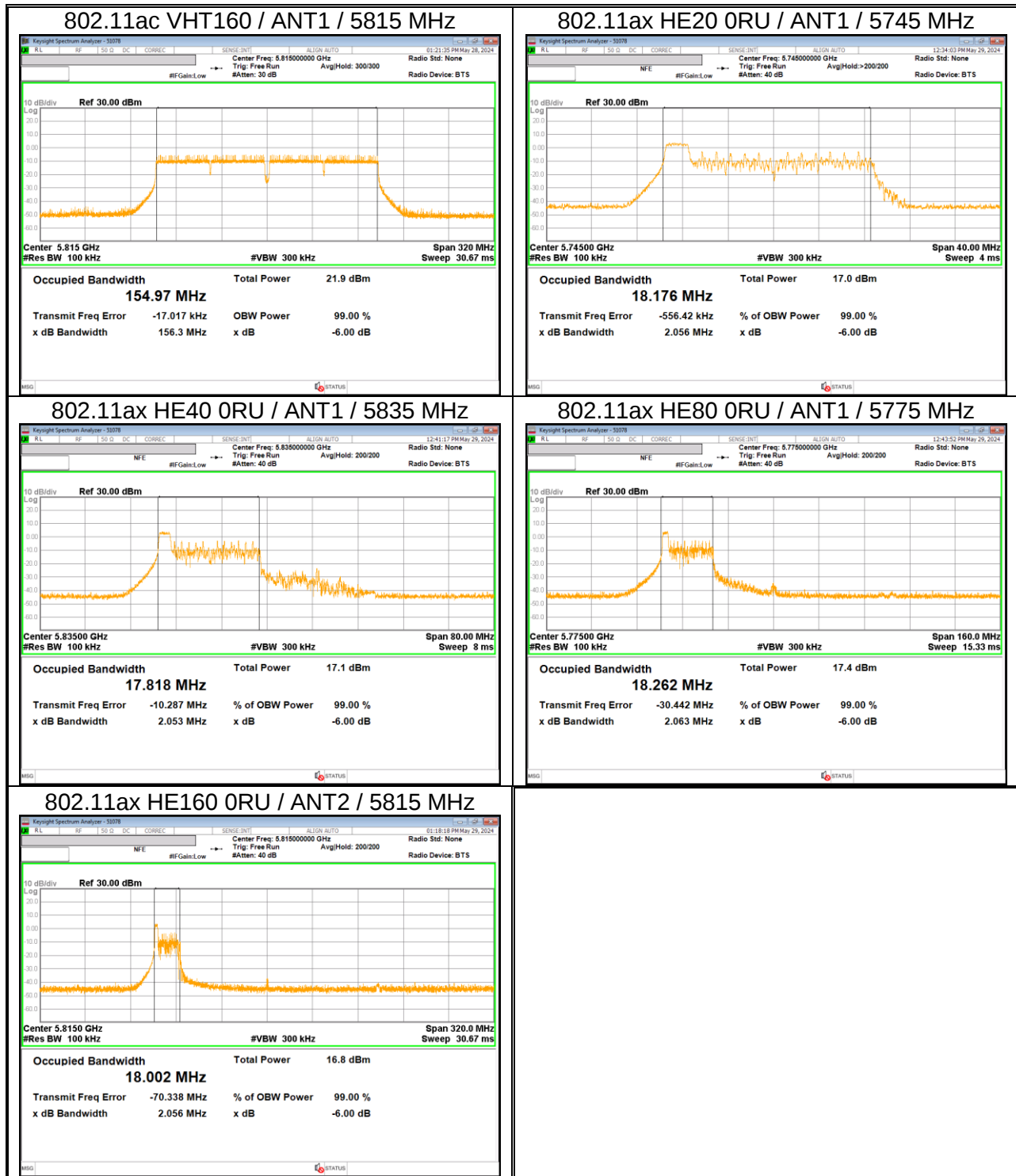
Reference to 789033 D02 General UNII Test Procedures New Rules v02r01: The transmitter output is connected to a spectrum analyzer with the RBW set to 100kHz, the VBW $\geq 3 \times$ RBW, peak detector and max hold.

RESULTS

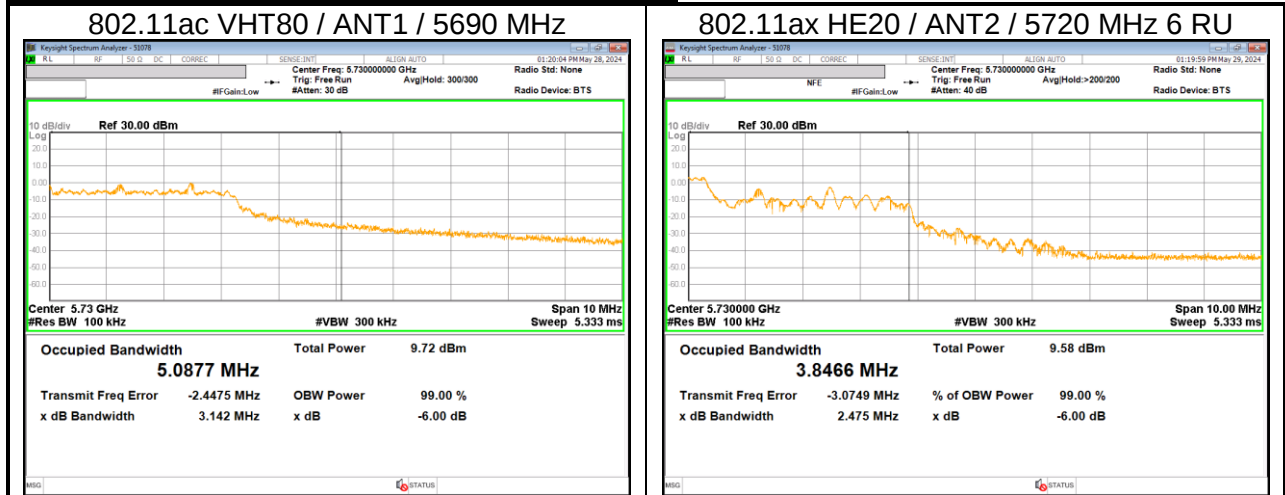
- Please refer to the next page

WORST CASE TEST PLOTS





WORST CASE TEST PLOTS(STRADDLE CHANNELS)



10.1.1. STRADDLE CHANNEL

Mode	Channel	Center Freq. [MHz]	6 dB BW [MHz]	
			UNII-3	
			ANT1	ANT2
802.11a	Straddle	5720	3.15	3.15
802.11n HT20	Straddle	5720	3.77	3.77
802.11n HT40	Straddle	5710	3.16	3.16
802.11ac VHT80	Straddle	5690	3.14	3.15
802.11ax HE20(SU)	Straddle	5720	4.45	4.48
802.11ax HE40(SU)	Straddle	5710	4.11	4.10
802.11ax HE80(SU)	Straddle	5690	4.11	4.06

Band	Mode	Center Freq. [MHz]	Tones	RU offset	6 dB BW [MHz]	
					UNII-3	
					ANT1	ANT2
Straddle Channel	HE20	5720	26T	6	2.49	2.48
	HE40	5710		15	3.50	3.49
	HE80	5690		34	3.73	3.51

10.1.2. UNII-3 & 4 BAND

Mode	Channel	Center Freq. [MHz]	6 dB BW [MHz]		Worst	Minimum Limit [MHz]
			ANT1	ANT2		
802.11a	149	5745	16.34	16.35	16.33	0.5
	157	5785	16.34	16.34		
	165	5825	16.35	16.35		
	169	5845	16.33	16.35		
	173	5865	16.36	16.35		
	177	5885	16.35	16.35		
802.11n HT20	149	5745	17.59	17.58	17.57	
	157	5785	17.58	17.58		
	165	5825	17.57	17.58		
	169	5845	17.60	17.58		
	173	5865	17.59	17.57		
	177	5885	17.60	17.59		
802.11n HT40	151	5755	36.35	36.35	36.34	
	159	5795	36.35	36.34		
	167	5835	36.35	36.34		
	175	5875	36.35	36.34		
802.11ac VHT80	155	5775	76.32	76.34	76.32	
	171	5855	76.34	76.34		
802.11ac VHT160	163	5815	156.30	156.30	156.30	
802.11ax HE20(SU)	149	5745	18.99	18.99	18.94	
	157	5785	18.99	18.99		
	165	5825	19.04	18.99		
	169	5845	19.00	18.94		
	173	5865	19.02	18.97		
	177	5885	19.01	18.95		
802.11ax HE40(SU)	151	5755	38.05	38.21	37.97	
	159	5795	38.17	38.08		
	167	5835	38.07	37.97		
	175	5875	38.15	38.20		
802.11ax HE80(SU)	155	5775	78.13	78.06	78.06	
	171	5855	78.17	78.16		
802.11ax HE160(SU)	163	5815	157.80	158.10	157.80	

10.1.3. UNII-3 & 4 BAND(RU)

Mode	Channel	Center Freq. [MHz]	Tones	RU offset	6 dB BW [MHz]		Minimum Limit [MHz]
					ANT1	ANT2	
HE20	149	5745	26T	0	2.06	2.06	0.5
	157	5785			2.08	2.07	
	165	5825			2.09	2.07	
	169	5845			2.08	2.09	
	173	5865			2.08	2.07	
	177	5885			2.10	2.08	
	Minimum 6dB Bandwidth				2.06		
HE40	151	5755	26T	0	2.09	2.08	
	159	5795			2.06	2.08	
	167	5835			2.05	2.10	
	175	5875			2.07	2.10	
	Minimum 6dB Bandwidth				2.05		
HE80	155	5775	26T	0	2.06	2.07	
	171	5855			2.07	2.09	
	Minimum 6dB Bandwidth				2.06		
HE160	163	5815	26T	0	2.07	2.06	
	Minimum 6dB Bandwidth				2.06		

10.2. OUTPUT POWER AND PPSD

LIMITS

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

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.

TEST PROCEDURE

KDB 789033 Method PM is used for output power. Duty correction factor has already been applied to the power meter and the average power value is measured.

KDB 789033 Method SA-2 is used for PSD. RBW set to 1MHz(500kHz for the band 5.725-5.85 GHz, the VBW $\geq 3 \times$ RBW, RMS detector and trace averaging).

Straddle Channel(UNII-2C&3)

KDB 789033 Method PM is used for output power of straddle channel.
(verification that both limit of UNII-2C and UNII-3 power are satisfied)

KDB 789033 Method SA-2 is used for PSD of straddle channel. RBW set to 1MHz, VBW $\geq 3 \times$ RBW, RMS detector and trace averaging. Peak marker value of the spectrum is used for PSD. Considering the PSD's RBW setting and test limit, the UNII-2C measurement method (RBW 1MHz) covers UNII-3 (RBW 500kHz).

Straddle Channel(UNII-3&4)

KDB 789033 Method PM is used for total power of straddle channel.
(verification that both limit of UNII-3 and UNII-4 power & e.i.r.p. are satisfied)

KDB 789033 Method SA-2 is used for PSD of straddle channel. RBW set to 1MHz, VBW $\geq 3 \times$ RBW, RMS detector and trace averaging. Peak marker value of the spectrum is used for PSD. Considering the PSD's RBW setting and test limit, the UNII-4 measurement method (RBW 1MHz) covers UNII-3 (RBW 500kHz).

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	-4.21	-2.40	-0.25
UNII 2A 5250 - 5350	-3.21	-2.21	0.31
UNII 2C 5470 - 5725	-2.64	-2.41	0.49
UNII 3 5725 - 5850	-2.41	-3.16	0.23
UNII 4 5850 - 5925	-2.33	-2.95	0.38

Note. Since the correlated 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	16.20	16.75		19.49	23.98
	40	5200	17.22	17.67		20.46	
	48	5240	17.35	17.58		20.48	
UNII-2A	52	5260	17.36	17.73		20.56	23.98
	60	5300	17.15	17.50		20.34	
	64	5320	16.05	16.52		19.30	
UNII-2C	100	5500	17.11	17.46		20.30	23.98
	116	5580	17.22	17.47		20.36	
	140	5700	17.11	17.51		20.32	
UNII-2C&3	144 Straddle	5720	17.23	17.64		20.45	23.00 or 30.00
UNII-3	149	5745	17.24	17.53		20.40	30.00
	157	5785	17.10	17.55		20.34	
	165	5825	17.07	17.34		20.22	
UNII-3&4	169	5845	17.09	17.34		20.23	30.00
		5845	17.09	17.34	0.38	20.61	30.00 _(e.i.r.p)
UNII-4	173	5865	17.05	17.31	0.38	20.57	30.00 _(e.i.r.p)
	177	5885	16.81	17.17	0.38	20.38	

* 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	5.65	5.81	0.15		8.89	11.00
	40	5200	6.50	6.79	0.15		9.80	
	48	5240	6.60	6.67	0.15		9.80	
UNII-2A	52	5260	6.86	6.90	0.15		10.04	11.00
	60	5300	6.76	6.61	0.15		9.84	
	64	5320	5.72	5.69	0.15		8.86	
UNII-2C	100	5500	6.47	6.49	0.15		9.64	11.00
	116	5580	6.93	6.40	0.15		9.83	
	140	5700	6.54	6.54	0.15		9.70	
UNII-2C&3	144 Straddle	5720	6.55	6.85	0.15		9.86	11.00 or 30.00/500kHz
UNII-3	149	5745	3.36	3.85	0.15		6.77	30.00/500kHz
	157	5785	3.18	3.68	0.15		6.60	
	165	5825	3.29	3.54	0.15		6.58	
UNII-3&4	169	5845	6.35	6.39	0.15		9.53	30.00/500kHz
		5845	6.35	6.39	0.15	0.38	9.91	14.00 _(e.i.r.p)
UNII-4	173	5865	6.67	6.51	0.15	0.38	10.13	14.00 _(e.i.r.p)
	177	5885	6.07	6.36	0.15	0.38	9.76	

* 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	17.24	17.79		20.53	23.98
	40	5200	17.16	17.65		20.42	
	48	5240	17.28	17.54		20.42	
UNII-2A	52	5260	17.29	17.72		20.52	23.98
	60	5300	17.15	17.50		20.34	
	64	5320	17.07	17.55		20.33	
UNII-2C	100	5500	17.03	17.45		20.26	23.98
	116	5580	17.13	17.47		20.31	
	140	5700	17.10	17.55		20.34	
UNII-2C&3	144 Straddle	5720	17.21	17.65		20.45	22.88 or 30.00
UNII-3	149	5745	17.17	17.54		20.37	30.00
	157	5785	17.07	17.55		20.33	
	165	5825	17.02	17.37		20.21	
UNII-3&4	169	5845	17.05	17.36		20.22	30.00
		5845	17.05	17.36	0.38	20.60	30.00 _(e.i.r.p)
UNII-4	173	5865	17.01	17.33	0.38	20.56	30.00 _(e.i.r.p)
	177	5885	16.81	17.22	0.38	20.41	

* 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	6.54	6.49	0.00		9.53	11.00
	40	5200	6.34	6.62	0.00		9.49	
	48	5240	6.54	6.57	0.00		9.56	
UNII-2A	52	5260	6.59	6.57	0.00		9.59	11.00
	60	5300	6.36	6.46	0.00		9.42	
	64	5320	6.57	6.62	0.00		9.60	
UNII-2C	100	5500	6.47	6.34	0.00		9.42	11.00
	116	5580	6.57	6.66	0.00		9.62	
	140	5700	6.24	6.66	0.00		9.47	
UNII-2C&3	144 Straddle	5720	6.20	6.73	0.00		9.48	11.00 or 30.00/500kHz
UNII-3	149	5745	3.13	3.58	0.00		6.37	30.00/500kHz
	157	5785	3.08	3.64	0.00		6.38	
	165	5825	3.32	3.29	0.00		6.31	
UNII-3&4	169	5845	6.39	6.79	0.00		9.60	30.00/500kHz
		5845	6.39	6.79	0.00	0.38	9.98	14.00 _(e.i.r.p)
UNII-4	173	5865	6.10	6.30	0.00	0.38	9.59	14.00 _(e.i.r.p)
	177	5885	5.84	6.20	0.00	0.38	9.41	

* 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	14.65	15.28		17.99	23.98
	46	5230	16.90	17.05		19.99	
UNII-2A	54	5270	16.70	17.34		20.04	23.98
	62	5310	14.50	14.96		17.75	
UNII-2C	102	5510	15.17	15.44		18.32	23.98
	110	5550	16.21	17.04		19.66	
	134	5670	17.05	17.56		20.32	
UNII-2C&3	142 Straddle	5710	17.10	17.64		20.39	23.98 or 30.00
UNII-3	151	5755	17.21	17.58		20.41	30.00
	159	5795	17.12	17.50		20.32	
UNII-3&4	167	5835	17.17	17.35		20.27	30.00
		5835	17.17	17.35	0.38	20.65	30.00 _(e.i.r.p)
UNII-4	175	5875	17.28	17.22	0.38	20.64	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	1.43	1.76	0.00		4.61	11.00
	46	5230	2.83	2.83	0.00		5.84	
UNII-2A	54	5270	3.09	3.20	0.00		6.16	11.00
	62	5310	1.12	0.94	0.00		4.04	
UNII-2C	102	5510	1.31	1.31	0.00		4.32	11.00
	110	5550	3.24	2.86	0.00		6.07	
	134	5670	3.15	3.54	0.00		6.36	
UNII-2C&3	142 Straddle	5710	3.11	3.51	0.00		6.33	11.00 or 30.00/500kHz
UNII-3	151	5755	0.15	0.61	0.00		3.40	30.00/500kHz
	159	5795	0.03	0.44	0.00		3.25	
UNII-3&4	167	5835	3.35	3.34	0.00		6.35	30.00/500kHz
		5835	3.35	3.34	0.00	0.38	6.73	14.00 _(e.i.r.p)
UNII-4	175	5875	3.29	3.28	0.00	0.38	6.67	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	15.48	15.70		18.60	23.98
UNII-2A	58	5290	15.22	15.78		18.52	23.98
UNII-2C	106	5530	15.47	15.62		18.56	23.98
	122	5610	17.02	17.50		20.28	
UNII-2C&3	138 Straddle	5690	17.01	17.49		20.27	23.98 or 30.00
UNII-3	155	5775	16.87	17.42		20.16	30.00
UNII-3&4	171	5855	16.91	17.24		20.09	30.00
		5855	16.91	17.24	0.38	20.47	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	-1.76	-1.79	0.25		1.48	11.00
UNII-2A	58	5290	-1.82	-1.43	0.25		1.64	11.00
UNII-2C	106	5530	-1.60	-1.58	0.25		1.67	11.00
	122	5610	-0.19	0.25	0.25		3.29	
UNII-2C&3	138 Straddle	5690	-0.33	-0.13	0.25		3.03	11.00 or 30.00/500kHz
UNII-3	155	5775	-3.37	-3.11	0.25		0.02	30.00/500kHz
UNII-3&4	171	5855	-0.45	-0.10	0.25		2.99	30.00/500kHz
		5855	-0.45	-0.10	0.25	0.38	3.37	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	15.28	15.68		18.49	23.98
UNII-2C	114	5570	13.61	13.91		16.77	23.98
UNII-3&4	163	5815	15.20	15.49		18.36	30.00
	163	5815	15.20	15.49	0.38	18.74	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&2A	50	5250	-4.71	-4.36	0.24		-1.28	11.00
UNII-2C	114	5570	-6.67	-6.52	0.24		-3.35	11.00
UNII-3&4	163	5815	-5.04	-5.02	0.24		-1.78	30.00/500kHz
	163	5815	-5.04	-5.02	0.24	0.38	-1.40	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)

10.2.6. 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	9.66	9.51	12.60	23.98
				4	9.30	9.01	12.17	
				8	9.77	9.30	12.55	
			SU	-	15.02	14.82	17.93	
	40	5200	26T	0	9.70	9.16	12.45	
				4	9.33	8.64	12.01	
				8	9.73	8.93	12.36	
			SU	-	17.15	16.50	19.85	
	48	5240	26T	0	8.99	9.32	12.17	
				4	9.05	9.24	12.16	
				8	9.45	9.56	12.52	
			SU	-	16.80	17.18	20.00	
UNII-2A	52	5260	26T	0	8.98	9.43	12.22	23.59
				4	8.50	8.92	11.73	
				8	8.83	9.23	12.04	
			SU	-	16.68	17.33	20.03	
	60	5300	26T	0	9.01	9.32	12.18	
				4	8.45	8.81	11.64	
				8	8.75	9.08	11.93	
			SU	-	16.53	17.25	19.92	
	64	5320	26T	0	9.06	9.57	12.33	
				4	8.51	9.07	11.81	
				8	8.81	9.31	12.08	
			SU	-	14.65	15.18	17.93	
UNII-2C	100	5500	26T	0	8.41	9.33	11.90	23.57
				4	8.80	9.40	12.12	
				8	9.24	9.74	12.51	
			SU	-	16.25	17.39	19.87	
	116	5580	26T	0	9.39	9.58	12.50	
				4	9.05	9.10	12.09	
				8	9.52	9.46	12.50	
			SU	-	16.57	17.54	20.09	
	140	5700	26T	0	8.77	9.75	12.30	
				4	8.35	9.27	11.84	
				8	8.88	9.60	12.27	
			SU	-	16.84	17.07	19.97	

* Calculation of Output Power : Average Power = Meas Power + Duty CF[dB]

Band	Channel	Center Freq. [MHz]	Tones	RU offset	Average Power [dBm]		Corr'd Power [dBm]	Limit [dBm]
					ANT1	ANT2		
UNII-2C & 3	144 Straddle	5720	26T	0	9.98	9.57	12.79	22.50 or 30.00
				4	9.73	9.09	12.43	
				8	9.99	9.45	12.74	
			SU	-	16.94	17.19	20.08	
UNII-3	149	5745	26T	0	9.46	9.62	12.55	30.00
				4	9.10	9.16	12.14	
				8	9.59	9.50	12.56	
			SU	-	16.94	17.07	20.02	
	157	5785	26T	0	9.37	9.65	12.52	
				4	9.02	9.21	12.13	
				8	9.46	9.56	12.52	
			SU	-	16.82	17.10	19.97	
	165	5825	26T	0	9.23	9.54	12.40	
				4	8.81	9.06	11.95	
				8	9.24	9.44	12.35	
			SU	-	16.75	16.92	19.85	

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	9.48	9.52		12.51	30.00 or 30.00 e.i.r.p. ^{Note}
				4	9.06	9.08		12.08	
				8	9.51	9.40	0.38	12.85	
			SU	-	16.80	16.93	0.38	20.26	
UNII-4	173	5865	26T	0	9.43	9.57	0.38	12.89	30.00 e.i.r.p.
				4	8.98	9.08	0.38	12.42	
				8	9.39	9.42	0.38	12.80	
			SU	-	16.75	16.91	0.38	20.22	
	177	5885	26T	0	9.44	9.46	0.38	12.84	
				4	8.98	9.01	0.38	12.39	
				8	9.34	9.30	0.38	12.71	
			SU	-	16.88	17.25	0.38	20.46	

* 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]	Tones	RU offset	Meas PSD [dBm/MHz]		Corr'd PSD [dBm/MHz]	PSD Limit [dBm/MHz]
					ANT1	ANT2		
UNII-1	36	5180	26T	0	6.89	6.61	9.77	11.00
				4	5.73	5.15	8.46	
				8	6.90	6.61	9.77	
			SU	-	3.11	2.79	5.97	
	40	5200	26T	0	6.98	6.45	9.74	
				4	5.57	5.05	8.32	
				8	6.79	6.37	9.60	
			SU	-	5.26	4.70	8.00	
	48	5240	26T	0	6.22	5.33	8.81	
				4	5.10	4.16	7.67	
				8	6.69	5.64	9.21	
			SU	-	5.08	4.38	7.75	
UNII-2A	52	5260	26T	0	6.32	5.62	8.99	11.00
				4	4.98	4.06	7.55	
				8	6.26	5.50	8.91	
			SU	-	5.05	4.45	7.77	
	60	5300	26T	0	6.37	5.49	8.96	
				4	4.91	4.03	7.50	
				8	6.17	5.45	8.84	
			SU	-	5.33	4.23	7.82	
	64	5320	26T	0	6.84	5.84	9.38	
				4	4.93	4.50	7.73	
				8	6.34	5.87	9.12	
			SU	-	3.41	2.26	5.89	
UNII-2C	100	5500	26T	0	5.65	5.97	8.82	11.00
				4	5.43	4.74	8.11	
				8	6.76	5.94	9.38	
			SU	-	5.68	4.66	8.21	
	116	5580	26T	0	6.99	6.38	9.71	
				4	5.52	4.80	8.18	
				8	6.92	6.23	9.60	
			SU	-	5.91	5.02	8.50	
	140	5700	26T	0	6.34	6.32	9.34	
				4	4.56	4.55	7.56	
				8	5.98	6.06	9.03	
			SU	-	5.14	4.37	7.78	
UNII-2C & 3	144 Straddle	5720	26T	0	7.11	6.11	9.65	11.00 or 30.00/500kHz
				4	5.99	4.59	8.35	
				8	7.16	6.00	9.63	
			SU	-	5.22	4.49	7.88	

* 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	3.92	3.46		6.70	30.00 /500kHz
				4	3.21	2.67		5.96	
				8	3.88	3.22		6.57	
			SU	-	2.43	1.26		4.90	
	157	5785	26T	0	3.94	3.54		6.76	
				4	3.62	2.99		6.33	
				8	4.16	3.28		6.75	
			SU	-	2.24	1.39		4.85	
	165	5825	26T	0	3.91	3.37		6.66	
				4	3.52	3.01		6.28	
				8	3.86	3.31		6.60	
			SU	-	2.39	1.43		4.95	
UNII-3&4	169	5845	26T	0	6.98	6.37		9.70	30.00 /500kHz
				4	5.63	4.59		8.15	
				8	6.91	6.24	0.38	9.98	14.00 /MHz e.i.r.p.
			SU	-	5.54	4.57	0.38	8.47	14.00 /MHz e.i.r.p.
UNII-4	173	5865	26T	0	6.98	6.48	0.38	10.13	14.00 /MHz e.i.r.p.
				4	5.63	4.71	0.38	8.59	
				8	6.98	6.04	0.38	9.93	
			SU	-	5.54	4.31	0.38	8.36	
	177	5885	26T	0	6.90	6.04	0.38	9.88	
				4	5.28	4.61	0.38	8.35	
				8	6.89	6.09	0.38	9.90	
			SU	-	5.59	4.86	0.38	8.63	

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

10.2.7. 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	8.50	9.62	12.11	23.98
				9	8.35	9.43	11.93	
				17	8.60	9.50	12.08	
			SU	-	14.70	15.67	18.22	
	46	5230	26T	0	8.86	9.07	11.98	
				9	8.71	8.93	11.83	
				17	8.85	8.96	11.92	
			SU	-	17.03	17.42	20.24	
UNII-2A	54	5270	26T	0	8.80	9.33	12.08	22.93
				9	8.63	9.23	11.95	
				17	8.65	9.22	11.95	
			SU	-	16.90	17.56	20.25	
	62	5310	26T	0	8.99	9.21	12.11	
				9	8.86	9.06	11.97	
				17	8.87	9.05	11.97	
			SU	-	14.77	15.40	18.11	
UNII-2C	102	5510	26T	0	9.17	9.76	12.49	23.94
				9	9.02	9.65	12.36	
				17	9.25	9.73	12.51	
			SU	-	15.20	15.42	18.32	
	110	5550	26T	0	8.91	9.85	12.42	
				9	8.68	9.71	12.24	
				17	9.04	9.80	12.45	
			SU	-	16.70	17.76	20.27	
	134	5670	26T	0	8.58	9.66	12.16	
				9	8.40	9.48	11.98	
				17	8.80	9.49	12.17	
			SU	-	16.93	17.26	20.11	
UNII-2C & 3	142 Straddle	5710	26T	0	8.75	9.70	12.26	22.52 or 30.00
				9	8.56	9.52	12.08	
				17	8.86	9.57	12.24	
			SU	-	17.02	17.42	20.23	

* 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	9.33	9.53	12.44	30.00
				9	9.14	9.37	12.27	
				17	9.42	9.46	12.45	
			SU	-	17.10	17.37	20.25	
	159	5795	26T	0	9.32	9.54	12.44	
				9	9.10	9.38	12.25	
				17	9.24	9.45	12.36	
			SU	-	17.05	17.39	20.23	

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	9.46	9.44		12.46	30.00
				9	9.20	9.24		12.23	
				17	9.36	9.35	0.38	12.75	
			SU	-	17.08	17.27	0.38	20.57	30.00 e.i.r.p. ^{Note}
UNII-4	175	5875	26T	0	9.99	9.47	0.38	13.13	30.00 e.i.r.p.
				9	9.78	9.27	0.38	12.92	
				17	9.90	9.32	0.38	13.01	
			SU	-	17.06	17.04	0.38	20.44	

* 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]	Tones	RU offset	Meas PSD [dBm/MHz]		Corr'd PSD [dBm/MHz]	PSD Limit [dBm/MHz]
					ANT1	ANT2		
UNII-1	38	5190	26T	0	5.96	5.69	8.83	11.00
				9	5.71	5.70	8.72	
				17	6.20	5.70	8.97	
			SU	-	0.05	-0.63	2.73	
	46	5230	26T	0	6.15	5.05	8.64	
				9	6.07	5.25	8.69	
				17	6.09	5.16	8.66	
			SU	-	2.24	1.43	4.87	
UNII-2A	54	5270	26T	0	6.34	6.98	9.68	11.00
				9	6.13	6.77	9.47	
				17	5.99	6.94	9.50	
			SU	-	2.55	3.17	5.88	
	62	5310	26T	0	6.48	6.80	9.65	
				9	6.50	6.82	9.67	
				17	6.20	6.85	9.55	
			SU	-	0.44	0.93	3.70	
UNII-2C	102	5510	26T	0	6.46	6.92	9.71	11.00
				9	6.39	6.93	9.68	
				17	6.75	6.90	9.84	
			SU	-	0.91	0.49	3.72	
	118	5590	26T	0	6.43	6.98	9.73	
				9	6.08	6.71	9.41	
				17	6.70	6.48	9.60	
			SU	-	2.75	2.93	5.85	
	134	5670	26T	0	6.04	6.92	9.51	
				9	5.51	6.65	9.13	
				17	5.74	6.62	9.21	
			SU	-	2.32	2.49	5.42	
UNII-2C & 3	142 Straddle	5710	26T	0	5.79	6.76	9.31	11.00 or 30.00/500kHz
				9	5.93	6.59	9.29	
				17	5.68	6.66	9.21	
			SU	-	2.37	2.30	5.34	

* 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	3.64	3.78		6.72	30.00 /500kHz
				9	3.47	3.87		6.69	
				17	3.80	3.62		6.72	
			SU	-	-0.55	-0.80		2.34	
	159	5795	26T	0	3.61	3.70		6.66	
				9	3.53	4.00		6.78	
				17	3.91	3.77		6.85	
			SU	-	-0.43	-0.64		2.48	
UNII-3&4	167	5835	26T	0	6.72	6.48		9.61	30.00 /500kHz
				9	6.52	6.36		9.45	
				17	6.60	6.73	0.38	10.06	14.00 /MHz e.i.r.p.
			SU	-	2.56	2.22	0.38	5.78	14.00 /MHz e.i.r.p
UNII-4	175	5875	26T	0	7.23	6.73	0.38	10.38	14.00 /MHz e.i.r.p
				9	7.34	6.18	0.38	10.19	
				17	7.23	6.41	0.38	10.23	
			SU	-	2.65	1.97	0.38	5.71	

* 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 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	8.85	9.25	12.06	23.98
				18	9.02	9.21	12.13	
				36	9.01	9.11	12.07	
			SU	-	14.72	15.00	17.87	
UNII-2A	58	5290	26T	0	8.92	9.50	12.23	23.98
				18	8.88	9.44	12.18	
				36	8.90	9.36	12.15	
			SU	-	15.18	15.58	18.39	
UNII-2C	106	5530	26T	0	8.92	9.52	12.24	23.98
				18	8.91	9.50	12.23	
				36	9.12	9.54	12.35	
			SU	-	15.06	15.23	18.16	
	122	5610	26T	0	9.50	9.86	12.69	
				18	9.53	9.79	12.67	
				36	9.65	9.76	12.72	
			SU	-	16.50	17.19	19.87	
UNII-2C & 3	138 Straddle	5690	26T	0	8.40	9.51	12.00	22.63 or 30.00
				18	8.42	9.40	11.95	
				36	8.44	9.30	11.90	
			SU	-	16.80	17.19	20.01	
UNII-3	155	5775	26T	0	9.60	9.87	12.75	30.00
				18	9.50	9.74	12.63	
				36	9.45	9.79	12.63	
			SU	-	16.80	17.14	19.98	
UNII-3&4	171	5855	26T	0	9.57	9.72	12.66	30.00 or
				18	9.42	9.61	12.53	
				36	9.22	9.56	12.40	
			SU	-	17.10	17.49	20.31	30.00 e.i.r.p ^{Note}

* 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]	Tones	RU offset	Meas PSD [dBm/MHz]		Corr'd PSD [dBm/MHz]	PSD Limit [dBm/MHz]
					ANT1	ANT2		
UNII-1	42	5210	26T	0	6.04	6.56	9.32	11.00
				18	5.06	5.82	8.46	
				36	5.98	6.77	9.41	
			SU	-	-3.16	-2.50	0.20	
UNII-2A	58	5290	26T	0	6.23	6.92	9.60	11.00
				18	5.17	6.42	8.85	
				36	6.64	7.10	9.88	
			SU	-	-2.36	-1.84	0.92	
UNII-2C	106	5530	26T	0	6.12	6.81	9.49	11.00
				18	5.32	5.55	8.45	
				36	6.57	6.72	9.66	
			SU	-	-2.34	-2.43	0.63	
	122	5610	26T	0	6.82	6.84	9.84	
				18	5.76	5.76	8.77	
				36	7.00	6.86	9.94	
			SU	-	-0.66	-0.69	2.34	
UNII-2C & 3	138 Straddle	5690	26T	0	5.60	6.44	9.05	11.00 or 30.00/500kHz
				18	4.76	5.29	8.04	
				36	5.43	6.20	8.84	
			SU	-	-0.88	-0.67	2.24	

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	3.95	4.08		7.02	30.00 /500kHz
				18	3.51	3.97		6.75	
				36	4.19	3.97		7.09	
			SU	-	-3.83	-3.81		-0.81	
UNII-3&4	171	5855	26T	0	7.17	6.90		10.04	30.00 /500kHz
				18	5.87	5.46		8.68	14.00 /MHz e.i.r.p.
				36	6.91	6.73	0.38	10.21	14.00 /MHz e.i.r.p.
			SU	-	-0.39	-0.55	0.38	2.92	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)

10.2.9. 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)	9.28	9.04	12.17	23.98
				0(UB)	9.46	9.27	12.38	
				36(BU)	9.25	9.04	12.16	
			SU	-	15.36	15.56	18.47	
UNII-2C	114	5570	26T	0(LB)	9.43	9.31	12.38	23.98
				0(UB)	9.52	9.38	12.46	
				36(UB)	9.50	9.23	12.38	
			SU	-	13.70	13.72	16.72	
UNII-3&4	163	5815	26T	0(LB)	9.47	9.58	12.54	30.00 or
				0(UB)	9.40	9.69	12.56	
				36(UB)	9.09	9.52	12.32	
			SU	-	15.68	15.76	18.73	30.00 e.i.r.p ^{Note}

* 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

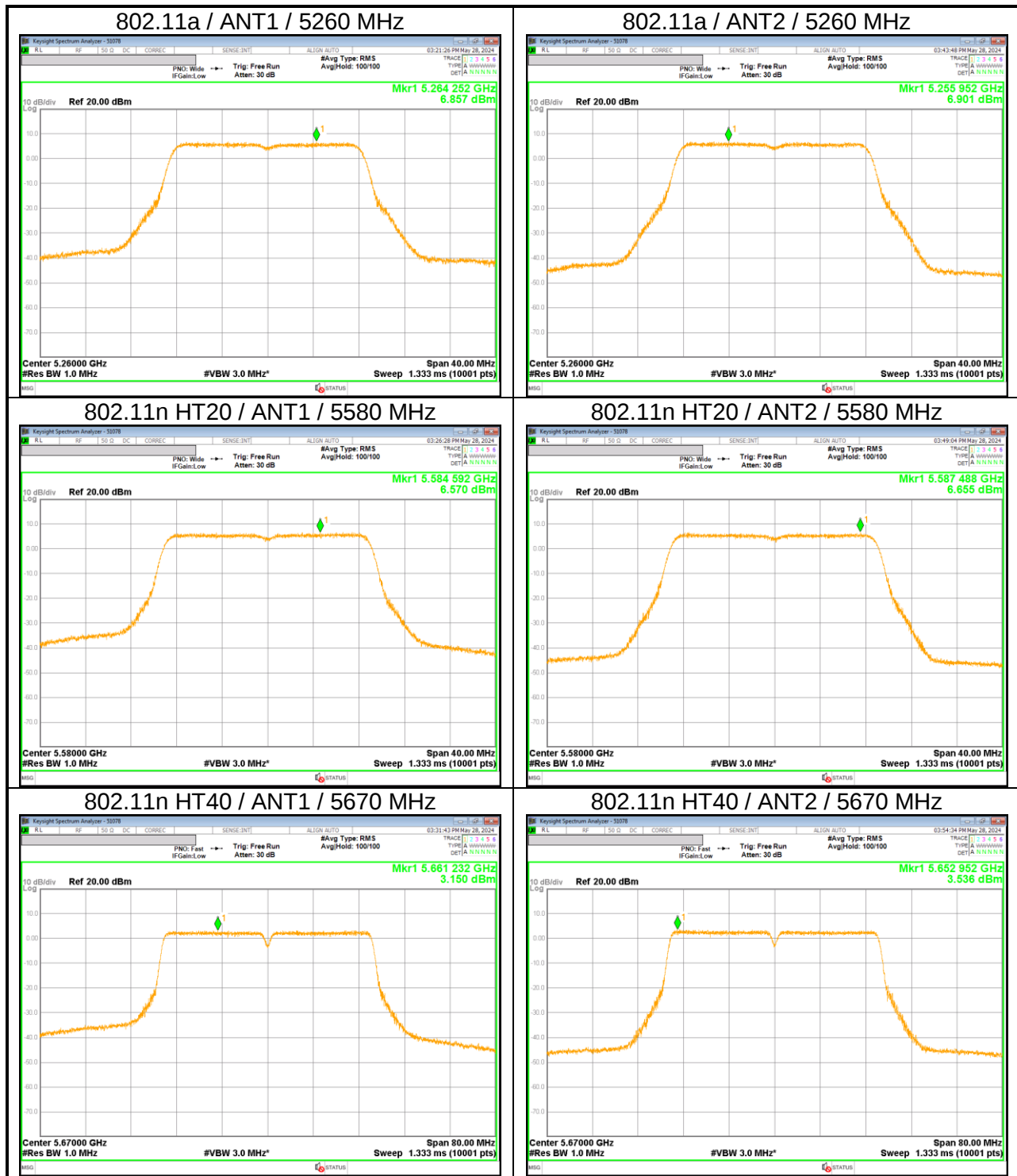
Band	Channel	Center Freq. [MHz]	Tones	RU offset	Meas PSD [dBm/MHz]		Corr'd PSD [dBm/MHz]	PSD Limit [dBm/MHz]
					ANT1	ANT2		
UNII-1&2A	50	5250	26T	0(LB)	4.57	5.32	7.97	11.00
				0(UB)	5.04	5.64	8.36	
				36(UB)	5.56	5.38	8.48	
			SU	-	-6.38	-5.69	-3.01	
UNII-2C	114	5570	26T	0(LB)	5.75	5.81	8.79	11.00
				0(UB)	6.16	5.85	9.02	
				36(UB)	6.05	5.67	8.87	
			SU	-	-7.21	-7.67	-4.42	

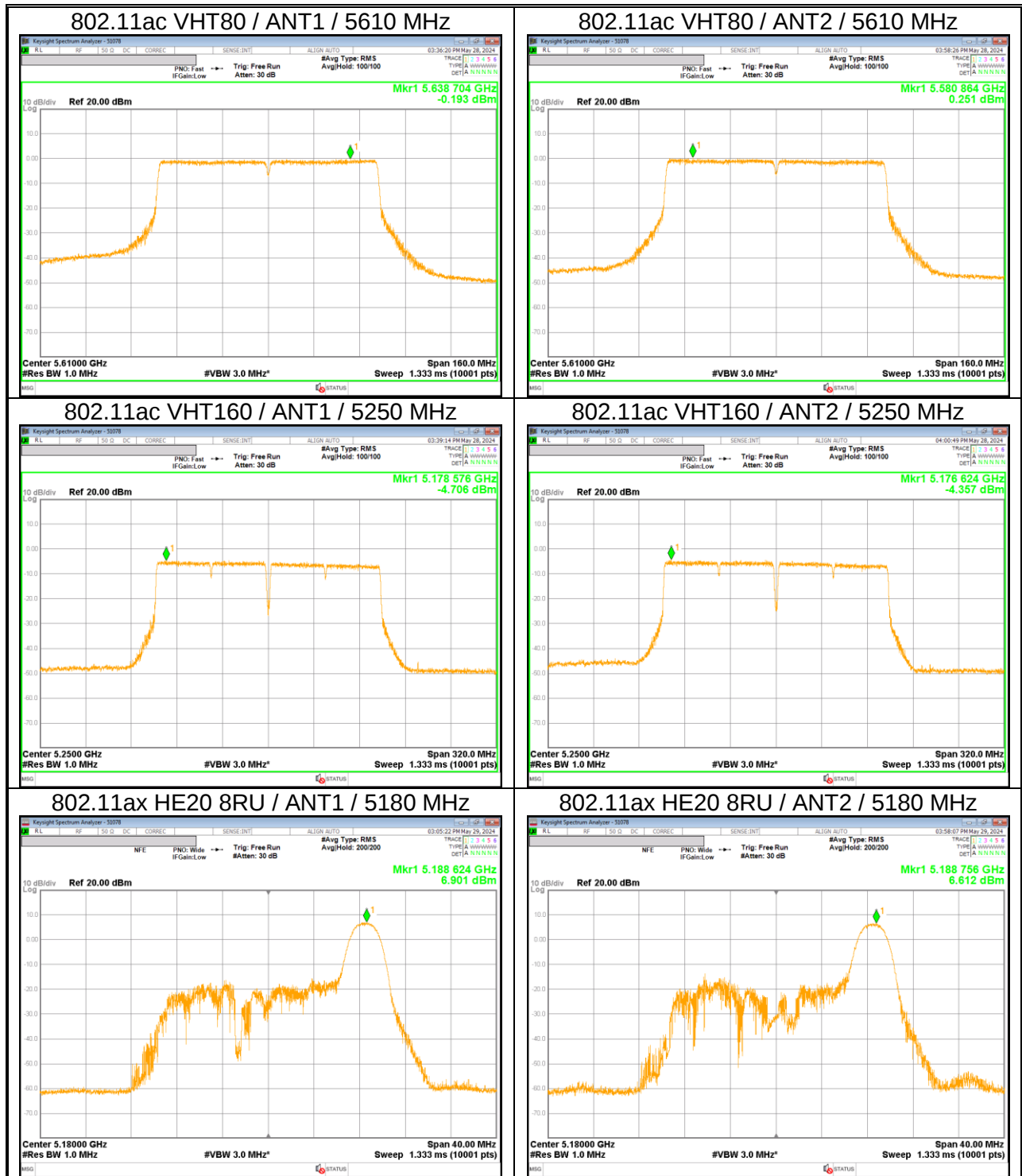
Band	Channel	Center Freq. [MHz]	Tones	RU offset	Meas PSD [dBm]		Direct. Gain [dBi]	Corr'd PSD [dBm]	PSD Limit [dBm]
					ANT1	ANT2			
UNII-3&4	171	5815	26T	0(LB)	5.94	5.98		8.97	30.00
				0(UB)	6.05	5.84		8.95	/500kHz
				36(UB)	5.86	5.79	0.38	9.21	14.00 /MHz e.i.r.p
			SU	-	-5.34	-5.72	0.38	-2.13	14.00 /MHz e.i.r.p

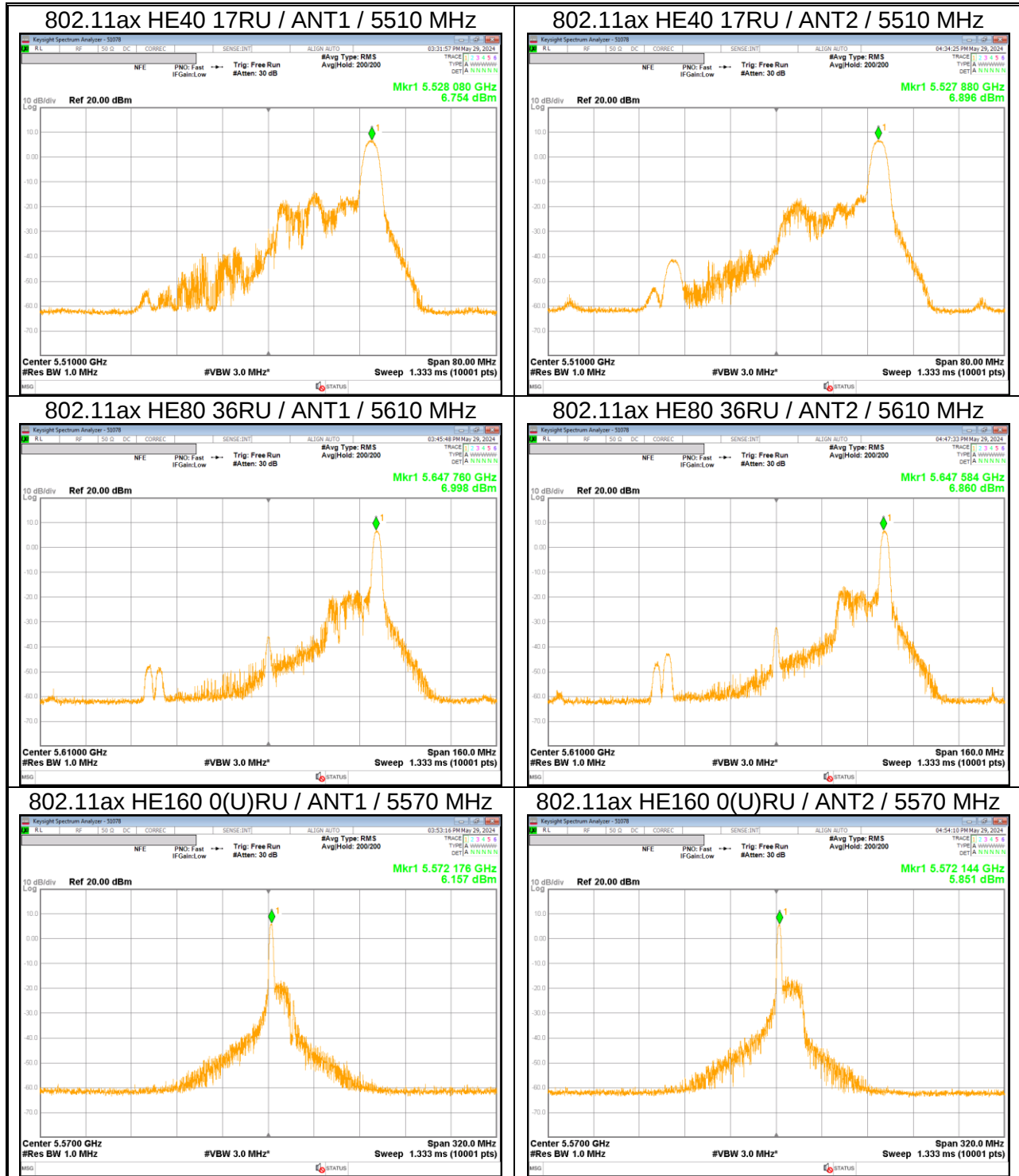
* Calculation of PSD: Corr'd PSD = Ant1 PSD + Ant2 PSD + Duty CF [dB] (in case of UNII-4: added directional gain)

Note. LB=Lower band(Lower 996T),UB=Upper band(Upper 996T), L=Lower side, U=Upper side

10.2.10. OUTPUT POWER AND PPSD PLOTS(WORST CASE)







11. TRANSMITTER ABOVE 1 GHz

LIMITS

FCC §15.205 and §15.209

Limits for radiated disturbance of an intentional radiator		
Frequency range (MHz)	Limits (µV/m)	Measurement Distance (m)
0.009 – 0.490	2400 / F (kHz)	300
0.490 – 1.705	24000 / F (kHz)	30
1.705 – 30.0	30	30
30 – 88	100**	3
88 - 216	150**	3
216 – 960	200**	3
Above 960	500	3

** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g. §§ 15.231 and 15.241.

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

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

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

FCC §15.407 (b)

(b) Undesirable emission limits. Except as shown in paragraph (b)(7) of this section, the maximum emissions outside of the frequency bands of operation shall be attenuated in accordance with the following limits:

- (1) For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.
- (2) For transmitters operating in the 5.25-5.35 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.
- (3) For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.
- (4) For transmitters operating solely in the 5.725–5.850 GHz band:
 - (i) All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.
- (5) For transmitters operating solely in the 5.850-5.895 GHz band or operating on a channel that spans across 5.725-5.895 GHz:
 - (ii) For a client device, all emissions at or above 5.895 GHz shall not exceed an e.i.r.p. of -5 dBm/MHz and shall decrease linearly to an e.i.r.p. of -27 dBm/MHz at or above 5.925 GHz.
 - (iii) For a client device or indoor access point or subordinate device, all emissions below 5.725 GHz shall not exceed an e.i.r.p. of -27 dBm/MHz at 5.65 GHz increasing linearly to 10 dBm/MHz at 5.7 GHz, and from 5.7 GHz increasing linearly to a level of 15.6 dBm/MHz at 5.72 GHz, and from 5.72 GHz increasing linearly to a level of 27 dBm/MHz at 5.725 GHz.
- (6) The emission measurements shall be performed using a minimum resolution bandwidth of 1 MHz. A lower resolution bandwidth may be employed near the band edge, when necessary, provided the measured energy is integrated to show the total power over 1 MHz.
- (7) Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in §15.209. Further, any U-NII devices using an AC power line are required to comply also with the conducted limits set forth in §15.207.
- (8) The provisions of §15.205 apply to intentional radiators operating under this section.
- (9) When measuring the emission limits, the nominal carrier frequency shall be adjusted as close to the upper and lower frequency band edges as the design of the equipment permits.

Note

- Limit translation to field strength level (FCC §15.407)

$$E[\text{dBuV/m}] = \text{EIRP}[\text{dBm}] + 95.2 = -27\text{dBm} + 95.2 = 68.2\text{dBuV/m}$$

$$E[\text{dBuV/m}] = \text{EIRP}[\text{dBm}] + 95.2 = -17\text{dBm} + 95.2 = 78.2\text{dBuV/m}$$

TEST PROCEDURE

The EUT is placed on a non-conducting table 80 cm above the ground plane for below 1GHz and 100 cm for above 1GHz. EUT is set 3 meters away from the receiving antenna and scan from 1m to 4m to find out the highest emission.

The EUT is configured in accordance with ANSI C63.10. The EUT is set to transmit in a continuous mode.

For measurements below 1 GHz the resolution bandwidth is set to 100 kHz for peak detection measurements or 120 kHz for quasi-peak detection measurements. Peak detection is used unless otherwise noted as quasi-peak.

Reference to KDB 789033 D02 v02r01 UNII part G) 6) c) Method AD:

For measurements above 1 GHz the resolution bandwidth is set to 1 MHz; the video bandwidth is set to 3 MHz for peak measurements and add duty cycle factor to the reading offset for average measurements. In UNII-4, unwanted emissions outside of restricted bands are measured with an RMS detector.

Pre-scans to detect harmonic and spurious emissions, the resolution bandwidth is set to 1 MHz; the video bandwidth is set to 30 kHz for peak measurements.

The spectrum from 1GHz to 40 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in each applicable band.

(From 30MHz to 1GHz, test was performed with the EUT set to transmit at the channel with highest output power)

The frequency range of interest is monitored at a fixed antenna height and EUT azimuth. The EUT is rotated through 360 degrees to maximize emissions received. The antenna is scanned from 1 to 4 meters above the ground plane to further maximize the emission. Measurements are made with the antenna polarized in both the vertical and the horizontal positions.

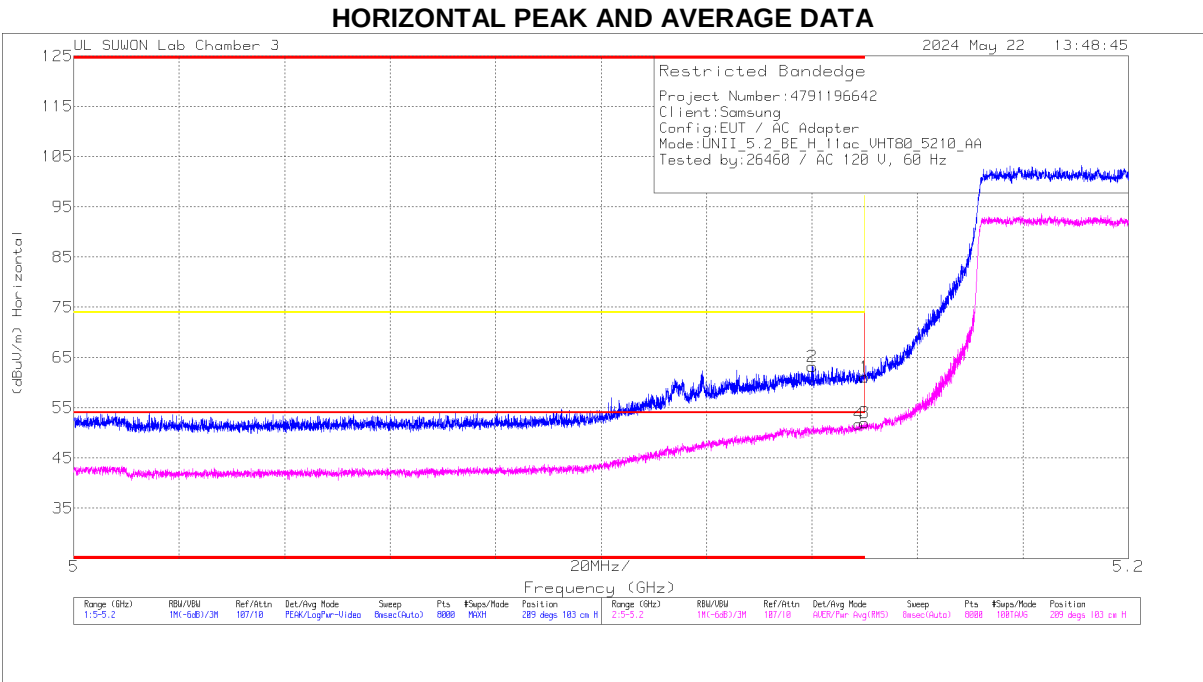
Note : Emission was pre-scanned from 9kHz to 30MHz; No emissions were detected which was at least 20dB below the specification limit (consider distance correction factor).
Per FCC part 15.31(o), test results were not reported.

Although these tests were performed other than open field test site, adequate comparison measurements were confirmed against 30 m open area test site.

Therefore sufficient tests were made to demonstrate that the alternative site produces results that correlate with the one of tests made in an open field based on KDB 414788.

11.1. TX ABOVE 1GHz 2Tx MODE IN THE 5.2GHz BAND

BANDEDGE (WORST CASE: 802.11ac VHT80 / 5210 MHz)



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	Antenna_S97_Factor(dB)	10dB_Path Loss(dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Altitude (Degs)	Height (cm)	Polarity
1	* 5.14999	47.35	Pk	34.4	-20.6	0	61.15	-	-	74	-12.85	209	103	H
2	* 5.14004	49.66	Pk	34.4	-20.8	0	63.26	-	-	74	-10.74	209	103	H
3	* 5.14999	37.9	RMS	34.4	-20.6	25	51.95	54	-2.05	-	-	209	103	H
4	* 5.14887	37.77	RMS	34.4	-20.7	25	51.72	54	-2.28	-	-	209	103	H

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

Pk - Peak detector

RMS - RMS detection

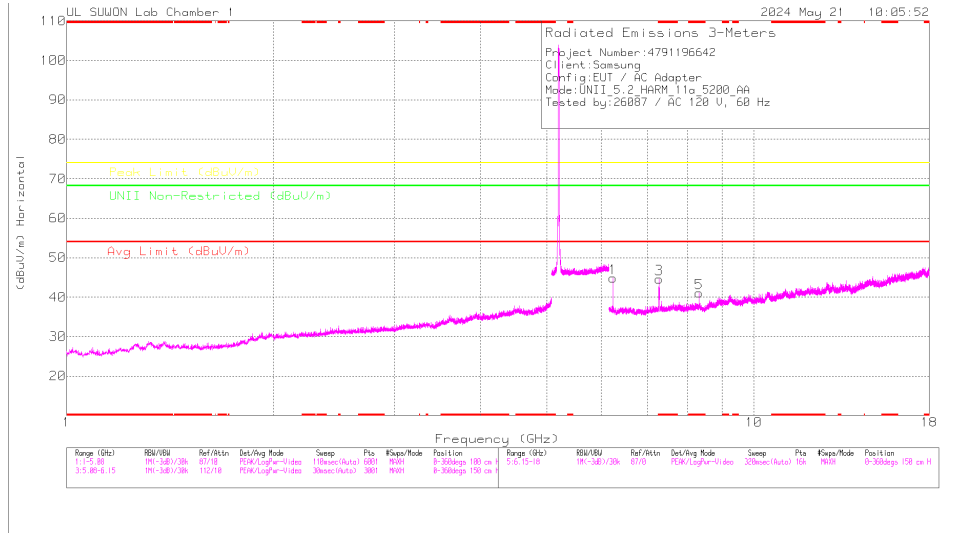
BANDEDGE TEST DATA

Mode	Freq. [MHz]	Antenna	Frequency [GHz]	Reading [dBuV]	Detector Mode	ANT Factor [dB/m]	Loss [dB]	DC Corr [dB]	Result [dBuV/m]	AV Limit [dBuV/m]	AV Margin [dB]	PK Limit [dBuV/m]	PK Margin [dB]	Azimuth [Degs]	Height [cm]	Polarity
802.11a	5180	MIMO	* 5.14999	42.40	Pk	34.40	-20.60	0.00	56.20	-	-	74.00	-17.80	210	100	H
			* 5.14764	45.32	Pk	34.40	-20.80	0.00	58.92	-	-	74.00	-15.08	210	100	H
			* 5.14999	30.54	RMS	34.40	-20.60	0.15	44.49	54.00	-9.51	-	-	210	100	H
			* 5.14767	31.66	RMS	34.40	-20.80	0.15	45.41	54.00	-8.59	-	-	210	100	H
			* 5.14999	38.92	Pk	34.40	-20.60	0.00	52.72	-	-	74.00	-21.28	174	339	V
			* 5.14712	42.18	Pk	34.40	-20.80	0.00	55.78	-	-	74.00	-18.22	174	339	V
			* 5.14999	28.54	RMS	34.40	-20.60	0.15	42.49	54.00	-11.51	-	-	174	339	V
802.11n (HT20)	5180	MIMO	* 5.14954	29.93	RMS	34.40	-20.70	0.15	43.78	54.00	-10.22	-	-	174	339	V
			* 5.14999	47.49	Pk	34.40	-20.60	0.00	61.29	-	-	74.00	-12.71	207	100	H
			* 5.14939	49.67	Pk	34.40	-20.70	0.00	63.37	-	-	74.00	-10.63	207	100	H
			* 5.14999	37.41	RMS	34.40	-20.60	0.00	51.21	54.00	-2.79	-	-	207	100	H
			* 5.14969	37.45	RMS	34.40	-20.60	0.00	51.25	54.00	-2.75	-	-	207	100	H
			* 5.14999	45.73	Pk	34.40	-20.60	0.00	59.53	-	-	74.00	-14.47	175	341	V
			* 5.14872	47.11	Pk	34.40	-20.70	0.00	60.81	-	-	74.00	-13.19	175	341	V
802.11n (HT40)	5190	MIMO	* 5.14999	34.26	RMS	34.40	-20.60	0.00	48.06	54.00	-5.94	-	-	175	341	V
			* 5.14897	34.77	RMS	34.40	-20.70	0.00	48.47	54.00	-5.53	-	-	175	341	V
			* 5.14999	44.51	Pk	34.40	-20.60	0.00	58.31	-	-	74.00	-15.69	216	100	H
			* 5.14659	46.64	Pk	34.40	-20.80	0.00	60.24	-	-	74.00	-13.76	216	100	H
			* 5.14999	34.45	RMS	34.40	-20.60	0.00	48.25	54.00	-5.75	-	-	216	100	H
			* 5.14984	35.09	RMS	34.40	-20.60	0.00	48.89	54.00	-5.11	-	-	216	100	H
			* 5.14999	43.72	Pk	34.40	-20.60	0.00	57.52	-	-	74.00	-16.48	179	340	V
802.11ac (VHT80)	5210	MIMO	* 5.14757	45.87	Pk	34.40	-20.80	0.00	59.47	-	-	74.00	-14.53	179	340	V
			* 5.14999	32.57	RMS	34.40	-20.60	0.00	46.37	54.00	-7.63	-	-	179	340	V
			* 5.14777	33.45	RMS	34.40	-20.80	0.00	47.05	54.00	-6.95	-	-	179	340	V
			* 5.14999	47.35	Pk	34.40	-20.60	0.00	61.15	-	-	74.00	-12.85	209	103	H
			* 5.14004	49.66	Pk	34.40	-20.80	0.00	63.26	-	-	74.00	-10.74	209	103	H
			* 5.14999	37.90	RMS	34.40	-20.60	0.25	51.95	54.00	-2.05	-	-	209	103	H
			* 5.14887	37.77	RMS	34.40	-20.70	0.25	51.72	54.00	-2.28	-	-	209	103	H
802.11ac (VHT160)	5250 Lower	MIMO	* 5.14999	43.71	Pk	34.40	-20.60	0.00	57.51	-	-	74.00	-16.49	171	338	V
			* 5.14864	46.07	Pk	34.40	-20.70	0.00	59.77	-	-	74.00	-14.23	171	338	V
			* 5.14999	33.22	RMS	34.40	-20.60	0.25	47.27	54.00	-6.73	-	-	171	338	V
			* 5.14969	34.51	RMS	34.40	-20.60	0.25	48.56	54.00	-5.44	-	-	171	338	V
			* 5.14999	41.79	Pk	34.40	-20.60	0.00	55.59	-	-	74.00	-18.41	211	104	H
			* 5.14959	49.72	Pk	34.40	-20.70	0.00	63.42	-	-	74.00	-10.58	211	104	H
			* 5.14999	31.45	RMS	34.40	-20.60	0.24	45.49	54.00	-8.51	-	-	211	104	H
802.11ax (HE20)	5180	MIMO	* 5.14234	33.64	RMS	34.40	-20.80	0.24	47.48	54.00	-6.52	-	-	211	104	H
			* 5.14999	41.68	Pk	34.40	-20.60	0.00	55.48	-	-	74.00	-18.52	174	341	V
			* 5.14802	50.25	Pk	34.40	-20.80	0.00	63.85	-	-	74.00	-10.15	174	341	V
			* 5.14999	31.32	RMS	34.40	-20.60	0.24	45.36	54.00	-8.64	-	-	174	341	V
			* 5.14512	32.56	RMS	34.40	-20.80	0.24	46.40	54.00	-7.60	-	-	174	341	V
			* 5.15	43.43	Pk	34.50	-23.40	0.00	54.53	-	-	74.00	-19.47	215	143	H
			* 5.13913	44.15	Pk	34.50	-23.40	0.00	55.25	-	-	74.00	-18.75	215	143	H
802.11ax (HE40)	5190	MIMO	* 5.15	31.76	RMS	34.50	-23.40	0.00	42.86	54.00	-11.14	-	-	215	143	H
			* 5.14948	32.51	RMS	34.50	-23.40	0.00	43.61	54.00	-10.39	-	-	215	143	H
			* 5.15	40.40	Pk	34.50	-23.40	0.00	51.50	-	-	74.00	-22.50	171	333	V
			* 5.1474	44.05	Pk	34.50	-23.40	0.00	55.15	-	-	74.00	-18.85	171	333	V
			* 5.15	31.62	RMS	34.50	-23.40	0.00	42.72	54.00	-11.28	-	-	171	333	V
			* 5.14968	32.12	RMS	34.50	-23.40	0.00	43.22	54.00	-10.78	-	-	171	333	V
			* 5.15	44.60	Pk	34.50	-23.40	0.00	55.70	-	-	74.00	-18.30	214	142	H
802.11ax (HE80)	5210	MIMO	* 5.1484	48.22	Pk	34.50	-23.40	0.00	59.32	-	-	74.00	-14.68	214	142	H
			* 5.15	35.09	RMS	34.50	-23.40	0.00	46.19	54.00	-7.81	-	-	214	142	H
			* 5.14988	35.89	RMS	34.50	-23.40	0.00	46.99	54.00	-7.01	-	-	214	142	H
			* 5.15	44.55	Pk	34.50	-23.40	0.00	55.65	-	-	74.00	-18.35	169	334	V
			* 5.1493	46.56	Pk	34.50	-23.40	0.00	57.66	-	-	74.00	-16.34	169	334	V
			* 5.15	34.22	RMS	34.50	-23.40	0.00	45.32	54.00	-8.68	-	-	169	334	V
			* 5.14933	34.55	RMS	34.50	-23.40	0.00	45.65	54.00	-8.35	-	-	169	334	V
802.11ax (HE160)	5250 Lower	MIMO	* 5.15	44.30	Pk	34.50	-23.40	0.00	55.40	-	-	74.00	-18.60	213	144	H
			* 5.14165	48.25	Pk	34.50	-23.40	0.00	59.35	-	-	74.00	-14.65	213	144	H
			* 5.15	35.87	RMS	34.50	-23.40	0.00	46.97	54.00	-7.03	-	-	213	144	H
			* 5.1494	36.52	RMS	34.50	-23.40	0.00	47.62	54.00	-6.38	-	-	213	144	H
			* 5.15	43.38	Pk	34.50	-23.40	0.00	54.48	-	-	74.00	-19.52	169	333	V
			* 5.14853	48.19	Pk	34.50	-23.40	0.00	59.29	-	-	74.00	-14.71	169	333	V
			* 5.15	36.02	RMS	34.50	-23.40	0.00	47.12	54.00	-6.88	-	-	169	333	V
802.11ax (HE160)	5250 Lower	MIMO	* 5.14905	36.11	RMS	34.50	-23.40	0.00	47.21	54.00	-6.79	-	-	169	333	V
			* 5.15	42.64	Pk	34.50	-23.40	0.00	53.74	-	-	74.00	-20.26	215	143	H
			* 5.07328	47.00	Pk	34.30	-23.50	0.00	57.80	-	-	74.00	-16.20	215	143	H
			* 5.15	33.18	RMS	34.50	-23.40	0.00	44.28	54.00	-9.72	-	-	215	143	H
			* 5.1181	34.15	RMS	34.40	-23.40	0.00	45.15	54.00	-8.85	-	-	215	143	H
			* 5.15	43.50	Pk	34.50	-23.40	0.00	54.60	-	-	74.00	-19.40	164	332	V
			* 5.13993	46.24	Pk	34.50	-23.40	0.00	57.34	-	-	74.00	-16.66	164	332	V
802.11ax (HE160)	5250 Lower	MIMO	* 5.15	33.06	RMS	34.50	-23.40	0.00	44.16	54.00	-9.84	-	-	164	332	V
			* 5.14795	33.64	RMS	34.50	-23.40	0.00	44.74	54.00	-9.26	-	-	164	332	V

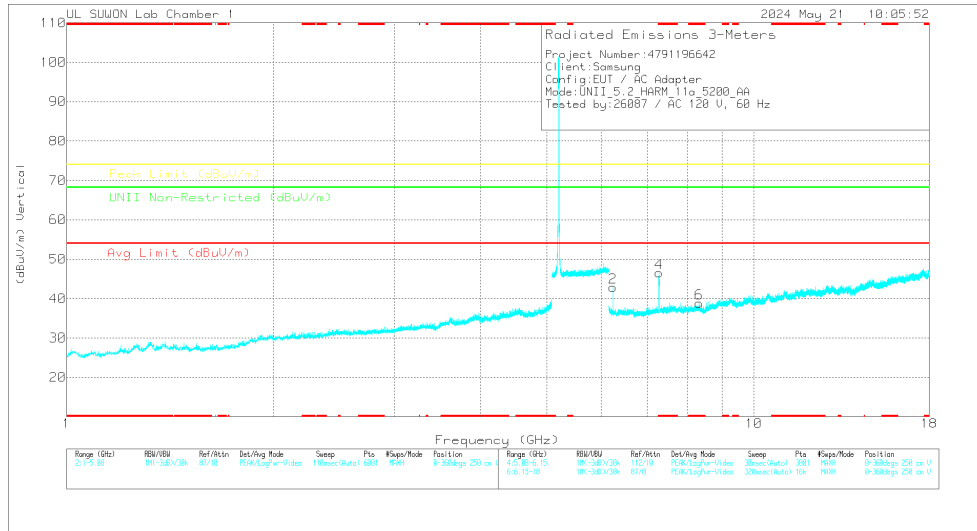
Note1. Pk - Peak detector, RMS - RMS detector

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

HARMONICS AND SPURIOUS EMISSIONS(WORST CASE: 802.11a / 5200 MHz)
5200 MHz HORIZONTAL



5200 MHz VERTICAL



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

5200 MHz DATA

Radiated Emissions

Frequency (GHz)	Meas Reading (dBuV)	Det	5117_00160717	550c_HF(dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Altitude (Feet)	Height (m)	Polarity
6.2401	48	PK-U	35.3	-31.1	0	52.2	-	-	-	-	68.2	-16	333	117	H
6.24015	47.03	PK-U	35.3	-31.1	0	51.23	-	-	-	-	68.2	-16.97	333	117	V
* 7.2853	49.88	PK-U	35.7	-30.1	0	55.48	-	-	74	-18.52	-	-	205	117	H
* 7.28492	38.45	ADR	35.7	-30.1	.15	44.21	54	-9.79	-	-	-	-	205	117	H
* 7.27559	51.37	PK-U	35.7	-30	0	57.07	-	-	74	-16.93	-	-	86	228	V
* 7.27599	40.58	ADR	35.7	-30	.15	46.43	54	-7.57	-	-	-	-	86	228	V
* 8.31987	42.2	PK-U	36.2	-28.4	0	50	-	-	74	-24	-	-	198	101	H
* 8.31992	32.75	ADR	36.2	-28.4	.15	40.7	54	-13.3	-	-	-	-	198	101	H
* 8.31988	41.76	PK-U	36.2	-28.4	0	49.56	-	-	74	-24.44	-	-	202	104	V
* 8.31995	31.04	ADR	36.2	-28.4	.15	38.99	54	-15.01	-	-	-	-	202	104	V

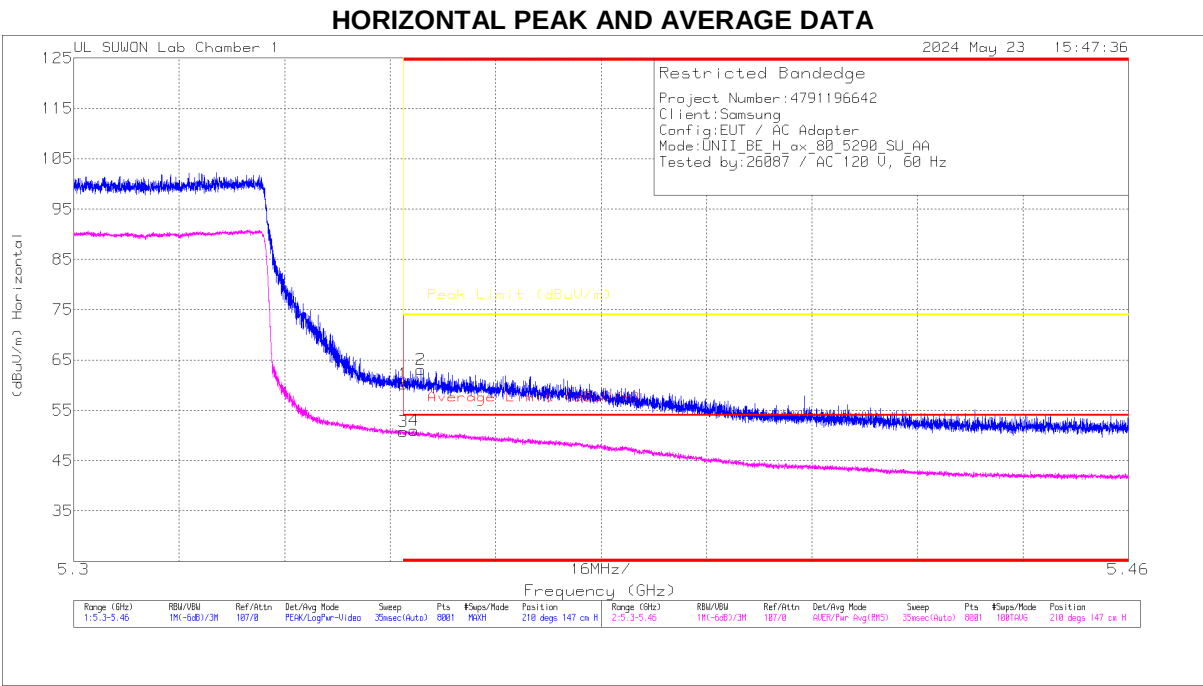
* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PK-U - U-NII: Maximum Peak
ADR - U-NII AD primary method, RMS average

HARMONICS AND SPURIOUS EMISSIONS TEST DATA

Mode	Freq. [MHz]	Antenna	Frequency [GHz]	Reading [dBuV]	Detector Mode	ANT Factor [dB/m]	Loss [dB]	DC Corr [dB]	Result [dBuV/m]	AV Limit [dBuV/m]	AV Margin [dB]	PK Limit [dBuV/m]	PK Margin [dB]	Non-Restricted [dBuV/m]	Margin [dB]	Azimuth [Degs]	Height [cm]	Polarity
802.11a	5180	MIMO	6.216	47.28	PK-U	35.30	-30.90	0.00	51.68	-	-	-	-	68.20	-16.52	335	111	H
			6.216	46.04	PK-U	35.30	-30.90	0.00	50.44	-	-	-	-	68.20	-17.76	237	368	V
			* 7.25683	48.39	PK-U	35.70	-30.20	0.00	53.89	-	-	74.00	-20.11	-	-	202	106	H
			* 7.25731	37.51	ADR	35.70	-30.20	0.15	43.16	54.00	-10.84	-	-	-	-	202	106	H
			* 7.25689	48.88	PK-U	35.70	-30.20	0.00	54.38	-	-	74.00	-19.62	-	-	174	103	V
			* 7.25679	37.73	ADR	35.70	-30.20	0.15	43.38	54.00	-10.62	-	-	-	-	174	103	V
			* 8.28835	42.16	PK-U	36.20	-28.60	0.00	49.76	-	-	74.00	-24.24	-	-	209	101	H
			* 8.28796	32.89	ADR	36.20	-28.50	0.15	40.74	54.00	-13.26	-	-	-	-	209	101	H
			* 8.28805	41.90	PK-U	36.20	-28.50	0.00	49.60	-	-	74.00	-24.40	-	-	220	379	V
			* 8.28801	31.17	ADR	36.20	-28.50	0.15	39.02	54.00	-14.98	-	-	-	-	220	379	V
			6.240	48.00	PK-U	35.30	-31.10	0.00	52.20	-	-	-	-	68.20	-16.00	333	117	H
			6.240	47.03	PK-U	35.30	-31.10	0.00	51.23	-	-	-	-	68.20	-16.97	238	363	V
	* 7.2853	49.88	PK-U	35.70	-30.10	0.00	55.48	-	-	74.00	-18.52	-	-	205	117	H		
	* 7.28492	38.46	ADR	35.70	-30.10	0.15	44.21	54.00	-9.79	-	-	-	-	205	117	H		
	* 7.27559	51.37	PK-U	35.70	-30.00	0.00	57.07	-	-	74.00	-16.93	-	-	86	228	V		
	* 7.27569	40.58	ADR	35.70	-30.00	0.15	46.43	54.00	-7.57	-	-	-	-	86	228	V		
	* 8.31987	42.20	PK-U	36.20	-28.40	0.00	50.00	-	-	74.00	-24.00	-	-	198	101	H		
	* 8.31992	32.75	ADR	36.20	-28.40	0.15	40.70	54.00	-13.30	-	-	-	-	198	101	H		
	* 8.31988	41.76	PK-U	36.20	-28.40	0.00	49.56	-	-	74.00	-24.44	-	-	202	104	V		
	* 8.31995	31.04	ADR	36.20	-28.40	0.15	38.99	54.00	-15.01	-	-	-	-	202	104	V		
	5200	MIMO	6.288	48.36	PK-U	35.30	-31.20	0.00	52.46	-	-	-	-	68.20	-15.74	320	121	H
			6.288	47.27	PK-U	35.30	-31.20	0.00	51.37	-	-	-	-	68.20	-16.83	101	312	V
			* 7.34092	49.86	PK-U	35.70	-29.90	0.00	55.66	-	-	74.00	-18.34	-	-	209	133	H
			* 7.34052	38.55	ADR	35.70	-29.90	0.15	44.50	54.00	-9.50	-	-	-	-	209	133	H
* 7.33993			50.52	PK-U	35.70	-29.90	0.00	56.32	-	-	74.00	-17.68	-	-	173	101	V	
* 7.32973			39.42	ADR	35.70	-29.90	0.15	45.47	54.00	-8.53	-	-	-	-	173	101	V	
* 8.33932			41.89	PK-U	36.20	-28.40	0.00	49.69	-	-	74.00	-24.31	-	-	201	100	H	
* 8.33845			31.75	ADR	36.20	-28.40	0.15	39.70	54.00	-14.30	-	-	-	-	201	100	H	
* 8.33367			41.27	PK-U	36.20	-28.40	0.00	49.07	-	-	74.00	-24.93	-	-	221	397	V	
* 8.33339			30.41	ADR	36.20	-28.40	0.15	38.36	54.00	-15.64	-	-	-	-	221	397	V	
6.240			47.95	PK-U	35.30	-31.10	0.00	52.15	-	-	-	-	68.20	-16.05	334	116	H	
6.240			46.07	PK-U	35.30	-31.10	0.00	50.27	-	-	-	-	68.20	-17.93	72	400	V	
802.11n HT20 Spot-check	5200	MIMO	* 7.27966	50.72	PK-U	35.70	-30.00	0.00	56.42	-	-	74.00	-17.58	-	-	200	121	H
			* 7.28166	38.96	ADR	35.70	-30.00	0.00	44.66	54.00	-9.34	-	-	-	-	200	121	H
			* 7.27871	50.76	PK-U	35.70	-30.00	0.00	56.46	-	-	74.00	-17.54	-	-	166	100	V
			* 7.27721	39.20	ADR	35.70	-30.10	0.00	44.80	54.00	-9.20	-	-	-	-	166	100	V
			* 8.31988	42.18	PK-U	36.20	-28.40	0.00	49.98	-	-	74.00	-24.02	-	-	206	116	H
			* 8.3199	33.09	ADR	36.20	-28.40	0.00	40.89	54.00	-13.11	-	-	-	-	206	116	H
			* 8.31957	41.85	PK-U	36.20	-28.40	0.00	49.65	-	-	74.00	-24.35	-	-	176	270	V
			* 8.31992	31.36	ADR	36.20	-28.40	0.00	39.16	54.00	-14.84	-	-	-	-	176	270	V
			6.228	45.84	PK-U	35.30	-31.00	0.00	50.14	-	-	-	-	68.20	-18.06	333	166	H
			6.228	45.59	PK-U	35.30	-31.00	0.00	49.89	-	-	-	-	68.20	-18.31	245	363	V
			* 7.2701	45.98	PK-U	35.70	-30.10	0.00	51.58	-	-	74.00	-22.42	-	-	206	109	H
* 7.26783	34.68	ADR	35.70	-30.10	0.00	40.28	54.00	-13.72	-	-	-	-	206	109	H			
* 7.26321	46.22	PK-U	35.70	-30.20	0.00	51.72	-	-	74.00	-22.28	-	-	167	101	V			
* 7.26341	34.33	ADR	35.70	-30.20	0.00	39.83	54.00	-14.17	-	-	-	-	167	101	V			
* 8.30414	42.49	PK-U	36.20	-28.50	0.00	50.19	-	-	74.00	-23.81	-	-	203	106	H			
* 8.3039	33.32	ADR	36.20	-28.50	0.00	41.02	54.00	-12.98	-	-	-	-	203	106	H			
* 8.30358	41.62	PK-U	36.20	-28.50	0.00	49.32	-	-	74.00	-24.68	-	-	176	270	V			
* 8.30399	31.18	ADR	36.20	-28.50	0.00	38.88	54.00	-15.12	-	-	-	-	176	270	V			
6.252	48.13	PK-U	35.30	-31.20	0.00	52.23	-	-	-	-	68.20	-15.97	316	119	H			
6.252	47.07	PK-U	35.30	-31.20	0.00	51.17	-	-	-	-	68.20	-17.03	251	396	V			
* 7.26719	44.51	PK-U	35.70	-30.10	0.00	50.11	-	-	74.00	-23.89	-	-	205	126	H			
* 7.26191	32.62	ADR	35.70	-30.10	0.25	38.47	54.00	-15.53	-	-	-	-	205	126	H			
* 7.27933	44.46	PK-U	35.70	-30.00	0.00	50.16	-	-	74.00	-23.84	-	-	163	109	V			
* 7.2788	31.95	ADR	35.70	-30.00	0.25	37.90	54.00	-16.10	-	-	-	-	163	109	V			
* 8.33587	42.62	PK-U	36.20	-28.20	0.00	50.62	-	-	74.00	-23.38	-	-	202	116	H			
* 8.33588	34.42	ADR	36.20	-28.20	0.25	42.67	54.00	-11.33	-	-	-	-	202	116	H			
* 8.33614	42.80	PK-U	36.20	-28.20	0.00	50.80	-	-	74.00	-23.20	-	-	172	270	V			
* 8.33601	32.88	ADR	36.20	-28.20	0.25	41.13	54.00	-12.87	-	-	-	-	172	270	V			
802.11ac VHT160 Spot-check	5250	MIMO	6.300	48.50	PK-U	35.30	-31.20	0.00	52.60	-	-	-	-	68.20	-15.60	317	116	H
			6.300	47.49	PK-U	35.30	-31.20	0.00	51.59	-	-	-	-	68.20	-16.61	240	355	V
			* 7.27445	44.09	PK-U	35.70	-30.10	0.00	49.69	-	-	74.00	-24.31	-	-	204	112	H
			* 7.2777	31.88	ADR	35.70	-30.10	0.25	37.72	54.00	-16.28	-	-	-	-	204	112	H
			* 7.274	43.32	PK-U	35.70	-30.10	0.00	48.92	-	-	74.00	-25.08	-	-	167	109	V
			* 7.27519	31.23	ADR	35.70	-30.00	0.24	37.17	54.00	-16.83	-	-	-	-	167	109	V
			* 8.39978	42.30	PK-U	36.20	-28.50	0.00	50.00	-	-	74.00	-24.00	-	-	201	118	H
			* 8.39999	33.44	ADR	36.20	-28.50	0.24	41.38	54.00	-12.62	-	-	-	-	201	118	H
			* 8.39994	42.46	PK-U	36.20	-28.50	0.00	50.16	-	-	74.00	-23.84	-	-	179	252	V
			* 8.3999	32.92	ADR	36.20	-28.50	0.24	40.86	54.00	-13.14	-	-	-	-	179	252	V
			7.243	39.82	PK-U	35.70	-24.10	0.00	51.42	-	-	-	-	68.20	-16.78	201	106	H
7.244	40.46	PK-U	35.70	-24.10	0.00	52.06	-	-	-	-	68.20	-16.14	174	116	V			
* 7.26023	42.18	PK-U	35.70	-24.00	0.00	53.88	-	-	74.00	-20.12	-	-	200	104	H			
* 7.26023	30.39	ADR	35.70	-24.00	0.00	42.09	54.00	-11.91	-	-	-	-	200	104	H			
* 7.26017	40.70	PK-U	35.70	-24.00	0.00	52.40	-	-	74.00	-21.60	-	-	173	104	V			
* 7.26043	29.77	ADR	35.70	-24.00	0.00	41.47	54.00	-12.53	-	-	-	-	173	104	V			
* 8.28803	35.94	PK-U	35.90	-21.70	0.00	50.14	-	-	74.00	-23.86	-	-	198	104	H			
* 8.28795	27.79	ADR	35.90	-21.70	0.00	41.99	54.00	-12.01	-	-	-	-	198	104	H			
* 8.28797	25.13	PK-U	35.90	-21.70	0.00	49.33	-	-	74.00	-24.67	-	-	311	104	V			
* 8.28801	35.06	ADR	35.90	-21.70	0.00	38.26	54.00	-14.74	-	-	-	-	311	104	V			

11.2. TX ABOVE 1GHz 2Tx MODE IN THE 5.3GHz BAND

BANDEDGE (WORST CASE: 802.11ax HE80 / 5290 MHz Upper)



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	Antenna_T17 Factor(dBm)	10dB_Path Loss(dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (m)	Polarity
1	* 5.35002	48.68	PK	34.6	-23.1	0	60.18	-	-	74	-13.82	210	147	H
2	* 5.35266	51.61	PK	34.6	-23.1	0	63.11	-	-	74	-10.89	210	147	H
3	* 5.35002	39.24	RMS	34.6	-23.1	0	50.74	54	-3.26	-	-	210	147	H
4	* 5.35158	39.49	RMS	34.6	-23.1	0	50.99	54	-3.01	-	-	210	147	H

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

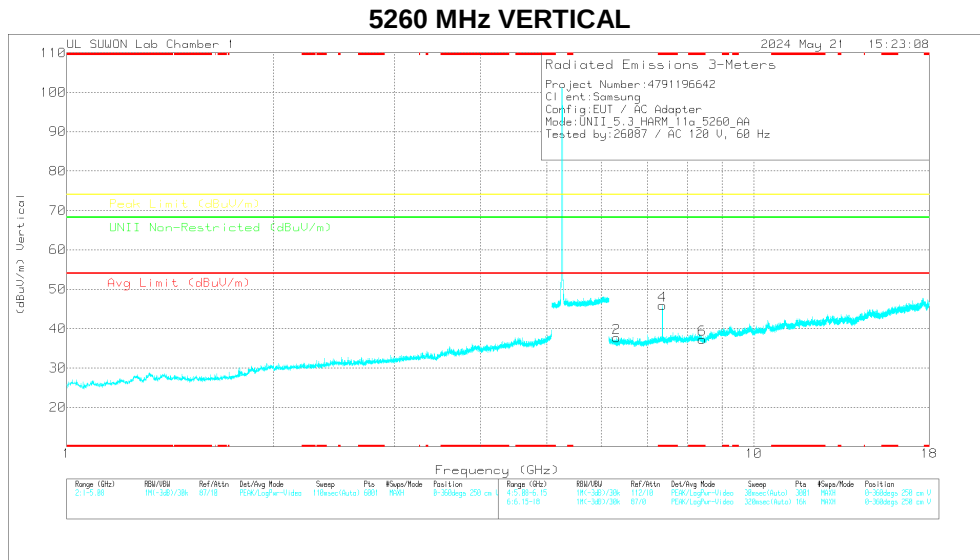
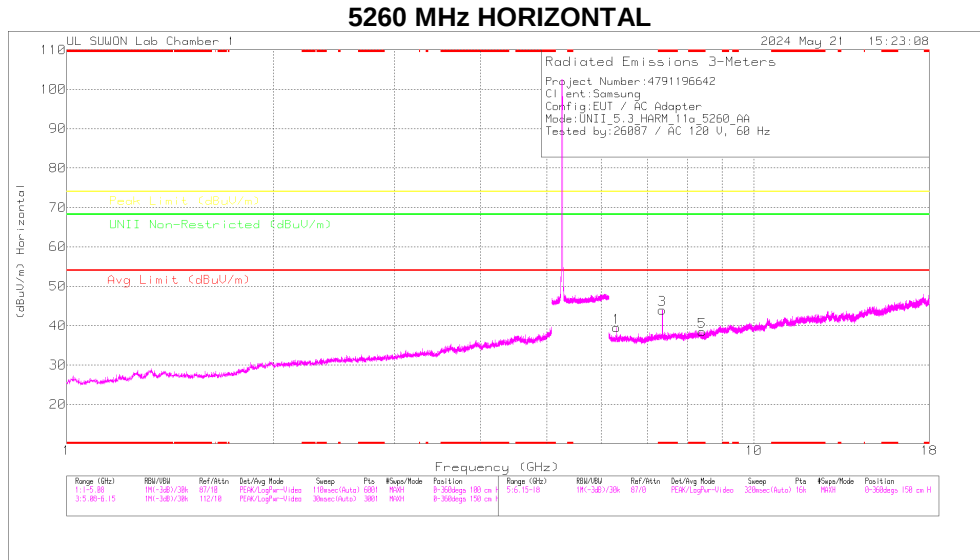
PK - Peak detector

RMS - RMS detection

BANDEDGE TEST DATA

Mode	Freq. [MHz]	Antenna	Frequency [GHz]	Reading [dBuV]	Detector Mode	ANT Factor [dB/m]	Loss [dB]	DC Corr [dB]	Result [dBuV/m]	AV Limit [dBuV/m]	AV Margin [dB]	PK Limit [dBuV/m]	PK Margin [dB]	Azimuth [Degs]	Height [cm]	Polarity
802.11a	5320	MIMO	* 5.35001	39.05	Pk	34.70	-20.40	0.00	53.35	-	-	74.00	-20.65	209	106	H
			* 5.37413	41.68	Pk	34.70	-20.20	0.00	56.18	-	-	74.00	-17.82	209	106	H
			* 5.35001	29.11	RMS	34.70	-20.40	0.15	43.56	54.00	-10.44	-	-	209	106	H
			* 5.35393	30.02	RMS	34.70	-20.30	0.15	44.57	54.00	-9.43	-	-	209	106	H
			* 5.35001	39.18	Pk	34.70	-20.40	0.00	53.48	-	-	74.00	-20.52	168	332	V
			* 5.38341	40.38	Pk	34.80	-20.20	0.00	54.98	-	-	74.00	-19.02	168	332	V
			* 5.35001	27.67	RMS	34.70	-20.40	0.15	42.12	54.00	-11.88	-	-	168	332	V
			* 5.36595	29.29	RMS	34.70	-20.30	0.15	43.84	54.00	-10.16	-	-	168	332	V
			* 5.35001	41.00	Pk	34.70	-20.40	0.00	55.30	-	-	74.00	-18.70	208	100	H
			* 5.35623	43.54	Pk	34.70	-20.30	0.00	57.94	-	-	74.00	-16.06	208	100	H
802.11n (HT20)	5320	MIMO	* 5.35001	29.39	RMS	34.70	-20.40	0.00	43.69	54.00	-10.31	-	-	208	100	H
			* 5.35135	31.19	RMS	34.70	-20.30	0.00	45.59	54.00	-8.41	-	-	208	100	H
			* 5.35001	39.84	Pk	34.70	-20.40	0.00	54.14	-	-	74.00	-19.86	167	332	V
			* 5.35399	41.88	Pk	34.70	-20.30	0.00	56.28	-	-	74.00	-17.72	167	332	V
			* 5.35001	28.19	RMS	34.70	-20.40	0.00	42.49	54.00	-11.51	-	-	167	332	V
			* 5.35417	30.58	RMS	34.70	-20.30	0.00	44.98	54.00	-9.02	-	-	167	332	V
			* 5.35001	44.10	Pk	34.70	-20.40	0.00	58.40	-	-	74.00	-15.60	208	104	H
			* 5.35053	46.63	Pk	34.70	-20.40	0.00	60.93	-	-	74.00	-13.07	208	104	H
			* 5.35001	32.87	RMS	34.70	-20.40	0.00	47.17	54.00	-6.83	-	-	208	104	H
			* 5.35071	33.54	RMS	34.70	-20.40	0.00	47.84	54.00	-6.16	-	-	208	104	H
802.11n (HT40)	5310	MIMO	* 5.35001	40.87	Pk	34.70	-20.40	0.00	55.17	-	-	74.00	-18.83	177	334	V
			* 5.35187	42.51	Pk	34.70	-20.30	0.00	56.91	-	-	74.00	-17.09	177	334	V
			* 5.35001	30.94	RMS	34.70	-20.40	0.00	45.24	54.00	-8.76	-	-	177	334	V
			* 5.35031	31.50	RMS	34.70	-20.40	0.00	45.80	54.00	-8.20	-	-	177	334	V
			* 5.35001	43.90	Pk	34.70	-20.40	0.00	58.20	-	-	74.00	-15.80	208	100	H
			* 5.35223	45.27	Pk	34.70	-20.30	0.00	59.67	-	-	74.00	-14.33	208	100	H
			* 5.35001	33.98	RMS	34.70	-20.40	0.25	48.53	54.00	-5.47	-	-	208	100	H
			* 5.35385	34.56	RMS	34.70	-20.30	0.25	49.21	54.00	-4.79	-	-	208	100	H
			* 5.35001	40.91	Pk	34.70	-20.40	0.00	55.21	-	-	74.00	-18.79	171	336	V
			* 5.35309	42.57	Pk	34.70	-20.30	0.00	56.97	-	-	74.00	-17.03	171	336	V
802.11ac (VHT80)	5290	MIMO	* 5.35001	29.83	RMS	34.70	-20.40	0.25	44.38	54.00	-9.62	-	-	171	336	V
			* 5.35277	31.18	RMS	34.70	-20.30	0.25	45.83	54.00	-8.17	-	-	171	336	V
			* 5.35001	40.47	Pk	34.70	-20.40	0.00	54.77	-	-	74.00	-19.23	211	106	H
			* 5.35263	49.37	Pk	34.70	-20.30	0.00	63.77	-	-	74.00	-10.23	211	106	H
			* 5.35001	30.56	RMS	34.70	-20.40	0.24	45.10	54.00	-8.90	-	-	211	106	H
			* 5.35207	31.37	RMS	34.70	-20.30	0.24	46.01	54.00	-7.99	-	-	211	106	H
			* 5.35001	41.09	Pk	34.70	-20.40	0.00	55.39	-	-	74.00	-18.61	171	316	V
			* 5.35319	48.79	Pk	34.70	-20.30	0.00	63.19	-	-	74.00	-10.81	171	316	V
			* 5.35001	29.24	RMS	34.70	-20.40	0.24	43.78	54.00	-10.22	-	-	171	316	V
			* 5.35485	30.31	RMS	34.70	-20.30	0.24	44.95	54.00	-9.05	-	-	171	316	V
802.11ac (VHT160)	5250 Upper	MIMO	* 5.35001	40.47	Pk	34.70	-20.40	0.00	54.77	-	-	74.00	-19.23	211	106	H
			* 5.35263	49.37	Pk	34.70	-20.30	0.00	63.77	-	-	74.00	-10.23	211	106	H
			* 5.35001	30.56	RMS	34.70	-20.40	0.24	45.10	54.00	-8.90	-	-	211	106	H
			* 5.35207	31.37	RMS	34.70	-20.30	0.24	46.01	54.00	-7.99	-	-	211	106	H
			* 5.35001	41.09	Pk	34.70	-20.40	0.00	55.39	-	-	74.00	-18.61	171	316	V
			* 5.35319	48.79	Pk	34.70	-20.30	0.00	63.19	-	-	74.00	-10.81	171	316	V
			* 5.35001	29.24	RMS	34.70	-20.40	0.24	43.78	54.00	-10.22	-	-	171	316	V
			* 5.35485	30.31	RMS	34.70	-20.30	0.24	44.95	54.00	-9.05	-	-	171	316	V
			* 5.35002	41.77	Pk	34.60	-23.10	0.00	53.27	-	-	74.00	-20.73	207	106	H
			* 5.37476	43.43	Pk	34.60	-23.10	0.00	54.93	-	-	74.00	-19.07	207	106	H
802.11ax (HE20)	5320	MIMO	* 5.35002	31.45	RMS	34.60	-23.10	0.00	42.95	54.00	-11.05	-	-	207	106	H
			* 5.35064	32.06	RMS	34.60	-23.10	0.00	43.56	54.00	-10.44	-	-	207	106	H
			* 5.35002	41.04	Pk	34.60	-23.10	0.00	52.54	-	-	74.00	-21.46	167	372	V
			* 5.3501	42.95	Pk	34.60	-23.10	0.00	54.45	-	-	74.00	-19.55	167	372	V
			* 5.35002	31.43	RMS	34.60	-23.10	0.00	42.93	54.00	-11.07	-	-	167	372	V
			* 5.35034	31.78	RMS	34.60	-23.10	0.00	43.28	54.00	-10.72	-	-	167	372	V
			* 5.35002	47.88	Pk	34.60	-23.10	0.00	59.38	-	-	74.00	-14.62	211	130	H
			* 5.35152	50.03	Pk	34.60	-23.10	0.00	61.53	-	-	74.00	-12.47	211	130	H
			* 5.35002	38.05	RMS	34.60	-23.10	0.00	49.55	54.00	-4.45	-	-	211	130	H
			* 5.35034	38.18	RMS	34.60	-23.10	0.00	49.68	54.00	-4.32	-	-	211	130	H
802.11ax (HE40)	5310	MIMO	* 5.35002	45.33	Pk	34.60	-23.10	0.00	56.83	-	-	74.00	-17.17	167	337	V
			* 5.35194	47.57	Pk	34.60	-23.10	0.00	59.07	-	-	74.00	-14.93	167	337	V
			* 5.35002	35.08	RMS	34.60	-23.10	0.00	46.58	54.00	-7.42	-	-	167	337	V
			* 5.35042	35.17	RMS	34.60	-23.10	0.00	46.67	54.00	-7.33	-	-	167	337	V
			* 5.35002	48.68	Pk	34.60	-23.10	0.00	60.18	-	-	74.00	-13.82	210	147	H
			* 5.35266	51.61	Pk	34.60	-23.10	0.00	63.11	-	-	74.00	-10.89	210	147	H
			* 5.35002	39.24	RMS	34.60	-23.10	0.00	50.74	54.00	-3.26	-	-	210	147	H
			* 5.35158	39.49	RMS	34.60	-23.10	0.00	50.99	54.00	-3.01	-	-	210	147	H
			* 5.35002	46.50	Pk	34.60	-23.10	0.00	58.00	-	-	74.00	-16.00	162	270	V
			* 5.35072	50.21	Pk	34.60	-23.10	0.00	61.71	-	-	74.00	-12.29	162	270	V
802.11ax (HE80)	5290	MIMO	* 5.35002	37.37	RMS	34.60	-23.10	0.00	48.87	54.00	-5.13	-	-	162	270	V
			* 5.3501	37.97	RMS	34.60	-23.10	0.00	49.47	54.00	-4.53	-	-	162	270	V
			* 5.35002	44.44	Pk	34.60	-23.10	0.00	55.94	-	-	74.00	-18.06	209	132	H
			* 5.35078	51.75	Pk	34.60	-23.10	0.00	63.25	-	-	74.00	-10.75	209	132	H
			* 5.35002	33.87	RMS	34.60	-23.10	0.00	45.37	54.00	-8.63	-	-	209	132	H
			* 5.3526	34.52	RMS	34.60	-23.10	0.00	46.02	54.00	-7.98	-	-	209	132	H
			* 5.35002	42.47	Pk	34.60	-23.10	0.00	53.97	-	-	74.00	-20.03	162	275	V
			* 5.35072	50.90	Pk	34.60	-23.10	0.00	62.40	-	-	74.00	-11.60	162	275	V
			* 5.35002	31.75	RMS	34.60	-23.10	0.00	43.25	54.00	-10.75	-	-	162	275	V
			* 5.35108	32.91	RMS	34.60	-23.10	0.00	44.41	54.00	-9.59	-	-	162	275	V
802.11ax (HE160)	5250 Upper	MIMO	* 5.35002	44.44	Pk	34.60	-23.10	0.00	55.94	-	-	74.00	-18.06	209	132	H
			* 5.35078	51.75	Pk	34.60	-23.10	0.00	63.25	-	-	74.00	-10.75	209	132	H
			* 5.35002	33.87	RMS	34.60	-23.10	0.00	45.37	54.00	-8.63	-	-	209	132	H
			* 5.3526	34.52	RMS	34.60	-23.10	0.00	46.02	54.00	-7.98	-	-	209	132	H
			* 5.35002	42.47	Pk	34.60	-23.10	0.00	53.97	-	-	74.00	-20.03	162	275	V
			* 5.35072	50.90	Pk	34.60	-23.10	0.00	62.40	-	-	74.00	-11.60	162	275	V
			* 5.35002	31.75	RMS	34.60	-23.10	0.00	43.25	54.00	-10.75	-	-	162	275	V
			* 5.35108	32.91	RMS	34.60	-23.10	0.00	44.41	54.00	-9.59	-	-	162	275	V

HARMONICS AND SPURIOUS EMISSIONS(WORST CASE: 802.11a / 5260 MHz)



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

5260 MHz DATA

Radiated Emissions

Frequency (GHz)	Meas Reading (dBuV)	Det	3117_00168717	5GHz_HPI(B)	DC Corr (dB)	Corrected Reading (dBuV)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Acctm (Chgs)	Height (cm)	Polarity
6.31242	46.45	PK-U	35.3	-31.1	0	48.65	-	-	-	-	68.2	-17.55	315	101	H
6.31198	44.55	PK-U	35.3	-31.1	0	48.75	-	-	-	-	68.2	-19.45	230	356	V
* 7.35773	49.44	PK-U	35.7	-30	0	55.14	-	-	74	-18.86	-	-	212	144	H
* 7.38698	39.07	ADR	35.7	-29.9	15	45.02	54	-8.98	-	-	-	-	212	141	H
* 7.35728	50.56	PK-U	35.7	-30	0	56.26	-	-	74	-17.74	-	-	160	101	V
* 7.35743	40.12	ADR	35.7	-30	15	45.97	54	-8.03	-	-	-	-	160	101	V
* 8.4159	41.89	PK-U	36.2	-28.6	0	49.19	-	-	74	-24.81	-	-	201	106	H
* 8.416	31.66	ADR	36.2	-28.6	15	39.41	54	-14.59	-	-	-	-	201	106	H
* 8.41582	41.02	PK-U	36.2	-28.6	0	48.62	-	-	74	-25.38	-	-	172	257	V
* 8.41603	30.31	ADR	36.2	-28.6	15	38.06	54	-15.94	-	-	-	-	172	257	V

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

PK-U - U-NII: Maximum Peak

ADR - U-NII AD primary method, RMS average

HARMONICS AND SPURIOUS EMISSIONS TEST DATA

Mode	Freq. [MHz]	Antenna	Frequency [GHz]	Reading [dBuV]	Detector Mode	ANT Factor [dB/m]	Loss [dB]	DC Corr [dB]	Result [dBuV/m]	AV Limit [dBuV/m]	AV Margin [dB]	PK Limit [dBuV/m]	PK Margin [dB]	Non-Restricted [dBuV/m]	Margin [dB]	Azimuth [Degs]	Height [cm]	Polarity
802.11a	5260	MIMO	6.312	46.45	PK-U	35.30	-31.10	0.00	50.65	-	-	-	-	68.20	-17.55	315	101	H
			6.312	44.55	PK-U	35.30	-31.10	0.00	48.75	-	-	-	-	68.20	-19.45	230	356	V
			* 7.35773	49.44	PK-U	35.70	-30.00	0.00	55.14	-	-	74.00	-18.86	-	-	212	141	H
			* 7.35868	39.07	ADR	35.70	-29.90	0.15	45.02	54.00	-8.98	-	-	-	-	212	141	H
			* 7.35728	50.56	PK-U	35.70	-30.00	0.00	56.26	-	-	74.00	-17.74	-	-	160	101	V
			* 7.35743	40.12	ADR	35.70	-30.00	0.15	45.97	54.00	-8.03	-	-	-	-	160	101	V
			* 8.4159	41.59	PK-U	36.20	-28.60	0.00	49.19	-	-	74.00	-24.81	-	-	201	106	H
			* 8.416	31.66	ADR	36.20	-28.60	0.15	39.41	54.00	-14.59	-	-	-	-	201	106	H
			* 8.41582	41.02	PK-U	36.20	-28.60	0.00	48.62	-	-	74.00	-25.38	-	-	172	257	V
			* 8.41603	30.31	ADR	36.20	-28.60	0.15	38.06	54.00	-15.94	-	-	-	-	172	257	V
			6.360	45.30	PK-U	35.30	-30.80	0.00	49.80	-	-	-	-	68.20	-18.40	313	115	H
			6.360	44.18	PK-U	35.30	-30.80	0.00	48.68	-	-	-	-	68.20	-19.52	254	382	V
	5300	MIMO	* 7.42447	49.88	PK-U	35.60	-30.30	0.00	55.18	-	-	74.00	-18.82	-	-	203	100	H
			* 7.41432	39.48	ADR	35.60	-30.30	0.15	44.93	54.00	-9.07	-	-	-	-	203	100	H
			* 7.41421	51.32	PK-U	35.60	-30.30	0.00	56.62	-	-	74.00	-17.38	-	-	74	259	V
			* 7.41361	40.34	ADR	35.60	-30.30	0.15	45.79	54.00	-8.21	-	-	-	-	74	259	V
			* 8.47964	41.47	PK-U	36.10	-28.70	0.00	48.87	-	-	74.00	-25.13	-	-	201	104	H
			* 8.47984	31.70	ADR	36.10	-28.80	0.15	39.15	54.00	-14.85	-	-	-	-	201	104	H
			* 8.47975	40.93	PK-U	36.10	-28.80	0.00	48.23	-	-	74.00	-25.77	-	-	218	315	V
			* 8.47995	29.82	ADR	36.10	-28.80	0.15	37.27	54.00	-16.73	-	-	-	-	218	315	V
			6.384	46.34	PK-U	35.30	-30.60	0.00	50.84	-	-	-	-	68.20	-17.36	316	119	H
			6.384	44.72	PK-U	35.30	-30.60	0.00	49.22	-	-	-	-	68.20	-18.98	92	346	V
			* 7.44165	49.51	PK-U	35.60	-30.30	0.00	54.81	-	-	74.00	-19.19	-	-	206	101	H
			* 7.44195	38.54	ADR	35.60	-30.30	0.15	43.99	54.00	-10.01	-	-	-	-	206	101	H
802.11ax HE20 RU mode 26 Tone offset 0 Spot-check	5320	MIMO	* 7.44651	49.37	PK-U	35.60	-30.30	0.00	54.67	-	-	74.00	-19.33	-	-	170	105	V
			* 7.44146	38.89	ADR	35.60	-30.30	0.15	44.34	54.00	-9.66	-	-	-	-	170	105	V
			8.512	42.25	PK-U	36.10	-28.60	0.00	49.75	-	-	-	-	68.20	-18.45	203	104	H
			8.510	40.94	PK-U	36.10	-28.60	0.00	48.44	-	-	-	-	68.20	-19.76	215	334	V
			* 7.45636	40.93	PK-U	35.70	-23.30	0.00	53.33	-	-	74.00	-20.67	-	-	205	116	H
			* 7.45646	30.11	ADR	35.70	-23.30	0.00	42.51	54.00	-11.49	-	-	-	-	205	116	H
			* 7.4566	39.47	PK-U	35.70	-23.30	0.00	51.87	-	-	74.00	-22.13	-	-	157	104	V
			* 7.45667	28.42	ADR	35.70	-23.30	0.00	40.82	54.00	-13.18	-	-	-	-	157	104	V
			* 10.64267	33.95	PK-U	37.80	-18.70	0.00	53.05	-	-	74.00	-20.95	-	-	0	100	H
			* 10.63038	33.35	PK-U	37.80	-18.60	0.00	52.55	-	-	74.00	-21.45	-	-	0	100	V
			* 15.96078	33.90	PK-U	40.40	-17.80	0.00	56.50	-	-	-	-	-	-	0	100	H
			* 15.9607	21.79	ADR	40.40	-17.80	0.00	44.39	54.00	-9.61	-	-	-	-	0	100	V
			* 15.95936	33.69	PK-U	40.40	-17.80	0.00	56.29	-	-	74.00	-17.71	-	-	0	100	V
			* 15.95918	21.54	ADR	40.40	-17.80	0.00	44.14	54.00	-9.86	-	-	-	-	0	100	V

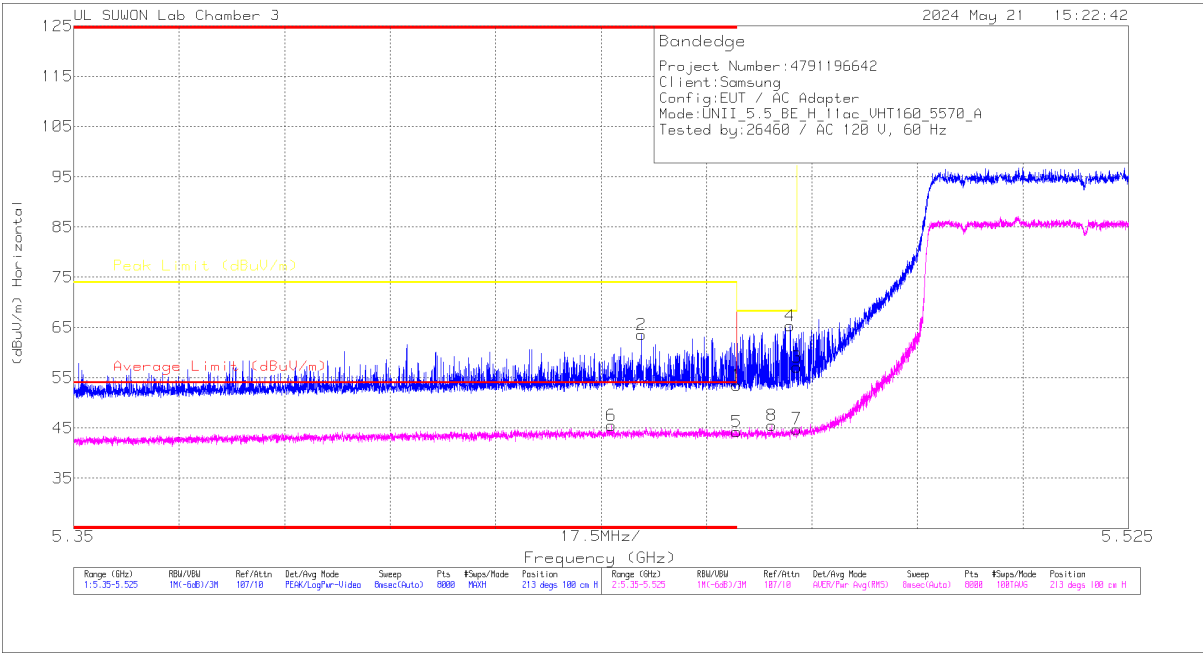
Note1. PK-U - U-NII: Maximum Peak / ADR - U-NII AD primary method, RMS average

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

11.3. TX ABOVE 1GHz 2Tx MODE IN THE 5.5 GHz BAND

BANDEDGE (WORST CASE: 802.11ac VHT160 / 5570 MHz Lower)

HORIZONTAL PEAK AND AVERAGE DATA



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	Antenna_957_Factor(dB)	10dB_Path Loss(dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.45998	38.73	Pk	34.9	-20.1	0	53.53	-	-	74	-20.47	213	100	H
2	* 5.44418	48.79	Pk	34.9	-20.1	0	63.59	-	-	74	-10.41	213	100	H
3	5.46998	42.42	Pk	34.9	-20.2	0	57.12	-	-	68.2	-11.08	213	100	H
4	5.46889	50.67	Pk	34.9	-20.2	0	66.37	-	-	68.2	-2.83	213	100	H
5	* 5.45998	29.21	RMS	34.9	-20.1	-24	44.25	54	-9.75	-	-	213	100	H
6	* 5.4392	30.46	RMS	34.9	-20.1	-24	45.5	54	-8.5	-	-	213	100	H
7	5.46998	29.89	RMS	34.9	-20.2	-24	44.83	-	-	-	-	213	100	H
8	5.46578	30.52	RMS	34.9	-20.1	-24	45.56	-	-	-	-	213	100	H

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

BANDEDGE TEST DATA

Mode	Freq. [MHz]	Antenna	Frequency [GHz]	Reading [dBuV]	Detector Mode	ANT Factor [dB/m]	Loss	DC Corr [dB]	Result [dBuV/m]	AV Limit [dBuV/m]	AV Margin [dB]	PK Limit [dBuV/m]	PK Margin [dB]	Azimuth [Degs]	Height [cm]	Polarity
802.11a	5500	MIMO	* 5.45998	37.95	Pk	34.90	-20.10	0.00	52.75	-	-	74.00	-21.25	209	100	H
			* 5.44834	41.65	Pk	34.90	-20.20	0.00	56.35	-	-	74.00	-17.65	209	100	H
			5.46998	40.51	Pk	34.90	-20.20	0.00	55.21	-	-	68.20	-12.99	209	100	H
			5.46727	44.08	Pk	34.90	-20.20	0.00	58.78	-	-	68.20	-9.42	209	100	H
			* 5.45998	28.62	RMS	34.90	-20.10	0.15	43.57	54.00	-10.43	-	-	209	100	H
			* 5.44418	30.19	RMS	34.90	-20.10	0.15	45.14	54.00	-8.86	-	-	209	100	H
			5.46998	29.46	RMS	34.90	-20.20	0.15	44.31	-	-	-	-	209	100	H
			5.46963	30.50	RMS	34.90	-20.20	0.15	45.35	-	-	-	-	209	100	H
			* 5.45998	37.35	Pk	34.90	-20.10	0.00	52.15	-	-	74.00	-21.85	172	376	V
			* 5.40535	40.45	Pk	34.80	-20.30	0.00	54.95	-	-	74.00	-19.05	172	376	V
			5.46998	38.60	Pk	34.90	-20.20	0.00	53.30	-	-	68.20	-14.90	172	376	V
			5.46639	40.53	Pk	34.90	-20.20	0.00	55.23	-	-	68.20	-12.97	172	376	V
			* 5.45998	28.44	RMS	34.90	-20.10	0.15	43.39	54.00	-10.61	-	-	172	376	V
			* 5.4476	28.95	RMS	34.90	-20.10	0.15	43.90	54.00	-10.10	-	-	172	376	V
			5.46998	27.99	RMS	34.90	-20.20	0.15	42.84	-	-	-	-	172	376	V
			5.46674	29.43	RMS	34.90	-20.20	0.15	44.28	-	-	-	-	172	376	V
			5.72500	42.96	Pk	35.00	-19.80	0.00	58.16	-	-	68.20	-10.04	211	108	H
			5.72571	44.95	Pk	35.00	-19.80	0.00	60.15	-	-	68.20	-8.05	211	108	H
			5.72500	39.12	Pk	35.00	-19.80	0.00	54.32	-	-	68.20	-13.88	172	377	V
			5.72508	41.47	Pk	35.00	-19.80	0.00	56.67	-	-	68.20	-11.53	172	377	V
802.11n (HT20)	5500	MIMO	* 5.45998	39.88	Pk	34.90	-20.10	0.00	54.68	-	-	74.00	-19.32	211	100	H
			* 5.45528	41.43	Pk	34.90	-20.20	0.00	56.13	-	-	74.00	-17.87	211	100	H
			5.46998	45.88	Pk	34.90	-20.20	0.00	60.58	-	-	68.20	-7.62	211	100	H
			5.46711	49.09	Pk	34.90	-20.20	0.00	63.79	-	-	68.20	-4.41	211	100	H
			* 5.45998	28.84	RMS	34.90	-20.10	0.00	43.64	54.00	-10.36	-	-	211	100	H
			* 5.4532	29.93	RMS	34.90	-20.10	0.00	44.73	54.00	-9.27	-	-	211	100	H
			5.46998	34.05	RMS	34.90	-20.20	0.00	48.75	-	-	-	-	211	100	H
			5.46932	34.20	RMS	34.90	-20.20	0.00	48.90	-	-	-	-	211	100	H
			* 5.45998	38.39	Pk	34.90	-20.10	0.00	53.19	-	-	74.00	-20.81	170	253	V
			* 5.4597	41.81	Pk	34.90	-20.10	0.00	56.61	-	-	74.00	-17.39	170	253	V
			5.46998	41.84	Pk	34.90	-20.20	0.00	56.54	-	-	68.20	-11.66	170	253	V
			5.46624	46.04	Pk	34.90	-20.10	0.00	60.84	-	-	68.20	-7.36	170	253	V
			* 5.45998	27.93	RMS	34.90	-20.10	0.00	42.73	54.00	-11.27	-	-	170	253	V
			* 5.45959	29.29	RMS	34.90	-20.10	0.00	44.09	54.00	-9.91	-	-	170	253	V
			5.46998	31.18	RMS	34.90	-20.20	0.00	45.88	-	-	-	-	170	253	V
			5.46915	32.43	RMS	34.90	-20.20	0.00	47.13	-	-	-	-	170	253	V
	5700	MIMO	5.72500	46.40	Pk	35.00	-19.80	0.00	61.60	-	-	68.20	-6.60	211	115	H
			5.72502	47.14	Pk	35.00	-19.80	0.00	62.34	-	-	68.20	-5.86	211	115	H
			5.72500	44.00	Pk	35.00	-19.80	0.00	59.20	-	-	68.20	-9.00	191	336	V
			5.72503	44.61	Pk	35.00	-19.80	0.00	59.81	-	-	68.20	-8.39	191	336	V
802.11n (HT40)	5510	MIMO	* 5.45998	42.63	Pk	34.90	-20.10	0.00	57.43	-	-	74.00	-16.57	212	100	H
			* 5.45957	44.00	Pk	34.90	-20.10	0.00	58.80	-	-	74.00	-15.20	212	100	H
			5.46998	41.09	Pk	34.90	-20.20	0.00	55.79	-	-	68.20	-12.41	212	100	H
			5.46149	45.97	Pk	34.90	-20.20	0.00	60.67	-	-	68.20	-7.53	212	100	H
			* 5.45998	31.38	RMS	34.90	-20.10	0.00	46.18	54.00	-7.82	-	-	212	100	H
			* 5.45965	31.14	RMS	34.90	-20.10	0.00	45.94	54.00	-8.06	-	-	212	100	H
			5.46998	31.04	RMS	34.90	-20.20	0.00	45.74	-	-	-	-	212	100	H
			5.46534	33.11	RMS	34.90	-20.20	0.00	47.81	-	-	-	-	212	100	H
			* 5.45998	39.40	Pk	34.90	-20.10	0.00	54.20	-	-	74.00	-19.80	171	376	V
			* 5.41445	40.66	Pk	34.80	-20.20	0.00	55.26	-	-	74.00	-18.74	171	376	V
			5.46998	38.53	Pk	34.90	-20.20	0.00	53.23	-	-	68.20	-14.97	171	376	V
			5.46215	42.39	Pk	34.90	-20.20	0.00	57.09	-	-	68.20	-11.11	171	376	V
			* 5.45998	29.03	RMS	34.90	-20.10	0.00	43.83	54.00	-10.17	-	-	171	376	V
			* 5.45381	29.59	RMS	34.90	-20.10	0.00	44.39	54.00	-9.61	-	-	171	376	V
			5.46998	28.72	RMS	34.90	-20.20	0.00	43.42	-	-	-	-	171	376	V
			5.46151	30.61	RMS	34.90	-20.20	0.00	45.31	-	-	-	-	171	376	V
	5670	MIMO	5.72500	40.20	Pk	35.00	-19.80	0.00	55.40	-	-	68.20	-12.80	212	104	H
			5.73180	44.82	Pk	35.00	-19.80	0.00	60.02	-	-	68.20	-8.18	212	104	H
			5.72500	40.79	Pk	35.00	-19.80	0.00	55.99	-	-	68.20	-12.21	188	321	V
			5.72849	42.39	Pk	35.00	-19.80	0.00	57.59	-	-	68.20	-10.61	188	321	V
802.11ac (VHT80)	5530	MIMO	* 5.45998	45.11	Pk	34.90	-20.10	0.00	59.91	-	-	74.00	-14.09	210	103	H
			* 5.45976	45.80	Pk	34.90	-20.10	0.00	60.60	-	-	74.00	-13.40	210	103	H
			5.46998	45.11	Pk	34.90	-20.20	0.00	59.81	-	-	68.20	-8.39	210	103	H
			5.46991	47.11	Pk	34.90	-20.20	0.00	61.81	-	-	68.20	-6.39	210	103	H
			* 5.45998	33.44	RMS	34.90	-20.10	0.25	48.49	54.00	-5.51	-	-	210	103	H
			* 5.4576	34.35	RMS	34.90	-20.10	0.25	49.40	54.00	-4.60	-	-	210	103	H
			5.46998	34.84	RMS	34.90	-20.20	0.25	49.79	-	-	-	-	210	103	H
			5.46996	35.57	RMS	34.90	-20.20	0.25	50.52	-	-	-	-	210	103	H
			42.92	42.92	Pk	34.90	-20.10	0.00	57.12	-	-	74.00	-15.88	159	285	V
			* 5.45749	44.01	Pk	34.90	-20.10	0.00	58.81	-	-	74.00	-15.19	159	285	V
			5.46998	43.13	Pk	34.90	-20.20	0.00	57.83	-	-	68.20	-10.37	159	285	V
			5.46510	45.00	Pk	34.90	-20.20	0.00	59.70	-	-	68.20	-8.50	159	285	V
			* 5.45998	31.72	RMS	34.90	-20.10	0.25	46.77	54.00	-7.23	-	-	159	285	V
			* 5.45862	32.45	RMS	34.90	-20.10	0.25	47.50	54.00	-6.50	-	-	159	285	V
			5.46998	31.99	RMS	34.90	-20.20	0.25	46.84	-	-	-	-	159	285	V
			5.46604	32.95	RMS	34.90	-20.10	0.25	48.00	-	-	-	-	159	285	V
	5610	MIMO	5.72500	40.24	Pk	35.00	-19.80	0.00	55.44	-	-	68.20	-12.76	211	100	H
			5.72836	40.54	Pk	35.00	-19.80	0.00	55.74	-	-	68.20	-12.46	211	100	H
			5.72500	38.38	Pk	35.00	-19.80	0.00	53.58	-	-	68.20	-14.62	190	341	V
			5.73446	40.33	Pk	35.00	-19.80	0.00	55.53	-	-	68.20	-12.67	190	341	V

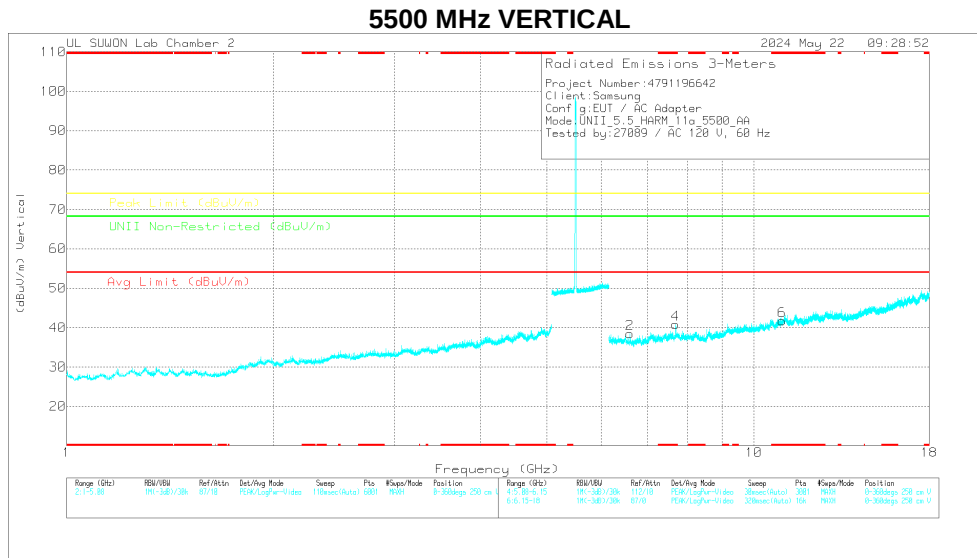
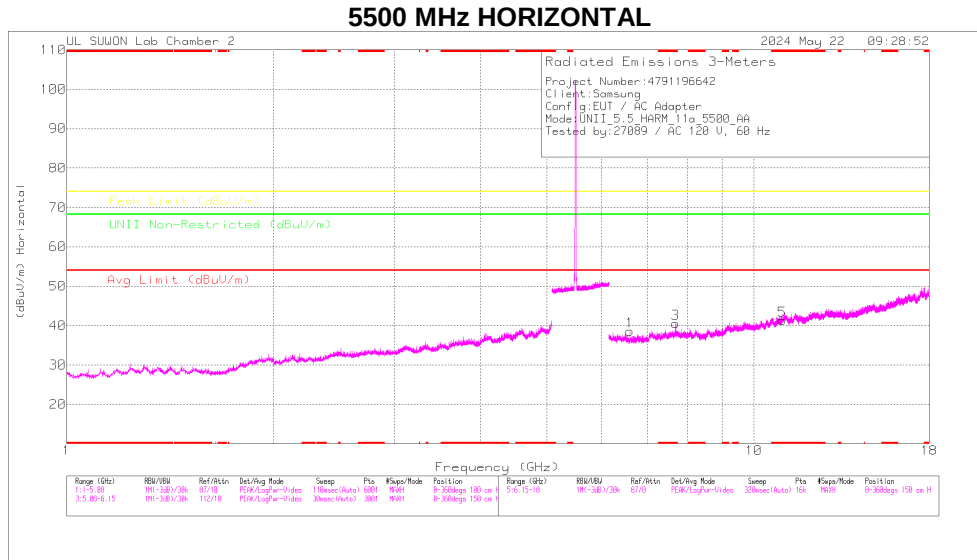
Mode	Freq. [MHz]	Antenna	Frequency [GHz]	Reading [dBuV]	Detector Mode	ANT Factor [dB/m]	Loss [dB]	DC Corr [dB]	Result [dBuV/m]	AV Limit [dBuV/m]	AV Margin [dB]	PK Limit [dBuV/m]	PK Margin [dB]	Azimuth [Degs]	Height [cm]	Polarity
802.11ac (VHT160)	5570 Lower	MIMO	* 5.45998	38.73	Pk	34.90	-20.10	0.00	53.53	-	-	74.00	-20.47	213	100	H
			* 5.44418	48.79	Pk	34.90	-20.10	0.00	63.59	-	-	74.00	-10.41	213	100	H
			5.46998	42.42	Pk	34.90	-20.20	0.00	57.12	-	-	68.20	-11.08	213	100	H
			5.46889	50.67	Pk	34.90	-20.20	0.00	65.37	-	-	68.20	-2.83	213	100	H
			* 5.45998	29.21	RMS	34.90	-20.10	0.24	44.25	54.00	-9.75	-	-	213	100	H
			* 5.4392	30.46	RMS	34.90	-20.10	0.24	45.50	54.00	-8.50	-	-	213	100	H
			5.46998	29.89	RMS	34.90	-20.20	0.24	44.83	-	-	-	-	213	100	H
			5.46578	30.52	RMS	34.90	-20.10	0.24	45.56	-	-	-	-	213	100	H
			* 5.45998	37.93	Pk	34.90	-20.10	0.00	52.73	-	-	74.00	-21.27	162	316	V
			* 5.45521	45.56	Pk	34.90	-20.20	0.00	60.26	-	-	74.00	-13.74	162	316	V
			5.46998	45.60	Pk	34.90	-20.20	0.00	60.30	-	-	68.20	-7.90	162	316	V
			5.46829	48.52	Pk	34.90	-20.20	0.00	63.22	-	-	68.20	-4.98	162	316	V
			* 5.45998	27.53	RMS	34.90	-20.10	0.24	42.57	54.00	-11.43	-	-	162	316	V
			* 5.45825	29.73	RMS	34.90	-20.10	0.24	44.77	54.00	-9.23	-	-	162	316	V
			5.46998	28.01	RMS	34.90	-20.20	0.24	42.95	-	-	-	-	162	316	V
			5.46985	29.35	RMS	34.90	-20.20	0.24	44.29	-	-	-	-	162	316	V
			5.72501	39.25	Pk	35.00	-19.80	0.00	54.45	-	-	68.20	-13.75	213	100	H
			5.72737	43.61	Pk	35.00	-19.80	0.00	58.81	-	-	68.20	-9.39	213	100	H
			5.72501	38.52	Pk	35.00	-19.80	0.00	53.72	-	-	68.20	-14.48	188	348	V
			5.77333	41.83	Pk	35.00	-19.70	0.00	57.13	-	-	68.20	-11.07	188	348	V
802.11ax (HE20)	5500	MIMO	* 5.45999	40.25	Pk	34.70	-23.10	0.00	51.85	-	-	74.00	-22.15	210	111	H
			* 5.45253	43.49	Pk	34.70	-23.10	0.00	55.09	-	-	74.00	-18.91	210	111	H
			5.46998	43.19	Pk	34.70	-23.10	0.00	54.79	-	-	68.20	-13.41	210	111	H
			5.46775	45.60	Pk	34.70	-23.10	0.00	57.20	-	-	68.20	-11.00	210	111	H
			* 5.45999	31.57	RMS	34.70	-23.10	0.00	43.17	54.00	-10.83	-	-	210	111	H
			* 5.44752	31.96	RMS	34.70	-23.10	0.00	43.56	54.00	-10.44	-	-	210	111	H
			5.46998	33.63	RMS	34.70	-23.10	0.00	45.23	-	-	-	-	210	111	H
			5.46985	34.16	RMS	34.70	-23.10	0.00	45.76	-	-	-	-	210	111	H
			* 5.45999	40.89	Pk	34.70	-23.10	0.00	52.49	-	-	74.00	-21.51	156	320	V
			* 5.45918	43.10	Pk	34.70	-23.10	0.00	54.70	-	-	74.00	-19.30	156	320	V
			5.46998	42.08	Pk	34.70	-23.10	0.00	53.68	-	-	68.20	-14.52	156	320	V
			5.46883	44.43	Pk	34.70	-23.10	0.00	56.03	-	-	68.20	-12.17	156	320	V
			* 5.45999	30.87	RMS	34.70	-23.10	0.00	42.47	54.00	-11.53	-	-	156	320	V
			* 5.45968	31.49	RMS	34.70	-23.10	0.00	43.09	54.00	-10.91	-	-	156	320	V
			5.46998	32.79	RMS	34.70	-23.10	0.00	44.39	-	-	-	-	156	320	V
			5.46988	32.95	RMS	34.70	-23.10	0.00	44.55	-	-	-	-	156	320	V
	5700	MIMO	5.72500	49.74	Pk	34.80	-22.80	0.00	61.74	-	-	68.20	-6.46	203	120	H
			5.72505	51.64	Pk	34.80	-22.80	0.00	63.64	-	-	68.20	-4.56	203	120	H
			5.72502	48.42	Pk	34.80	-22.80	0.00	60.42	-	-	68.20	-7.78	185	341	V
			5.72530	49.40	Pk	34.80	-22.80	0.00	61.40	-	-	68.20	-6.80	185	341	V
802.11ax (HE40)	5510	MIMO	* 5.45999	45.23	Pk	34.70	-23.10	0.00	56.83	-	-	74.00	-17.17	207	125	H
			* 5.45688	46.45	Pk	34.70	-23.10	0.00	58.05	-	-	74.00	-15.95	207	125	H
			5.46998	49.04	Pk	34.70	-23.10	0.00	60.64	-	-	68.20	-7.56	207	125	H
			5.46977	49.68	Pk	34.70	-23.10	0.00	61.28	-	-	68.20	-6.92	207	125	H
			* 5.45999	33.69	RMS	34.70	-23.10	0.00	45.29	54.00	-8.71	-	-	207	125	H
			* 5.45964	34.17	RMS	34.70	-23.10	0.00	45.77	54.00	-8.23	-	-	207	125	H
			5.46998	37.47	RMS	34.70	-23.10	0.00	49.07	-	-	-	-	207	125	H
			5.46996	38.06	RMS	34.70	-23.10	0.00	49.66	-	-	-	-	207	125	H
			* 5.45999	42.30	Pk	34.70	-23.10	0.00	53.90	-	-	74.00	-20.10	169	395	V
			* 5.45944	43.87	Pk	34.70	-23.10	0.00	55.47	-	-	74.00	-18.53	169	395	V
			5.46998	45.38	Pk	34.70	-23.10	0.00	56.98	-	-	68.20	-11.22	169	395	V
			5.46911	47.37	Pk	34.70	-23.10	0.00	58.97	-	-	68.20	-9.23	169	395	V
			* 5.45999	31.68	RMS	34.70	-23.10	0.00	43.28	54.00	-10.72	-	-	169	395	V
			* 5.45994	32.47	RMS	34.70	-23.10	0.00	44.07	54.00	-9.93	-	-	169	395	V
			5.46998	35.22	RMS	34.70	-23.10	0.00	46.82	-	-	-	-	169	395	V
			5.46968	35.65	RMS	34.70	-23.10	0.00	47.25	-	-	-	-	169	395	V
	5670	MIMO	5.72500	43.94	Pk	34.80	-22.80	0.00	55.94	-	-	68.20	-12.26	204	122	H
			5.72509	46.57	Pk	34.80	-22.80	0.00	58.57	-	-	68.20	-9.63	204	122	H
			5.72502	42.73	Pk	34.80	-22.80	0.00	54.73	-	-	68.20	-13.47	184	341	V
			5.72769	44.20	Pk	34.80	-22.80	0.00	56.20	-	-	68.20	-12.00	184	341	V
802.11ax (HE80)	5530	MIMO	* 5.45999	46.41	Pk	34.70	-23.10	0.00	58.01	-	-	74.00	-15.99	214	100	H
			* 5.45959	48.37	Pk	34.70	-23.10	0.00	59.97	-	-	74.00	-14.03	214	100	H
			5.46998	46.37	Pk	34.70	-23.10	0.00	57.97	-	-	68.20	-10.23	214	100	H
			5.46985	48.25	Pk	34.70	-23.10	0.00	59.85	-	-	68.20	-8.35	214	100	H
			* 5.45999	35.82	RMS	34.70	-23.10	0.00	47.42	54.00	-6.58	-	-	214	100	H
			* 5.45929	36.50	RMS	34.70	-23.10	0.00	48.10	54.00	-5.90	-	-	214	100	H
			5.46998	36.98	RMS	34.70	-23.10	0.00	48.58	-	-	-	-	214	100	H
			5.46979	37.47	RMS	34.70	-23.10	0.00	49.07	-	-	-	-	214	100	H
			* 5.45999	43.38	Pk	34.70	-23.10	0.00	54.98	-	-	74.00	-19.02	167	373	V
			* 5.45992	45.55	Pk	34.70	-23.10	0.00	57.15	-	-	74.00	-16.85	167	373	V
			5.46998	43.44	Pk	34.70	-23.10	0.00	55.04	-	-	68.20	-13.16	167	373	V
			5.46508	46.70	Pk	34.70	-23.10	0.00	58.30	-	-	68.20	-9.90	167	373	V
			* 5.45999	33.26	RMS	34.70	-23.10	0.00	44.86	54.00	-9.14	-	-	167	373	V
			* 5.45994	33.82	RMS	34.70	-23.10	0.00	45.42	54.00	-8.58	-	-	167	373	V
			5.46998	34.53	RMS	34.70	-23.10	0.00	46.13	-	-	-	-	167	373	V
			5.46961	35.33	RMS	34.70	-23.10	0.00	46.93	-	-	-	-	167	373	V
	5610	MIMO	5.72500	41.04	Pk	34.80	-22.80	0.00	53.04	-	-	68.20	-15.16	204	134	H
			5.73221	43.51	Pk	34.80	-22.80	0.00	55.51	-	-	68.20	-12.69	204	134	H
			5.72502	39.50	Pk	34.80	-22.80	0.00	51.50	-	-	68.20	-16.70	183	349	V
			5.77461	42.70	Pk	34.90	-22.80	0.00	54.80	-	-	68.20	-13.40	183	349	V

Mode	Freq. [MHz]	Antenna	Frequency [GHz]	Reading [dBuV]	Detector Mode	ANT Factor [dB/m]	Loss [dB]	DC Corr [dB]	Result [dBuV/m]	AV Limit [dBuV/m]	AV Margin [dB]	PK Limit [dBuV/m]	PK Margin [dB]	Azimuth [Degs]	Height [cm]	Polarity
802.11ax (HE160)	5570 Lower	MIMO	* 5.45999	40.92	Pk	34.70	-23.10	0.00	52.52	-	-	74.00	-21.48	215	100	H
			* 5.45133	48.18	Pk	34.70	-23.10	0.00	59.78	-	-	74.00	-14.22	215	100	H
			5.46998	42.26	Pk	34.70	-23.10	0.00	53.86	-	-	68.20	-14.34	215	100	H
			5.46872	49.01	Pk	34.70	-23.10	0.00	60.61	-	-	68.20	-7.59	215	100	H
			* 5.45999	31.96	RMS	34.70	-23.10	0.00	43.56	54.00	-10.44	-	-	215	100	H
			* 5.45819	32.19	RMS	34.70	-23.10	0.00	43.79	54.00	-10.21	-	-	215	100	H
			5.46998	31.46	RMS	34.70	-23.10	0.00	43.06	-	-	-	-	215	100	H
			5.46904	32.59	RMS	34.70	-23.10	0.00	44.19	-	-	-	-	215	100	H
			* 5.45999	40.45	Pk	34.70	-23.10	0.00	52.05	-	-	74.00	-21.95	169	371	V
			* 5.38102	46.12	Pk	34.60	-23.30	0.00	57.42	-	-	74.00	-16.58	169	371	V
			5.46998	40.23	Pk	34.70	-23.10	0.00	51.83	-	-	68.20	-16.37	169	371	V
			5.46924	46.23	Pk	34.70	-23.10	0.00	57.83	-	-	68.20	-10.37	169	371	V
			* 5.45999	30.10	RMS	34.70	-23.10	0.00	41.70	54.00	-12.30	-	-	169	371	V
			* 5.35973	31.19	RMS	34.60	-23.10	0.00	42.69	54.00	-11.31	-	-	169	371	V
			5.46998	30.47	RMS	34.70	-23.10	0.00	42.07	-	-	-	-	169	371	V
			5.46780	30.96	RMS	34.70	-23.10	0.00	42.56	-	-	-	-	169	371	V
	5570 Upper	MIMO	5.72500	41.10	Pk	34.80	-22.80	0.00	53.10	-	-	68.20	-15.10	204	122	H
			5.73934	45.43	Pk	34.80	-22.80	0.00	57.43	-	-	68.20	-10.77	204	122	H
			5.72502	39.67	Pk	34.80	-22.80	0.00	51.67	-	-	68.20	-16.53	169	319	V
			5.74656	44.91	Pk	34.80	-22.90	0.00	56.81	-	-	68.20	-11.39	169	319	V

Note1. Pk - Peak detector, RMS - RMS detector

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

HARMONICS AND SPURIOUS EMISSIONS(WORST CASE: 802.11a / 5500 MHz)



Note. Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

5500 MHz DATA

Radiated Emissions

Frequency (GHz)	Meas. Reading (dBm)	Det	Antenna_7dA_Factor(dB)	5GHz_HP_Path Loss(dB)	DC Corr (dB)	Corrected Reading (dBm)	Avg Limit (dBm)	Margin (dB)	Peak Limit (dBm)	Margin (dB)	UNII Non-Restricted (dBm)	Margin (dB)	Actuals (dBm)	Height (cm)	Polarity
6.59973	37.84	PK-U	35.4	-24.6	0	48.64	-	-	-	-	68.2	-19.56	327	105	H
6.59986	36.16	PK-U	35.4	-24.6	0	46.96	-	-	-	-	68.2	-19.24	240	352	V
* 7.70237	39.64	PK-U	35.9	-22.7	0	52.84	-	-	74	-21.16	-	-	207	106	H
* 7.69279	28.82	ADR	35.9	-22.9	.15	41.97	54	-12.03	-	-	-	-	207	106	H
* 7.69666	39.51	PK-U	35.9	-22.9	0	52.51	-	-	74	-21.49	-	-	169	100	V
* 7.69258	28.21	ADR	35.9	-22.9	.15	41.36	54	-12.64	-	-	-	-	169	100	V
* 11.0032	34.1	PK-U	38	-19.7	0	52.4	-	-	74	-21.6	-	-	0	100	H
* 11.00303	34.06	PK-U	38	-19.7	0	52.36	-	-	74	-21.64	-	-	0	100	V

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

PK-U - U-NII: Maximum Peak

ADR - U-NII AD primary method, RMS average

HARMONICS AND SPURIOUS EMISSIONS TEST DATA

Mode	Freq. [MHz]	Antenna	Frequency [GHz]	Reading [dBuV]	Detector Mode	ANT Factor [dB/m]	Loss [dB]	DC Corr [dB]	Result [dBuV/m]	AV Limit [dBuV/m]	AV Margin [dB]	PK Limit [dBuV/m]	PK Margin [dB]	Non-Restricted [dBuV/m]	Margin [dB]	Azimuth [Degs]	Height [cm]	Polarity
802.11a	5500	MIMO	6.600	37.84	PK-U	35.40	-24.60	0.00	48.64	-	-	-	-	68.20	-19.56	327	105	H
			6.600	38.16	PK-U	35.40	-24.60	0.00	48.96	-	-	-	-	68.20	-19.24	240	382	V
			* 7.70237	39.64	PK-U	35.90	-22.70	0.00	52.84	-	-	74.00	-21.16	-	-	207	106	H
			* 7.69279	28.82	ADR	35.90	-22.90	0.15	41.97	54.00	-12.03	-	-	-	-	207	106	H
			* 7.69666	39.51	PK-U	35.90	-22.90	0.00	52.51	-	-	74.00	-21.49	-	-	169	100	V
			* 7.69258	28.21	ADR	35.90	-22.90	0.15	41.36	54.00	-12.64	-	-	-	-	169	100	V
			* 11.0032	34.10	PK-U	38.00	-19.70	0.00	52.40	-	-	74.00	-21.60	-	-	0	100	H
			* 11.00303	34.06	PK-U	38.00	-19.70	0.00	52.36	-	-	74.00	-21.64	-	-	0	100	V
			7.111	35.31	PK-U	35.60	-22.40	0.00	48.51	-	-	-	-	68.20	-19.69	0	100	H
			7.109	35.33	PK-U	35.60	-22.40	0.00	48.53	-	-	-	-	68.20	-19.67	0	100	V
			7.806	39.16	PK-U	35.90	-22.90	0.00	52.16	-	-	-	-	68.20	-16.04	208	108	H
			7.809	38.12	PK-U	35.90	-23.00	0.00	51.02	-	-	-	-	68.20	-17.18	165	101	V
	5580	MIMO	* 11.16897	33.57	PK-U	38.00	-18.80	0.00	52.77	-	-	74.00	-21.23	-	-	0	100	H
			* 11.15457	33.61	PK-U	38.00	-18.70	0.00	52.91	-	-	74.00	-21.09	-	-	0	100	V
			6.840	46.27	PK-U	35.50	-30.60	0.00	51.17	-	-	-	-	68.20	-17.03	205	100	H
			6.840	46.25	PK-U	35.50	-30.60	0.00	51.15	-	-	-	-	68.20	-17.05	174	314	V
			7.976	43.68	PK-U	36.00	-29.20	0.00	50.48	-	-	-	-	68.20	-17.72	206	116	H
			7.976	43.38	PK-U	36.00	-29.20	0.00	50.18	-	-	-	-	68.20	-18.02	174	263	V
			* 8.12155	41.18	PK-U	36.60	-27.50	0.00	50.28	-	-	74.00	-23.72	-	-	0	100	H
			* 8.11695	41.00	PK-U	36.60	-27.60	0.00	50.00	-	-	74.00	-24.00	-	-	0	100	V
			6.864	45.70	PK-U	35.50	-30.60	0.00	50.60	-	-	-	-	68.20	-17.60	208	103	H
			6.864	45.16	PK-U	35.50	-30.60	0.00	50.06	-	-	-	-	68.20	-18.14	170	339	V
			* 11.43088	33.89	PK-U	38.10	-19.70	0.00	52.29	-	-	74.00	-21.71	-	-	0	100	H
			8.015	42.47	PK-U	36.10	-29.10	0.00	49.47	-	-	-	-	68.20	-17.71	204	100	H
	5700	MIMO	* 9.14747	40.31	PK-U	36.70	-27.30	0.00	49.71	-	-	74.00	-24.29	-	-	0	100	H
			* 9.15027	40.57	PK-U	36.70	-27.20	0.00	50.07	-	-	74.00	-23.93	-	-	0	100	V
			8.574	33.96	PK-U	36.00	-20.70	0.00	49.26	-	-	-	-	68.20	-18.94	0	100	H
			8.570	33.87	PK-U	36.00	-20.80	0.00	49.07	-	-	-	-	68.20	-19.13	0	100	V
			* 11.43413	34.02	PK-U	38.10	-19.60	0.00	52.52	-	-	74.00	-21.48	-	-	0	100	H
			17.150	33.05	PK-U	41.20	-16.80	0.00	57.45	-	-	-	-	68.20	-10.75	0	100	H
			17.150	33.46	PK-U	41.20	-16.80	0.00	57.86	-	-	-	-	68.20	-10.34	0	100	V
	5720	MIMO	8.574	33.96	PK-U	36.00	-20.70	0.00	49.26	-	-	-	-	68.20	-18.94	0	100	H
			8.570	33.87	PK-U	36.00	-20.80	0.00	49.07	-	-	-	-	68.20	-19.13	0	100	V
			* 11.43088	33.89	PK-U	38.10	-19.70	0.00	52.29	-	-	74.00	-21.71	-	-	0	100	H
			* 11.43413	34.02	PK-U	38.10	-19.60	0.00	52.52	-	-	74.00	-21.48	-	-	0	100	V
			17.150	33.05	PK-U	41.20	-16.80	0.00	57.45	-	-	-	-	68.20	-10.75	0	100	H
			17.150	33.46	PK-U	41.20	-16.80	0.00	57.86	-	-	-	-	68.20	-10.34	0	100	V
	802.11ax HE20 RU mode 26 Tone offset 0 Spot-check	MIMO	8.574	33.96	PK-U	36.00	-20.70	0.00	49.26	-	-	-	-	68.20	-18.94	0	100	H
			8.570	33.87	PK-U	36.00	-20.80	0.00	49.07	-	-	-	-	68.20	-19.13	0	100	V
			* 11.43088	33.89	PK-U	38.10	-19.70	0.00	52.29	-	-	74.00	-21.71	-	-	0	100	H
			* 11.43413	34.02	PK-U	38.10	-19.60	0.00	52.52	-	-	74.00	-21.48	-	-	0	100	V
			17.150	33.05	PK-U	41.20	-16.80	0.00	57.45	-	-	-	-	68.20	-10.75	0	100	H
			17.150	33.46	PK-U	41.20	-16.80	0.00	57.86	-	-	-	-	68.20	-10.34	0	100	V

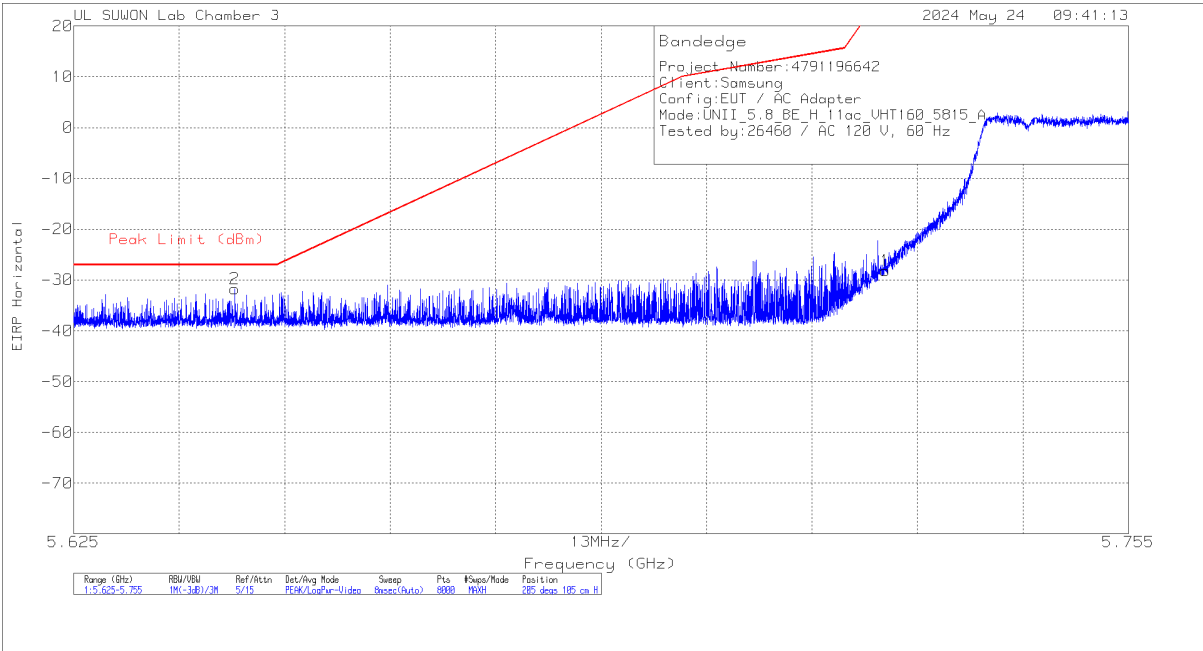
Note1. PK-U - U-NII: Maximum Peak / ADR - U-NII AD primary method, RMS average

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

11.4. TX ABOVE 1GHz 2Tx MODE IN THE 5.8 GHz BAND

BANDEDGE (WORST CASE: 802.11ac VHT160 / 5815 MHz Lower)

HORIZONTAL PEAK DATA



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	Antenna_957_F actor(dB)	10dB_Path Loss(dB)	Conversion Factor (dB)	DC Corr (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.725	-55.02	Pk	34.9	-19.8	11.8	0	-28.12	27	-55.12	205	105	H
2	5.64488	-58.47	Pk	34.9	-20	11.8	0	-31.77	-27	-4.77	205	105	H

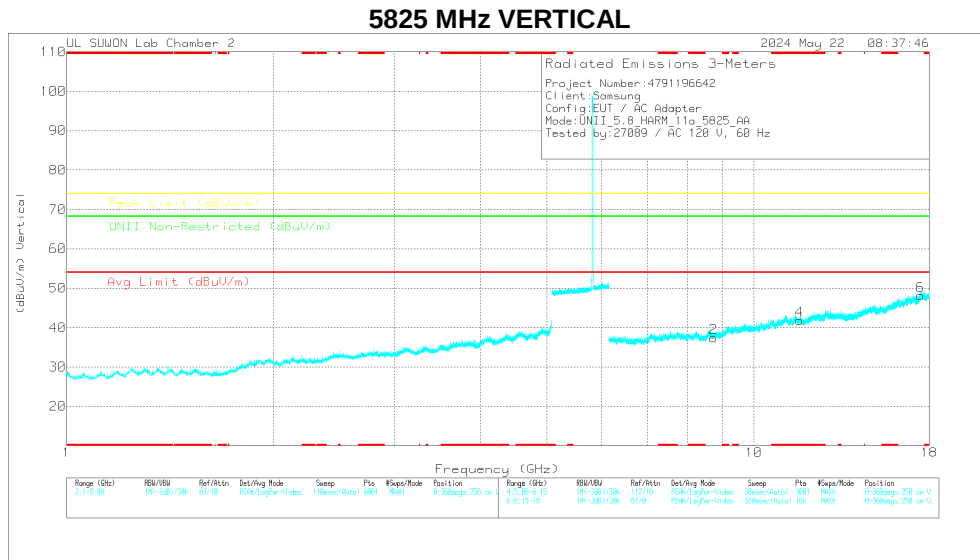
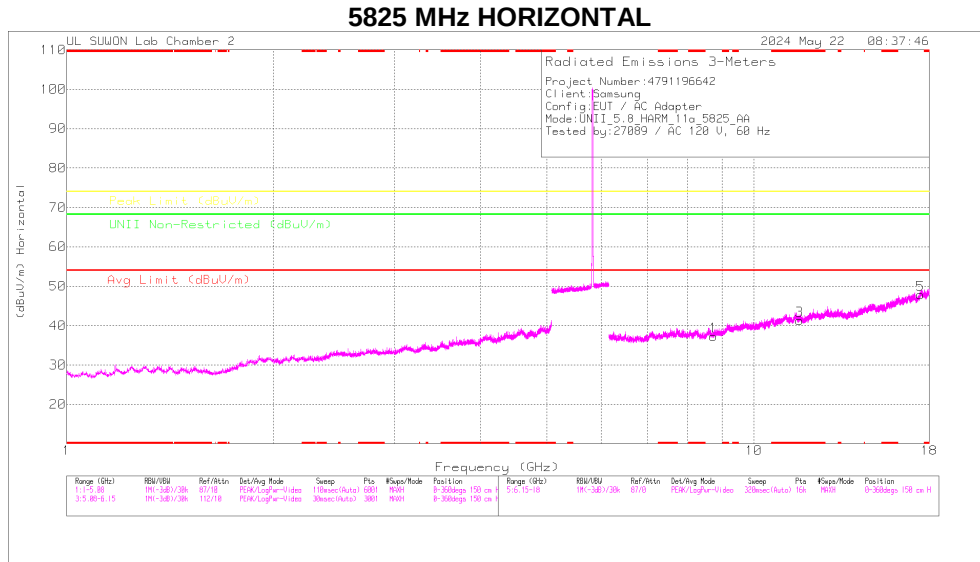
Pk - Peak detector

BANDEDGE TEST DATA

Mode	Freq. [MHz]	Antenna	Frequency [GHz]	Reading [dBm]	Detector Mode	ANT Factor [dB/m]	Loss [dB]	Conv. F [dB]	DC Corr [dB]	Result [dBm]	PK Limit [dBm]	PK Margin [dB]	Azimuth [Degs]	Height [cm]	Polarity
802.11a	5745	MIMO	5.72500	-53.07	Pk	34.90	-19.80	11.80	0.00	-26.17	27.00	-53.17	338	100	H
			5.63851	-63.57	Pk	34.90	-20.00	11.80	0.00	-36.87	-27.00	-9.87	338	100	H
			5.72500	-61.59	Pk	34.90	-19.80	11.80	0.00	-34.69	27.00	-61.69	266	107	V
			5.63816	-63.10	Pk	34.90	-20.00	11.80	0.00	-36.40	-27.00	-9.40	266	107	V
802.11n (HT20)	5745	MIMO	5.72500	-51.34	Pk	34.90	-19.80	11.80	0.00	-24.44	27.00	-51.44	340	118	H
			5.63027	-63.03	Pk	34.90	-20.00	11.80	0.00	-36.33	-27.00	-9.33	340	118	H
			5.72500	-55.73	Pk	34.90	-19.80	11.80	0.00	-28.83	27.00	-55.83	98	320	V
			5.63766	-63.54	Pk	34.90	-20.00	11.80	0.00	-36.84	-27.00	-9.84	98	320	V
802.11n (HT40)	5755	MIMO	5.72500	-57.62	Pk	34.90	-19.80	11.80	0.00	-30.72	27.00	-57.72	172	334	H
			5.64918	-62.38	Pk	34.90	-20.00	11.80	0.00	-35.88	-27.00	-8.88	172	334	H
			5.72500	-60.16	Pk	34.90	-19.80	11.80	0.00	-33.26	27.00	-60.26	212	237	V
			5.63160	-63.22	Pk	34.90	-20.00	11.80	0.00	-36.52	-27.00	-9.52	212	237	V
802.11ac (VHT80)	5775 (Lower Side)	MIMO	5.72500	-52.83	Pk	34.90	-19.80	11.80	0.00	-25.93	27.00	-52.93	338	110	H
			5.64814	-63.20	Pk	34.90	-20.00	11.80	0.00	-36.50	-27.00	-9.50	338	110	H
			5.72500	-54.80	Pk	34.90	-19.80	11.80	0.00	-27.90	27.00	-54.90	175	353	V
			5.63994	-63.40	Pk	34.90	-20.00	11.80	0.00	-36.70	-27.00	-9.70	175	353	V
802.11ac (VHT160)	5815 (Lower Side)	MIMO	5.72500	-55.02	Pk	34.90	-19.80	11.80	0.00	-28.12	27.00	-55.12	205	105	H
			5.64488	-58.47	Pk	34.90	-20.00	11.80	0.00	-31.77	-27.00	-4.77	205	105	H
			5.72500	-55.27	Pk	34.90	-19.80	11.80	0.00	-28.37	27.00	-55.37	169	278	V
			5.63823	-61.26	Pk	34.90	-20.00	11.80	0.00	-34.56	-27.00	-7.56	169	278	V
802.11ax (HE20)	5745	MIMO	5.72499	-60.04	Pk	34.60	-16.30	11.80	0.00	-29.94	26.97	-56.91	214	100	H
			5.64749	-66.49	Pk	34.50	-16.40	11.80	0.00	-36.59	-27.00	-9.59	214	100	H
			5.72499	-62.65	Pk	34.60	-16.30	11.80	0.00	-32.55	26.97	-59.52	191	311	V
			5.63035	-67.36	Pk	34.50	-16.50	11.80	0.00	-37.56	-27.00	-10.56	191	311	V
802.11ax (HE40)	5755	MIMO	5.72499	-64.72	Pk	34.60	-16.30	11.80	0.00	-34.62	26.97	-61.59	215	104	H
			5.64512	-66.04	Pk	34.50	-16.40	11.80	0.00	-36.14	-27.00	-9.14	215	104	H
			5.72499	-63.75	Pk	34.60	-16.30	11.80	0.00	-33.65	26.97	-60.62	189	313	V
			5.64221	-66.31	Pk	34.50	-16.40	11.80	0.00	-36.41	-27.00	-9.41	189	313	V
802.11ax (HE80)	5775 (Lower Side)	MIMO	5.72499	-54.18	Pk	34.60	-16.30	11.80	0.00	-24.08	26.97	-51.05	207	131	H
			5.63829	-65.59	Pk	34.50	-16.40	11.80	0.00	-35.69	-27.00	-8.69	207	131	H
			5.72499	-57.83	Pk	34.60	-16.30	11.80	0.00	-27.73	26.97	-54.70	189	312	V
			5.64600	-66.21	Pk	34.50	-16.40	11.80	0.00	-36.31	-27.00	-9.31	189	312	V
802.11ax (HE160)	5815 Lower	MIMO	5.72499	-58.91	Pk	34.60	-16.30	11.80	0.00	-28.81	26.97	-55.78	217	106	H
			5.64536	-61.80	Pk	34.50	-16.40	11.80	0.00	-31.90	-27.00	-4.90	217	106	H
			5.72499	-60.31	Pk	34.60	-16.30	11.80	0.00	-30.21	26.97	-57.18	190	331	V
			5.64577	-64.72	Pk	34.50	-16.40	11.80	0.00	-34.82	-27.00	-7.82	190	331	V

Note. Pk - Peak detector

HARMONICS AND SPURIOUS EMISSIONS(WORST CASE: 802.11a / 5825 MHz)



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

5825 MHz DATA

Radiated Emissions

Frequency (GHz)	Mean Reading (dBuV)	Det	Antenna_724_Factor(dB)	6GHz_HP_Path Loss(dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Asmth (dB)	Height (cm)	Polarity
8.73142	35.4	PK-U	36.1	-22.4	0	49.1	-	-	-	-	68.2	-19.1	0	100	H
8.73375	34.64	PK-U	36.1	-22.4	0	48.54	-	-	-	-	68.2	-19.66	0	100	V
* 11.64725	33.43	PK-U	38.3	-19.5	0	52.43	-	-	74	-21.57	-	-	0	100	H
* 11.64924	33.58	PK-U	38.3	-19.5	0	52.58	-	-	74	-21.42	-	-	0	100	V
17.48023	33.65	PK-U	41.5	-16.3	0	58.85	-	-	-	-	68.2	-9.35	0	100	H
17.4675	33.86	PK-U	41.5	-16.4	0	58.96	-	-	-	-	68.2	-9.24	0	100	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PK-U - U-NII: Maximum Peak

HARMONICS AND SPURIOUS EMISSIONS TEST DATA

Mode	Freq. [MHz]	Antenna	Frequency [GHz]	Reading [dBuV]	Detector Mode	ANT Factor [dB/m]	Loss [dB]	DC Corr [dB]	Result [dBuV/m]	AV Limit [dBuV/m]	AV Margin [dB]	PK Limit [dBuV/m]	PK Margin [dB]	Non-Restricted [dBuV/m]	Margin [dB]	Azimuth [Degs]	Height [cm]	Polarity
802.11a	5745	MIMO	8.610	33.63	PK-U	36.00	-20.50	0.00	49.13	-	-	-	-	68.20	-19.07	0	100	H
			8.625	33.85	PK-U	36.00	-20.80	0.00	49.05	-	-	-	-	68.20	-19.15	0	100	V
			*11.48665	34.49	PK-U	38.20	-19.10	0.00	53.59	-	-	74.00	-20.41	-	-	0	100	H
			*11.48367	33.92	PK-U	38.20	-19.10	0.00	53.02	-	-	74.00	-20.98	-	-	0	100	V
			17.245	33.69	PK-U	41.20	-17.20	0.00	57.69	-	-	-	-	68.20	-10.51	0	100	H
			17.242	33.85	PK-U	41.20	-17.30	0.00	57.75	-	-	-	-	68.20	-10.45	0	100	V
			8.680	35.41	PK-U	36.10	-21.80	0.00	49.71	-	-	-	-	68.20	-18.49	0	100	H
			8.674	34.55	PK-U	36.10	-21.70	0.00	48.95	-	-	-	-	68.20	-19.25	0	100	V
	5785	MIMO	*11.57163	33.54	PK-U	38.20	-19.30	0.00	52.44	-	-	74.00	-21.56	-	-	0	100	H
			*11.56863	33.41	PK-U	38.20	-19.30	0.00	52.31	-	-	74.00	-21.69	-	-	0	100	V
			17.346	33.89	PK-U	41.30	-17.10	0.00	58.09	-	-	-	-	68.20	-10.11	0	100	H
			17.347	33.22	PK-U	41.30	-17.10	0.00	57.42	-	-	-	-	68.20	-10.78	0	100	V
			8.731	35.40	PK-U	36.10	-22.40	0.00	49.10	-	-	-	-	68.20	-19.10	0	100	H
			8.734	34.84	PK-U	36.10	-22.40	0.00	48.54	-	-	-	-	68.20	-19.66	0	100	V
			*11.64725	33.43	PK-U	38.30	-19.30	0.00	52.43	-	-	74.00	-21.57	-	-	0	100	H
			*11.64924	33.58	PK-U	38.30	-19.30	0.00	52.58	-	-	74.00	-21.42	-	-	0	100	V
	5825	MIMO	17.480	33.65	PK-U	41.50	-16.30	0.00	58.85	-	-	-	-	68.20	-9.35	0	100	H
			17.468	33.86	PK-U	41.50	-16.40	0.00	58.96	-	-	-	-	68.20	-9.24	0	100	V
			8.608	33.33	PK-U	36.00	-20.60	0.00	48.73	-	-	-	-	68.20	-19.47	0	100	H
			8.616	33.57	PK-U	36.00	-20.60	0.00	48.97	-	-	-	-	68.20	-19.23	0	100	V
			*11.49265	33.36	PK-U	38.20	-19.00	0.00	52.56	-	-	74.00	-21.44	-	-	0	100	H
			*11.48503	33.51	PK-U	38.20	-19.10	0.00	52.61	-	-	74.00	-21.39	-	-	0	100	V
			17.242	33.43	PK-U	41.20	-17.30	0.00	57.33	-	-	-	-	68.20	-10.87	0	100	H
			17.226	34.69	PK-U	41.20	-17.30	0.00	58.59	-	-	-	-	68.20	-9.61	0	100	V
802.11ax HE20 RU mode 26 Tone offset 8 Spot-check	5745	MIMO	8.608	33.33	PK-U	36.00	-20.60	0.00	48.73	-	-	-	-	68.20	-19.47	0	100	H
			8.616	33.57	PK-U	36.00	-20.60	0.00	48.97	-	-	-	-	68.20	-19.23	0	100	V
			*11.49265	33.36	PK-U	38.20	-19.00	0.00	52.56	-	-	74.00	-21.44	-	-	0	100	H
			*11.48503	33.51	PK-U	38.20	-19.10	0.00	52.61	-	-	74.00	-21.39	-	-	0	100	V
			17.242	33.43	PK-U	41.20	-17.30	0.00	57.33	-	-	-	-	68.20	-10.87	0	100	H
			17.226	34.69	PK-U	41.20	-17.30	0.00	58.59	-	-	-	-	68.20	-9.61	0	100	V

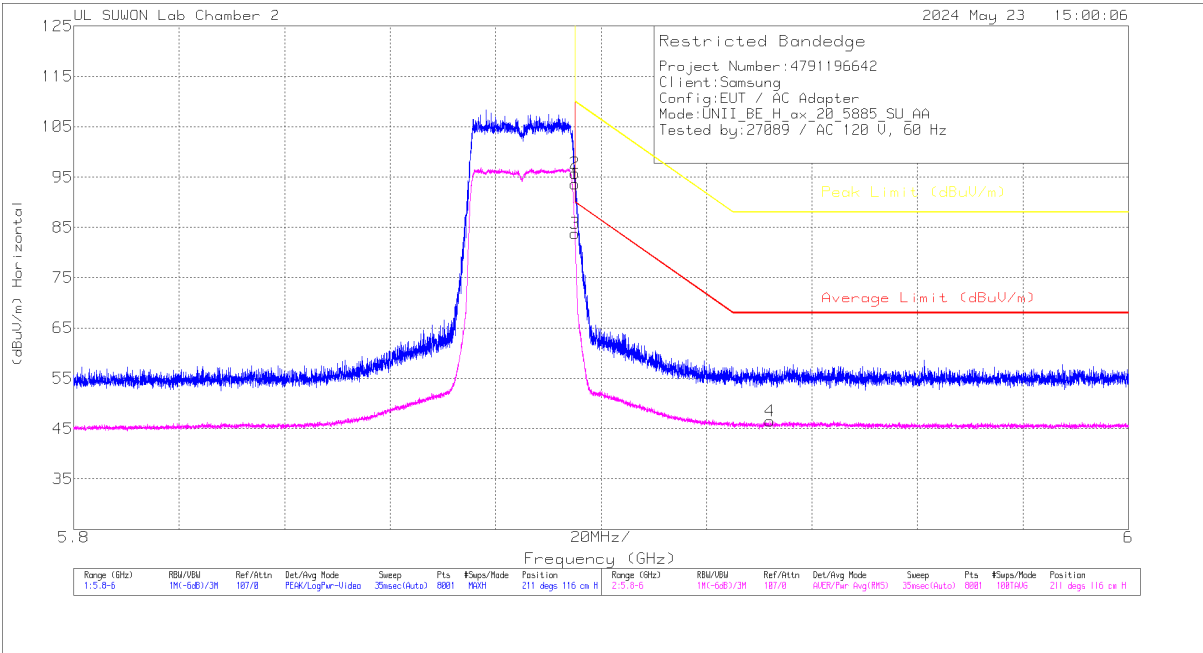
Note1. PK-U - U-NII: Maximum Peak / ADR - U-NII AD primary method, RMS average

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

11.5. TX ABOVE 1GHz 2Tx MODE IN THE 5.9 GHz BAND

BANDEDGE (WORST CASE: 802.11ax HE20 / 5885 MHz)

HORIZONTAL PEAK DATA



Trace Markers

Marker	Frequency (GHz)	Marker Reading (dBuV)	Det	Antenna_724_Factor(dB)	10dB_Path Loss(dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Altitude (dops)	Height (m)	Polarity
1	5.89503	74.94	PK	34.8	-16.1	0	93.64	-	-	109.98	-16.34	211	116	H
2	5.8951	75.99	PK	34.8	-16.1	0	95.69	-	-	109.95	-14.24	211	116	H
3	5.89503	65.12	RMS	34.8	-16.1	0	83.82	89.98	-6.16	-	-	211	116	H
4	5.93203	27.69	RMS	34.8	-16.1	0	46.49	68	-21.51	-	-	211	116	H

Pk - Peak detector
RMS - RMS detection

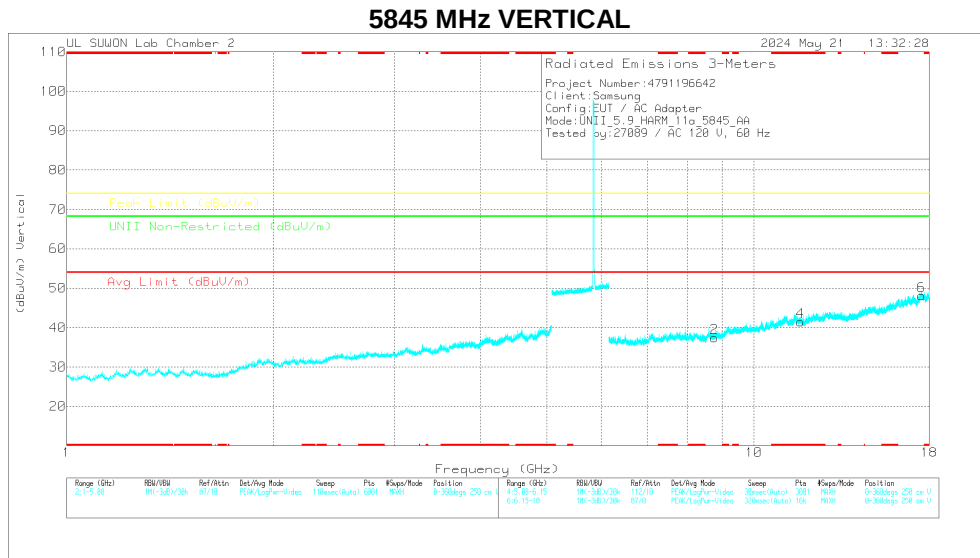
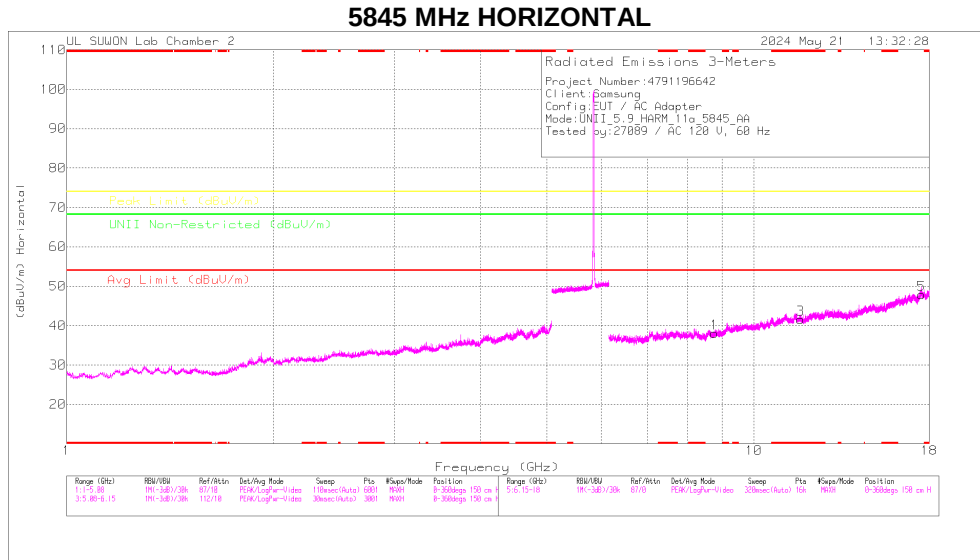
BANDEDGE TEST DATA

Mode	Freq. [MHz]	Antenna	Frequency [GHz]	Reading [dBuV]	Detector Mode	ANT Factor [dB/m]	Loss [dB]	DC Corr [dB]	Result [dBuV/m]	AV Limit [dBuV/m]	AV Margin [dB]	PK Limit [dBuV/m]	PK Margin [dB]	Azimuth [Degs]	Height [cm]	Polarity
802.11a	5885	MIMO	5.895	68.95	Pk	35.40	-19.40	0.00	84.95	-	-	109.99	-25.04	338	112	H
			5.895	69.91	Pk	35.40	-19.40	0.00	85.91	-	-	109.99	-23.88	338	112	H
			5.895	54.92	RMS	35.40	-19.40	0.15	71.07	89.99	-18.92	-	-	338	112	H
			5.895	54.60	RMS	35.40	-19.40	0.15	70.75	89.81	-19.06	-	-	338	112	H
			5.895	65.53	Pk	35.40	-19.40	0.00	81.53	-	-	109.99	-28.46	243	388	V
			5.895	65.85	Pk	35.40	-19.40	0.00	81.85	-	-	109.86	-28.01	243	388	V
			5.895	50.68	RMS	35.40	-19.40	0.15	66.83	89.99	-23.16	-	-	243	388	V
			5.895	51.09	RMS	35.40	-19.40	0.15	67.24	89.94	-22.70	-	-	243	388	V
			5.895	74.85	Pk	35.40	-19.40	0.00	90.85	-	-	109.99	-19.14	302	103	H
			5.895	75.97	Pk	35.40	-19.40	0.00	91.97	-	-	109.97	-18.00	302	103	H
802.11n (HT20)	5885	MIMO	5.895	59.07	RMS	35.40	-19.40	0.00	75.07	89.99	-14.92	-	-	302	103	H
			5.895	58.81	RMS	35.40	-19.40	0.00	74.81	89.92	-15.11	-	-	302	103	H
			5.895	72.97	Pk	35.40	-19.40	0.00	88.97	-	-	109.99	-21.02	186	304	V
			5.895	72.97	Pk	35.40	-19.40	0.00	88.97	-	-	109.95	-20.98	186	304	V
			5.895	56.00	RMS	35.40	-19.40	0.00	72.00	89.99	-17.99	-	-	186	304	V
			5.895	57.54	RMS	35.40	-19.40	0.00	73.54	89.97	-16.43	-	-	186	304	V
			5.895	62.03	Pk	35.40	-19.40	0.00	78.03	-	-	109.99	-31.96	310	106	H
			5.925	49.62	Pk	35.50	-19.40	0.00	65.72	-	-	88.00	-22.28	310	106	H
			5.895	46.22	RMS	35.40	-19.40	0.00	62.22	89.99	-27.77	-	-	310	106	H
			5.924	36.61	RMS	35.50	-19.40	0.00	52.71	68.69	-15.98	-	-	310	106	H
802.11n (HT40)	5875	MIMO	5.895	59.17	Pk	35.40	-19.40	0.00	75.17	-	-	109.99	-34.82	104	350	V
			5.920	49.77	Pk	35.50	-19.40	0.00	65.87	-	-	91.80	-25.93	104	350	V
			5.895	43.21	RMS	35.40	-19.40	0.00	59.21	89.99	-30.78	-	-	104	350	V
			5.922	35.11	RMS	35.50	-19.30	0.00	51.31	70.24	-18.93	-	-	104	350	V
			5.895	68.11	Pk	35.40	-19.40	0.00	84.11	-	-	109.99	-25.88	294	100	H
			5.895	69.71	Pk	35.40	-19.40	0.00	85.71	-	-	109.79	-24.08	294	100	H
			5.895	54.11	RMS	35.40	-19.40	0.25	70.36	89.99	-19.63	-	-	294	100	H
			5.925	32.96	RMS	35.50	-19.40	0.25	49.31	68.14	-18.83	-	-	294	100	H
			5.895	65.32	Pk	35.40	-19.40	0.00	81.32	-	-	109.99	-28.67	172	313	V
			5.895	66.40	Pk	35.40	-19.40	0.00	82.40	-	-	109.95	-27.55	172	313	V
802.11ac (VHT80)	5855	MIMO	5.895	48.00	RMS	35.40	-19.40	0.25	64.25	89.99	-25.74	-	-	172	313	V
			5.926	30.15	RMS	35.50	-19.40	0.25	46.50	68.00	-21.50	-	-	172	313	V
			5.895	63.52	Pk	35.40	-19.40	0.00	79.52	-	-	109.99	-30.47	302	112	H
			5.924	46.64	Pk	35.50	-19.40	0.00	62.74	-	-	88.85	-26.11	302	112	H
			5.895	44.99	RMS	35.40	-19.40	0.24	61.23	89.99	-28.76	-	-	302	112	H
			5.937	31.20	RMS	35.50	-19.40	0.24	47.54	68.00	-20.46	-	-	302	112	H
			5.895	60.23	Pk	35.40	-19.40	0.00	76.23	-	-	109.99	-33.76	196	276	V
			5.924	44.01	Pk	35.50	-19.40	0.00	60.11	-	-	88.58	-28.47	196	276	V
			5.895	44.18	RMS	35.40	-19.40	0.24	60.42	89.99	-29.57	-	-	196	276	V
			5.926	28.73	RMS	35.50	-19.40	0.24	45.07	68.00	-22.93	-	-	196	276	V
802.11ax (HE20)	5885	MIMO	5.895	74.94	Pk	34.80	-16.10	0.00	93.64	-	-	109.98	-16.34	211	116	H
			5.895	76.99	Pk	34.80	-16.10	0.00	95.69	-	-	109.93	-14.24	211	116	H
			5.895	65.12	RMS	34.80	-16.10	0.00	83.82	89.98	-6.16	-	-	211	116	H
			5.932	27.69	RMS	34.90	-16.10	0.00	46.49	68.00	-21.51	-	-	211	116	H
			5.895	67.47	Pk	34.80	-16.10	0.00	86.17	-	-	109.98	-23.81	43	100	V
			5.895	68.98	Pk	34.80	-16.10	0.00	87.68	-	-	109.96	-22.28	43	100	V
			5.895	58.00	RMS	34.80	-16.10	0.00	76.70	89.98	-13.28	-	-	43	100	V
			5.973	27.15	RMS	35.00	-16.00	0.00	46.15	68.00	-21.85	-	-	43	100	V
			5.895	66.71	Pk	34.80	-16.10	0.00	85.41	-	-	109.98	-24.57	210	114	H
			5.895	69.31	Pk	34.80	-16.10	0.00	88.01	-	-	109.95	-21.94	210	114	H
802.11ax (HE40)	5875	MIMO	5.895	48.77	RMS	34.80	-16.10	0.00	67.47	89.98	-22.51	-	-	210	114	H
			5.926	28.54	RMS	34.90	-16.10	0.00	47.34	68.00	-20.66	-	-	210	114	H
			5.895	65.93	Pk	34.80	-16.10	0.00	84.63	-	-	109.98	-25.36	191	298	V
			5.895	66.22	Pk	34.80	-16.10	0.00	86.92	-	-	109.91	-22.99	191	298	V
			5.895	46.88	RMS	34.80	-16.10	0.00	65.58	89.98	-24.40	-	-	191	298	V
			5.925	28.05	RMS	34.90	-16.10	0.00	46.85	68.00	-21.15	-	-	191	298	V
			5.895	67.30	Pk	34.80	-16.10	0.00	86.00	-	-	109.98	-23.98	209	114	H
			5.895	68.68	Pk	34.80	-16.10	0.00	87.38	-	-	109.89	-22.51	209	114	H
			5.895	47.08	RMS	34.80	-16.10	0.00	65.78	89.98	-24.20	-	-	209	114	H
			5.933	29.61	RMS	34.90	-16.10	0.00	48.41	68.00	-19.59	-	-	209	114	H
802.11ax (HE80)	5855	MIMO	5.895	62.02	Pk	34.80	-16.10	0.00	80.72	-	-	109.98	-29.26	45	100	V
			5.944	40.16	Pk	34.90	-16.00	0.00	59.06	-	-	88.00	-28.94	45	100	V
			5.895	40.29	RMS	34.80	-16.10	0.00	58.99	89.98	-30.99	-	-	45	100	V
			5.926	27.72	RMS	34.90	-16.10	0.00	46.52	68.00	-21.48	-	-	45	100	V
			5.895	63.39	Pk	34.80	-16.10	0.00	82.09	-	-	109.98	-27.89	209	116	H
			5.924	44.95	Pk	34.90	-16.10	0.00	63.75	-	-	89.05	-25.30	209	116	H
			5.895	43.83	RMS	34.80	-16.10	0.00	62.53	89.98	-27.45	-	-	209	116	H
			5.970	27.93	RMS	35.00	-16.10	0.00	46.83	68.00	-21.17	-	-	209	116	H
			5.895	53.62	Pk	34.80	-16.10	0.00	72.32	-	-	109.98	-37.66	44	100	V
			5.994	39.19	Pk	35.00	-16.10	0.00	58.09	-	-	88.00	-29.91	44	100	V
802.11ax (HE160)	5815 Upper	MIMO	5.895	36.31	RMS	34.80	-16.10	0.00	55.01	89.98	-34.97	-	-	44	100	V
			5.999	27.28	RMS	35.00	-16.00	0.00	46.28	68.00	-21.72	-	-	44	100	V

Note1. PK: Maximum Peak / ADR - U-NII AD primary method, RMS average

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

HARMONICS AND SPURIOUS EMISSIONS(WORST CASE: 802.11a / 5845 MHz)



Note: Emission was scanned up to 40GHz; No emissions were detected above the noise floor which was at least 20dB below the specification limit.

5845 MHz DATA

Radiated Emissions

Frequency (GHz)	Meas Reading (dBuV)	Det	Antenna_724_Factor(dB)	6GHz_HP_Path Loss(dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	Avg Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Margin (dB)	UNII Non-Restricted (dBuV/m)	Margin (dB)	Asym (dB)	Height (cm)	Polarity
8.76395	34.86	PK-U	36.2	-22.2	0	48.86	-	-	-	-	68.2	-19.34	0	100	H
8.77302	34.56	PK-U	36.2	-22	0	48.76	-	-	-	-	68.2	-19.44	0	100	V
*11.68769	33.35	PK-U	38.3	-19.1	0	52.55	-	-	74	-21.45	-	-	0	100	H
*11.6953	33.62	PK-U	38.4	-19.1	0	52.92	-	-	74	-21.08	-	-	0	100	V
17.54099	33.89	PK-U	41.6	-15.8	0	59.69	-	-	-	-	68.2	-8.51	0	100	H
17.54349	33.67	PK-U	41.6	-15.8	0	59.47	-	-	-	-	68.2	-8.73	0	100	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PK-U - U-NII: Maximum Peak

HARMONICS AND SPURIOUS EMISSIONS TEST DATA

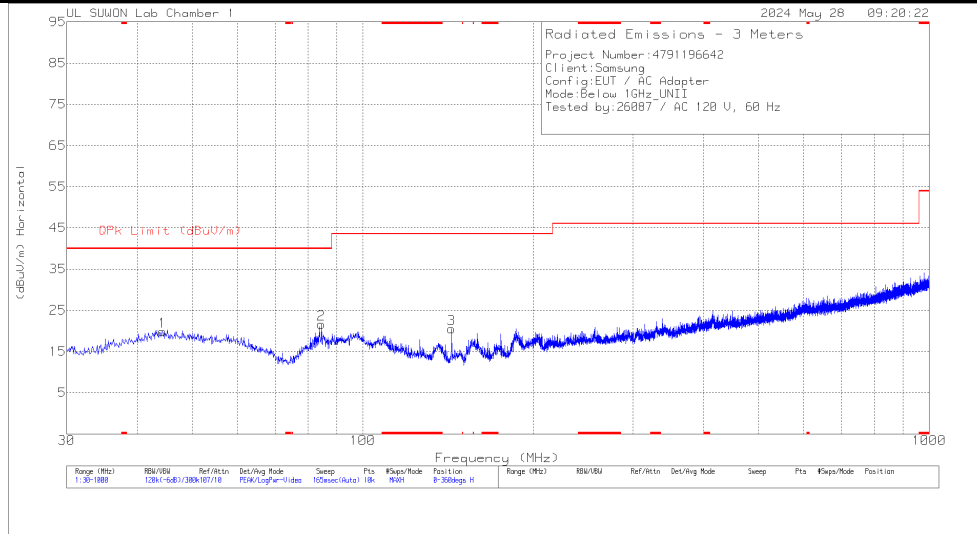
Mode	Freq. [MHz]	Antenna	Frequency [GHz]	Reading [dBuV]	Detector Mode	ANT Factor [dB/m]	Loss [dB]	DC Corr [dB]	Result [dBuV/m]	AV Limit [dBuV/m]	AV Margin [dB]	PK Limit [dBuV/m]	PK Margin [dB]	Non-Restricted [dBuV/m]	Margin [dB]	Azimuth [Degs]	Height [cm]	Polarity
802.11a	5845	MIMO	8.764	34.86	PK-U	36.20	-22.20	0.00	48.86	-	-	-	-	68.20	-19.34	0	100	H
			8.773	34.56	PK-U	36.20	-22.00	0.00	48.76	-	-	-	-	68.20	-19.44	0	100	V
			*11.68769	33.35	PK-U	38.30	-19.10	0.00	52.55	-	-	74.00	-21.45	-	-	0	100	H
			*11.6953	33.62	PK-U	38.40	-19.10	0.00	52.92	-	-	74.00	-21.08	-	-	0	100	V
			17.541	33.89	PK-U	41.60	-15.80	0.00	59.69	-	-	-	-	68.20	-8.51	0	100	H
			17.543	33.67	PK-U	41.60	-15.80	0.00	59.47	-	-	-	-	68.20	-8.73	0	100	V
			8.788	35.12	PK-U	36.20	-21.90	0.00	49.42	-	-	-	-	68.20	-18.78	0	100	H
			8.793	34.31	PK-U	36.20	-21.80	0.00	48.71	-	-	-	-	68.20	-19.49	0	100	V
	5865	MIMO	*11.73336	33.93	PK-U	38.40	-19.40	0.00	52.93	-	-	74.00	-21.07	-	-	0	100	H
			*11.73268	33.78	PK-U	38.40	-19.40	0.00	52.78	-	-	74.00	-21.22	-	-	0	100	V
			17.589	33.81	PK-U	41.60	-16.50	0.00	58.91	-	-	-	-	68.20	-9.29	0	100	H
			17.596	33.89	PK-U	41.60	-16.50	0.00	58.99	-	-	-	-	68.20	-9.21	0	100	V
			8.836	34.53	PK-U	36.20	-21.40	0.00	49.33	-	-	-	-	68.20	-18.87	0	100	H
			8.837	34.35	PK-U	36.20	-21.40	0.00	49.15	-	-	-	-	68.20	-19.05	0	100	V
			*11.76757	34.21	PK-U	38.40	-19.70	0.00	52.91	-	-	74.00	-21.09	-	-	0	100	H
			*11.77838	33.27	PK-U	38.40	-19.60	0.00	52.07	-	-	74.00	-21.93	-	-	0	100	V
	5885	MIMO	17.653	34.07	PK-U	41.70	-16.60	0.00	59.17	-	-	-	-	68.20	-9.03	0	100	H
			17.653	33.80	PK-U	41.70	-16.60	0.00	58.90	-	-	-	-	68.20	-9.30	0	100	V
			8.826	41.52	PK-U	36.40	-28.20	0.00	49.72	-	-	-	-	68.20	-18.48	0	100	H
			8.826	40.43	PK-U	36.40	-28.20	0.00	48.63	-	-	-	-	68.20	-19.57	0	100	V
			*11.76897	38.28	PK-U	38.70	-24.60	0.00	52.38	-	-	74.00	-21.62	-	-	0	100	H
			*11.76906	37.99	PK-U	38.70	-24.60	0.00	52.09	-	-	74.00	-21.91	-	-	0	100	V
			17.654	37.21	PK-U	41.30	-21.40	0.00	57.11	-	-	-	-	68.20	-11.09	0	100	H
			17.654	37.48	PK-U	41.30	-21.40	0.00	57.38	-	-	-	-	68.20	-10.82	0	100	V
802.11ax HE20 RU mode 26 Tone offset 8 Spot-check	5885	MIMO	8.826	41.52	PK-U	36.40	-28.20	0.00	49.72	-	-	-	-	68.20	-18.48	0	100	H
			8.826	40.43	PK-U	36.40	-28.20	0.00	48.63	-	-	-	-	68.20	-19.57	0	100	V
			*11.76897	38.28	PK-U	38.70	-24.60	0.00	52.38	-	-	74.00	-21.62	-	-	0	100	H
			*11.76906	37.99	PK-U	38.70	-24.60	0.00	52.09	-	-	74.00	-21.91	-	-	0	100	V
			17.654	37.21	PK-U	41.30	-21.40	0.00	57.11	-	-	-	-	68.20	-11.09	0	100	H
			17.654	37.48	PK-U	41.30	-21.40	0.00	57.38	-	-	-	-	68.20	-10.82	0	100	V

Note1. PK-U - U-NII: Maximum Peak / ADR - U-NII AD primary method, RMS average

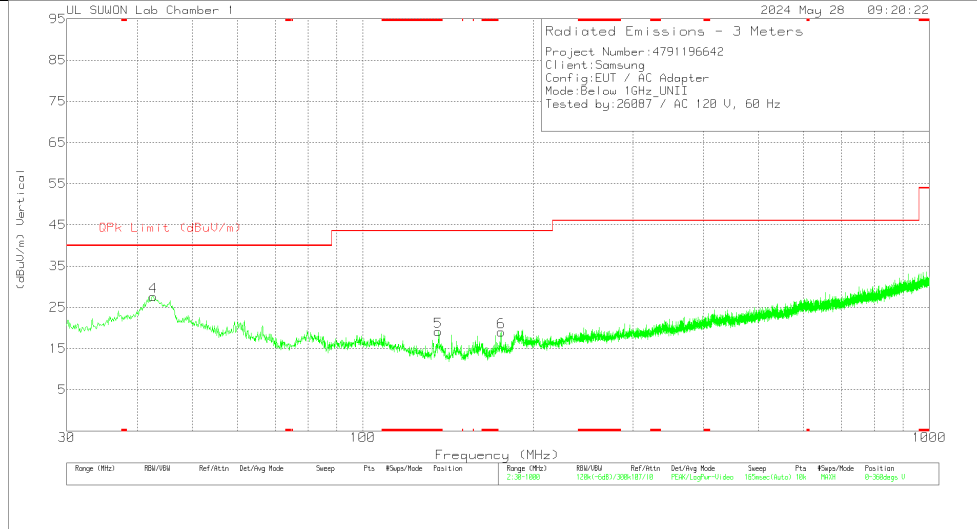
Note2. * - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

12. WORST-CASE BELOW 1 GHz

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



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



Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	VULB9163_750	Below_1G(dB)	DC Corr (dB)	Corrected Reading (dBuV/m)	OPR Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	44.259	31.37	Pk	19.4	-30.9	0	19.87	40	-20.13	0-360	100	H
2	84.514	38.01	Pk	14	-30.4	0	21.61	40	-18.39	0-360	200	H
3	143.393	36.55	Pk	13.6	-29.7	0	20.45	43.52	-23.07	0-360	100	H
4	42.61	39.54	Pk	19.1	-31	0	27.64	40	-12.36	0-360	100	V
5	* 135.924	35.04	Pk	13.9	-29.8	0	19.14	43.52	-24.38	0-360	100	V
6	175.403	33.86	Pk	14.7	-29.5	0	19.06	43.52	-24.46	0-360	100	V

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

Pk - Peak detector

13. AC POWER LINE CONDUCTED EMISSIONS

LIMITS

FCC §15.207 (a)
IC RSS-GEN Clause 8.8

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

⁺ Decreases with the logarithm of the frequency.

TEST PROCEDURE

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

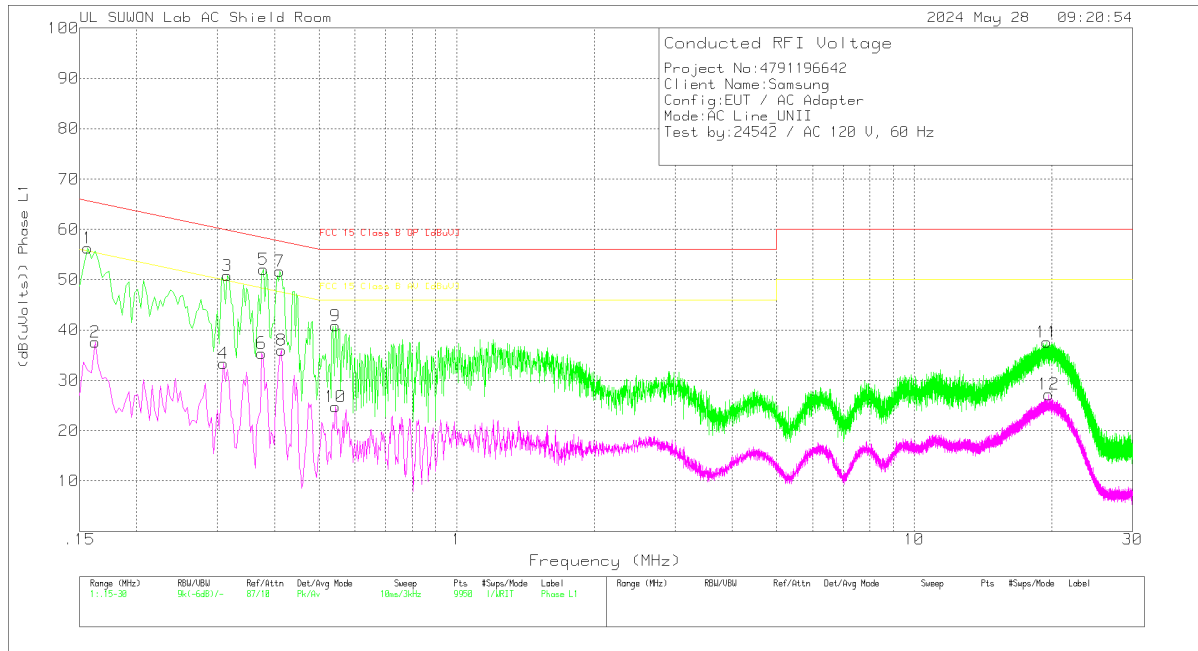
The receiver is set to a resolution bandwidth of 9 kHz. Peak detection is used unless otherwise noted as quasi-peak or average.

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

RESULTS

WORST EMISSIONS

LINE 1 DATA



Trace Markers

Range 1: Phase L1 .15 - 30MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	101836_Wit h EX_L1 [dB]	Cable Loss [dB]	Corrected Reading (dB(uVolts))	FCC 15 Class B QP [dBuV]	Margin (dB)	FCC 15 Class B AV [dBuV]	Margin (dB)
1	.156	46.42	Pk	9.8	.1	56.32	65.67	-9.35	-	-
2	.162	27.59	Av	9.9	.1	37.59	-	-	55.36	-17.77
3	.315	40.97	Pk	9.7	.1	50.77	59.84	-9.07	-	-
4	.309	23.6	Av	9.7	.1	33.4	-	-	50	-16.6
5	.378	42.1	Pk	9.8	.1	52	58.32	-6.32	-	-
6	.375	25.51	Av	9.8	.1	35.41	-	-	48.39	-12.98
7	.411	41.82	Pk	9.8	.1	51.72	57.63	-5.91	-	-
8	.414	26.11	Av	9.8	.1	36.01	-	-	47.57	-11.56
9	.543	30.86	Pk	9.9	.1	40.86	56	-15.14	-	-
10	.543	14.72	Av	9.9	.1	24.72	-	-	46	-21.28
11	19.464	27.09	Pk	10.2	.3	37.59	60	-22.41	-	-
12	19.656	16.69	Av	10.2	.3	27.19	-	-	50	-22.81

Pk - Peak detector

Av - Average detection

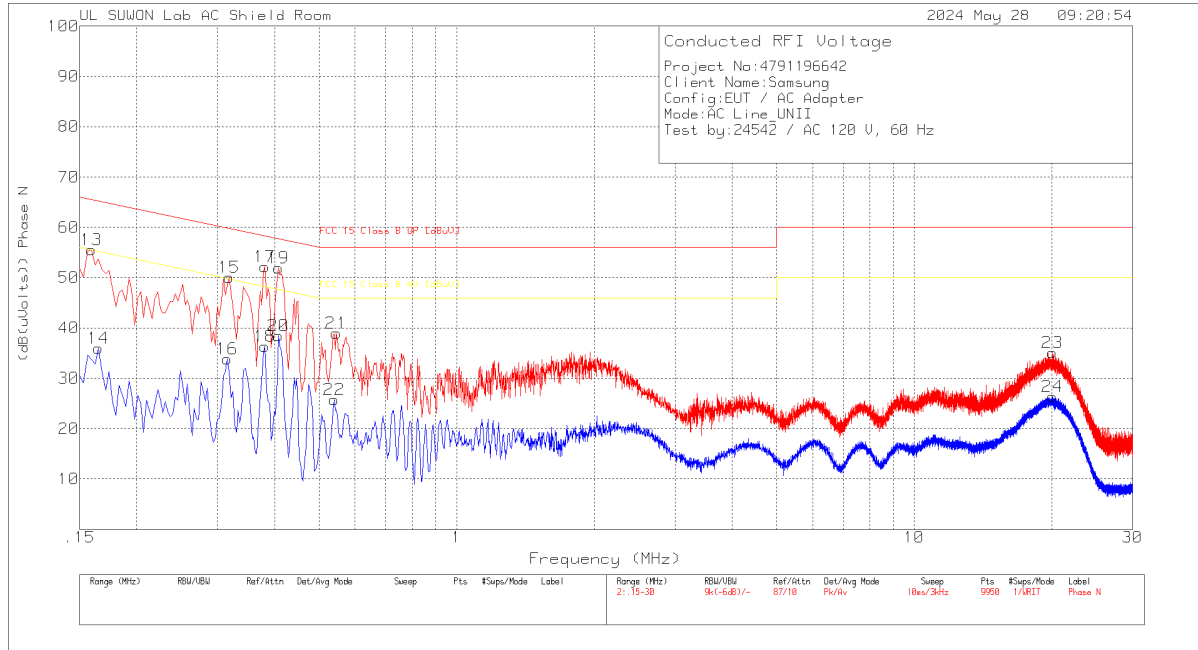
Quasi-Peak Emissions

Range 1: Phase L1 .15 - 30MHz

Frequency (MHz)	Meter Reading (dBuV)	Det	101836_Wit h EX_L1 [dB]	Cable Loss [dB]	Corrected Reading (dB(uVolts))	FCC 15 Class B QP [dBuV]	Margin (dB)	FCC 15 Class B AV [dBuV]	Margin (dB)
.15675	42.1	Qp	9.8	.1	52	65.63	-13.63	-	-
.31575	37.02	Qp	9.7	.1	46.82	59.82	-13	-	-
.37875	38.28	Qp	9.8	.1	48.18	58.31	-10.13	-	-
.41175	39.58	Qp	9.8	.1	49.48	57.61	-8.13	-	-

Qp - Quasi-Peak detector

LINE 2 DATA



Trace Markers

Range 2: Phase N .15 - 30MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	101836_Wit h EX_N [dB]	Cable Loss [dB]	Corrected Reading (dB(uVolts))	FCC 15 Class B QP [dBuV]	Margin (dB)	FCC 15 Class B AV [dBuV]	Margin (dB)
13	.159	45.64	Pk	9.8	.1	55.54	65.52	-9.98	-	-
14	.165	26	Av	9.9	.1	36	-	-	55.21	-19.21
15	.318	40.23	Pk	9.7	.1	50.03	59.76	-9.73	-	-
16	.315	24.02	Av	9.7	.1	33.82	-	-	49.84	-16.02
17	.381	42.28	Pk	9.8	.1	52.18	58.26	-6.08	-	-
18	.381	26.41	Av	9.8	.1	36.31	-	-	48.26	-11.95
19	.408	42.06	Pk	9.8	.1	51.96	57.69	-5.73	-	-
20	.408	28.51	Av	9.8	.1	38.41	-	-	47.69	-9.28
21	.546	28.93	Pk	9.9	.1	38.93	56	-17.07	-	-
22	.54	15.8	Av	9.9	.1	25.8	-	-	46	-20.2
23	20.076	24.49	Pk	10.3	.3	35.09	60	-24.91	-	-
24	20.04	15.81	Av	10.3	.3	26.41	-	-	50	-23.59

Pk - Peak detector

Av - Average detection

Quasi-Peak Emissions

Range 2: Phase N .15 - 30MHz

Frequency (MHz)	Meter Reading (dBuV)	Det	101836_Wit h EX_N [dB]	Cable Loss [dB]	Corrected Reading (dB(uVolts))	FCC 15 Class B QP [dBuV]	Margin (dB)	FCC 15 Class B AV [dBuV]	Margin (dB)
.15915	42.63	Qp	9.8	.1	52.53	65.51	-12.98	-	-
.31875	37.12	Qp	9.7	.1	46.92	59.74	-12.82	-	-
.38175	39.19	Qp	9.8	.1	49.09	58.24	-9.15	-	-
.40875	36.85	Qp	9.8	.1	46.75	57.67	-10.92	-	-

Qp - Quasi-Peak detector

14. DYNAMIC FREQUENCY SELECTION

14.1. OVERVIEW

14.1.1. LIMITS

FCC

§15.407 (h), FCC KDB 905462 D02 “COMPLIANCE MEASUREMENT PROCEDURES FOR UNLICENSED-NATIONAL INFORMATION INFRASTRUCTURE DEVICES OPERATING IN THE 5250-5350 MHz AND 5470-5725 MHz BANDS INCORPORATING DYNAMIC FREQUENCY SELECTION” and KDB 905462 D03 “U-NII CLIENT DEVICES WITHOUT RADAR DETECTION CAPABILITY”.

Table 1: Applicability of DFS requirements prior to use of a channel

Requirement	Operational Mode		
	Master	Client (without radar detection)	Client (with radar detection)
Non-Occupancy Period	Yes	Not required	Yes
DFS Detection Threshold	Yes	Not required	Yes
Channel Availability Check Time	Yes	Not required	Not required
U-NII Detection Bandwidth	Yes	Not required	Yes

Table 2: Applicability of DFS requirements during normal operation

Requirement	Operational Mode		
	Master	Client (without DFS)	Client (with DFS)
DFS Detection Threshold	Yes	Not required	Yes
Channel Closing Transmission Time	Yes	Yes	Yes
Channel Move Time	Yes	Yes	Yes
U-NII Detection Bandwidth	Yes	Not required	Yes

Additional requirements for devices with multiple bandwidth modes	Master Device or Client with Radar DFS	Client (without DFS)
U-NII Detection Bandwidth and Statistical Performance Check	All BW modes must be tested	Not required
Channel Move Time and Channel Closing Transmission Time	Test using widest BW mode available	Test using the widest BW mode available for the link
All other tests	Any single BW mode	Not required

Note: Frequencies selected for statistical performance check (Section 7.8.4) should include several frequencies within the radar detection bandwidth and frequencies near the edge of the radar detection bandwidth. For 802.11 devices it is suggested to select frequencies in all 20 MHz channel blocks and a null frequency between the bonded 20 MHz channel blocks.

Table 3: Interference Threshold values, Master or Client incorporating In-Service Monitoring

Maximum Transmit Power	Value (see notes)
E.I.R.P. $\geq$ 200 mill watt	-64 dBm
E.I.R.P. $<$ 200 mill watt and power spectral density $<$ 10 dBm/MHz	-62 dBm
E.I.R.P. $<$ 200 mill watt that do not meet power spectral density requirement	-64 dBm
Note 1: This is the level at the input of the receiver assuming a 0 dBi receive antenna Note 2: Throughout these test procedures an additional 1 dB has been added to the amplitude of the test transmission waveforms to account for variations in measurement equipment. This will ensure that the test signal is at or above the detection threshold level to trigger a DFS response. Note 3: E.I.R.P. is based on the highest antenna gain. For MIMO devices refer to KDB publication 662911 D01.	

Table 4: DFS Response requirement values

Parameter	Value
<i>Non-occupancy period</i>	30 minutes
<i>Channel Availability Check Time</i>	60 seconds
<i>Channel Move Time</i>	10 seconds (See Note 1)
<i>Channel Closing Transmission Time</i>	200 milliseconds + approx. 60 milliseconds over remaining 10 second period. (See Notes 1 and 2)
<i>U-NII Detection Bandwidth</i>	Minimum 100% of the U- NII 99% transmission power bandwidth. (See Note 3)
Note 1: <i>Channel Move Time</i> and the <i>Channel Closing Transmission Time</i> should be performed with Radar Type 0. The measurement timing begins at the end of the Radar Type 0 burst. Note 2: The <i>Channel Closing Transmission Time</i> is comprised of 200 milliseconds starting at the beginning of the <i>Channel Move Time</i> plus any additional intermittent control signals required to facilitate a <i>Channel</i> move (an aggregate of 60 milliseconds) during the remainder of the 10 second period. The aggregate duration of control signals will not count quiet periods in between transmissions. Note 3: During the <i>U-NII Detection Bandwidth</i> detection test, radar type 0 should be used. For each frequency step the minimum percentage of detection is 90 percent. Measurements are performed with no data traffic.	

Table 5 – Short Pulse Radar Test Waveforms

Radar Type	Pulse Width (usec)	PRI (usec)	Pulses	Minimum Percentage of Successful Detection	Minimum Trials
0	1	1428	18	See Note 1	See Note 1
1	1	Test A: 15 unique PRI values randomly selected from the list of 23 PRI values in table 5a	Roundup: $\{(1/360) \times (19 \times 10^6 \text{ PRI}_{\text{usec}})\}$	60%	30
		Test B: 15 unique PRI values randomly selected within the range of 518-3066 usec. With a minimum increment of 1 usec, excluding PRI values selected in Test A			
2	1-5	150-230	23-29	60%	30
3	6-10	200-500	16-18	60%	30
4	11-20	200-500	12-16	60%	30
Aggregate (Radar Types 1-4)				80%	120
Note 1: Short Pulse Radar Type 0 should be used for the <i>Detection Bandwidth</i> test, <i>Channel Move Time</i> , and <i>Channel Closing Time</i> tests.					

Table 6 – Long Pulse Radar Test Signal

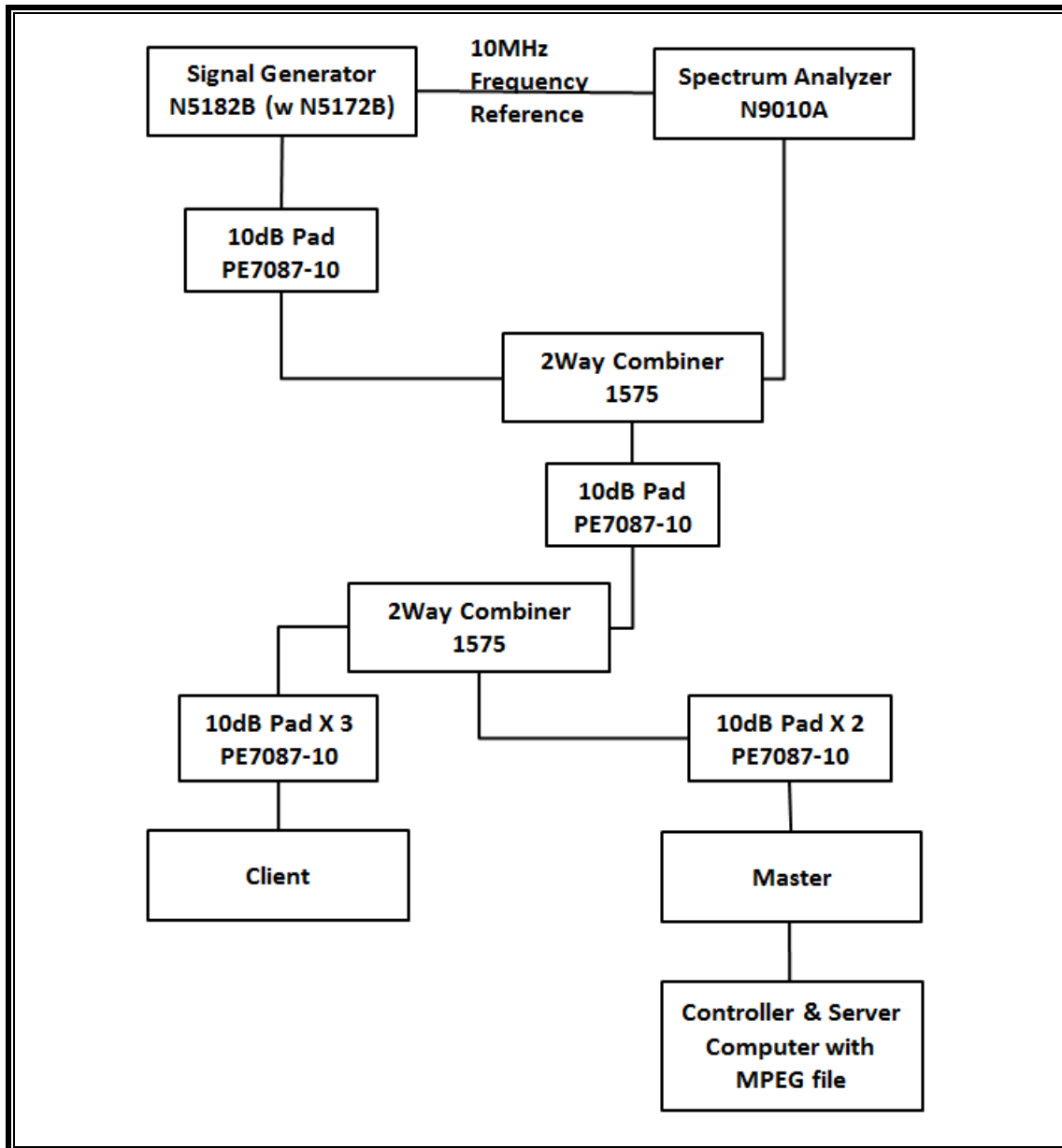
Radar Waveform Type	Pulse Width (μsec)	Chirp Width (MHz)	PRI (μsec)	Pulses per Burst	Number of Bursts	Minimum Percentage of Successful Detection	Minimum Trials
5	50-100	5-20	1000-2000	1-3	8-20	80%	30

Table 7 – Frequency Hopping Radar Test Signal

Radar Waveform Type	Pulse Width (μsec)	PRI (μsec)	Pulses per Hop	Hopping Rate (kHz)	Hopping Sequence Length (msec)	Minimum Percentage of Successful Detection	Minimum Trials
6	1	333	9	0.333	300	70%	30

14.1.2. TEST AND MEASUREMENT SYSTEM

CONDUCTED METHOD SYSTEM BLOCK DIAGRAM



SYSTEM OVERVIEW

The short pulse and long pulse signal generating system utilizes the Keysite Signal Studio for Pulse Building as N5172B. The Vector Signal Generator has been validated by the NTIA. The hopping signal generating system utilizes the CCS simulated hopping method and system, which has been validated by the DoD, FCC and NTIA. The software selects waveform parameters from within the bounds of the signal type on a random basis using uniform distribution.

The short pulse types 1, 2, 3 and 4, and the long pulse type 5 parameters are randomized at run-time.

The hopping type 6 pulse parameters are fixed while the hopping sequence is based on the August 2005 NTIA Hopping Frequency List. The initial starting point randomized at run-time and each subsequent starting point is incremented by 475. Each frequency in the 100-length segment is compared to the boundaries of the EUT Detection Bandwidth and the software creates a hopping burst pattern in accordance with Section 7.4.1.3 Method #2 Simulated Frequency Hopping Radar Waveform Generating Subsystem of KDB 905462 D02. The frequency of the signal generator is incremented in 1 MHz steps from F_L to F_H for each successive trial. This incremental sequence is repeated as required to generate a minimum of 30 total trials and to maintain a uniform frequency distribution over the entire Detection Bandwidth.

The signal monitoring equipment consists of a spectrum analyzer. The aggregate ON time is calculated by multiplying the number of bins above a threshold during a particular observation period by the dwell time per bin, with the analyzer set to peak detection and max hold.

SYSTEM CALIBRATION

A 50-ohm load is connected in place of the spectrum analyzer, and the spectrum analyzer is connected to a horn antenna via a coaxial cable, with the reference level offset set to (horn antenna gain – coaxial cable loss). The signal generator is set to CW mode. The amplitude of the signal generator is adjusted to yield a level of –64 dBm as measured on the spectrum analyzer.

Without changing any of the instrument settings, the spectrum analyzer is reconnected to the Common port of the Spectrum Analyzer Combiner/Divider. The Reference Level Offset of the spectrum analyzer is adjusted so that the displayed amplitude of the signal is –64 dBm.

The spectrum analyzer displays the level of the signal generator as received at the antenna ports of the Master Device. The interference detection threshold may be varied from the calibrated value of –64 dBm and the spectrum analyzer will still indicate the level as received by the Master Device.

ADJUSTMENT OF DISPLAYED TRAFFIC LEVEL

A link is established between the Master and Slave and the distance between the units is adjusted as needed to provide a suitable received level at the Master and Slave devices. The video test file is streamed to generate WLAN traffic. The monitoring antenna is adjusted so that the WLAN traffic level, as displayed on the spectrum analyzer, is at lower amplitude than the radar detection threshold.

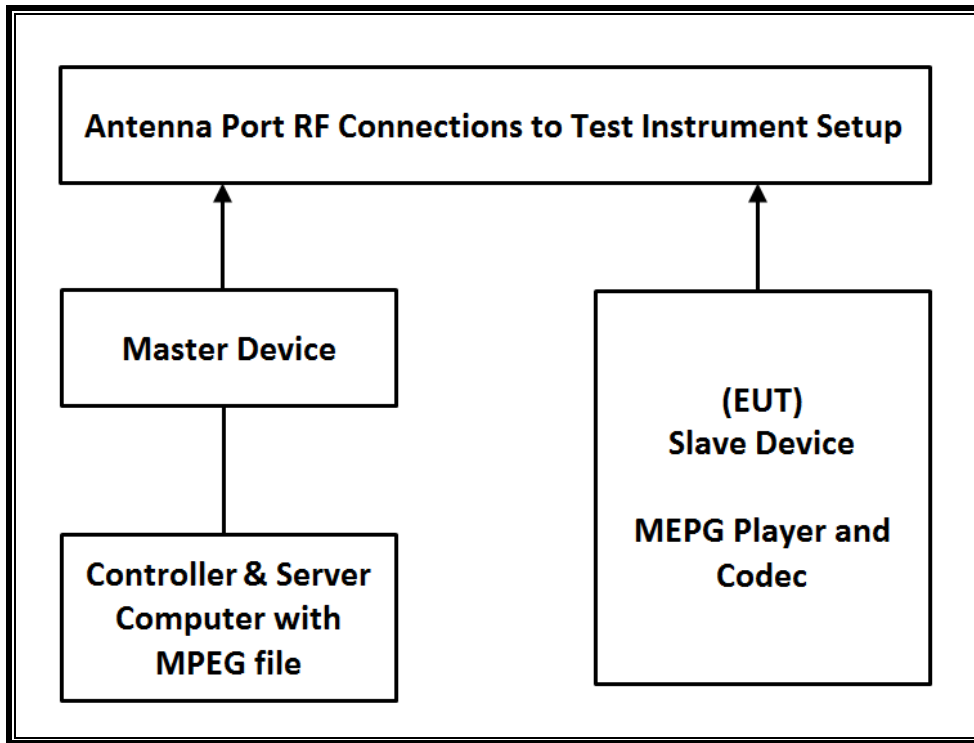
TEST AND MEASUREMENT EQUIPMENT

The following test and measurement equipment was utilized for the DFS tests documented in this report:

TEST EQUIPMENT LIST				
Description	Manufacturer	Model	S/N	Next Cal Due
Spectrum Analyzer, 7 GHz	Agilent / HP	N9010A	MY54200580	07-23-24
Vector Signal Generator, 6GHz	Agilent / HP	N5182B	MY53051241	07-23-24
Combiner	WEINSCHEL	WA1534	UL001	01-16-25
Combiner	WEINSCHEL	WA1534	UL003	01-02-25

14.1.3. SETUP OF EUT

CONDUCTED METHOD EUT TEST SETUP



SUPPORT EQUIPMENT

The following support equipment was utilized for the DFS tests documented in this report:

PERIPHERAL SUPPORT EQUIPMENT LIST				
Description	Manufacturer	Model	Serial Number	FCC ID
Wireless Access Point	ASUS	GT-AXE11000	M3IAJF200742	MSQ-RTAXJF00
Notebook PC (Controller/Server)	HP	HP EliteDesk 800 G1 TWR	CZC4125J25	DoC

14.1.4. DESCRIPTION OF EUT

The EUT operates over the 5250-5350 MHz and 5470-5725 MHz ranges.

The EUT is a Slave Device without Radar Detection.

The highest power level of the widest bandwidth (802.11ac VHT160) within these bands is 13.91 dBm in the 5250-5350 MHz band and 5470-5725 MHz band.

The antenna assembly utilized two antenna.

Gain of ANT1 : -3.21 dBi for UNII 2A and -2.64 dBi for UNII 2C.

Gain of ANT2 : -2.21 dBi for UNII 2A and -2.41 dBi for UNII 2C.

The rated output power of the Master unit is > 23dBm (EIRP). Therefore the required interference threshold level is -64 dBm. After correction for procedural adjustments, the required conducted threshold at the antenna port is $-64 + 1 = -63$ dBm.

The calibrated radiated DFS Detection Threshold level is set to -64 dBm. The tested level is lower than the required level hence it provides a margin to the limit.

The EUT uses one transmitter/receiver chain connected to an antenna to perform radiated tests. WLAN traffic that meets or exceeds the minimum required loading was generated by transferring a data stream from the controller/server PC to the EUT using iPerf version 2.0.5 software package.

TPC is not required since the maximum EIRP is less than 500 mW (27 dBm).

The EUT utilizes the 802.11 architecture. 4 nominal channel bandwidth are implemented: 20 MHz, 40 MHz, 80 MHz and 160 MHz.

The software installed in the access point is 12.4(25d)JA1.

UNIFORM CHANNEL SPREADING

This requirement is not applicable to Slave radio devices.

CHANNEL PUNCTURING(802.11ax)

This EUT does not support channel puncturing.

OVERVIEW OF MASTER DEVICE WITH RESPECT TO §15.407 (h) REQUIREMENTS

The Master Device is a ASUS Access Point, FCC ID: MSQ-RTAXJF00. The minimum antenna gain for the Master Device is 6 dBi.

The rated output power of the Master unit is > 23dBm (EIRP). Therefore the required interference threshold level is -64 dBm. After correction for procedural adjustments, the required radiated threshold at the antenna port is $-64 + 1 = -63$ dBm.

The calibrated radiated DFS Detection Threshold level is set to -64 dBm. The tested level is lower than the required level hence it provides a margin to the limit.

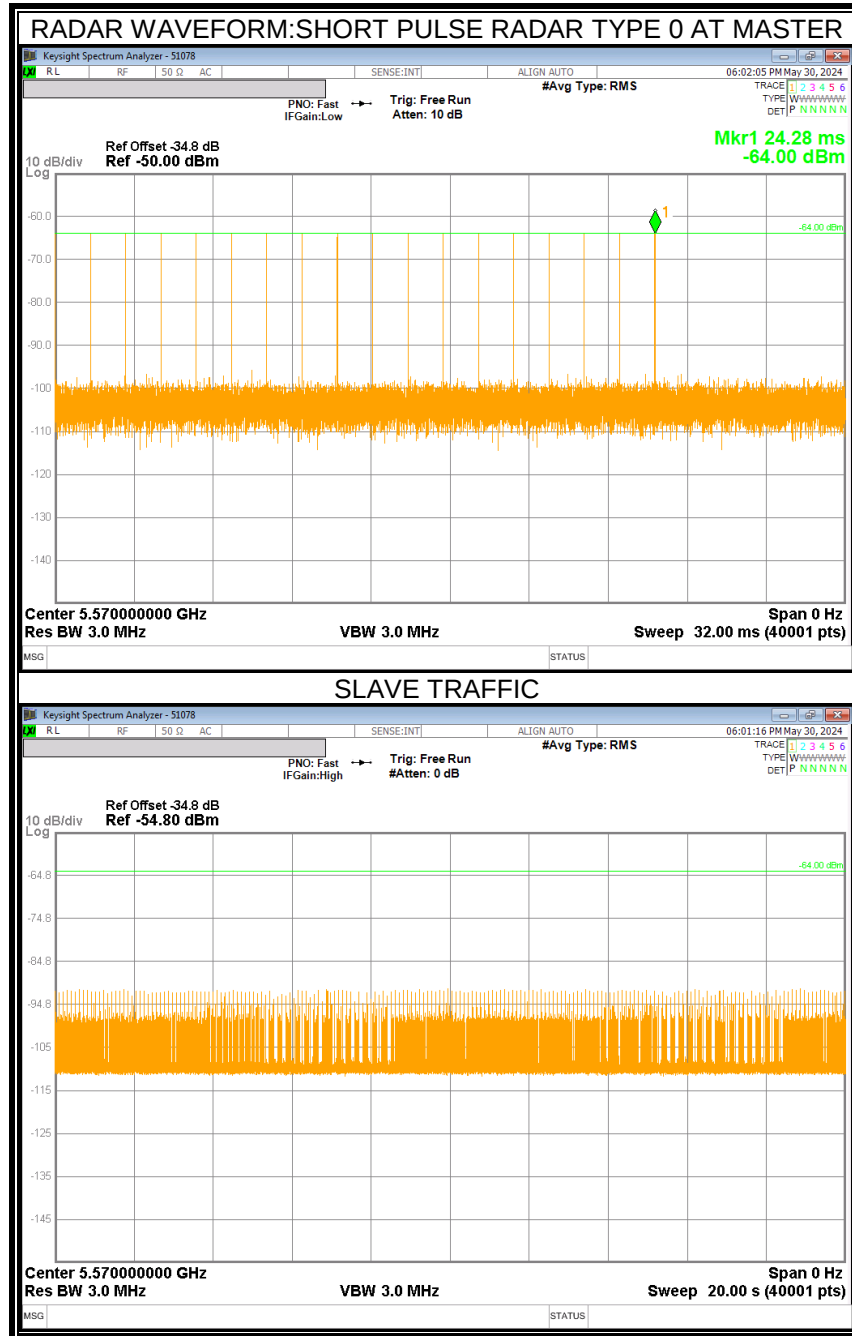
14.2. RESULTS FOR 160 MHz BANDWIDTH (UNII-2A & 2C BANDS)

14.2.1. TEST CHANNEL

All tests were performed at a channel center frequency of 5570 MHz.

14.2.2. RADAR WAVEFORM AND TRAFFIC

RADAR WAVEFORM



14.2.3. OVERLAPPING CHANNEL TESTS

RESULTS

These tests are not applicable.

14.2.4. MOVE AND CLOSING TIME

REPORTING NOTES

The reference marker is set at the end of last radar pulse.

The delta marker is set at the end of the last WLAN transmission following the radar pulse. This delta is the channel move time.

The aggregate channel closing transmission time is calculated as follows:

Aggregate Transmission Time =
(Number of analyzer bins showing transmission) * (dwell time per bin)

The observation period over which the aggregate time is calculated begins at (Reference Marker + 200 msec) and ends no earlier than (Reference Marker + 10 sec).

RESULTS

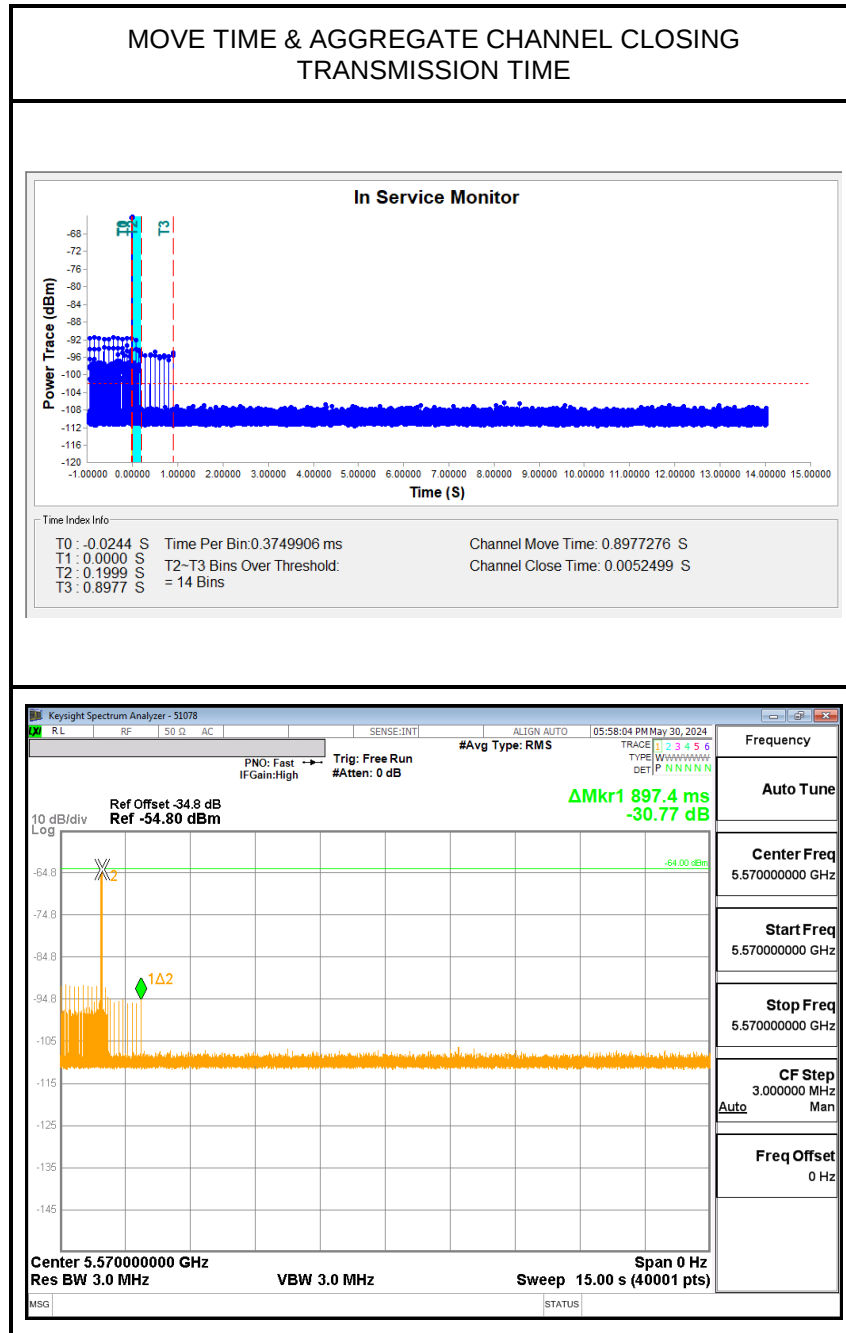
Channel Move Time (sec)	Limit (sec)
0.898	10

Aggregate Channel Closing Transmission Time (msec)	Limit (msec)
5.250	60

MOVE TIME & CHANNEL CLOSING TIME

AGGREGATE CHANNEL CLOSING TRANSMISSION TIME

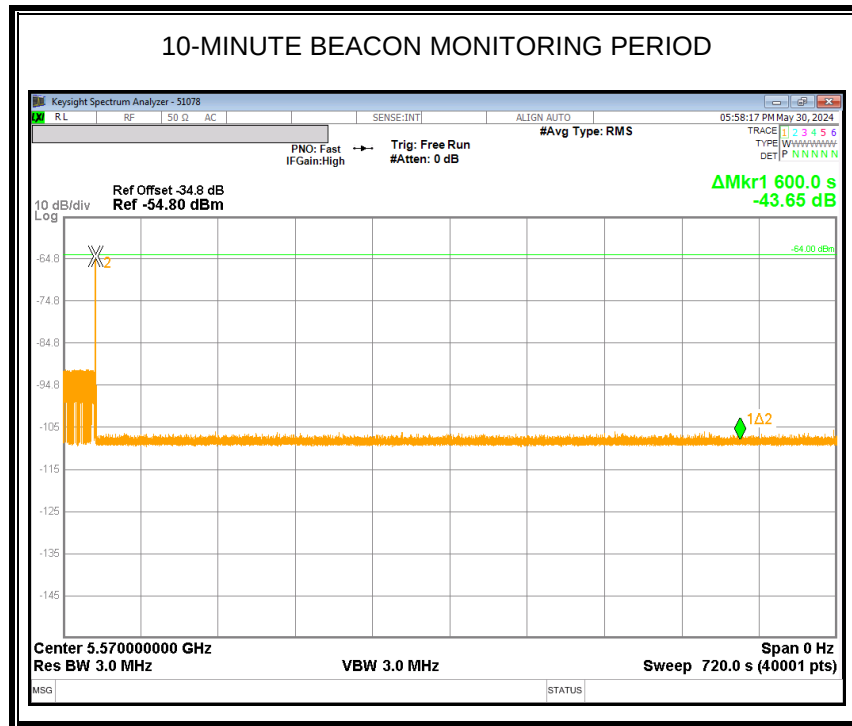
No transmissions are observed during the aggregate monitoring period.



NON-OCCUPANCY PERIOD

RESULTS

No EUT transmissions were observed on the test channel during the 10-minute observation time.



END OF TEST REPORT