CERTIFICATION TEST REPORT

Report Number. : 4790716492-E6V3

Applicant	:	SAMSUNG ELECTRONICS CO., LTD. 129 SAMSUNG-RO, YEONGTONG-GU, SUWON-SI, GYEONGGI-DO, 16677, KOREA
Model	:	SM-A145FB/DS
FCC ID	:	A3LSMA145F
EUT Description	:	GSM/WCDMA/LTE Phone + BT/BLE, DTS/UNII a/b/g/n/ac.
Test Standard(s)	:	FCC 47 CFR PART 15 SUBPART E

Date Of Issue:
2023-02-23

Prepared by:
UL Korea, Ltd.
26th floor, 152, Teheran-ro, Gangnam-gu Seoul, 06236, Korea

Suwon Test Site: UL Korea, Ltd. Suwon Laboratory
218 Maeyeong-ro, Yeongtong-gu,
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IAS ACCREDITED Testing Laboratory TL-637

`Revision History

Rev.	Issue Date	Revisions	Revised By
V1	2023-02-13	Initial issue	Myeongjun Kwon
V2	2023-02-20	Updated to address TCB's question	Myeongjun Kwon
V3	2023-02-23	Updated to address TCB's question	Myeongjun Kwon

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME:	SAMSUNG ELECTRONICS CO., LTD.
EUT DESCRIPTION:	GSM/WCDMA/LTE Phone + BT/BLE, DTS/UNII a/b/g/n/ac.
MODEL NUMBER:	SM-A145FB/DS
SERIAL NUMBER:	R38T90084BB (CONDUCTED); R38T90076XE, R38T90085AH, R38T90083KP(RADIATED);
DATE TESTED:	2023-01-27 ~ 2023-02-23;

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
UL Korea, Ltd. By:

Seokhwan Hong
Suwon Lab Engineer
UL Korea, Ltd.

Tested By:

Myeongjun Kwon
Suwon Lab Engineer
UL Korea, Ltd.

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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. 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.

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4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

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

4.2. SAMPLE CALCULATION

Where relevant, the following sample calculation is provided:

Field Strength (dBuV/m) = Measured Voltage (dBuV) + Antenna Factor (dB/m) + Cable Loss (dB) – Preamp Gain (dB)
36.5 dBuV + 18.7 dB/m + 0.6 dB – 26.9 dB = 28.9 dBuV/m
Corrected Reading (dBuV) = Meter Reading (dBuV) + External Cable (dB) + Cableloss (dB)
46.62 dBuV + 9.8 dB + 0.1 dB = 56.52 dBuV

4.3. MEASUREMENT UNCERTAINTY

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

PARAMETER	UNCERTAINTY
Conducted Disturbance, 0.15 to 30 MHz	2.80 dB
Radiated Disturbance, 9 kHz to 30 MHz	1.69 dB
Radiated Disturbance, 30 MHz to 1 GHz	3.92 dB
Radiated Disturbance, 1 GHz to 18 GHz	5.06 dB
Radiated Disturbance, Above 18 GHz	6.02 dB

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

4.4. DECISION RULE

Decision rule for statement(s) of conformity is based on Procedure 2, Clause 4.4.3 in IEC Guide 115:2021.

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5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The EUT is a GSM/WCDMA/LTE Phone + BT/BLE, DTS/UNII a/b/g/n/ac.
This test report addresses the NII (WLAN) operational mode.

WiFi operating mode

Frequency rage	Mode	Ant.
5GHz (5180 MHz ~ 5825 MHz)	802.11a SISO	TX/RX
	802.11n SISO	TX/RX
	802.11ac SISO	TX/RX

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MAXIMUM OUTPUT POWER

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

Band	Frequency Range [MHz]	Mode	Output Power [dBm]	Output Power [mW]
UNII-1	5180 - 5240	802.11a	15.16	24.89
		802.11n(HT20)	15.13	32.58
	5190 - 5230	802.11n(HT40)	14.02	25.23
	5210	802.11ac(VHT80)	8.52	7.11
UNII-2A	5260 - 5320	802.11a	15.25	33.50
		802.11n(HT20)	15.43	34.91
	5190 - 5230	802.11n(HT40)	14.56	28.58
	5270 - 5310	802.11ac(VHT80)	8.56	7.18
UNII-2C	5500 - 5720	802.11a	15.07	32.14
		802.11n(HT20)	14.94	31.19
	5510 - 5710	802.11n(HT40)	14.30	26.92
	5530 - 5690	802.11ac(VHT80)	12.11	16.26
UNII-3	5745 - 5825	802.11a	15.26	33.57
		802.11n(HT20)	15.06	32.06
	5755 - 5795	802.11n(HT40)	14.36	27.29
	5775	802.11ac(VHT80)	12.19	16.56

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5.2. DESCRIPTION OF AVAILABLE ANTENNAS

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

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

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

Frequency Band [MHz]	ANT Gain [dBi]
UNII 1 5150 - 5250	-4.87
UNII 2A 5250 - 5350	-4.04
UNII 2C 5470 - 5725	-3.11
UNII 3 5725 - 5850	-2.98

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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	SISO	802.11a 1TX	
802.11n HT20		802.11n HT20 1TX	
802.11ac VHT20		802.11ac VHT20 1TX	802.11n HT20 1TX
802.11n HT40		802.11n HT40 1TX	
802.11ac VHT40		802.11ac VHT40 1TX	802.11n HT40 1TX
802.11ac VHT80		802.11ac VHT80 1TX	

Note. The target power is the same, and there is no difference in 11ac(VHT20,40) mode and 11n(HT20,40) spot-check data. Test data was reported in 11n(HT20, 40) modes.

5.4. WORST-CASE CONFIGURATION AND MODE

Radiated emission below 1GHz and power line conducted emission were performed with the EUT set to transmit at the channel with highest output power as worst-case scenario.

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

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

802.11a mode: 6 Mbps 1Tx
802.11n HT20 mode: MCS0 1Tx
802.11n HT40 mode: MCS0 1Tx
802.11ac VHT80 mode: MCS0 1Tx

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

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Test case configuration for 802.11a, 802.11n HT20 & 40, 802.11ac VHT20 & 40 & 80 modes :

Mode	Band	SISO Target[dBm]		
		802.11a	802.11n	802.11ac
5GHz (20 MHz)	UNII-1	15 36ch: 13.5	15 36ch: 13.5	15 36ch: 13.5
	UNII-2A	15	15	15
	UNII-2C	15 100ch: 14	15 100ch: 14 140ch: 14	15 100ch: 14 140ch: 14
	UNII-3	15	15	15
5GHz (40 MHz)	UNII-1		14 38ch: 10	14 38ch: 10
	UNII-2A		14 62ch: 12	14 62ch: 12
	UNII-2C		14 102ch: 10.5	14 102ch: 10.5
	UNII-3		14	14
5GHz (80 MHz)	UNII-1			8
	UNII-2A			8
	UNII-2C			12 106ch: 9
	UNII-3			12

Band-Edge & Spurious Emission
Band-Edge & Spurious Emission Spot-Check

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

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5.5. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	**Manufacturer**	**Model**	**Serial Number**	**FCC ID**
Charger	SAMSUNG	EP-TA200	R37NS8Q7J35DK3	N/A
Data Cable	SAMSUNG	EP-DR140AWE	GH39-02134A	N/A
Charger	SAMSUNG	EP-TA800	R37T2H82D29SEA	N/A
Data Cable	SAMSUNG	EP-DN980BWE	GH39-02115A	N/A
Earphone	SAMSUNG	EHS61ASFBE	GH59-15063A	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
2	Audio	2	Mini-jack	Unshielded	0.7 m	N/A

TEST SETUP

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

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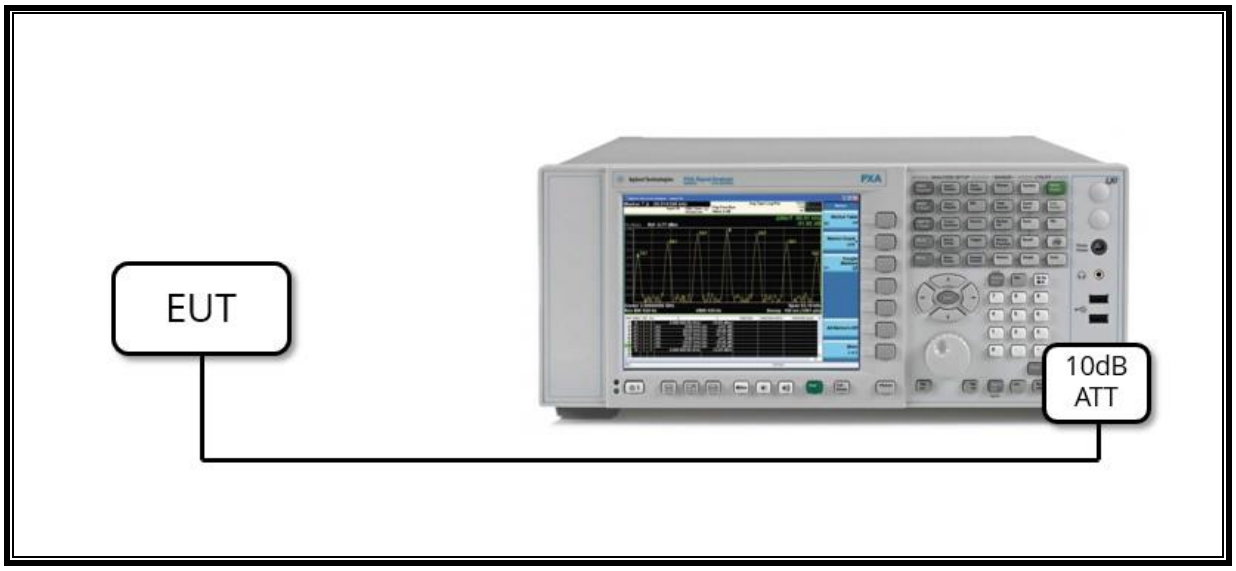
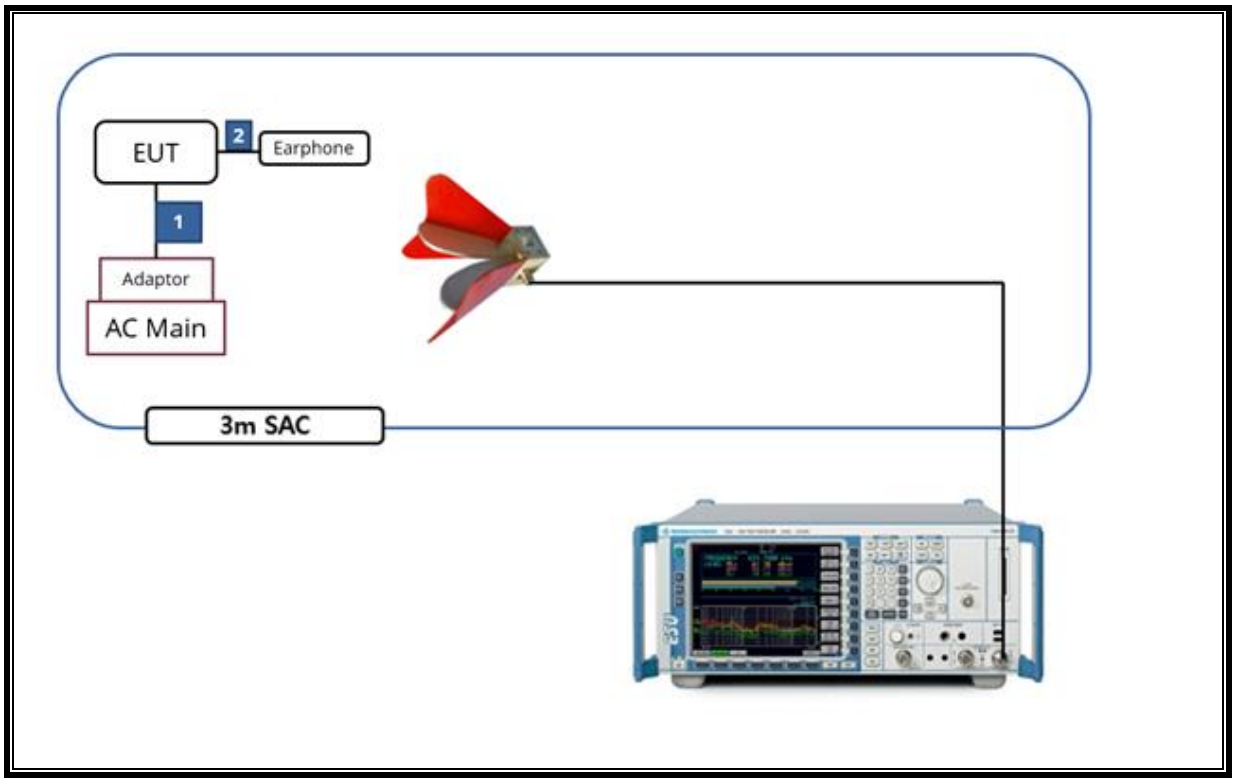
SETUP DIAGRAM FOR TESTS (CONDUCTED TEST SETUP)



SETUP DIAGRAM FOR TESTS (RADIATED TEST SETUP)



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6. TEST AND MEASUREMENT EQUIPMENT

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

Test Equipment List				
Description	**Manufacturer**	**Model**	**S/N**	**Cal Due**
Antenna, Bilog, 30MHz-1GHz	SCHWARZBECK	VULB9163	750	2024-08-15
Antenna, Bilog, 30MHz-1GHz	SCHWARZBECK	VULB9163	749	2024-08-15
Antenna, Bilog, 30MHz-1GHz	SCHWARZBECK	VULB9163	845	2024-08-15
Antenna, Horn, 18 GHz	ETS	3115	00167211	2024-08-04
Antenna, Horn, 18 GHz	ETS	3115	00161451	2024-08-21
Antenna, Horn, 18 GHz	ETS	3117	00168724	2024-08-04
Antenna, Horn, 18 GHz	ETS	3117	00168717	2024-08-21
Antenna, Horn, 18 GHz	ETS	3117	00218957	2025-01-08
Antenna, Horn, 40 GHz	ETS	3116C	00166155	2024-08-02
Antenna, Horn, 40 GHz	ETS	3116C	00168645	2023-10-13
Preamplifier	ETS	3116C-PA	00168841	2023-08-04
Preamplifier, 1000 MHz	Sonoma	310N	341282	2023-08-02
Preamplifier, 1000 MHz	Sonoma	310N	351741	2023-08-02
Preamplifier, 1000 MHz	Sonoma	310N	370599	2023-08-02
Preamplifier, 18 GHz	Miteq	AFS42-00101800-25-S-42	1876511	2023-08-02
Preamplifier, 18 GHz	Miteq	AFS42-00101800-25-S-42	1896138	2023-08-01
Preamplifier, 18 GHz	Miteq	AFS42-00101800-25-S-42	2029169	2023-08-01
Spectrum Analyzer, 44 GHz	Agilent / HP	N9030A	MY54170614	2023-08-03
Spectrum Analyzer, 44 GHz	Agilent / HP	N9030A	MY54490312	2023-08-01
Spectrum Analyzer, 44 GHz	KEYSIGHT	N9030B	MY60070693	2024-01-09
Spectrum Analyzer, 44 GHz	KEYSIGHT	N9040B	MY60080268	2024-01-09
Average Power Sensor	Agilent / HP	U2000	MY54270007	2023-08-03
Average Power Sensor	Agilent / HP	U2000	MY54260010	2023-08-03
Attenuator	PASTERNACK	PE7087-10	A001	2023-08-03
Attenuator	PASTERNACK	PE7087-10	A008	2023-08-03
Attenuator	PASTERNACK	PE7004-10	2	2023-08-01
Attenuator	PASTERNACK	PE7087-10	A009	2023-08-03
EMI Test Receive, 40 GHz	R&S	ESU40	100439	2023-08-02
EMI Test Receive, 40 GHz	R&S	ESU40	100457	2023-07-29
EMI Test Receive, 3 GHz	R&S	ESR3	101832	2023-08-01
Notch Filter	Micro-Tronics	BRM50702-02	G037	2023-08-01
Notch Filter	Micro-Tronics	BRM50716-2	006	2023-08-01
Low Pass Filter 5GHz	Micro-Tronics	LPS17541	009	2023-08-02
Low Pass Filter 5GHz	Micro-Tronics	LPS17541	015	2023-08-01
Low Pass Filter 5GHz	Micro-Tronics	LPS17541	020	2023-08-01
High Pass Filter 3GHz	Micro-Tronics	HPM17543	010	2023-08-02
High Pass Filter 3GHz	Micro-Tronics	HPM17543	015	2023-08-01
High Pass Filter 3GHz	Micro-Tronics	HPM17543	020	2023-08-01
High Pass Filter 6GHz	Micro-Tronics	HPS17542	009	2023-08-02
High Pass Filter 6GHz	Micro-Tronics	HPS17542	016	2023-08-01
High Pass Filter 6GHz	Micro-Tronics	HPS17542	021	2023-08-01
LISN	R&S	ENV-216	101837	2023-08-04
Antenna, Loop, 9kHz-30MHz	R&S	HFH2-Z2	100418	2023-10-06
Termination	WEINSCHEL	M1406A	T09	2023-08-03
Attenuator	WEINSCHEL	WA76-30-21	A015	2023-08-03
UL Software				
Description	**Manufacturer**	**Model**	**Version**	
Radiated software	UL	UL EMC	Ver 9.5	
AC Line Conducted software	UL	UL EMC	Ver 9.5	

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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)(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
15.207 (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.

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8. MEASUREMENT METHODS

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

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

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

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

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

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

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

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

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

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

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

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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 SISO	1.426	1.453	0.981	98.142	-
802.11n(HT20) SISO	2.595	2.619	0.991	99.084	-
802.11n(HT40) SISO	2.484	2.521	0.985	98.532	-
802.11ac(VHT80) SISO	1.967	2.003	0.982	98.203	-

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

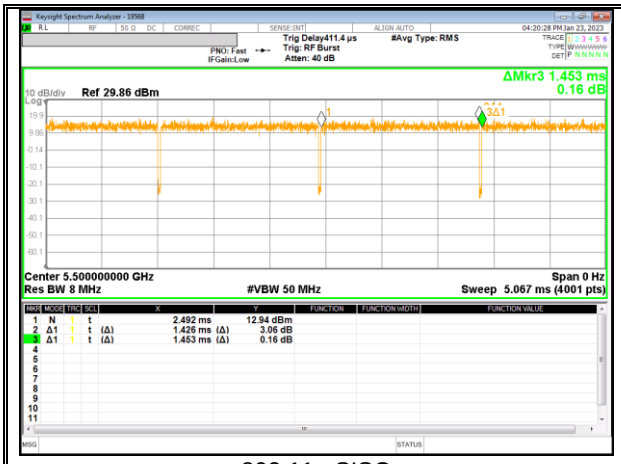
LIMITS

None; for reporting purposes only.

PROCEDURE

KDB 789033 D02 v02r01 Zero-Span Spectrum Analyzer Method.

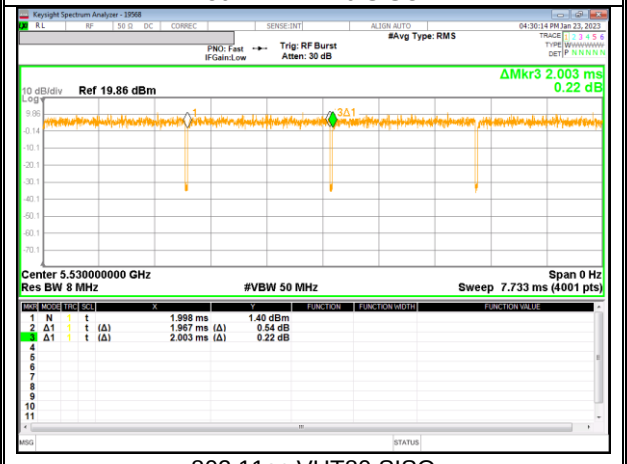
9.2. DUTY CYCLE PLOTS



802.11a SISO

802.11n HT20 SISO

802.11n HT40 SISO



802.11ac VHT80 SISO

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9.3. 26 dB BANDWIDTH

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

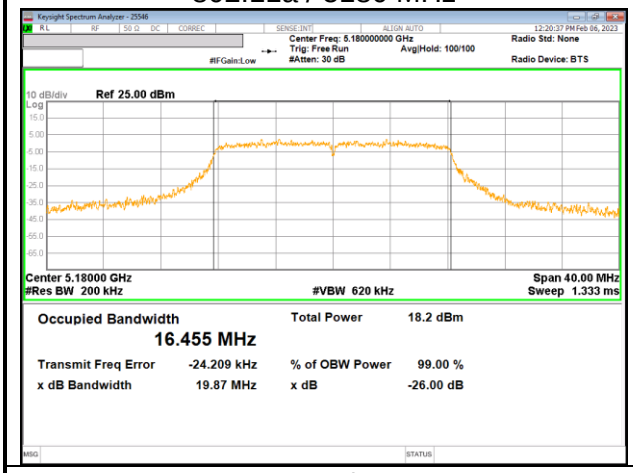
Reference to 789033 D02 General UNII Test Procedures New Rules v02r01: The transmitter output is connected to a spectrum analyzer with the RBW set to approximately 1% of EBW, the VBW > RBW, peak detector and max hold.

RESULTS

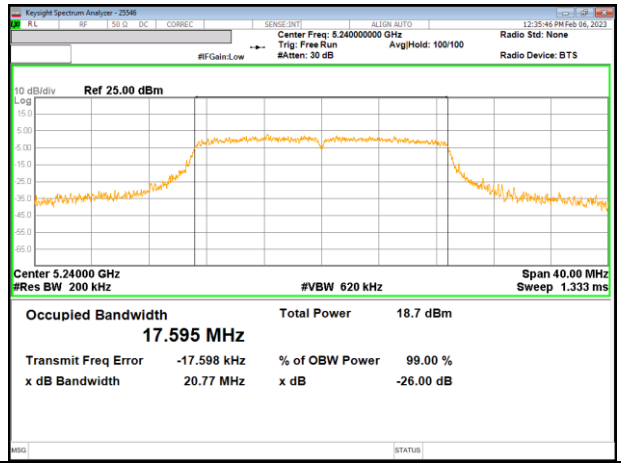
- Please refer to the next page

WORST CASE TEST PLOTS

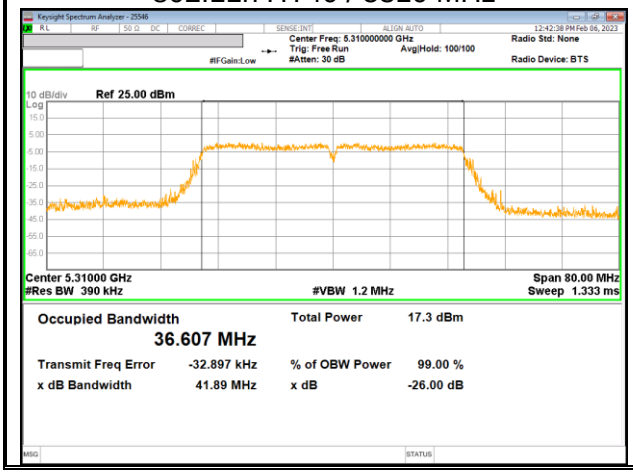
802.11a / 5180 MHz



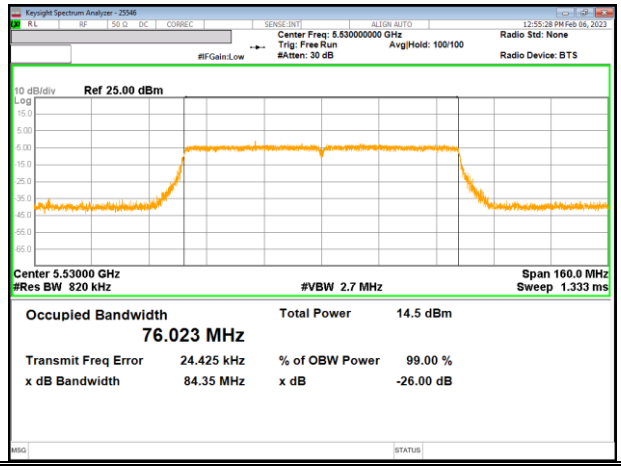
802.11n HT20 / 5240 MHz



802.11n HT40 / 5310 MHz



802.11ac VHT80 / 5530 MHz



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9.3.1. 802.11a

Band	Channel	Center Freq. [MHz]	26 dB BW [MHz]	Worst	99% BW [MHz]
UNII-1 Note	36	5180	19.870	19.870	16.455
	40	5200	20.160		16.456
	48	5240	20.020		16.431
UNII-2A Note	52	5260	20.230	20.060	16.458
	60	5300	20.290		16.443
	64	5320	20.060		16.450
UNII-2C	100	5500	20.140	19.990	
	116	5580	20.350		
	140	5700	19.990		

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

9.3.2. 802.11n HT20

Band	Channel	Center Freq. [MHz]	26 dB BW [MHz]	Worst	99% BW [MHz]
UNII-1 Note	36	5180	22.280	20.770	17.610
	40	5200	22.130		17.602
	48	5240	20.770		17.595
UNII-2A Note	52	5260	21.960	21.380	17.594
	60	5300	21.380		17.608
	64	5320	22.180		17.589
UNII-2C	100	5500	20.770	20.770	
	116	5580	21.490		
	140	5700	20.930		

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

9.3.3. 802.11n HT40

Band	Channel	Center Freq. [MHz]	26 dB BW [MHz]	Worst	99% BW [MHz]
UNII-1 Note	38	5190	42.070	42.070	36.352
	46	5230	43.510		36.791
UNII-2A Note	54	5270	41.920	41.890	36.666
	62	5310	41.890		36.607
UNII-2C	102	5510	42.410	42.200	
	118	5590	42.200		
	134	5670	42.780		

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

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9.3.4. 802.11ac VHT80

Band	Channel	Center Freq. [MHz]	26 dB BW [MHz]	Worst	99% BW [MHz]
UNII-1 Note	42	5210	86.620	86.620	76.096
UNII-2A Note	58	5290	85.210	85.210	75.933
UNII-2C	106	5530	84.350	84.350	
	122	5610	85.500		

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

9.3.5. STRADDLE CHANNEL

Mode	Channel	Center Freq. [MHz]	26 dB BW [MHz]	
			UNII-2C	UNII-3
802.11a	Straddle	5720	15.100	5.140
802.11n HT20	Straddle	5720	15.260	5.580
802.11n HT40	Straddle	5710	36.320	6.560
802.11ac VHT80	Straddle	5690	77.260	7.580

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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

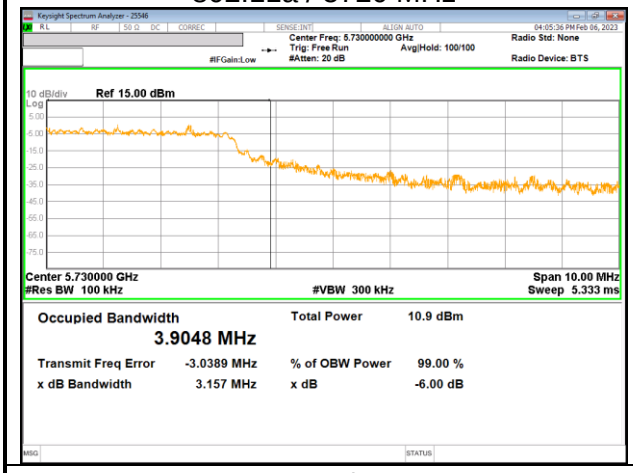
Reference to 789033 D02 General UNII Test Procedures New Rules v02r01: The transmitter output is connected to a spectrum analyzer with the RBW set to100KHz, the VBW >= 3 x RBW, peak detector and max hold.

RESULTS

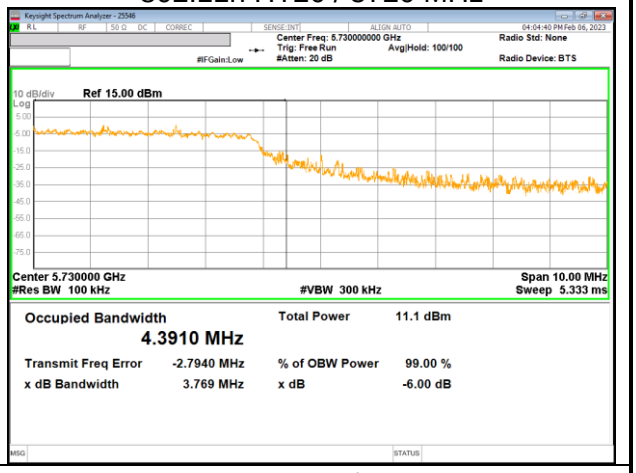
- Please refer to the next page

WORST CASE TEST PLOTS

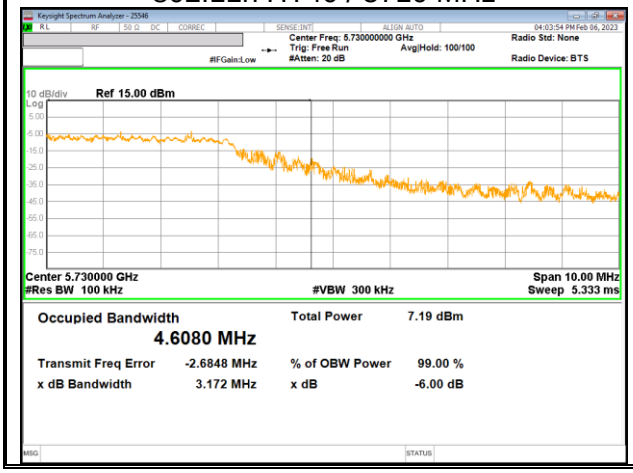
802.11a / 5720 MHz



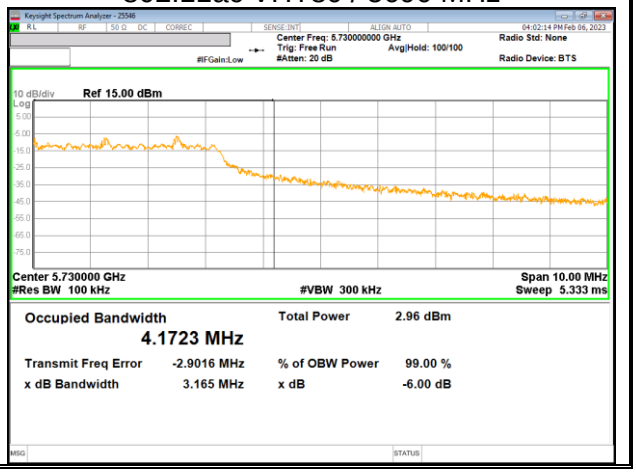
802.11n HT20 / 5720 MHz



802.11n HT40 / 5710 MHz



802.11ac VHT80 / 5690 MHz



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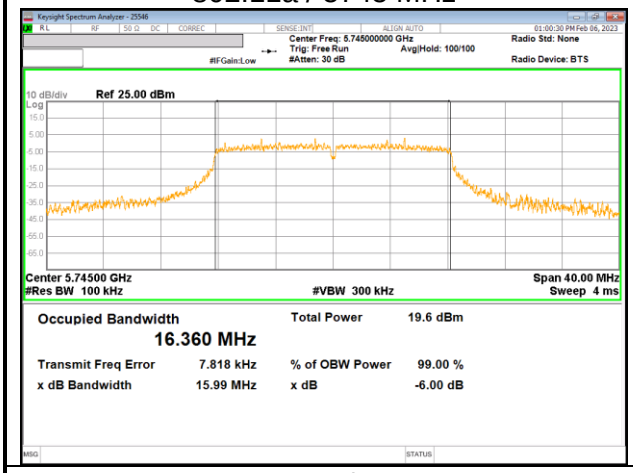
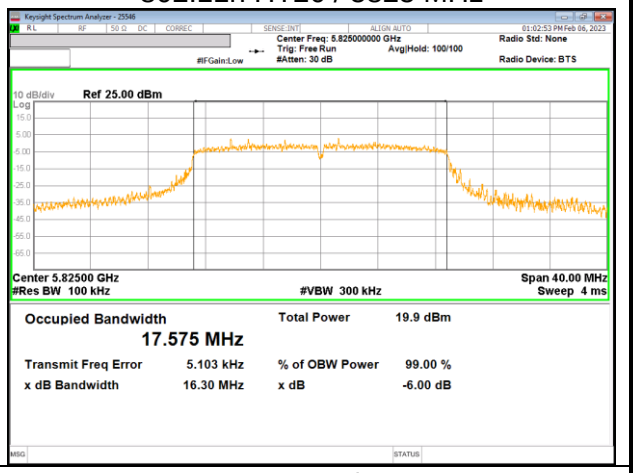
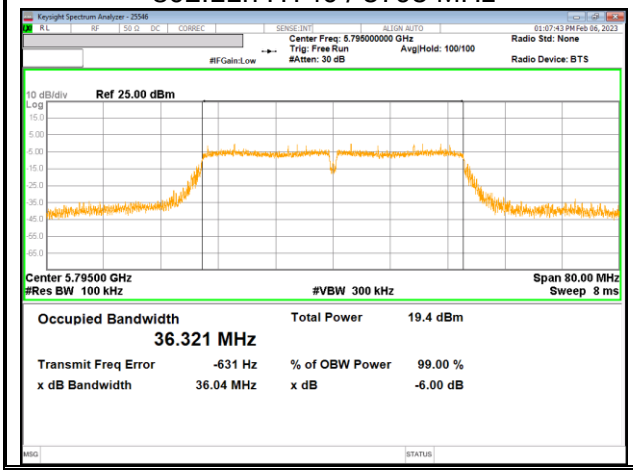
802.11a / 5745 MHz



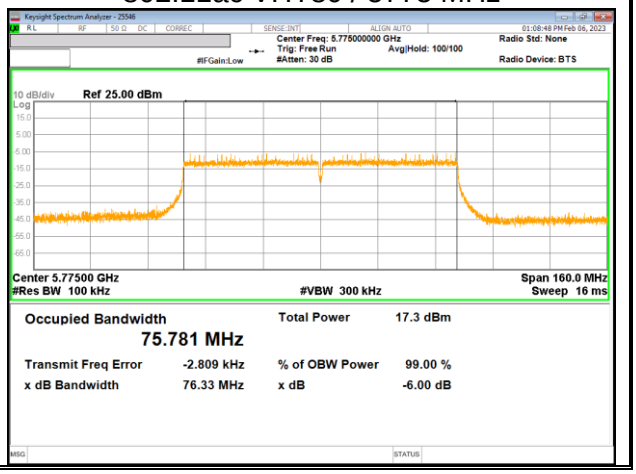
802.11n HT20 / 5825 MHz



802.11n HT40 / 5795 MHz



802.11ac VHT80 / 5775 MHz



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10.1.1. STRADDLE CHANNEL

Mode	Channel	Center Freq. [MHz]	6 dB BW [MHz]	Minimum Limit [MHz]
802.11a	144	5720	3.157	0.5
802.11n HT20	144	5720	3.769	
802.11n HT40	142	5710	3.172	
802.11ac VHT80	138	5690	3.165	

10.1.2. UNII-3 BAND

Mode	Channel	Center Freq. [MHz]	6 dB BW [MHz]	Worst	Minimum Limit [MHz]
802.11a	149	5745	15.990	15.990	0.5
	157	5785	16.030		
	165	5825	16.280		
802.11n HT20	149	5745	17.560	16.300	
	157	5785	16.900		
	165	5825	16.300		
802.11n HT40	151	5755	36.320	36.040	
	159	5795	36.040		
802.11ac VHT80	155	5775	76.330	76.330	

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10.2. OUTPUT POWER AND PPSD

LIMITS

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

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.

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TEST PROCEDURE

KDB 789033 Method PM is used for output power.
KDB 789033 Method SA-2 is used for PSD. RBW set to 1MHz(500kHz for the band 5.725-5.85 GHz, the VBW >= 3 x RBW, RMS detector and trace averaging).

Straddle Channel(UNII-2C&3)

KDB 789033 Method SA-2 is used for only power of straddle Ch. and PSD. RBW set to 1MHz(500kHz for the band 5.725-5.85 GHz, the VBW >= 3 x RBW, RMS detector and trace averaging). Band power function used for power and peak marker value of the spectrum is used for PSD.

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]	ANT Gain [dBi]
UNII 1 5150 - 5250	-4.87
UNII 2A 5250 - 5350	-4.04
UNII 2C 5470 - 5725	-3.11
UNII 3 5725 - 5850	-2.98

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10.2.1. 802.11a MODE

Output Power Results

Band	Channel	Center Freq. [MHz]	Average Power [dBm]	Corr'd Power [dBm]	Limit [dBm]
UNII-1	36	5180	13.96	13.96	23.98
	40	5200	15.16	15.16	
	48	5240	14.57	14.57	
UNII-2A	52	5260	15.25	15.25	23.98
	60	5300	14.83	14.83	
	64	5320	14.75	14.75	
UNII-2C	100	5500	14.58	14.58	23.98
	116	5580	15.03	15.03	
	140	5700	15.07	15.07	
UNII-3	149	5745	15.26	15.26	30.00
	157	5785	15.14	15.14	
	165	5825	15.16	15.16	

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

PSD Results

Band	Channel	Center Freq. [MHz]	Meas PSD [dBm/MHz]	DCCF.	Corr'd PSD [dBm]	Limit [dBm/ MHz]
UNII-1	36	5180	2.740	-	2.740	11.00
	40	5200	3.266	-	3.266	
	48	5240	2.823	-	2.823	
UNII-2A	52	5260	3.456	-	3.456	11.00
	60	5300	3.331	-	3.331	
	64	5320	3.173	-	3.173	
UNII-2C	100	5500	3.051	-	3.051	11.00
	116	5580	3.805	-	3.805	
	140	5700	3.350	-	3.350	
UNII-3	149	5745	1.538	-	1.538	30.00/500kHz
	157	5785	1.817	-	1.817	
	165	5825	1.433	-	1.433	

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

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10.2.2. 802.11n HT20 MODE

Output Power Results

Band	Channel	Center Freq. [MHz]	Average Power [dBm]	Corr'd Power [dBm]	Limit [dBm]
UNII-1	36	5180	13.36	13.36	23.98
	40	5200	15.13	15.13	
	48	5240	15.00	15.00	
UNII-2A	52	5260	15.43	15.43	23.98
	60	5300	15.09	14.83	
	64	5320	14.91	14.75	
UNII-2C	100	5500	14.22	14.22	23.98
	116	5580	14.94	14.94	
	140	5700	14.32	14.32	
UNII-3	149	5745	15.06	15.06	30.00
	157	5785	15.01	15.01	
	165	5825	15.02	15.02	

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

PSD Results

Band	Channel	Center Freq. [MHz]	Meas PSD [dBm/MHz]	DCCF.	Corr'd PSD [dBm]	Limit [dBm/ MHz]
UNII-1	36	5180	2.114	-	2.114	11.00
	40	5200	3.458	-	3.458	
	48	5240	2.967	-	2.967	
UNII-2A	52	5260	3.203	-	3.203	11.00
	60	5300	3.125	-	3.125	
	64	5320	2.772	-	2.772	
UNII-2C	100	5500	2.655	-	2.655	11.00
	116	5580	3.442	-	3.442	
	140	5700	2.681	-	2.681	
UNII-3	149	5745	1.341	-	1.341	30.00/500kHz
	157	5785	1.546	-	1.546	
	165	5825	1.670	-	1.670	

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

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10.2.3. 802.11n HT40 MODE

Output Power Results

Band	Channel	Center Freq. [MHz]	Average Power [dBm]	Corr'd Power [dBm]	Limit [dBm]
UNII-1	38	5190	10.02	10.02	23.98
	46	5230	14.02	14.02	
UNII-2A	54	5270	14.56	14.56	23.98
	62	5310	12.13	12.13	
UNII-2C	102	5510	10.41	10.41	23.98
	118	5590	14.30	14.19	
	134	5670	14.26	14.26	
UNII-3	151	5755	14.28	14.28	30.00
	159	5795	14.36	14.36	

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

PSD Results

Band	Channel	Center Freq. [MHz]	Meas PSD [dBm/MHz]	DCCF.	Corr'd PSD [dBm]	Limit [dBm/ MHz]
UNII-1	38	5190	-4.557	-	-4.557	11.00
	46	5230	-0.898	-	-0.898	
UNII-2A	54	5270	-0.228	-	-0.228	11.00
	62	5310	-2.456	-	-2.456	
UNII-2C	102	5510	-3.946	-	-3.946	11.00
	118	5590	-0.676	-	-0.676	
	134	5670	-0.945	-	-0.945	
UNII-3	151	5755	-2.618	-	-2.618	30.00/500kHz
	159	5795	-2.408	-	-2.408	

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

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10.2.4. 802.11ac VHT80 MODE

Output Power Results

Band	Channel	Center Freq. [MHz]	Average Power [dBm]	Corr'd Power [dBm]	Limit [dBm]
UNII-1	42	5210	8.52	8.52	23.98
UNII-2A	58	5290	8.56	8.56	23.98
UNII-2C	106	5530	9.56	9.56	23.98
	122	5610	12.11	12.11	
UNII-3	155	5775	12.19	12.19	30.00

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

PSD Results

Band	Channel	Center Freq. [MHz]	Meas PSD [dBm/MHz]	DCCF.	Corr'd PSD [dBm]	Limit [dBm/ MHz]
UNII-1	42	5210	-9.863	-	-9.863	11.00
UNII-2A	58	5290	-9.665	-	-9.665	11.00
UNII-2C	106	5530	-8.724	-	-8.724	11.00
	122	5610	-6.287	-	-6.287	
UNII-3	155	5775	-8.252	-	-8.252	30.00/500kHz

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

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10.2.5. STRADDLE CHANNEL

Output Power Results

Mode	Band	Center Freq. [MHz]	Meas Power [dBm]	DCCF.	Corr'd Power [dBm]	Limit [dBm]
802.11a	UNII-2C	5720	13.279	-	13.279	22.79
	UNII-3		6.579	-	6.579	30.00
802.11n HT20	UNII-2C	5720	13.100	-	13.100	22.84
	UNII-3		6.824	-	6.824	30.00
802.11n HT40	UNII-2C	5710	12.809	-	12.809	23.98
	UNII-3		2.882	-	2.882	30.00
802.11ac VHT80	UNII-2C	5690	10.904	-	10.904	23.98
	UNII-3		-2.310	-	-2.310	30.00

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

PSD Results

Mode	Band	Center Freq. [MHz]	Meas PSD [dBm/MHz]	DCCF.	Corr'd PSD [dBm]	Limit [dBm/ MHz]
802.11a	UNII-2C	5720	1.411	-	1.411	11.00
	UNII-3		-1.932	-	-1.932	30.00/500kHz
802.11n HT20	UNII-2C	5720	0.937	-	0.937	11.00
	UNII-3		-2.181	-	-2.181	30.00/500kHz
802.11n HT40	UNII-2C	5710	-3.232	-	-3.232	11.00
	UNII-3		-5.614	-	-5.614	30.00/500kHz
802.11ac VHT80	UNII-2C	5690	-8.765	-	-8.765	11.00
	UNII-3		-11.644	-	-11.644	30.00/500kHz

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

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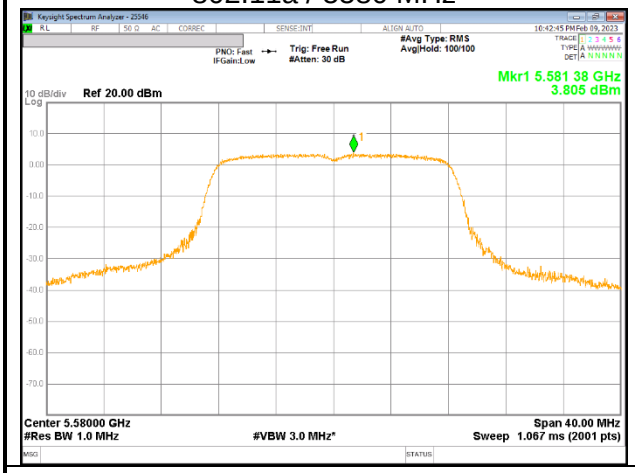
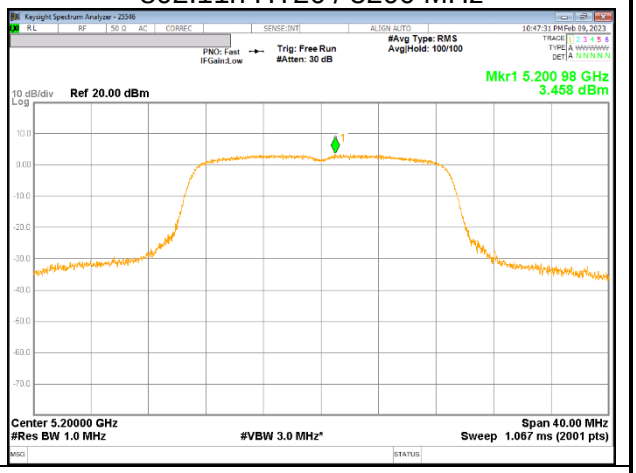
10.2.6. OUTPUT POWER AND PPSD PLOTS(WORST CASE)

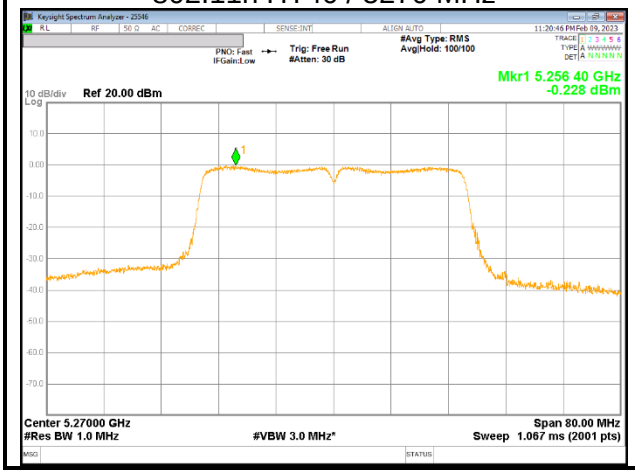
802.11a / 5580 MHz



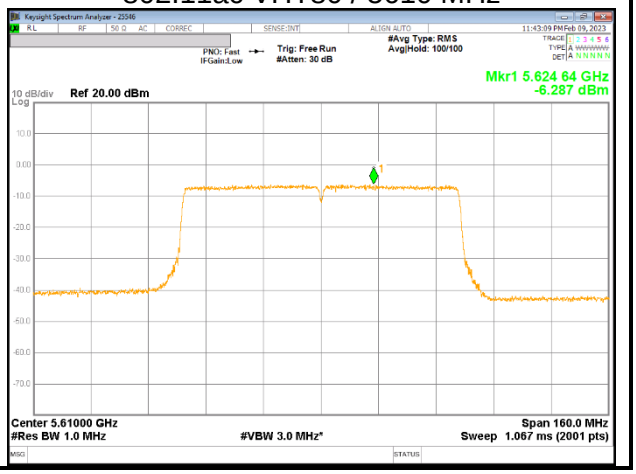
802.11n HT20 / 5200 MHz



802.11n HT40 / 5270 MHz



802.11ac VHT80 / 5610 MHz



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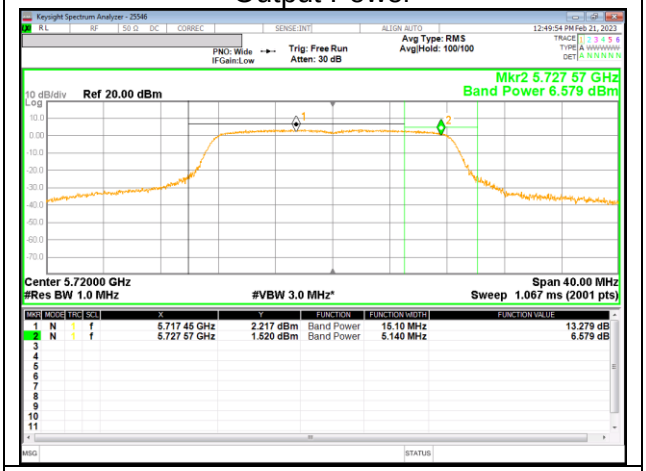
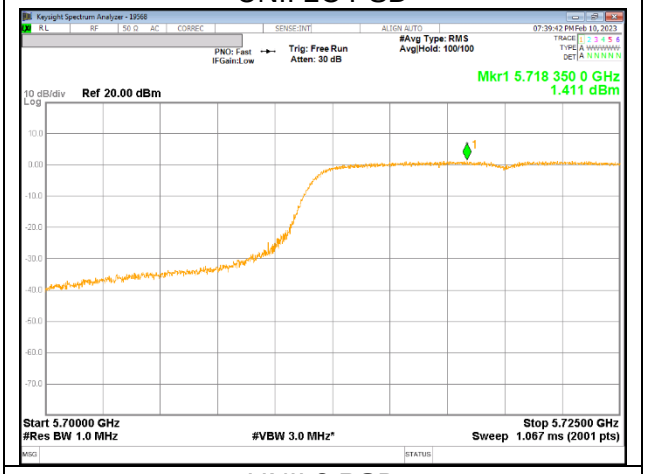
UNII Straddle Ch. IEEE 802.11a mode Output Power and PSD

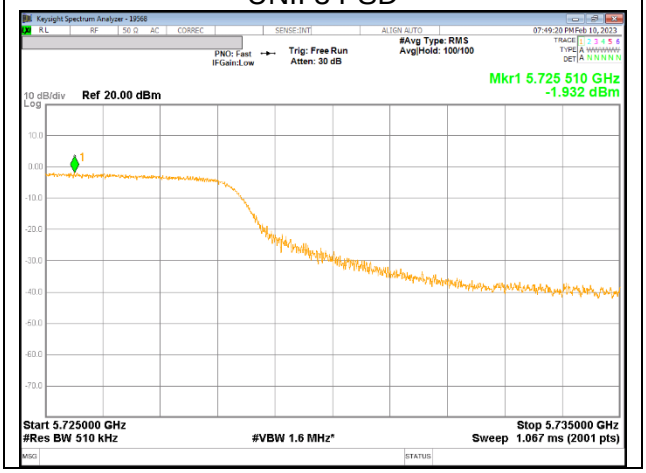
Output Power



UNII 2C PSD



UNII 3 PSD



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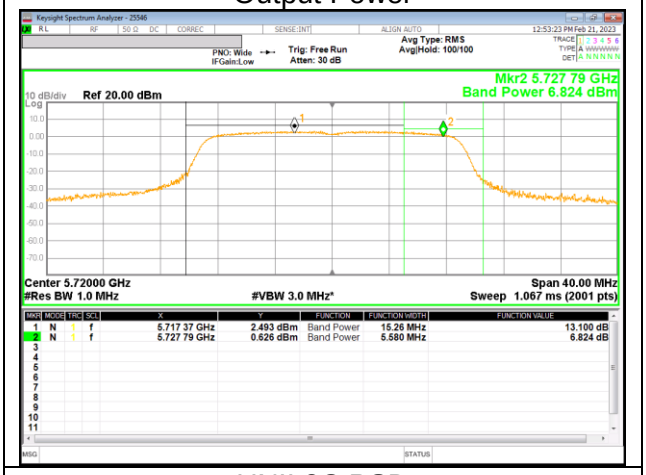
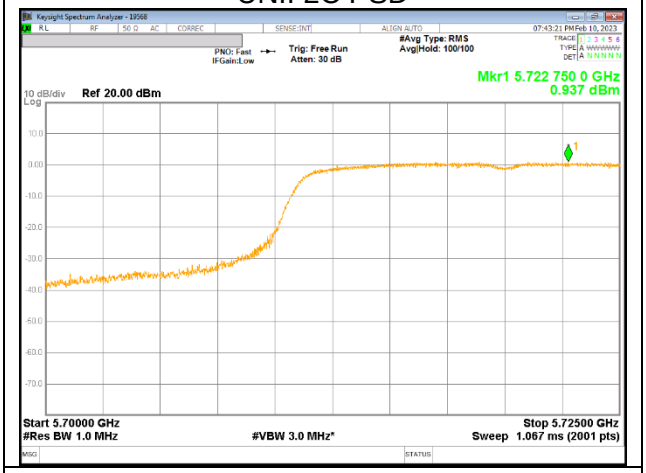
UNII Straddle Ch. IEEE 802.11n HT20 mode Output Power and PSD

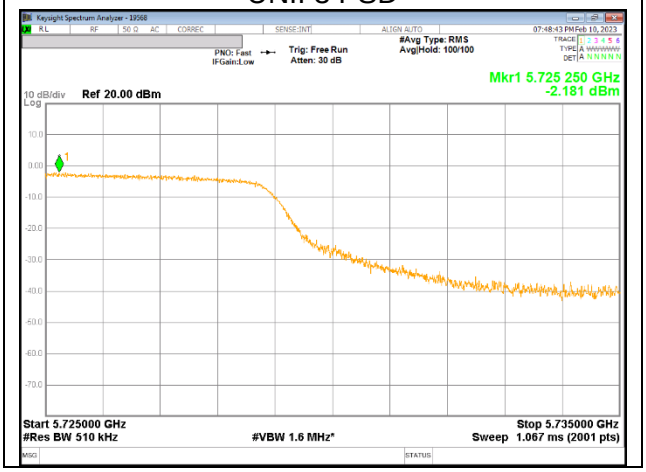
Output Power



UNII 2C PSD



UNII 3 PSD



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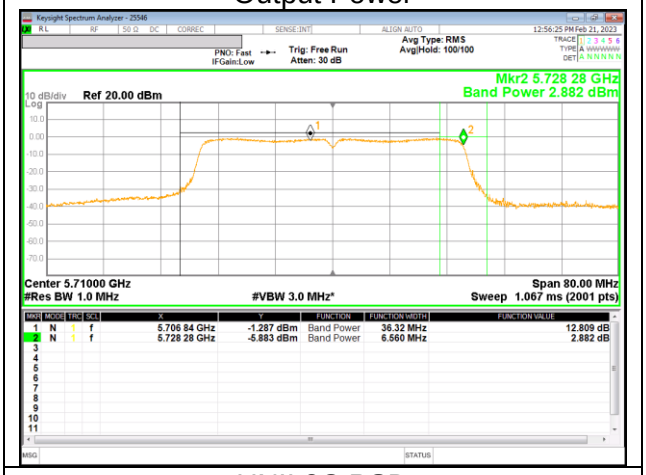
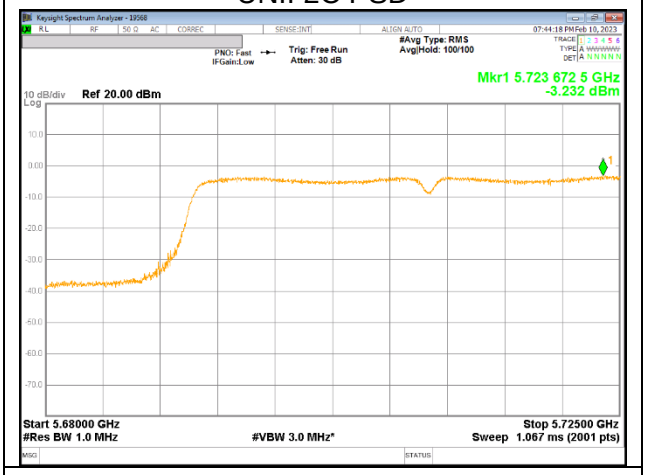
UNII Straddle Ch. IEEE 802.11n HT40 mode Output Power and PSD

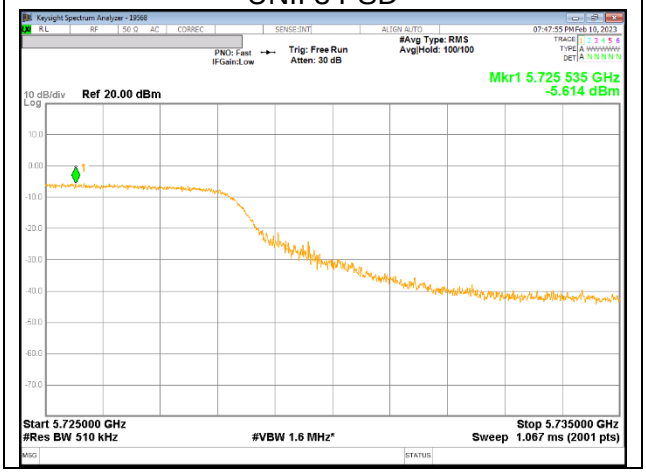
Output Power



UNII 2C PSD



UNII 3 PSD



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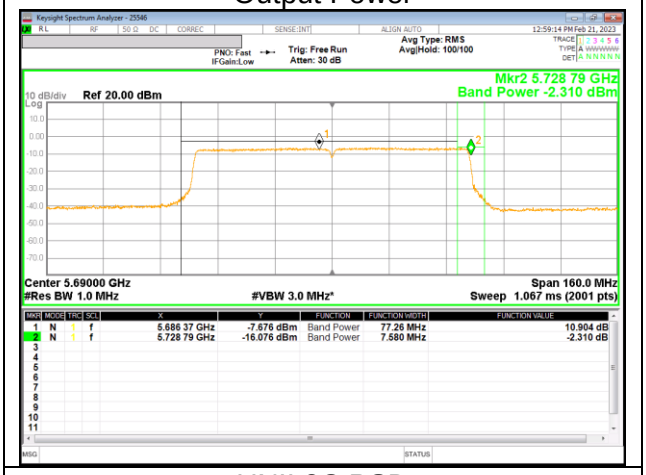
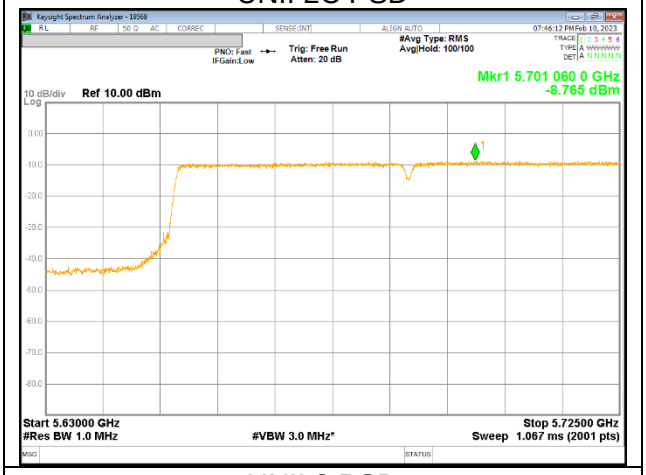
UNII Straddle Ch. IEEE 802.11ac VHT80 mode Output Power and PSD

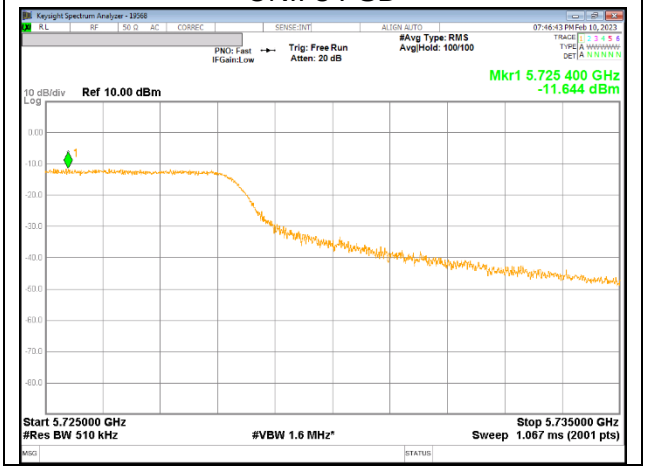
Output Power



UNII 2C PSD



UNII 3 PSD



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10.3. 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.

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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) 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.
(6) 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.
(7) The provisions of §15.205 apply to intentional radiators operating under this section.
(8) 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[dBuV/m] = EIRP[dBm] + 95.2 = -27dBm + 95.2 = 68.2dBuV/m

E[dBuV/m] = EIRP[dBm] + 95.2 = -17dBm + 95.2 = 78.2dBuV/m

UL Korea, Ltd. Suwon Laboratory FORM ID: FCC_15E(04)
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TEST PROCEDURE

The EUT is placed on a non-conducting table 80 cm above the ground plane for below 1GHz and 150 cm for above 1GHz. The antenna to EUT distance is 3 meters. The EUT is configured in accordance with ANSI C63.10. The EUT is set to transmit in a continuous mode.

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

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.

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

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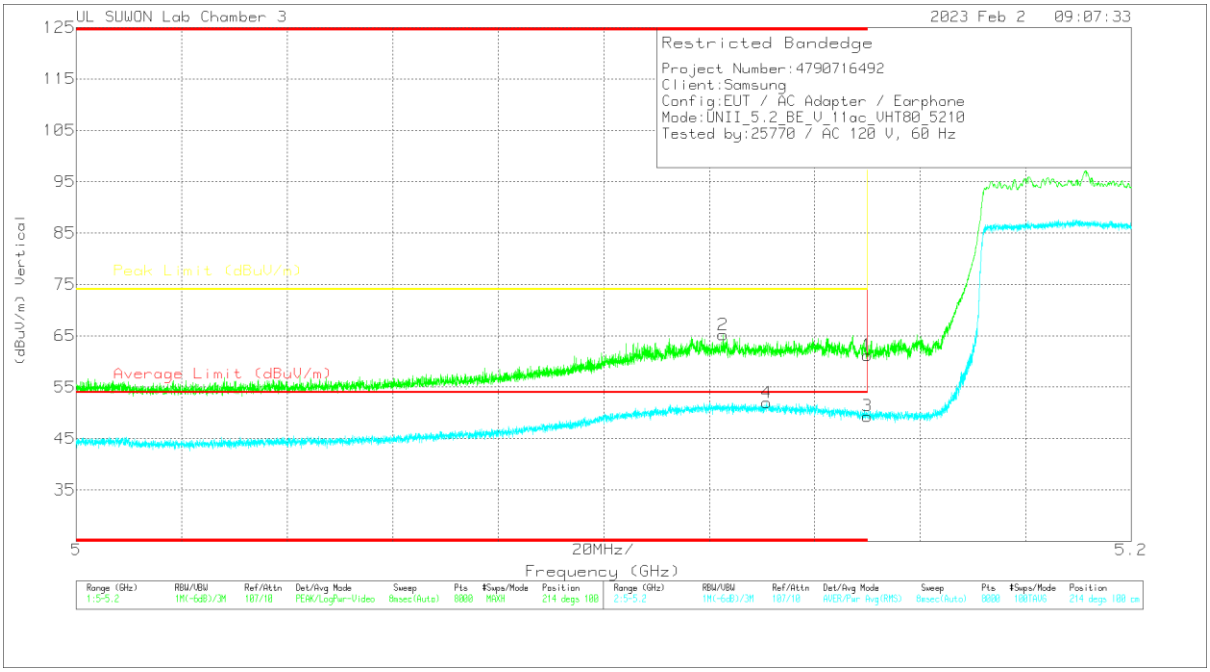
10.4. TX ABOVE 1GHz 1Tx MODE IN THE 5.2GHz BAND

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

VERTICAL PEAK AND AVERAGE DATA



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00218957	10dB_ATT[dB]	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.14999	47	Pk	34.8	-20.6	0	61.2	-	-	74	-12.8	214	100	V
2	* 5.12261	50.98	Pk	34.8	-20.6	0	65.18	-	-	74	-8.82	214	100	V
3	* 5.14999	35.17	RMS	34.8	-20.6	0	49.37	54	-4.63	-	-	214	100	V
4	* 5.13092	37.78	RMS	34.8	-20.6	0	51.98	54	-2.02	-	-	214	100	V

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

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BANDEDGE TEST DATA

Mode	Freq. [MHz]	Antenna	Frequency [GHz]	Reading [dBuV]	Detector Mode	ANT Factor	Loss [dB]	DC Corr [dB]	Result [dBuV/m]	AV Limit [dBuV/m]	AV Margin [dB]	PK Limit [dBuV/m]	PK Margin [dB]	Azimuth [Degs]	Height [cm]	Polarity
802.11a	5180	ANT1	* 5.14999	39.72	Pk	34.80	-20.60	0.00	53.92	-	-	74.00	-20.08	151	101	H
			* 5.00453	41.10	Pk	34.70	-20.60	0.00	55.20	-	-	74.00	-18.80	151	101	H
			* 5.14999	29.12	RMS	34.80	-20.60	0.00	43.32	54.00	-10.68	-	-	151	101	H
			* 5.14579	30.05	RMS	34.80	-20.60	0.00	44.25	54.00	-9.75	-	-	151	101	H
			* 5.14999	47.27	Pk	34.80	-20.60	0.00	61.47	-	-	74.00	-12.53	208	101	V
			* 5.14962	48.48	Pk	34.80	-20.60	0.00	62.68	-	-	74.00	-11.32	208	101	V
			* 5.14999	37.05	RMS	34.80	-20.60	0.00	51.25	54.00	-2.75	-	-	208	101	V
			* 5.14997	37.63	RMS	34.80	-20.60	0.00	51.83	54.00	-2.17	-	-	208	101	V
802.11n (HT20)	5180	ANT1	* 5.14999	43.52	Pk	34.80	-20.60	0.00	57.72	-	-	74.00	-16.28	151	100	H
			* 5.14989	44.31	Pk	34.80	-20.60	0.00	58.51	-	-	74.00	-15.49	151	100	H
			* 5.14999	28.20	RMS	34.80	-20.60	0.00	42.40	54.00	-11.60	-	-	151	100	H
			* 5.00005	29.53	RMS	34.70	-20.60	0.00	43.63	54.00	-10.37	-	-	151	100	H
			* 5.14999	54.07	Pk	34.80	-20.60	0.00	68.27	-	-	74.00	-5.73	206	100	V
			* 5.14989	54.28	Pk	34.80	-20.60	0.00	68.48	-	-	74.00	**-5.52**	206	100	V
			* 5.14999	36.15	RMS	34.80	-20.60	0.00	50.35	54.00	-3.65	-	-	206	100	V
			* 5.14892	36.81	RMS	34.80	-20.60	0.00	51.01	54.00	-2.99	-	-	206	100	V
802.11n (HT40)	5190	ANT1	* 5.14999	40.24	Pk	34.80	-20.60	0.00	54.44	-	-	74.00	-19.56	152	100	H
			* 5.14242	41.96	Pk	34.80	-20.60	0.00	56.16	-	-	74.00	-17.84	152	100	H
			* 5.14999	29.57	RMS	34.80	-20.60	0.00	43.77	54.00	-10.23	-	-	152	100	H
			* 5.14764	30.02	RMS	34.80	-20.60	0.00	44.22	54.00	-9.78	-	-	152	100	H
			* 5.14999	51.43	Pk	34.80	-20.60	0.00	65.63	-	-	74.00	-8.37	214	100	V
			* 5.14562	52.20	Pk	34.80	-20.60	0.00	66.40	-	-	74.00	-7.60	214	100	V
			* 5.14999	36.01	RMS	34.80	-20.60	0.00	50.21	54.00	-3.79	-	-	214	100	V
			* 5.14754	37.30	RMS	34.80	-20.60	0.00	51.50	54.00	-2.50	-	-	214	100	V
802.11ac (VHT80)	5210	ANT1	* 5.14999	37.96	Pk	34.80	-20.60	0.00	52.16	-	-	74.00	-21.84	152	100	H
			* 5.10951	40.64	Pk	34.80	-20.60	0.00	54.84	-	-	74.00	-19.16	152	100	H
			* 5.14999	27.76	RMS	34.80	-20.60	0.00	41.96	54.00	-12.04	-	-	152	100	H
			* 5.00258	29.38	RMS	34.70	-20.60	0.00	43.48	54.00	-10.52	-	-	152	100	H
			* 5.14999	47.00	Pk	34.80	-20.60	0.00	61.20	-	-	74.00	-12.80	214	100	V
			* 5.12261	50.98	Pk	34.80	-20.60	0.00	65.18	-	-	74.00	-8.82	214	100	V
			* 5.14999	35.17	RMS	34.80	-20.60	0.00	49.37	54.00	-4.63	-	-	214	100	V
			* 5.13092	37.78	RMS	34.80	-20.60	0.00	51.98	54.00	**-2.02**	-	-	214	100	V

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

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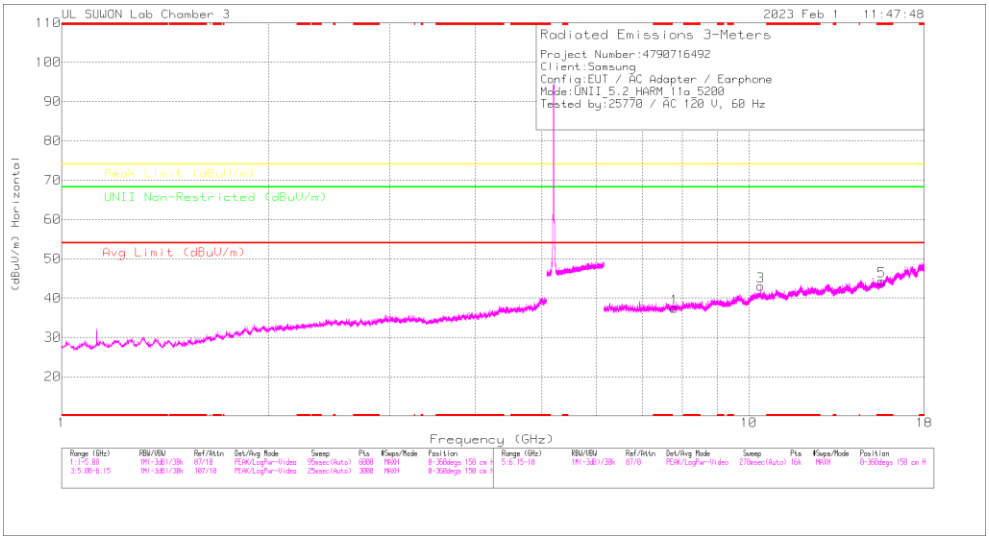
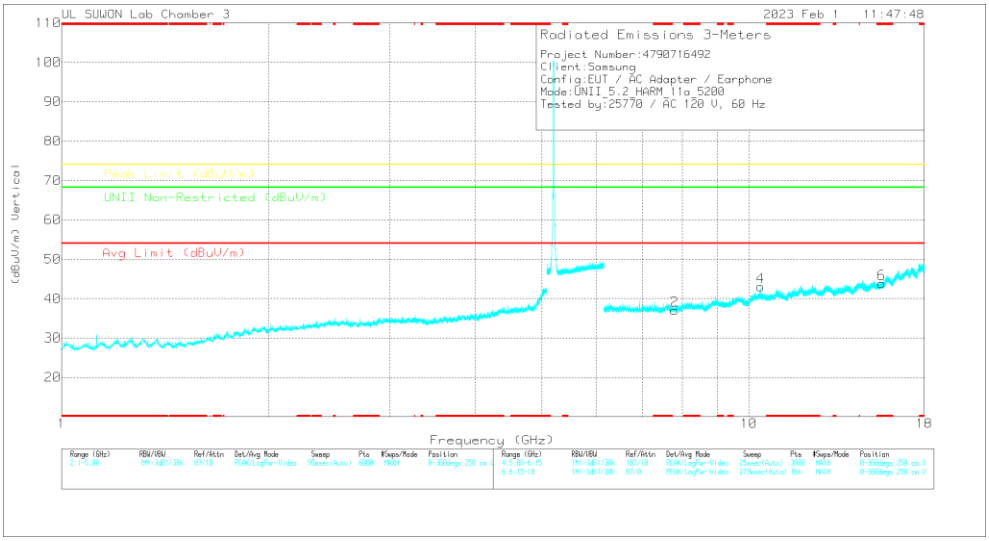
HARMONICS AND SPURIOUS EMISSIONS(WORST CASE: 802.11a / 5200 MHz)

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.

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00218957	6GHz_HP[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)	Azimuth (Degs)	Height (cm)	Polarity
7.79592	35.62	PK-U	36.3	-24.5	0	47.42	-	-	-	-	68.2	-20.78	0	100	H
7.79826	35.84	PK-U	36.3	-24.5	0	47.64	-	-	-	-	68.2	-20.56	0	100	V
10.39992	35.57	PK-U	38.1	-21	0	52.67	-	-	-	-	68.2	-15.53	268	104	H
10.39565	34.89	PK-U	38.1	-21	0	51.99	-	-	-	-	68.2	-16.21	114	103	V
* 15.5914	33.37	PK-U	40.3	-21.2	0	52.47	-	-	74	-21.53	-	-	0	100	H
* 15.59687	33.55	PK-U	40.3	-21.2	0	52.65	-	-	74	-21.35	-	-	0	100	V

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

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HARMONICS AND SPURIOUS EMISSIONS TEST DATA

Mode	Freq. [MHz]	Antenna	Frequency [GHz]	Reading [dBuV]	Detector Mode	ANT Factor	Loss [dB]	DC Corr [dB]	Result [dBuV/m]	AV Limit [dBuV/m]	AV Margin [dB]	PK Limit [dBuV/m]	PK Margin [dB]	Non-Restricted [dBuV/m]	Margin [dB]	Azimuth [Degs]	Height [cm]	Polarity
802.11a	5180	ANT1	6.907	38.74	PK-U	36.20	-26.50	0.00	48.44	-	-	-	-	68.20	-19.76	222	100	H
			6.907	39.28	PK-U	36.20	-26.50	0.00	48.98	-	-	-	-	68.20	-19.22	156	121	V
			10.360	34.44	PK-U	38.10	-21.00	0.00	51.54	-	-	-	-	68.20	-16.66	268	100	H
			10.359	33.36	PK-U	38.10	-21.00	0.00	50.46	-	-	-	-	68.20	-17.74	0	100	V
			* 15.53753	34.98	PK-U	40.20	-21.40	0.00	53.78	-	-	74.00	-20.22	-	-	0	100	H
			* 15.54015	35.08	PK-U	40.20	-21.40	0.00	53.88	-	-	74.00	-20.12	-	-	0	100	V
	5200	ANT1	7.796	35.62	PK-U	36.30	-24.50	0.00	47.42	-	-	-	-	68.20	-20.78	0	100	H
			7.798	35.84	PK-U	36.30	-24.50	0.00	47.64	-	-	-	-	68.20	-20.56	0	100	V
			10.400	35.57	PK-U	38.10	-21.00	0.00	52.67	-	-	-	-	68.20	**-15.53**	268	104	H
			10.396	34.89	PK-U	38.10	-21.00	0.00	51.99	-	-	-	-	68.20	-16.21	114	103	V
			* 15.5914	33.37	PK-U	40.30	-21.20	0.00	52.47	-	-	74.00	-21.53	-	-	0	100	H
			* 15.59687	33.55	PK-U	40.30	-21.20	0.00	52.65	-	-	74.00	-21.35	-	-	0	100	V
	5240	ANT1	6.987	38.90	PK-U	36.20	-26.00	0.00	49.10	-	-	-	-	68.20	-19.10	220	100	H
			6.987	39.13	PK-U	36.20	-26.00	0.00	49.33	-	-	-	-	68.20	-18.87	203	100	V
			10.480	34.20	PK-U	38.20	-21.20	0.00	51.20	-	-	-	-	68.20	-17.00	264	100	H
			10.478	33.91	PK-U	38.20	-21.20	0.00	50.91	-	-	-	-	68.20	-17.29	133	108	V
			* 15.72375	34.33	PK-U	40.50	-20.90	0.00	53.93	-	-	74.00	**-20.07**	-	-	0	100	H
			* 15.71692	34.41	PK-U	40.50	-21.00	0.00	53.91	-	-	74.00	-20.09	-	-	0	100	V
802.11n (HT20)	5200	ANT1	7.806	35.83	PK-U	36.30	-24.40	0.00	47.73	-	-	-	-	68.20	-20.47	0	100	H
			7.810	36.25	PK-U	36.30	-24.30	0.00	48.25	-	-	-	-	68.20	-19.95	0	100	V
			10.400	35.11	PK-U	38.10	-21.00	0.00	52.21	-	-	-	-	68.20	-15.99	271	100	H
			10.410	33.73	PK-U	38.10	-21.10	0.00	50.73	-	-	-	-	68.20	-17.47	0	100	V
			* 15.60607	33.87	PK-U	40.30	-21.20	0.00	52.97	-	-	74.00	-21.03	-	-	0	100	H
			* 15.60624	33.99	PK-U	40.30	-21.20	0.00	53.09	-	-	74.00	-20.91	-	-	0	100	V
802.11n (HT40)	5190	ANT1	7.784	36.46	PK-U	36.30	-24.60	0.00	48.16	-	-	-	-	68.20	-20.04	0	100	H
			7.782	35.85	PK-U	36.30	-24.60	0.00	47.55	-	-	-	-	68.20	-20.65	0	100	V
			10.380	33.88	PK-U	38.10	-20.90	0.00	51.08	-	-	-	-	68.20	-17.12	256	101	H
			10.372	34.19	PK-U	38.10	-20.90	0.00	51.39	-	-	-	-	68.20	-16.81	216	100	V
			* 15.58007	33.74	PK-U	40.30	-21.30	0.00	52.74	-	-	74.00	-21.26	-	-	0	100	H
			* 15.56084	33.46	PK-U	40.30	-21.40	0.00	52.36	-	-	74.00	-21.64	-	-	0	100	V
802.11ac (VHT80)	5210	ANT1	6.947	38.90	PK-U	36.20	-26.30	0.00	48.80	-	-	-	-	68.20	-19.40	203	100	H
			6.947	38.81	PK-U	36.20	-26.30	0.00	48.71	-	-	-	-	68.20	-19.49	153	119	V
			10.426	34.82	PK-U	38.10	-21.20	0.00	51.72	-	-	-	-	68.20	-16.48	0	100	H
			10.425	34.67	PK-U	38.10	-21.20	0.00	51.57	-	-	-	-	68.20	-16.63	0	100	V
			* 15.62252	33.56	PK-U	40.30	-21.10	0.00	52.76	-	-	74.00	-21.24	-	-	0	100	H
			* 15.62096	33.41	PK-U	40.30	-21.10	0.00	52.61	-	-	74.00	-21.39	-	-	0	100	V

Note1. PK-U - U-NII: Maximum Peak
Note2. * - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band

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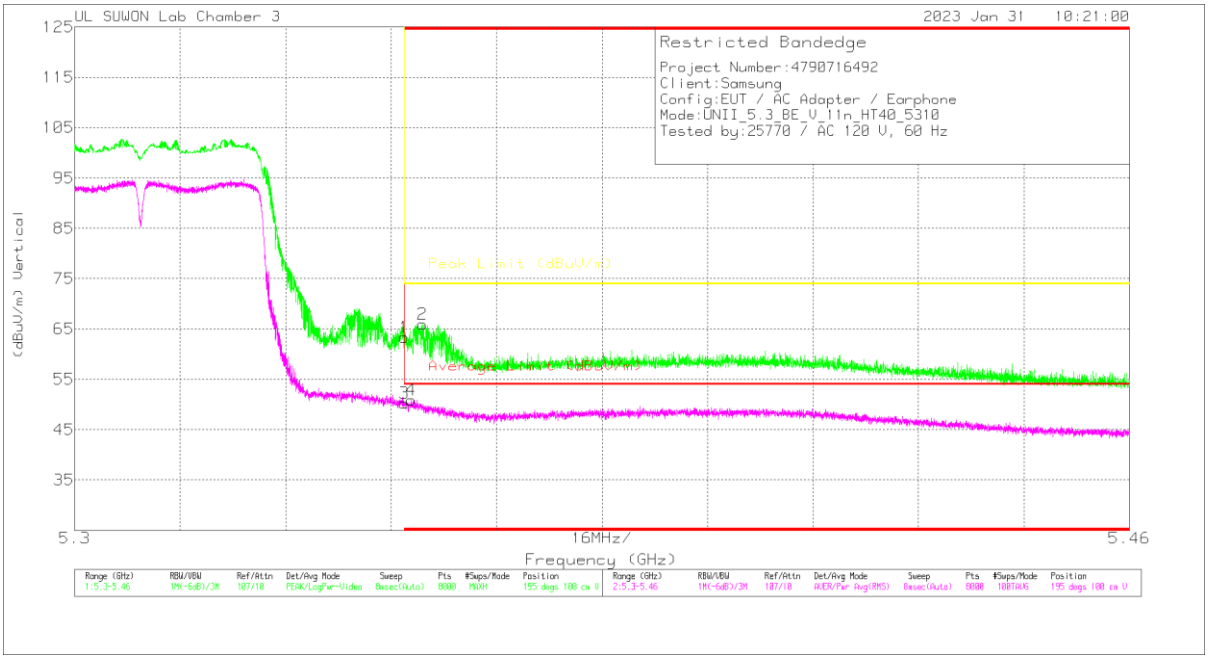
10.5. TX ABOVE 1GHz 1Tx MODE IN THE 5.3GHz BAND

BANDEDGE (WORST CASE: 802.11n HT40/ 5310 MHz)

VERTICAL PEAK AND AVERAGE DATA



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00218957	10dB_ATT[dB]	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	*5.35001	48.49	Pk	35.1	-20.2	0	63.39	-	-	74	-10.61	195	100	V
2	*5.35279	51.01	Pk	35.1	-20.2	0	65.91	-	-	74	-8.09	195	100	V
3	*5.35001	35.32	RMS	35.1	-20.2	0	50.22	54	-3.78	-	-	195	100	V
4	*5.35107	36.01	RMS	35.1	-20.2	0	50.91	54	-3.09	-	-	195	100	V

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

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BANDEDGE TEST DATA

Mode	Freq. [MHz]	Antenna	Frequency [GHz]	Reading [dBuV]	Detector Mode	ANT Factor	Loss [dB]	DC Corr [dB]	Result [dBuV/m]	AV Limit [dBuV/m]	AV Margin [dB]	PK Limit [dBuV/m]	PK Margin [dB]	Azimuth [Degs]	Height [cm]	Polarity
802.11a	5320	ANT1	* 5.35001	42.21	Pk	35.10	-20.20	0.00	57.11	-	-	74.00	-16.89	66	265	H
			* 5.35061	43.54	Pk	35.10	-20.20	0.00	58.44	-	-	74.00	-15.56	66	265	H
			* 5.35001	29.79	RMS	35.10	-20.20	0.00	44.69	54.00	-9.31	-	-	66	265	H
			* 5.35113	30.42	RMS	35.10	-20.20	0.00	45.32	54.00	-8.68	-	-	66	265	H
			* 5.35001	48.13	Pk	35.10	-20.20	0.00	63.03	-	-	74.00	-10.97	252	114	V
			* 5.35023	48.88	Pk	35.10	-20.20	0.00	63.78	-	-	74.00	-10.22	252	114	V
			* 5.35001	33.42	RMS	35.10	-20.20	0.00	48.32	54.00	-5.68	-	-	252	114	V
			* 5.35143	34.27	RMS	35.10	-20.20	0.00	49.17	54.00	-4.83	-	-	252	114	V
802.11n (HT20)	5320	ANT1	* 5.35001	43.27	Pk	35.10	-20.20	0.00	58.17	-	-	74.00	-15.83	154	100	H
			* 5.35031	44.07	Pk	35.10	-20.20	0.00	58.97	-	-	74.00	-15.03	154	100	H
			* 5.35001	30.15	RMS	35.10	-20.20	0.00	45.05	54.00	-8.95	-	-	154	100	H
			* 5.35285	30.69	RMS	35.10	-20.20	0.00	45.59	54.00	-8.41	-	-	154	100	H
			* 5.35001	47.82	Pk	35.10	-20.20	0.00	62.72	-	-	74.00	-11.28	199	114	V
			* 5.35045	51.25	Pk	35.10	-20.20	0.00	66.15	-	-	74.00	**-7.85**	199	114	V
			* 5.35001	34.72	RMS	35.10	-20.20	0.00	49.62	54.00	-4.38	-	-	199	114	V
			* 5.35045	35.79	RMS	35.10	-20.20	0.00	50.69	54.00	-3.31	-	-	199	114	V
802.11n (HT40)	5310	ANT1	* 5.35001	39.79	Pk	35.10	-20.20	0.00	54.69	-	-	74.00	-19.31	153	105	H
			* 5.35221	43.66	Pk	35.10	-20.20	0.00	58.56	-	-	74.00	-15.44	153	105	H
			* 5.35001	28.67	RMS	35.10	-20.20	0.00	43.57	54.00	-10.43	-	-	153	105	H
			* 5.39105	30.20	RMS	35.20	-20.20	0.00	45.20	54.00	-8.80	-	-	153	105	H
			* 5.35001	48.49	Pk	35.10	-20.20	0.00	63.39	-	-	74.00	-10.61	195	100	V
			* 5.35279	51.01	Pk	35.10	-20.20	0.00	65.91	-	-	74.00	-8.09	195	100	V
			* 5.35001	35.32	RMS	35.10	-20.20	0.00	50.22	54.00	-3.78	-	-	195	100	V
			* 5.35107	36.01	RMS	35.10	-20.20	0.00	50.91	54.00	**-3.09**	-	-	195	100	V
802.11ac (VHT80)	5290	ANT1	* 5.35001	40.72	Pk	35.10	-20.20	0.00	55.62	-	-	74.00	-18.38	152	103	H
			* 5.35543	42.74	Pk	35.10	-20.30	0.00	57.54	-	-	74.00	-16.46	152	103	H
			* 5.35001	29.41	RMS	35.10	-20.20	0.00	44.31	54.00	-9.69	-	-	152	103	H
			* 5.38367	30.57	RMS	35.20	-20.20	0.00	45.57	54.00	-8.43	-	-	152	103	H
			* 5.35001	43.95	Pk	35.10	-20.20	0.00	58.85	-	-	74.00	-15.15	249	100	V
			* 5.35903	47.14	Pk	35.10	-20.20	0.00	62.04	-	-	74.00	-11.96	249	100	V
			* 5.35001	33.58	RMS	35.10	-20.20	0.00	48.48	54.00	-5.52	-	-	249	100	V
			* 5.37587	35.11	RMS	35.20	-20.20	0.00	50.11	54.00	-3.89	-	-	249	100	V

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

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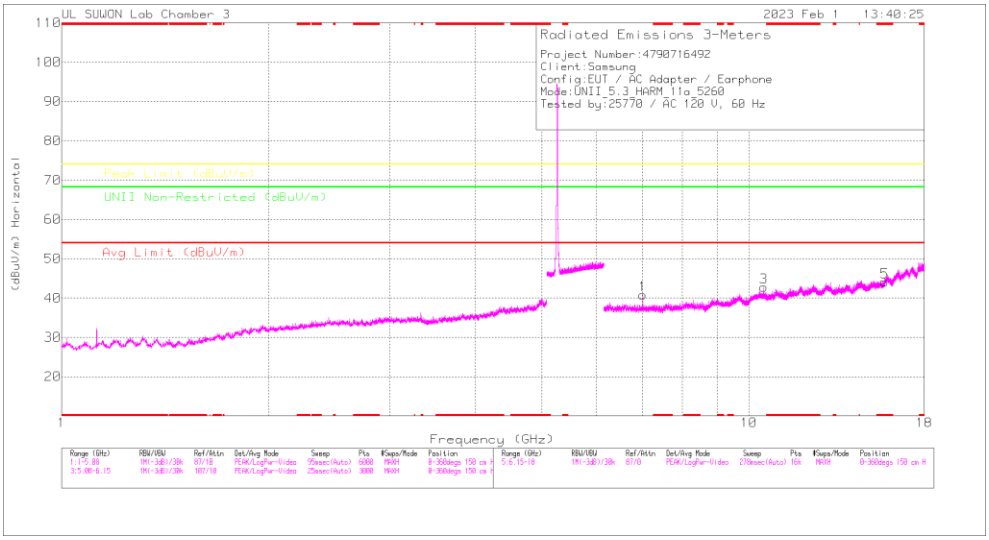
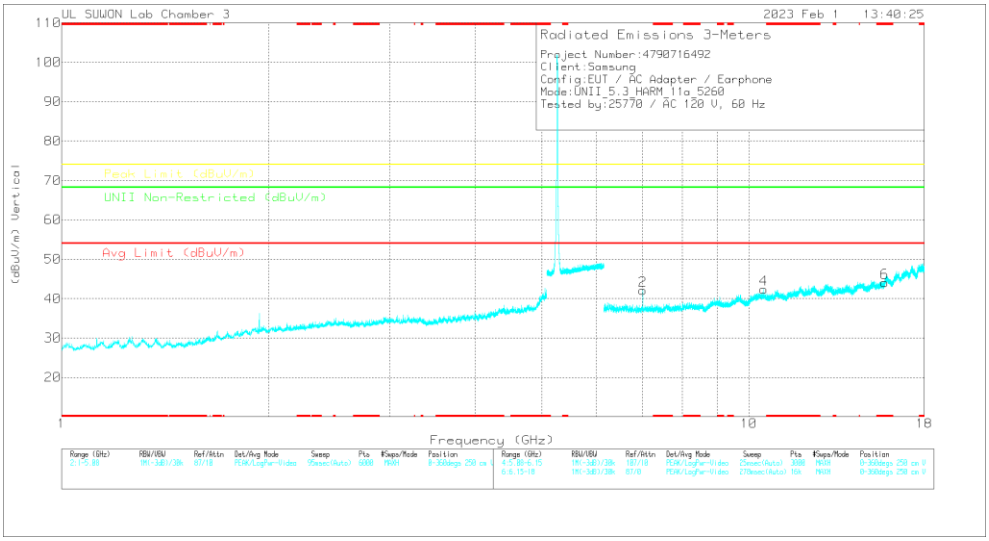
HARMONICS AND SPURIOUS EMISSIONS(WORST CASE: 802.11a / 5260 MHz)

5260 MHz HORIZONTAL



5260 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.

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00218957	6GHz_HP[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)	Azimuth (Degs)	Height (cm)	Polarity
7.01352	38.79	PK-U	36.2	-25.9	0	49.09	-	-	-	-	68.2	-19.11	215	101	H
7.0132	38.79	PK-U	36.2	-25.9	0	49.09	-	-	-	-	68.2	-19.11	188	100	V
10.52002	34.84	PK-U	38.2	-21.1	0	51.94	-	-	-	-	68.2	-16.26	249	101	H
10.51974	33.7	PK-U	38.2	-21.1	0	50.8	-	-	-	-	68.2	-17.4	222	100	V
* 15.7715	34.35	PK-U	40.6	-20.9	0	54.05	-	-	74	-19.95	-	-	0	100	H
* 15.7805	34.62	PK-U	40.6	-20.8	0	54.42	-	-	74	-19.58	-	-	0	100	V

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

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HARMONICS AND SPURIOUS EMISSIONS TEST DATA

Mode	Freq. [MHz]	Antenna	Frequency [GHz]	Reading [dBuV]	Detector Mode	ANT Factor	Loss [dB]	DC Corr [dB]	Result [dBuV/m]	AV Limit [dBuV/m]	AV Margin [dB]	PK Limit [dBuV/m]	PK Margin [dB]	Non-Restricted [dBuV/m]	Margin [dB]	Azimuth [Degs]	Height [cm]	Polarity
802.11a	5260	ANT1	7.014	38.79	PK-U	36.20	-25.90	0.00	49.09	-	-	-	-	68.20	-19.11	215	101	H
			7.013	38.79	PK-U	36.20	-25.90	0.00	49.09	-	-	-	-	68.20	-19.11	188	100	V
			10.520	34.84	PK-U	38.20	-21.10	0.00	51.94	-	-	-	-	68.20	**-16.26**	249	101	H
			10.520	33.70	PK-U	38.20	-21.10	0.00	50.80	-	-	-	-	68.20	-17.40	222	100	V
			* 15.7715	34.35	PK-U	40.60	-20.90	0.00	54.05	-	-	74.00	-19.95	-	-	0	100	H
			* 15.7805	34.62	PK-U	40.60	-20.80	0.00	54.42	-	-	74.00	-19.58	-	-	0	100	V
	5300	ANT1	7.952	36.40	PK-U	36.30	-24.20	0.00	48.50	-	-	-	-	68.20	-19.70	0	100	H
			7.947	36.43	PK-U	36.30	-24.10	0.00	48.63	-	-	-	-	68.20	-19.57	0	100	V
			10.582	33.33	PK-U	38.30	-21.20	0.00	50.43	-	-	-	-	68.20	-17.77	0	100	H
			10.467	33.83	PK-U	38.20	-21.20	0.00	50.83	-	-	-	-	68.20	-17.37	0	100	V
			* 15.89077	34.14	PK-U	40.80	-20.30	0.00	54.64	-	-	74.00	**-19.36**	-	-	0	100	H
			* 15.90834	34.14	PK-U	40.80	-20.30	0.00	54.64	-	-	74.00	**-19.36**	-	-	0	100	V
	5320	ANT1	7.986	35.88	PK-U	36.30	-24.30	0.00	47.88	-	-	-	-	68.20	-20.32	0	100	H
			7.985	36.35	PK-U	36.30	-24.30	0.00	48.35	-	-	-	-	68.20	-19.85	0	100	V
			* 10.63143	32.84	PK-U	38.30	-21.10	0.00	50.04	-	-	74.00	-23.96	-	-	0	100	H
			* 10.64589	32.90	PK-U	38.30	-21.10	0.00	50.10	-	-	74.00	-23.90	-	-	0	100	V
			* 15.95516	33.70	PK-U	40.90	-20.40	0.00	54.20	-	-	74.00	-19.80	-	-	0	100	H
			* 15.95999	33.61	PK-U	40.90	-20.40	0.00	54.11	-	-	74.00	-19.89	-	-	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

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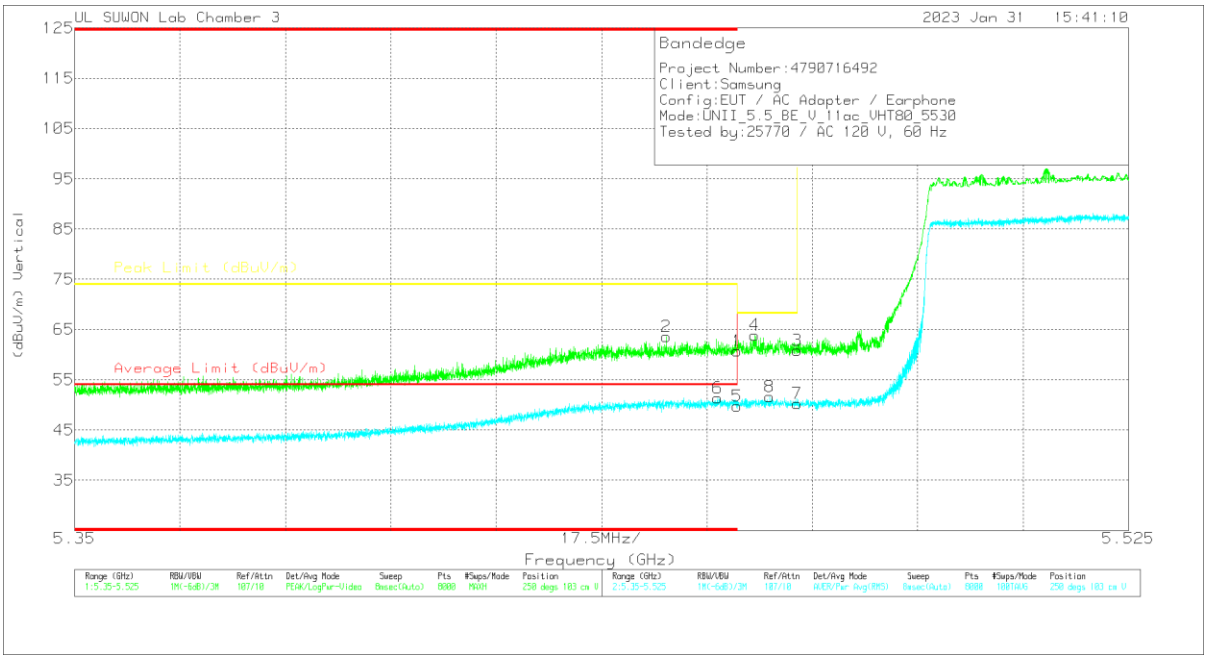
10.6. TX ABOVE 1GHz 1Tx MODE IN THE 5.5 GHz BAND

BANDEDGE (WORST CASE: 802.11ac VHT80 / 5530 MHz)

VERTICAL PEAK AND AVERAGE DATA



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00218957	10dB_ATT[dB]	DC Corr (dB)	Corrected Reading (dBuV/m)	Average Limit (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	* 5.45998	45.54	Pk	35.3	-20.1	0	60.74	-	-	74	-13.26	250	103	V
2	* 5.44823	48.38	Pk	35.3	-20.1	0	63.58	-	-	74	-10.42	250	103	V
3	5.46998	45.66	Pk	35.3	-20.1	0	60.86	-	-	68.2	-7.34	250	103	V
4	5.46287	48.7	Pk	35.3	-20.1	0	63.9	-	-	68.2	-4.3	250	103	V
5	* 5.45998	34.57	RMS	35.3	-20.1	0	49.77	54	-4.23	-	-	250	103	V
6	* 5.45674	36.19	RMS	35.3	-20.1	0	51.39	54	-2.61	-	-	250	103	V
7	5.46998	35.11	RMS	35.3	-20.1	0	50.31	-	-	-	-	250	103	V
8	5.46538	36.46	RMS	35.3	-20.1	0	51.66	-	-	-	-	250	103	V

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

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BANDEDGE TEST DATA

Mode	Freq. [MHz]	Antenna	Frequency [GHz]	Reading [dBuV]	Detector Mode	ANT Factor	Loss [dB]	DC Corr [dB]	Result [dBuV/m]	AV Limit [dBuV/m]	AV Margin [dB]	PK Limit [dBuV/m]	PK Margin [dB]	Azimuth [Degs]	Height [cm]	Polarity
802.11a	5500	ANT1	* 5.45998	38.57	Pk	35.30	-20.10	0.00	53.77	-	-	74.00	-20.23	149	100	H
			* 5.43329	40.63	Pk	35.30	-20.10	0.00	55.83	-	-	74.00	-18.17	149	100	H
			5.46998	40.82	Pk	35.30	-20.10	0.00	56.02	-	-	68.20	-12.18	149	100	H
			5.46643	42.49	Pk	35.30	-20.10	0.00	57.69	-	-	68.20	-10.51	149	100	H
			* 5.45998	29.06	RMS	35.30	-20.10	0.00	44.26	54.00	-9.74	-	-	149	100	H
			* 5.45821	29.48	RMS	35.30	-20.10	0.00	44.68	54.00	-9.32	-	-	149	100	H
			5.46998	29.69	RMS	35.30	-20.10	0.00	44.89	-	-	-	-	149	100	H
			5.46884	30.65	RMS	35.30	-20.10	0.00	45.85	-	-	-	-	149	100	H
			* 5.45998	40.74	Pk	35.30	-20.10	0.00	55.94	-	-	74.00	-18.06	250	115	V
			* 5.45434	42.52	Pk	35.30	-20.10	0.00	57.72	-	-	74.00	-16.28	250	115	V
			5.46998	45.20	Pk	35.30	-20.10	0.00	60.40	-	-	68.20	-7.80	250	115	V
			5.46884	45.41	Pk	35.30	-20.10	0.00	60.61	-	-	68.20	-7.59	250	115	V
			* 5.45998	31.53	RMS	35.30	-20.10	0.00	46.73	54.00	-7.27	-	-	250	115	V
			* 5.45897	31.68	RMS	35.30	-20.10	0.00	46.88	54.00	-7.12	-	-	250	115	V
			5.46998	33.88	RMS	35.30	-20.10	0.00	49.08	-	-	-	-	250	115	V
			5.46845	34.09	RMS	35.30	-20.10	0.00	49.29	-	-	-	-	250	115	V
	5700	ANT1	5.72500	42.56	Pk	35.70	-19.50	0.00	58.76	-	-	68.20	-9.44	140	107	H
			5.72602	43.20	Pk	35.70	-19.50	0.00	59.40	-	-	68.20	-8.80	140	107	H
			5.72500	48.61	Pk	35.70	-19.50	0.00	64.81	-	-	68.20	-3.39	206	100	V
			5.72503	48.67	Pk	35.70	-19.50	0.00	64.87	-	-	68.20	-3.33	206	100	V
802.11n (HT20)	5500	ANT1	* 5.45998	40.39	Pk	35.30	-20.10	0.00	55.59	-	-	74.00	-18.41	98	105	H
			* 5.45954	41.13	Pk	35.30	-20.10	0.00	56.33	-	-	74.00	-17.67	98	105	H
			5.46998	44.22	Pk	35.30	-20.10	0.00	59.42	-	-	68.20	-8.78	98	105	H
			5.46991	45.69	Pk	35.30	-20.10	0.00	60.89	-	-	68.20	-7.31	98	105	H
			* 5.45998	28.99	RMS	35.30	-20.10	0.00	44.19	54.00	-9.81	-	-	98	105	H
			* 5.45937	30.01	RMS	35.30	-20.10	0.00	45.21	54.00	-8.79	-	-	98	105	H
			5.46998	30.60	RMS	35.30	-20.10	0.00	45.80	-	-	-	-	98	105	H
			5.46733	30.84	RMS	35.30	-20.10	0.00	46.04	-	-	-	-	98	105	H
			* 5.45998	41.01	Pk	35.30	-20.10	0.00	56.21	-	-	74.00	-17.79	251	106	V
			* 5.4593	43.20	Pk	35.30	-20.10	0.00	58.40	-	-	74.00	-15.60	251	106	V
			5.46998	49.19	Pk	35.30	-20.10	0.00	64.39	-	-	68.20	-3.81	251	106	V
			5.46989	49.91	Pk	35.30	-20.10	0.00	65.11	-	-	68.20	-3.09	251	106	V
			* 5.45998	31.88	RMS	35.30	-20.10	0.00	47.08	54.00	-6.92	-	-	251	106	V
			* 5.45987	32.13	RMS	35.30	-20.10	0.00	47.33	54.00	-6.67	-	-	251	106	V
			5.46998	33.53	RMS	35.30	-20.10	0.00	48.73	-	-	-	-	251	106	V
			5.46985	35.96	RMS	35.30	-20.10	0.00	51.16	-	-	-	-	251	106	V
	5700	ANT1	5.72500	40.36	Pk	35.70	-19.50	0.00	56.56	-	-	68.20	-11.64	137	108	H
			5.72860	42.36	Pk	35.70	-19.50	0.00	58.56	-	-	68.20	-9.64	137	108	H
			5.72500	48.35	Pk	35.70	-19.50	0.00	64.55	-	-	68.20	-3.65	208	100	V
			5.72513	49.34	Pk	35.70	-19.50	0.00	65.54	-	-	68.20	**-2.66**	208	100	V
802.11n (HT40)	5510	ANT1	* 5.45998	40.41	Pk	35.30	-20.10	0.00	55.61	-	-	74.00	-18.39	149	100	H
			* 5.43799	41.78	Pk	35.30	-20.10	0.00	56.98	-	-	74.00	-17.02	149	100	H
			5.46998	40.55	Pk	35.30	-20.10	0.00	55.75	-	-	68.20	-12.45	149	100	H
			5.46858	43.22	Pk	35.30	-20.10	0.00	58.42	-	-	68.20	-9.78	149	100	H
			* 5.45998	29.18	RMS	35.30	-20.10	0.00	44.38	54.00	-9.62	-	-	149	100	H
			* 5.42235	30.60	RMS	35.20	-20.10	0.00	45.70	54.00	-8.30	-	-	149	100	H
			5.46998	28.81	RMS	35.30	-20.10	0.00	44.01	-	-	-	-	149	100	H
			5.46943	30.64	RMS	35.30	-20.10	0.00	45.84	-	-	-	-	149	100	H
			* 5.45998	46.36	Pk	35.30	-20.10	0.00	61.56	-	-	74.00	-12.44	251	103	V
			* 5.45987	46.67	Pk	35.30	-20.10	0.00	61.87	-	-	74.00	-12.13	251	103	V
			5.46998	45.37	Pk	35.30	-20.10	0.00	60.57	-	-	68.20	-7.63	251	103	V
			5.46716	49.30	Pk	35.30	-20.10	0.00	64.50	-	-	68.20	-3.70	251	103	V
			* 5.45998	32.53	RMS	35.30	-20.10	0.00	47.73	54.00	-6.27	-	-	251	103	V
			* 5.42342	33.59	RMS	35.20	-20.10	0.00	48.69	54.00	-5.31	-	-	251	103	V
			5.46998	34.47	RMS	35.30	-20.10	0.00	49.67	-	-	-	-	251	103	V
			5.46952	35.35	RMS	35.30	-20.10	0.00	50.55	-	-	-	-	251	103	V
	5670	ANT1	5.72500	40.12	Pk	35.70	-19.50	0.00	56.32	-	-	68.20	-11.88	144	100	H
			5.75599	41.52	Pk	35.70	-19.40	0.00	57.82	-	-	68.20	-10.38	144	100	H
			5.72500	45.86	Pk	35.70	-19.50	0.00	62.06	-	-	68.20	-6.14	212	103	V
			5.73632	47.92	Pk	35.70	-19.50	0.00	64.12	-	-	68.20	-4.08	212	103	V
802.11ac (VHT80)	5530	ANT1	* 5.45998	41.23	Pk	35.30	-20.10	0.00	56.43	-	-	74.00	-17.57	147	100	H
			* 5.45948	43.13	Pk	35.30	-20.10	0.00	58.33	-	-	74.00	-15.67	147	100	H
			5.46998	40.13	Pk	35.30	-20.10	0.00	55.33	-	-	68.20	-12.87	147	100	H
			5.46287	43.61	Pk	35.30	-20.10	0.00	58.81	-	-	68.20	-9.39	147	100	H
			* 5.45998	30.80	RMS	35.30	-20.10	0.00	46.00	54.00	-8.00	-	-	147	100	H
			* 5.44335	31.90	RMS	35.30	-20.10	0.00	47.10	54.00	-6.90	-	-	147	100	H
			5.46998	30.38	RMS	35.30	-20.10	0.00	45.58	-	-	-	-	147	100	H
			5.46523	31.67	RMS	35.30	-20.10	0.00	46.87	-	-	-	-	147	100	H
			* 5.45998	45.54	Pk	35.30	-20.10	0.00	60.74	-	-	74.00	-13.26	250	103	V
			* 5.44823	48.38	Pk	35.30	-20.10	0.00	63.58	-	-	74.00	-10.42	250	103	V
			5.46998	45.66	Pk	35.30	-20.10	0.00	60.86	-	-	68.20	-7.34	250	103	V
			5.46287	48.70	Pk	35.30	-20.10	0.00	63.90	-	-	68.20	-4.30	250	103	V
			* 5.45998	34.57	RMS	35.30	-20.10	0.00	49.77	54.00	-4.23	-	-	250	103	V
			* 5.45674	36.19	RMS	35.30	-20.10	0.00	51.39	54.00	**-2.61**	-	-	250	103	V
			5.46998	35.11	RMS	35.30	-20.10	0.00	50.31	-	-	-	-	250	103	V
			5.46538	36.46	RMS	35.30	-20.10	0.00	51.66	-	-	-	-	250	103	V
	5610	ANT1	5.72500	38.26	Pk	35.70	-19.50	0.00	54.46	-	-	68.20	-13.74	145	101	H
			5.72691	40.17	Pk	35.70	-19.50	0.00	56.37	-	-	68.20	-11.83	145	101	H
			5.72500	42.04	Pk	35.70	-19.50	0.00	58.24	-	-	68.20	-9.96	206	100	V
			5.73094	43.81	Pk	35.70	-19.50	0.00	60.01	-	-	68.20	-8.19	206	100	V

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

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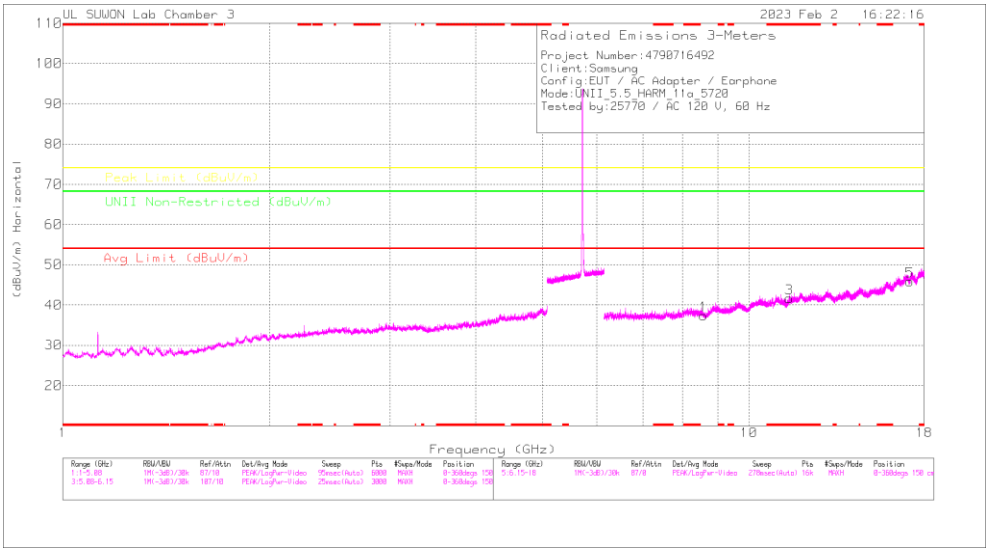
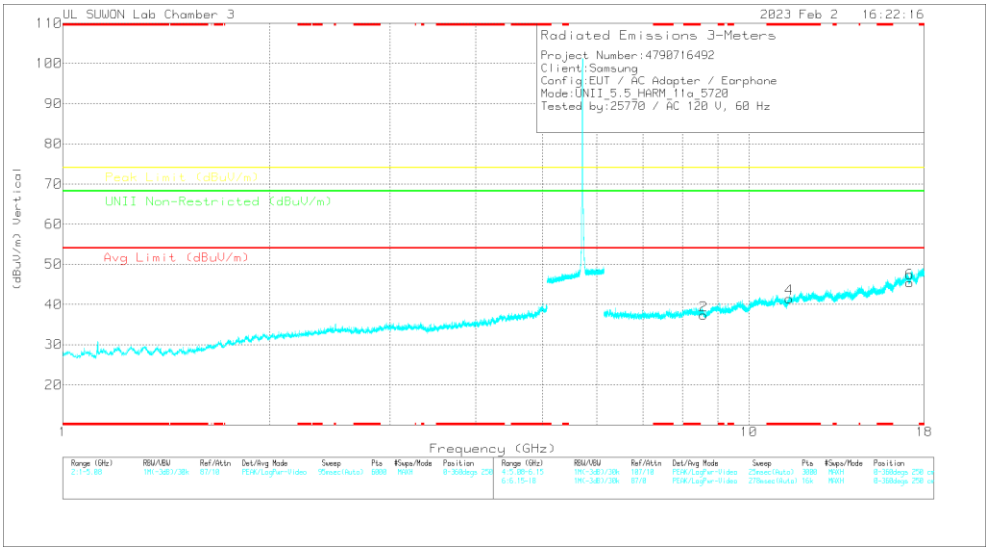
HARMONICS AND SPURIOUS EMISSIONS(WORST CASE: 802.11a / 5720 MHz)

5720 MHz HORIZONTAL



5720 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.

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00218957	6GHz_HP(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)	Azimuth (Degs)	Height (cm)	Polarity
8.57317	34.32	PK-U	36.5	-23	0	47.82	-	-	-	-	68.2	-20.38	0	100	H
8.57287	34.18	PK-U	36.5	-23	0	47.68	-	-	-	-	68.2	-20.52	0	100	V
* 11.44136	32.79	PK-U	38.6	-21.3	0	50.09	-	-	74	-23.91	-	-	0	100	H
* 11.44553	32.57	PK-U	38.6	-21.3	0	49.87	-	-	74	-24.13	-	-	0	100	V
17.16917	32.53	PK-U	42.2	-17.9	0	56.83	-	-	-	-	68.2	-11.37	0	100	H
17.16518	32.24	PK-U	42.2	-17.9	0	56.54	-	-	-	-	68.2	-11.66	0	100	V

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

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HARMONICS AND SPURIOUS EMISSIONS TEST DATA

Mode	Freq. [MHz]	Antenna	Frequency [GHz]	Reading [dBuV]	Detector Mode	ANT Factor	Loss [dB]	DC Corr [dB]	Result [dBuV/m]	AV Limit [dBuV/m]	AV Margin [dB]	PK Limit [dBuV/m]	PK Margin [dB]	Non-Restricted [dBuV/m]	Margin [dB]	Azimuth [Degs]	Height [cm]	Polarity
802.11a	5500	ANT1	* 8.24643	35.95	PK-U	36.20	-23.60	0.00	48.55	-	-	74.00	-25.45	-	-	0	100	H
			* 8.24415	35.88	PK-U	36.20	-23.60	0.00	48.48	-	-	74.00	-25.52	-	-	0	100	V
			* 11.00633	33.42	PK-U	38.50	-21.20	0.00	50.72	-	-	74.00	-23.28	-	-	0	100	H
			* 11.00588	33.44	PK-U	38.50	-21.20	0.00	50.74	-	-	74.00	-23.26	-	-	0	100	V
			16.506	33.04	PK-U	42.00	-19.20	0.00	55.84	-	-	-	-	68.20	-12.36	0	100	H
			16.511	32.93	PK-U	42.00	-19.20	0.00	55.73	-	-	-	-	68.20	-12.47	0	100	V
	5580	ANT1	* 8.36455	35.62	PK-U	36.20	-23.60	0.00	48.22	-	-	74.00	-25.78	-	-	0	100	H
			* 8.36401	35.51	PK-U	36.20	-23.60	0.00	48.11	-	-	74.00	-25.89	-	-	0	100	V
			* 11.16107	34.09	PK-U	38.60	-21.50	0.00	51.19	-	-	74.00	-22.81	-	-	0	100	H
			* 11.15627	34.40	PK-U	38.60	-21.40	0.00	51.60	-	-	74.00	**-22.40**	-	-	0	100	V
			16.750	31.51	PK-U	42.40	-18.70	0.00	55.21	-	-	-	-	68.20	-12.99	0	100	H
			16.747	32.08	PK-U	42.30	-18.80	0.00	55.58	-	-	-	-	68.20	-12.62	0	100	V
	5700	ANT1	8.552	34.68	PK-U	36.50	-22.90	0.00	48.28	-	-	-	-	68.20	-19.92	0	100	H
			8.558	34.76	PK-U	36.50	-22.90	0.00	48.36	-	-	-	-	68.20	-19.84	0	100	V
			* 11.40309	32.58	PK-U	38.60	-21.40	0.00	49.78	-	-	74.00	-24.22	-	-	0	100	H
			* 11.40802	32.61	PK-U	38.60	-21.50	0.00	49.71	-	-	74.00	-24.29	-	-	0	100	V
			17.098	32.00	PK-U	42.30	-18.00	0.00	56.30	-	-	-	-	68.20	-11.90	0	100	H
			17.106	31.99	PK-U	42.30	-18.00	0.00	56.29	-	-	-	-	68.20	-11.91	0	100	V
	5720	ANT1	8.573	34.32	PK-U	36.50	-23.00	0.00	47.82	-	-	-	-	68.20	-20.38	0	100	H
			8.573	34.18	PK-U	36.50	-23.00	0.00	47.68	-	-	-	-	68.20	-20.52	0	100	V
			* 11.44136	32.79	PK-U	38.60	-21.30	0.00	50.09	-	-	74.00	-23.91	-	-	0	100	H
			* 11.44553	32.57	PK-U	38.60	-21.30	0.00	49.87	-	-	74.00	-24.13	-	-	0	100	V
			17.169	32.53	PK-U	42.20	-17.90	0.00	56.83	-	-	-	-	68.20	**-11.37**	0	100	H
			17.165	32.24	PK-U	42.20	-17.90	0.00	56.54	-	-	-	-	68.20	-11.66	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

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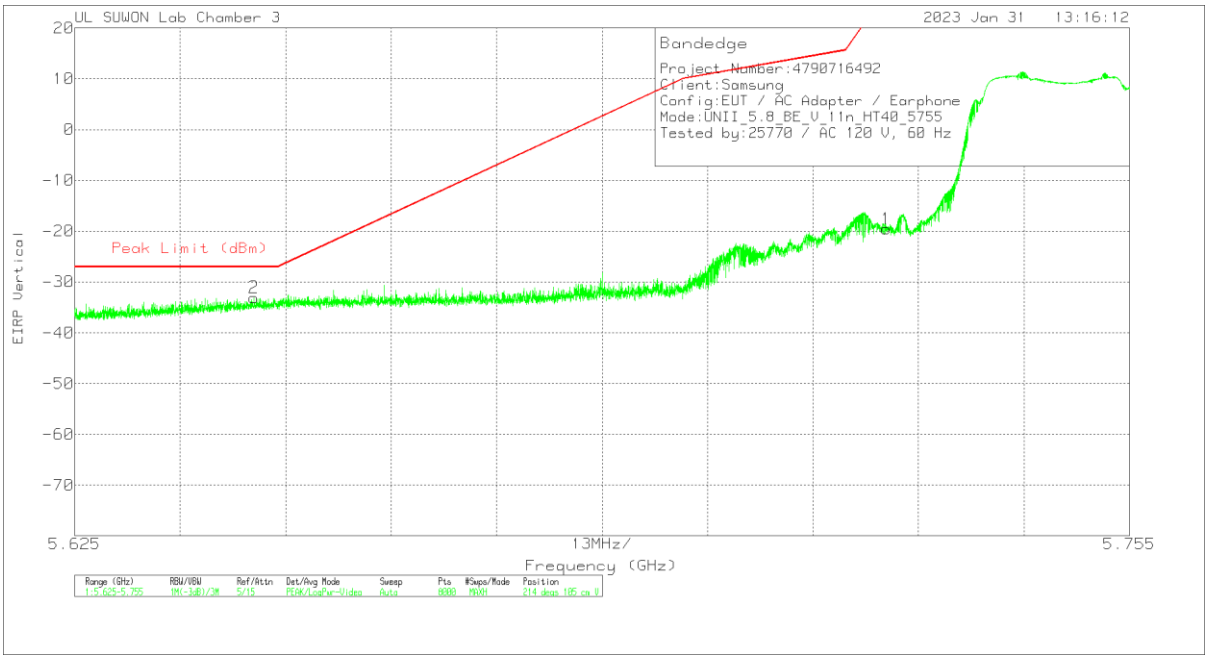
10.7. TX ABOVE 1GHz 1Tx MODE IN THE 5.8 GHz BAND

BANDEDGE (WORST CASE: 802.11n HT40 / 5755 MHz)

VERTICAL PEAK DATA



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBm)	Det	3117_00218957	10dB_ATT[dB]	Conversion Factor (dB)	DC Corr (dB)	Corrected Reading EIRP	Peak Limit (dBm)	PK Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	5.725	-47.48	Pk	35.6	-19.5	11.8	0	-19.58	27	-46.58	214	105	V
2	5.64707	-60.54	Pk	35.5	-19.8	11.8	0	-33.04	-27	-6.04	214	105	V

Pk - Peak detector

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BANDEDGE TEST DATA

Mode	Freq. [MHz]	Antenna	Frequency [GHz]	Reading [dBm]	Detector Mode	ANT Factor	Loss [dB]	Conv. F [dB]	DC Corr [dB]	Result [dBm]	PK Limit [dBm]	PK Margin [dB]	Azimuth [Degs]	Height [cm]	Polarity
802.11a	5745	ANT1	5.72500	-54.02	Pk	35.60	-19.50	11.80	0.00	-26.12	27.00	-53.12	144	100	H
			5.64749	-62.98	Pk	35.50	-19.80	11.80	0.00	-35.48	-27.00	-8.48	144	100	H
			5.72500	-48.34	Pk	35.60	-19.50	11.80	0.00	-20.44	27.00	-47.44	212	105	V
			5.63308	-62.50	Pk	35.50	-19.90	11.80	0.00	-35.10	-27.00	-8.10	212	105	V
	5825	ANT1	5.85001	-63.25	Pk	35.90	-19.30	11.80	0.00	-34.85	26.99	-61.84	71	226	H
			5.95229	-63.27	Pk	36.00	-19.30	11.80	0.00	-34.77	-27.00	-7.77	71	226	H
			5.85001	-55.98	Pk	35.90	-19.30	11.80	0.00	-27.58	26.99	-54.57	188	101	V
			5.98810	-63.24	Pk	36.00	-19.20	11.80	0.00	-34.64	-27.00	-7.64	188	101	V
802.11n (HT20)	5745	ANT1	5.72500	-55.09	Pk	35.60	-19.50	11.80	0.00	-27.19	27.00	-54.19	147	100	H
			5.64401	-62.84	Pk	35.50	-19.80	11.80	0.00	-35.34	-27.00	-8.34	147	100	H
			5.72500	-46.17	Pk	35.60	-19.50	11.80	0.00	-18.27	27.00	-45.27	207	100	V
			5.63794	-63.32	Pk	35.50	-19.80	11.80	0.00	-35.82	-27.00	-8.82	207	100	V
	5825	ANT1	5.85001	-63.68	Pk	35.90	-19.30	11.80	0.00	-35.28	26.99	-62.27	255	114	H
			5.99330	-63.47	Pk	36.00	-19.20	11.80	0.00	-34.87	-27.00	-7.87	255	114	H
			5.85001	-53.66	Pk	35.90	-19.30	11.80	0.00	-25.26	26.99	-52.25	205	101	V
			5.94317	-63.31	Pk	36.00	-19.30	11.80	0.00	-34.81	-27.00	-7.81	205	101	V
802.11n (HT40)	5755	ANT1	5.72500	-56.50	Pk	35.60	-19.50	11.80	0.00	-28.60	27.00	-55.60	144	100	H
			5.64135	-62.64	Pk	35.50	-19.80	11.80	0.00	-35.14	-27.00	-8.14	144	100	H
			5.72500	-47.48	Pk	35.60	-19.50	11.80	0.00	-19.58	27.00	-46.58	214	105	V
			5.64707	-60.54	Pk	35.50	-19.80	11.80	0.00	-33.04	-27.00	**-6.04**	214	105	V
	5795	ANT1	5.85001	-65.99	Pk	35.90	-19.30	11.80	0.00	-37.59	26.99	-64.58	168	108	H
			5.97032	-63.92	Pk	36.00	-19.20	11.80	0.00	-35.32	-27.00	-8.32	168	108	H
			5.85001	-60.53	Pk	35.90	-19.30	11.80	0.00	-32.13	26.99	-59.12	211	103	V
			5.93014	-62.12	Pk	36.00	-19.30	11.80	0.00	-33.62	-27.00	-6.62	211	103	V
802.11ac (VHT80)	5775 (Lowerr Side)	ANT1	5.72500	-59.16	Pk	35.60	-19.50	11.80	0.00	-31.26	27.00	-58.26	146	108	H
			5.64476	-63.38	Pk	35.50	-19.80	11.80	0.00	-35.88	-27.00	-8.88	146	108	H
			5.72500	-49.25	Pk	35.60	-19.50	11.80	0.00	-21.35	27.00	-48.35	211	100	V
			5.64848	-61.72	Pk	35.50	-19.80	11.80	0.00	-34.22	-27.00	-7.22	211	100	V
	5775 (Upper Side)	ANT1	5.85001	-64.16	Pk	35.90	-19.30	11.80	0.00	-35.76	26.99	-62.75	141	100	H
			5.95307	-63.63	Pk	36.00	-19.30	11.80	0.00	-35.13	-27.00	-8.13	141	100	H
			5.85001	-57.77	Pk	35.90	-19.30	11.80	0.00	-29.37	26.99	-56.36	196	100	V
			5.92699	-63.41	Pk	36.00	-19.30	11.80	0.00	-34.91	-27.00	-7.91	196	100	V

Note. Pk - Peak detector

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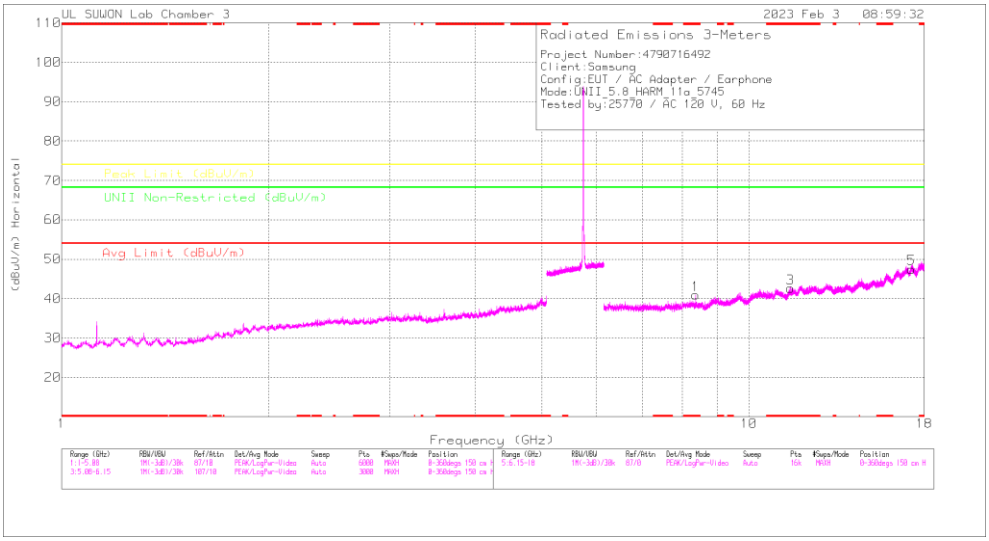
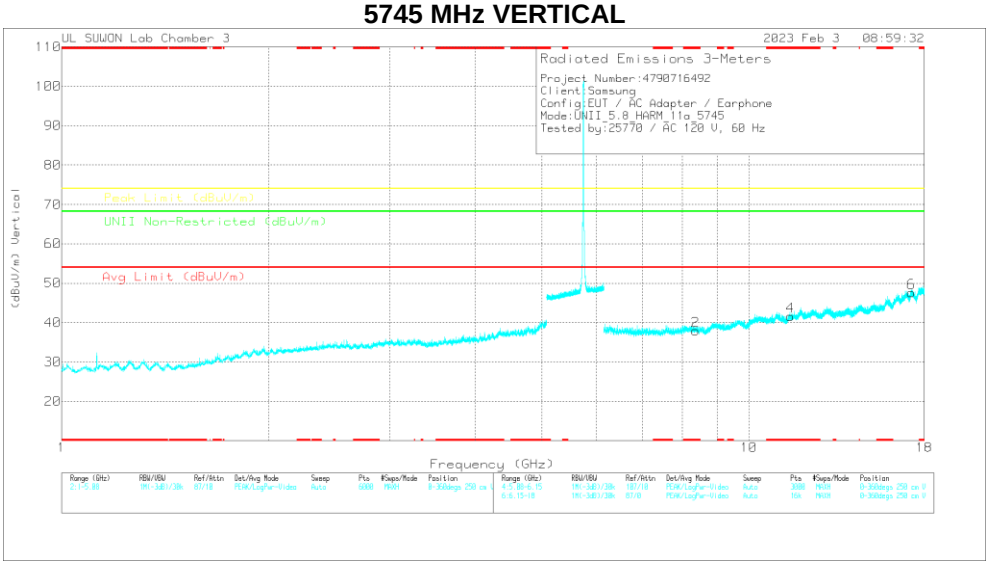
HARMONICS AND SPURIOUS EMISSIONS(WORST CASE: 802.11a / 5745 MHz)

5745 MHz HORIZONTAL



5745 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.

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00218957	6GHz_HP[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)	Azimuth (Degs)	Height (cm)	Polarity
* 8.36698	36.11	PK-U	36.2	-23.6	0	48.71	-	-	74	-25.29	-	-	158	155	H
* 8.36276	24.39	ADR	36.2	-23.6	0	36.99	54	-17.01	-	-	-	-	158	155	H
* 8.36305	36.09	PK-U	36.2	-23.6	0	48.69	-	-	74	-25.31	-	-	0	100	V
* 11.49058	33.36	PK-U	38.7	-21.4	0	50.66	-	-	74	-23.34	-	-	0	100	H
* 11.49743	33.29	PK-U	38.7	-21.4	0	50.59	-	-	74	-23.41	-	-	0	100	V
17.22587	32.82	PK-U	42.1	-17.2	0	57.72	-	-	-	-	68.2	-10.48	0	100	H
17.2424	32.36	PK-U	42.1	-17.1	0	57.36	-	-	-	-	68.2	-10.84	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

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HARMONICS AND SPURIOUS EMISSIONS TEST DATA

Mode	Freq. [MHz]	Antenna	Frequency [GHz]	Reading [dBuV]	Detector Mode	ANT Factor	Loss [dB]	DC Corr [dB]	Result [dBuV/m]	AV Limit [dBuV/m]	AV Margin [dB]	PK Limit [dBuV/m]	PK Margin [dB]	Non-Restricted [dBuV/m]	Margin [dB]	Azimuth [Degs]	Height [cm]	Polarity
802.11a	5745	ANT1	* 8.36698	36.11	PK-U	36.20	-23.60	0.00	48.71	-	-	74.00	-25.29	-	-	158	155	H
			* 8.36276	24.39	ADR	36.20	-23.60	0.00	36.99	54.00	**-17.01**	-	-	-	-	158	155	H
			* 8.36305	36.09	PK-U	36.20	-23.60	0.00	48.69	-	-	74.00	-25.31	-	-	0	100	V
			* 11.49058	33.36	PK-U	38.70	-21.40	0.00	50.66	-	-	74.00	-23.34	-	-	0	100	H
			* 11.49743	33.29	PK-U	38.70	-21.40	0.00	50.59	-	-	74.00	-23.41	-	-	0	100	V
			17.226	32.82	PK-U	42.10	-17.20	0.00	57.72	-	-	-	-	68.20	**-10.48**	0	100	H
			17.242	32.36	PK-U	42.10	-17.10	0.00	57.36	-	-	-	-	68.20	-10.84	0	100	V
	5785	ANT1	8.674	34.07	PK-U	36.50	-23.00	0.00	47.57	-	-	-	-	68.20	-20.63	0	100	H
			8.684	34.37	PK-U	36.50	-22.90	0.00	47.97	-	-	-	-	68.20	-20.23	0	100	V
			* 11.56781	33.75	PK-U	38.80	-21.60	0.00	50.95	-	-	74.00	-23.05	-	-	0	100	H
			* 11.57305	34.40	PK-U	38.80	-21.60	0.00	51.60	-	-	74.00	-22.40	-	-	0	100	V
			17.361	32.09	PK-U	42.00	-17.20	0.00	56.89	-	-	-	-	68.20	-11.31	0	100	H
			17.361	32.00	PK-U	42.00	-17.30	0.00	56.70	-	-	-	-	68.20	-11.50	0	100	V
	5825	ANT1	8.739	34.85	PK-U	36.50	-22.80	0.00	48.55	-	-	-	-	68.20	-19.65	0	100	H
			8.728	34.82	PK-U	36.50	-22.90	0.00	48.42	-	-	-	-	68.20	-19.78	0	100	V
			* 11.65829	34.45	PK-U	38.90	-21.50	0.00	51.85	-	-	74.00	**-22.15**	-	-	0	100	H
			* 11.64673	34.54	PK-U	38.80	-21.50	0.00	51.84	-	-	74.00	-22.16	-	-	0	100	V
			17.467	31.56	PK-U	42.00	-16.80	0.00	56.76	-	-	-	-	68.20	-11.44	0	100	H
			17.483	31.08	PK-U	42.00	-16.80	0.00	56.28	-	-	-	-	68.20	-11.92	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

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10.8. Spurious Emissions for Simultaneous Transmission

10.8.1. Worst test case of Simultaneous Transmission

Case 1	Bluetooth	5GHz WLAN	WWAN
Mode	BDR	802.11a	GSM850
Channel	39	40	186
Frequency [MHz]	2441	5200	836.6
Tone	-	-	-
RU	-	-	-
Data Rate	1 Mbps	6 Mbps	270.833 kbps
Axis (Worst)	Y		

NOTE
The lowest margin condition among the channels and modes were selected for test.
GSM850 and Bluetooth BDR were tested, and the worst case configuration & data were listed in the test report.

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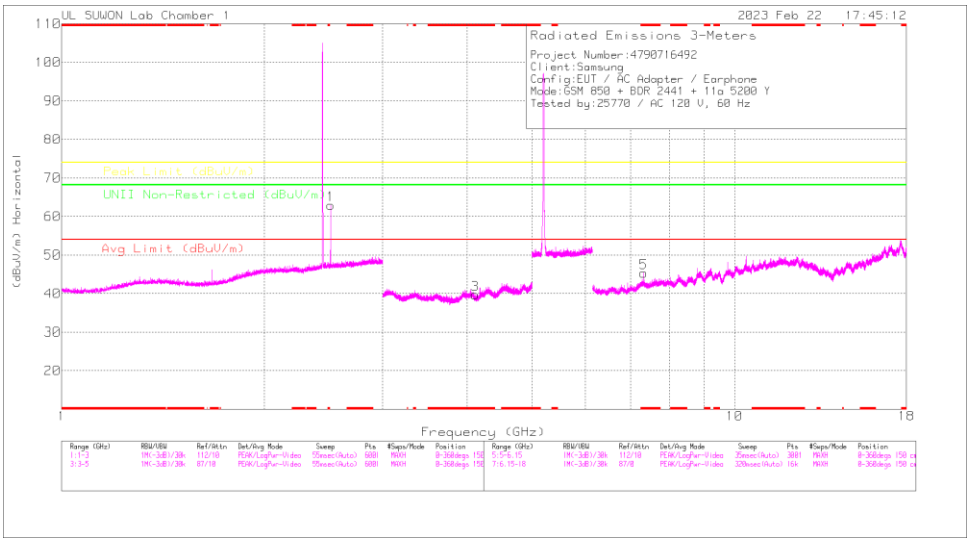
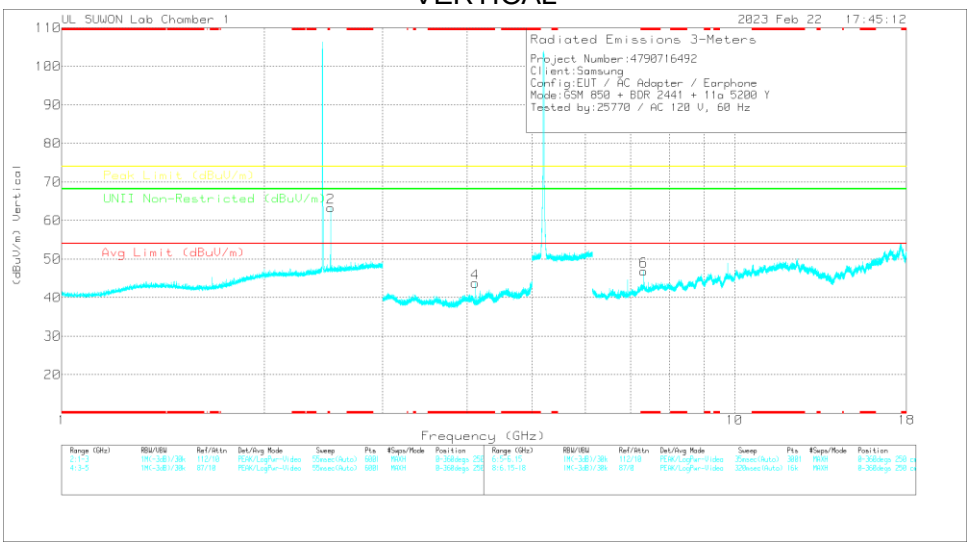
10.8.2. Test Results

Spurious emission for Simultaneous Transmission
Case1. – Y axis

HORIZONTAL



VERTICAL



Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168717	10dB_ATT[dB]	UNII Notch[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)	Azimuth (Degs)	Height (cm)	Polarity
1	2.50967	55.38	PK	32.2	-25	.4	0	62.98	-	-	-	-	68.2	-5.22	0-360	150	H
2	2.51	55.77	PK	32.2	-25	.4	0	63.37	-	-	-	-	68.2	-4.83	0-360	250	V

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168717	5GHz_LP[dB]	DTS Notch[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)	Azimuth (Degs)	Height (cm)	Polarity
3	* 4.11367	37.03	PK	34	-32	.7	0	39.73	-	-	74	-34.27	-	-	0-360	150	H
4	* 4.11433	41.08	PK	34	-32	.7	0	43.78	-	-	74	-30.22	-	-	0-360	250	V

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168717	6GHz_HP[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)	Azimuth (Degs)	Height (cm)	Polarity
5	* 7.32234	36.26	PK	35.7	-26.6	0	45.36	-	-	74	-28.64	-	-	0-360	150	H
6	* 7.32234	37.77	PK	35.7	-26.6	0	46.87	-	-	74	-27.13	-	-	0-360	250	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PK – Peak Detector

Radiated Emissions

Frequency (GHz)	Meter Reading (dBuV)	Det	3117_00168717	6GHz_HP[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)	Azimuth (Degs)	Height (cm)	Polarity
* 7.32259	44.48	PKFH	35.7	-26.6	0	53.58	-	-	74	-20.42	-	-	176	100	H
* 7.32301	33.27	VA1T	35.7	-26.6	.08	42.45	54	-11.55	-	-	-	-	176	100	H
* 7.3226	45.49	PKFH	35.7	-26.6	0	54.59	-	-	74	-19.41	-	-	125	108	V
* 7.32296	34.03	VA1T	35.7	-26.6	.08	43.21	54	-10.79	-	-	-	-	125	108	V

* - indicates frequency in CFR47 Pt 15 / IC RSS-Restricted Band
PKFH FHSS/BT RB=100k for Frequencies<1GHz / RB=1MHz for Frequencies>1GHz, VB

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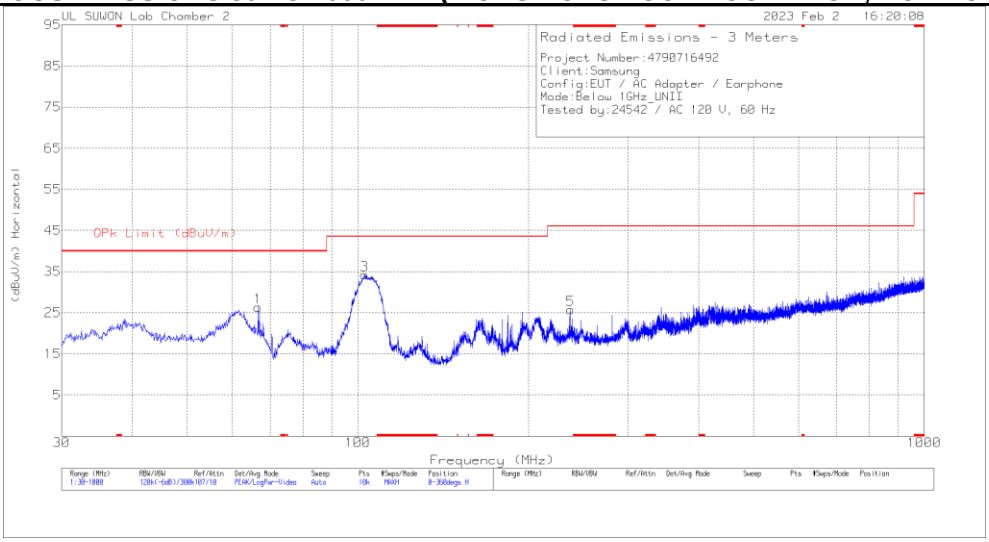
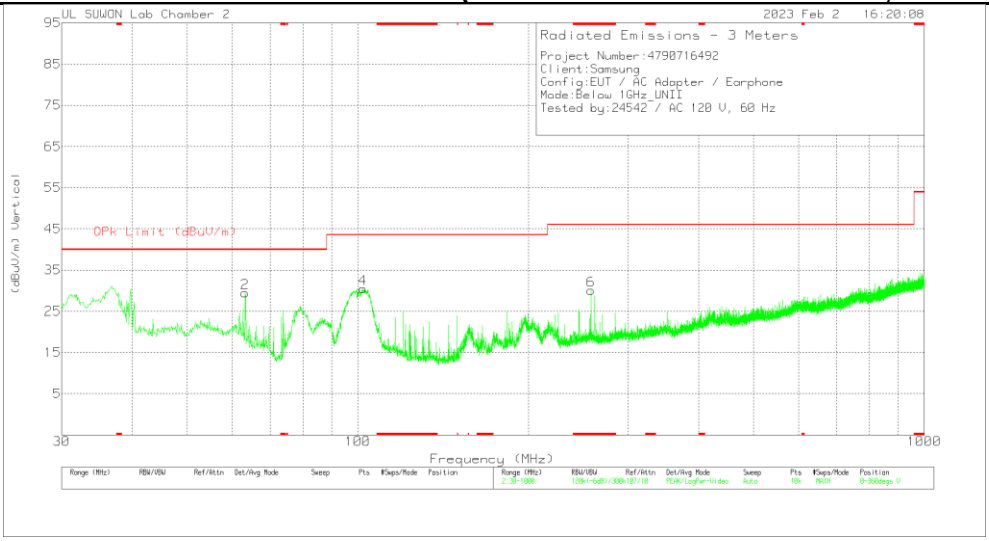
10.9. WORST-CASE BELOW 1 GHz

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_749	Below 1G[dB]	DC Corr (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Azimuth (Degs)	Height (cm)	Polarity
1	66.666	40.55	Pk	16.8	-31	0	26.35	40	-13.65	0-360	200	H
3	102.75	47.08	Pk	17.6	-30.5	0	34.18	43.52	-9.34	0-360	200	H
5	237.677	37.19	Pk	18.1	-29.5	0	25.79	46.02	-20.23	0-360	300	H
2	63.271	42.78	Pk	17.8	-31.1	0	29.48	40	-10.52	0-360	100	V
4	102.168	43.52	Pk	17.6	-30.6	0	30.52	43.52	-13	0-360	100	V
6	* 257.853	40.81	Pk	18.6	-29.3	0	30.11	46.02	-15.91	0-360	100	V

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

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11. AC POWER LINE CONDUCTED EMISSIONS

LIMITS

FCC §15.207 (a)

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

* Decreases with the logarithm of the frequency.

TEST PROCEDURE

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

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

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

RESULTS

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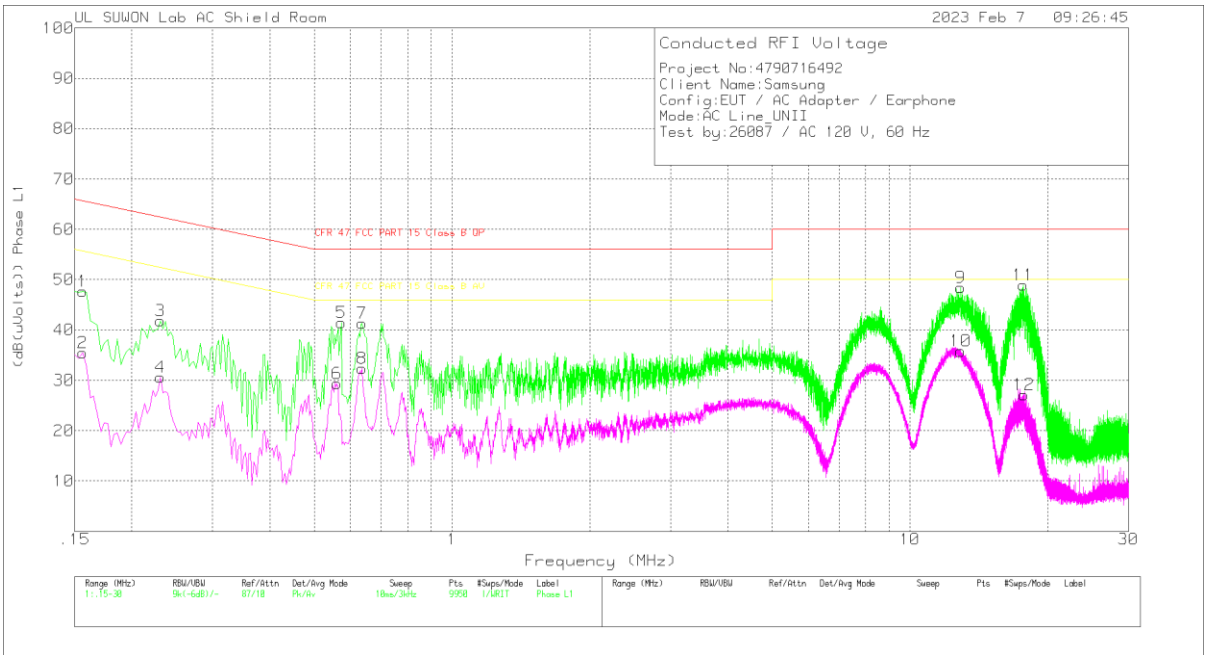
WORST EMISSIONS(USB C to A Cable)

LINE 1 DATA



Trace Markers

Range 1: Phase L1 .15 - 30MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	101836_With EX_L1[dB]	CABLELOSS(dB)	Corrected Reading (dB(uVolts))	CFR 47 FCC PART 15 Class B QP	Margin (dB)	CFR 47 FCC PART 15 Class B AV	Margin (dB)
1	.156	37.74	Pk	9.8	.1	47.64	65.67	-18.03	-	-
2	.156	25.59	Av	9.8	.1	35.49	-	-	55.67	-20.18
3	.231	31.94	Pk	9.7	.2	41.84	62.41	-20.57	-	-
4	.231	20.67	Av	9.7	.2	30.57	-	-	52.41	-21.84
5	.573	31.41	Pk	9.8	.2	41.41	56	-14.59	-	-
6	.561	19.4	Av	9.8	.2	29.4	-	-	46	-16.6
7	.636	31.31	Pk	9.8	.2	41.31	56	-14.69	-	-
8	.636	22.39	Av	9.8	.2	32.39	-	-	46	-13.61
9	12.9	38.1	Pk	9.9	.4	48.4	60	-11.6	-	-
10	12.897	25.49	Av	9.9	.4	35.79	-	-	50	-14.21
11	17.7	38.46	Pk	10.1	.4	48.96	60	-11.04	-	-
12	17.727	16.6	Av	10.1	.4	27.1	-	-	50	-22.9

Pk - Peak detector
Av - Average detection

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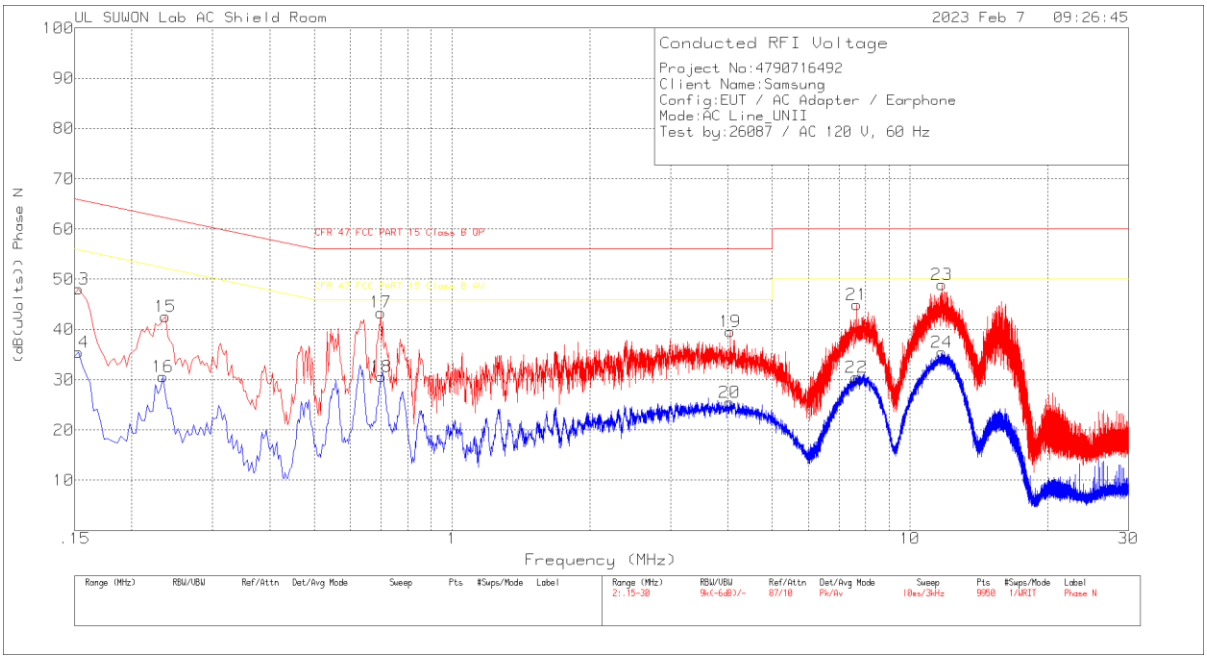
LINE 2 DATA



Trace Markers

Range 2: Phase N .15 - 30MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	101836_With EX_N[dB]	CABLELOSS(dB)	Corrected Reading (dB(uVolts))	CFR 47 FCC PART 15 Class B QP	Margin (dB)	CFR 47 FCC PART 15 Class B AV	Margin (dB)
13	.153	38.22	Pk	9.8	.1	48.12	65.84	-17.72	-	-
14	.153	25.62	Av	9.8	.1	35.52	-	-	55.84	-20.32
15	.237	32.73	Pk	9.7	.2	42.63	62.2	-19.57	-	-
16	.234	20.72	Av	9.7	.2	30.62	-	-	52.31	-21.69
17	.699	33.39	Pk	9.8	.2	43.39	56	-12.61	-	-
18	.702	20.59	Av	9.8	.2	30.59	-	-	46	-15.41
19	4.056	29.61	Pk	9.7	.3	39.61	56	-16.39	-	-
20	4.041	15.54	Av	9.7	.3	25.54	-	-	46	-20.46
21	7.647	34.8	Pk	9.8	.3	44.9	60	-15.1	-	-
22	7.638	20.38	Av	9.8	.3	30.48	-	-	50	-19.52
23	11.727	38.76	Pk	9.9	.3	48.96	60	-11.04	-	-
24	11.745	25.22	Av	9.9	.3	35.42	-	-	50	-14.58

Pk - Peak detector
Av - Average detection

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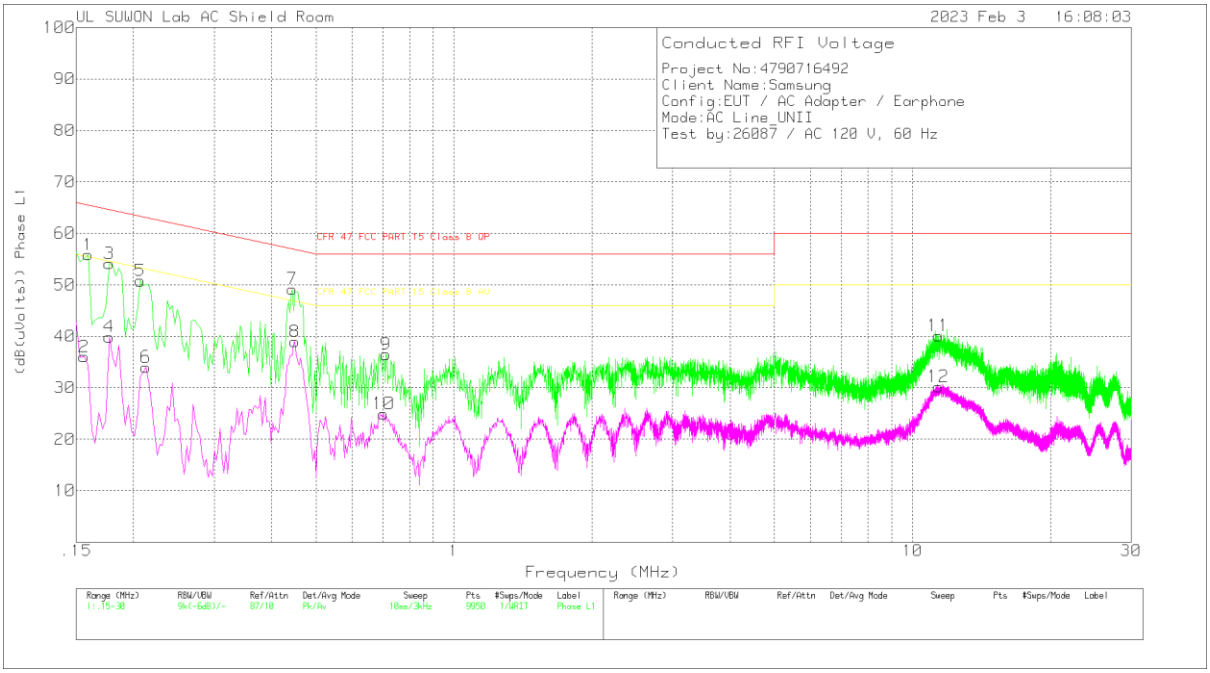
WORST EMISSIONS(USB C to C Cable)

LINE 1 DATA



Trace Markers

Range 1: Phase L1 .15 - 30MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	101836_Wit h EX_L1[dB]	CABLELOS S(dB)	Corrected Reading (dB(uVolts))	CFR 47 FCC PART 15 Class B QP	Margin (dB)	CFR 47 FCC PART 15 Class B AV	Margin (dB)
1	.159	45.83	Pk	9.9	.1	55.83	65.52	-9.69	-	-
2	.156	26.04	Av	9.9	.1	36.04	-	-	55.67	-19.63
3	.177	43.93	Pk	10	.2	54.13	64.63	-10.5	-	-
4	.177	29.69	Av	10	.2	39.89	-	-	54.63	-14.74
5	.207	40.7	Pk	9.9	.2	50.8	63.32	-12.52	-	-
6	.213	23.99	Av	9.8	.2	33.99	-	-	53.09	-19.1
7	.444	39.08	Pk	9.9	.2	49.18	56.99	-7.81	-	-
8	.45	28.86	Av	9.9	.2	38.96	-	-	46.88	-7.92
9	.711	26.4	Pk	9.9	.2	36.5	56	-19.5	-	-
10	.702	14.86	Av	9.9	.2	24.96	-	-	46	-21.04
11	11.385	29.82	Pk	10	.3	40.12	60	-19.88	-	-
12	11.382	19.89	Av	10	.3	30.19	-	-	50	-19.81

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]	CABLELOS S(dB)	Corrected Reading (dB(uVolts))	CFR 47 FCC PART 15 Class B QP	Margin (dB)	CFR 47 FCC PART 15 Class B AV	Margin (dB)
.15825	37.97	Qp	9.9	.1	47.97	65.56	-17.59	-	-
.44325	29.16	Qp	9.9	.2	39.26	57	-17.74	-	-
.44925	27.56	Qp	9.9	.2	37.66	56.89	-19.23	-	-

Qp - Quasi-Peak detector

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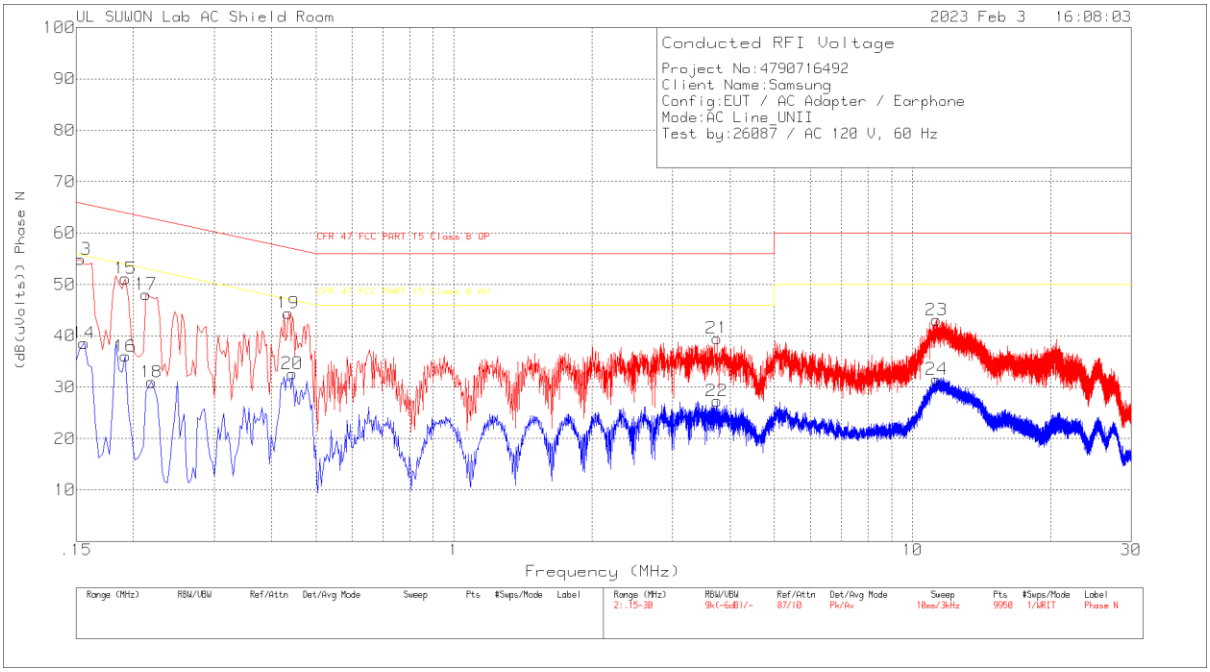
LINE 2 DATA



Trace Markers

Range 2: Phase N .15 - 30MHz

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	101836_With EX_N[dB]	CABLELOSS(dB)	Corrected Reading (dB(uVolts))	CFR 47 FCC PART 15 Class B QP	Margin (dB)	CFR 47 FCC PART 15 Class B AV	Margin (dB)
13	.153	44.98	Pk	9.8	.1	54.88	65.84	-10.96	-	-
14	.156	28.56	Av	9.9	.1	38.56	-	-	55.67	-17.11
15	.192	41.05	Pk	9.9	.2	51.15	63.95	-12.8	-	-
16	.192	25.92	Av	9.9	.2	36.02	-	-	53.95	-17.93
17	.213	38.04	Pk	9.8	.2	48.04	63.09	-15.05	-	-
18	.219	20.99	Av	9.8	.2	30.99	-	-	52.86	-21.87
19	.435	34.32	Pk	9.9	.2	44.42	57.16	-12.74	-	-
20	.444	22.56	Av	9.9	.2	32.66	-	-	46.99	-14.33
21	3.744	29.43	Pk	9.8	.3	39.53	56	-16.47	-	-
22	3.744	17.23	Av	9.8	.3	27.33	-	-	46	-18.67
23	11.283	32.78	Pk	10	.3	43.08	60	-16.92	-	-
24	11.286	21.23	Av	10	.3	31.53	-	-	50	-18.47

Pk - Peak detector
Av - Average detection

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12. DYNAMIC FREQUENCY SELECTION

12.1. OVERVIEW

12.1.1. 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.		

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

Maximum Transmit Power	Value (see notes)
E.I.R.P. ≥ 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
Non-occupancy period	30 minutes
Channel Availability Check Time	60 seconds
Channel Move Time	10 seconds (See Note 1)
Channel Closing Transmission Time	200 milliseconds + approx. 60 milliseconds over remaining 10 second period. (See Notes 1 and 2)
U-NII Detection Bandwidth	Minimum 100% of the U-NII 99% transmission power bandwidth. (See Note 3)

Note 1: *Channel Move Time* and the *Channel Closing Transmission Time* should be performed with Radar Type 0. The measurement timing begins at the end of the Radar Type 0 burst.
Note 2: The *Channel Closing Transmission Time* is comprised of 200 milliseconds starting at the beginning of the *Channel Move Time* plus any additional intermittent control signals required to facilitate a *Channel* 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 *U-NII Detection Bandwidth* 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.

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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) x (19 x 10^6 PRI_{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 *Detection Bandwidth* test, *Channel Move Time*, and *Channel Closing Time* 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

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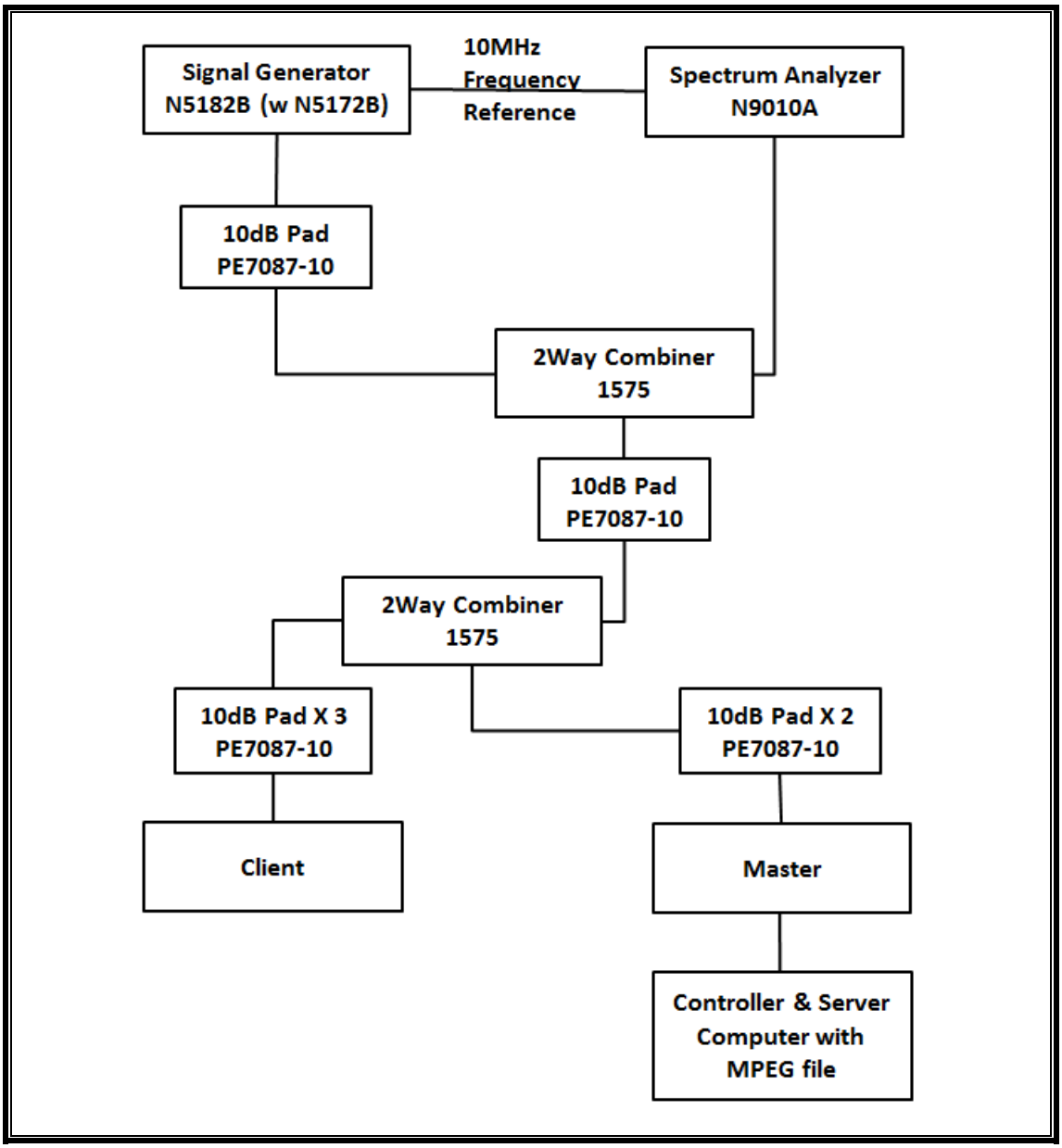
12.1.2. TEST AND MEASUREMENT SYSTEM

CONDUCTED METHOD SYSTEM BLOCK DIAGRAM



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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.

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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	08-01-23
Vector Signal Generator, 6GHz	Agilent / HP	N5182B	MY53051241	08-01-23
Combiner	WEINSCHEL	WA1534	UL001	01-09-24
Combiner	WEINSCHEL	WA1534	UL003	01-09-24

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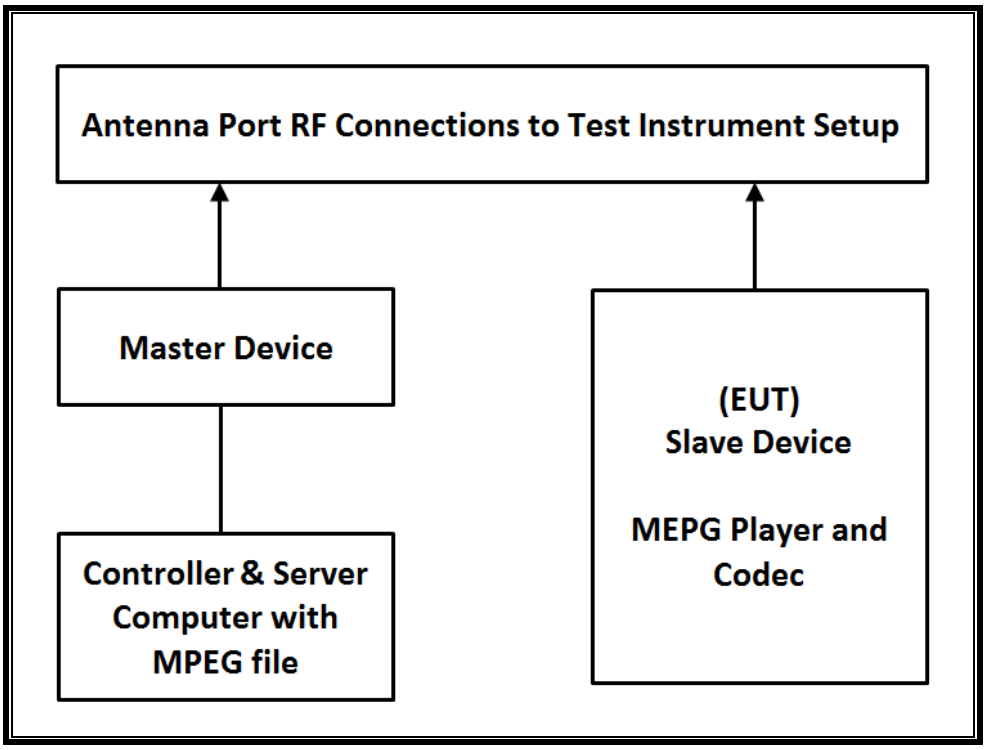
12.1.3. SETUP OF EUT

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	Cisco	AIR-CAP3702E-A-K9	FTX182276QX	LDK102087
Notebook PC (Controller/Server)	HP	HP EliteDesk 800 G1 TWR	CZC4125J25	DoC

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12.1.4. 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 VHT80) within these bands is 8.56 dBm in the 5250-5350 MHz band and 12.11 dBm in the 5470-5725 MHz band.

The antenna assembly utilized two antenna.
Gain of ANT: -4.04 dBi for UNII 2A and -3.11 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. Three nominal channel bandwidths are implemented: 20 MHz, 40 MHz and 80 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 Cisco Access Point, FCC ID: LDK102087. 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.

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12.2. RESULTS FOR 80 MHz BANDWIDTH (UNII-2A BAND)

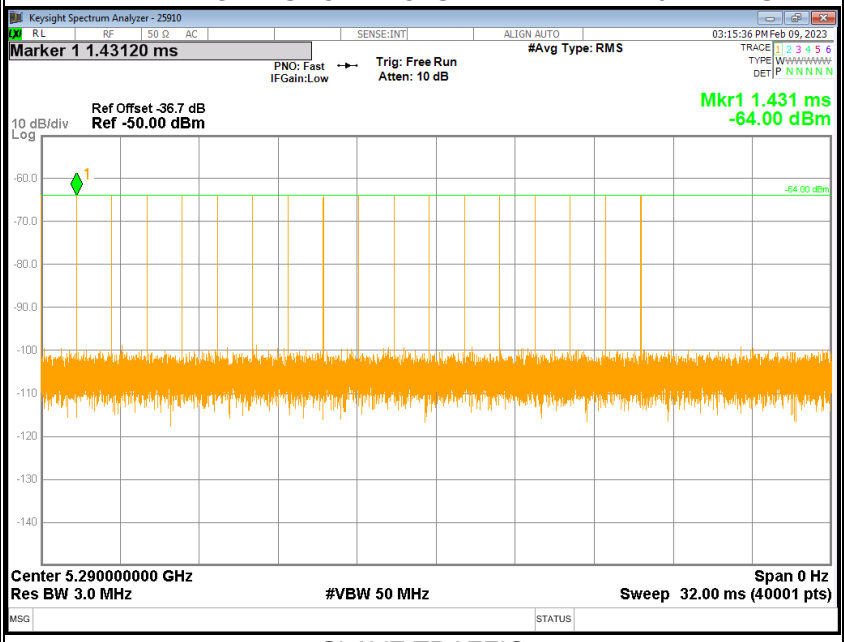
12.2.1. TEST CHANNEL

All tests were performed at a channel center frequency of 5290 MHz.

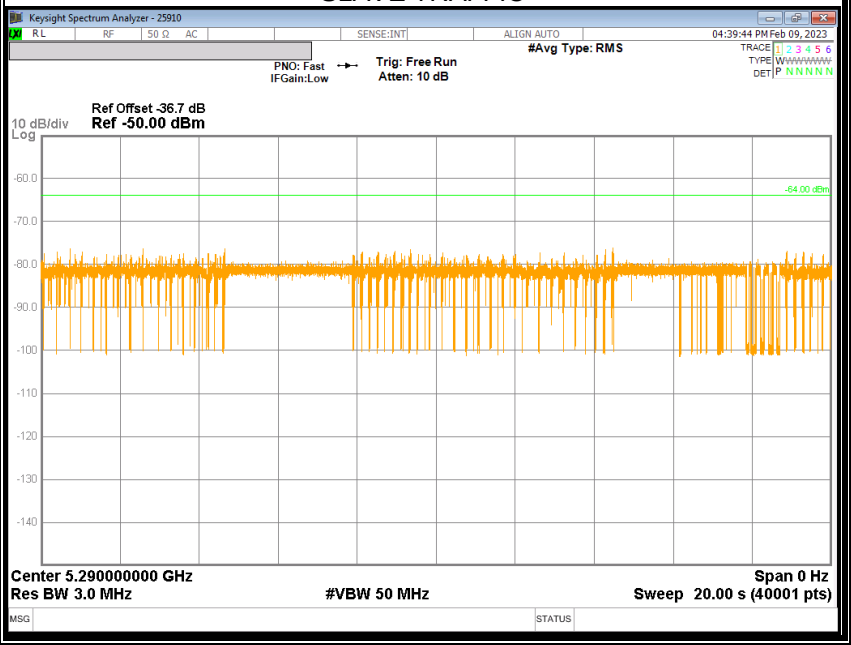
12.2.2. RADAR WAVEFORM AND TRAFFIC

RADAR WAVEFORM

RADAR WAVEFORM:SHORT PULSE RADAR TYPE 0 AT MASTER



SLAVE TRAFFIC



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12.2.3. OVERLAPPING CHANNEL TESTS

RESULTS

These tests are not applicable.

12.2.4. 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)
0.758	10

Aggregate Channel Closing Transmission Time (msec)	Limit (msec)
4.125	60

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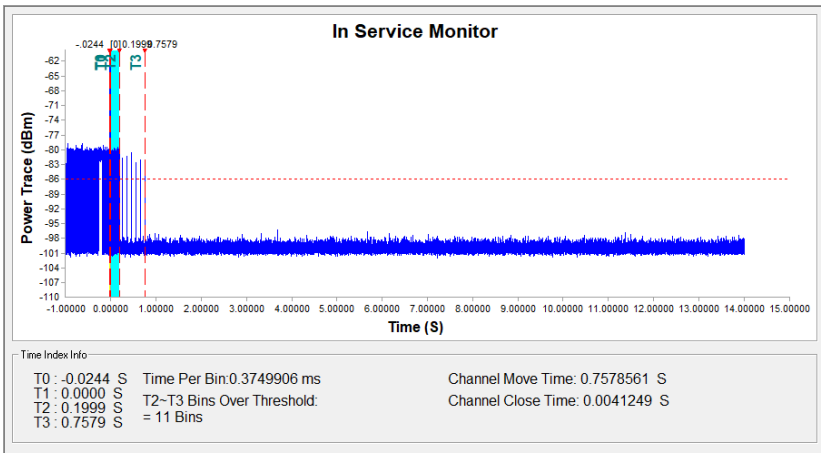
MOVE TIME & CHANNEL CLOSING TIME

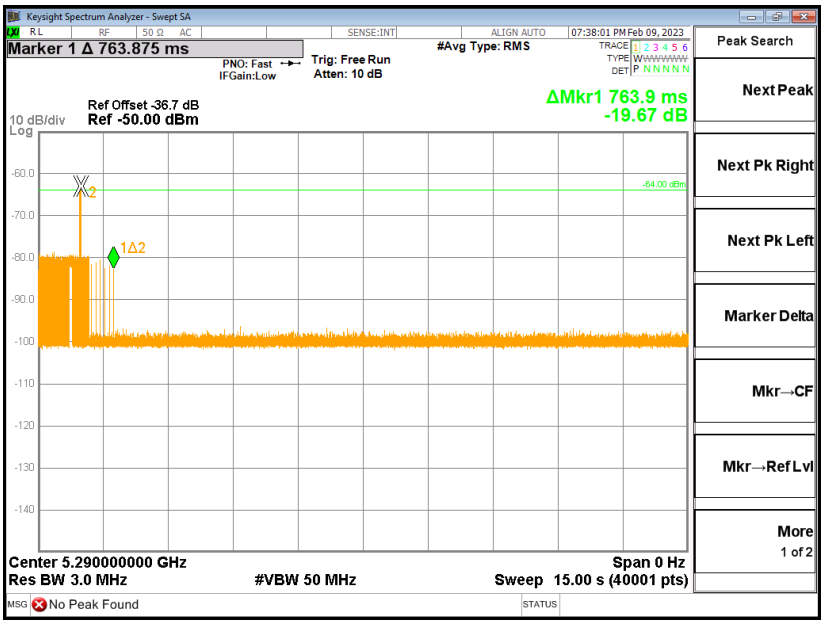
AGGREGATE CHANNEL CLOSING TRANSMISSION TIME

No transmissions are observed during the aggregate monitoring period.

MOVE TIME & AGGREGATE CHANNEL CLOSING TRANSMISSION TIME



MOVE TIME & CLOSING TIME AT IN SERVICE MONITOR



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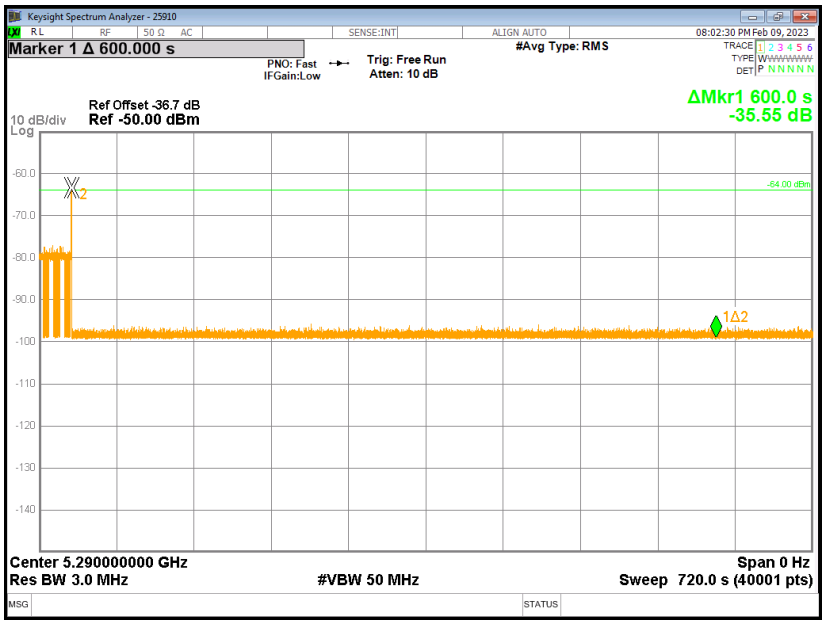
NON-OCCUPANCY PERIOD

RESULTS

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

10-MINUTE BEACON MONITORING PERIOD



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12.3. RESULTS FOR 80 MHz BANDWIDTH (UNII-2C BAND)

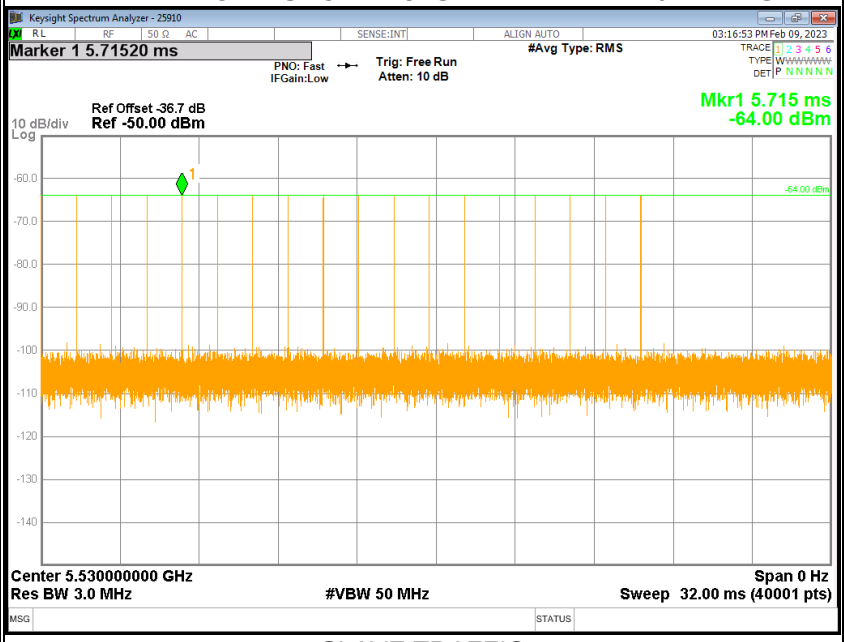
12.3.1. TEST CHANNEL

All tests were performed at a channel center frequency of 5530 MHz.

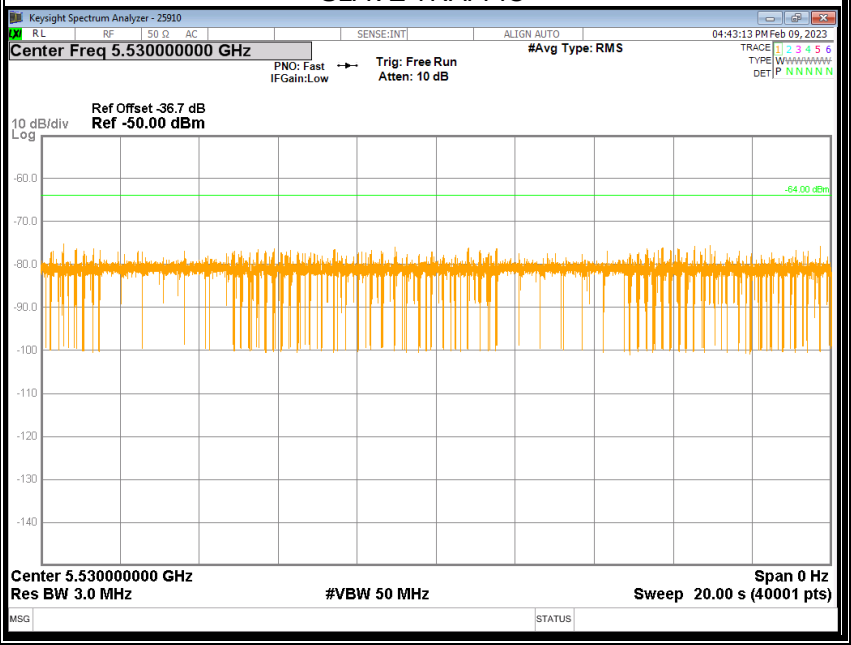
12.3.2. RADAR WAVEFORM AND TRAFFIC

RADAR WAVEFORM

RADAR WAVEFORM:SHORT PULSE RADAR TYPE 0 AT MASTER



SLAVE TRAFFIC



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12.3.3. OVERLAPPING CHANNEL TESTS

RESULTS

These tests are not applicable.

12.3.4. 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)
0.759	10

Aggregate Channel Closing Transmission Time (msec)	Limit (msec)
4.500	60

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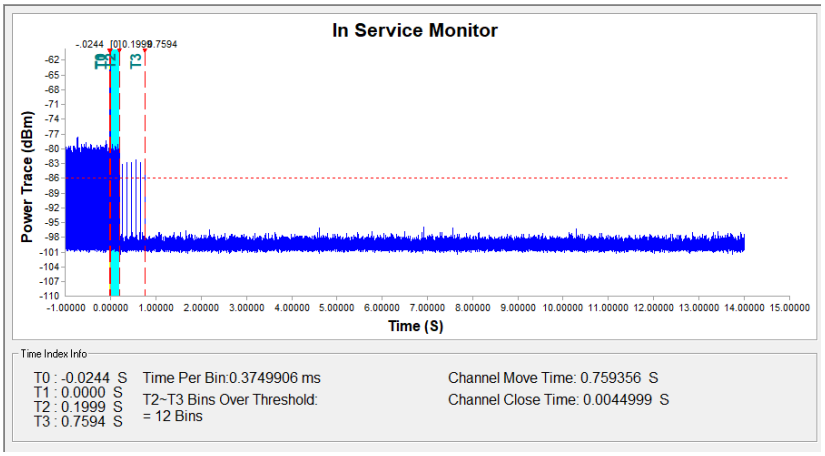
MOVE TIME & CHANNEL CLOSING TIME

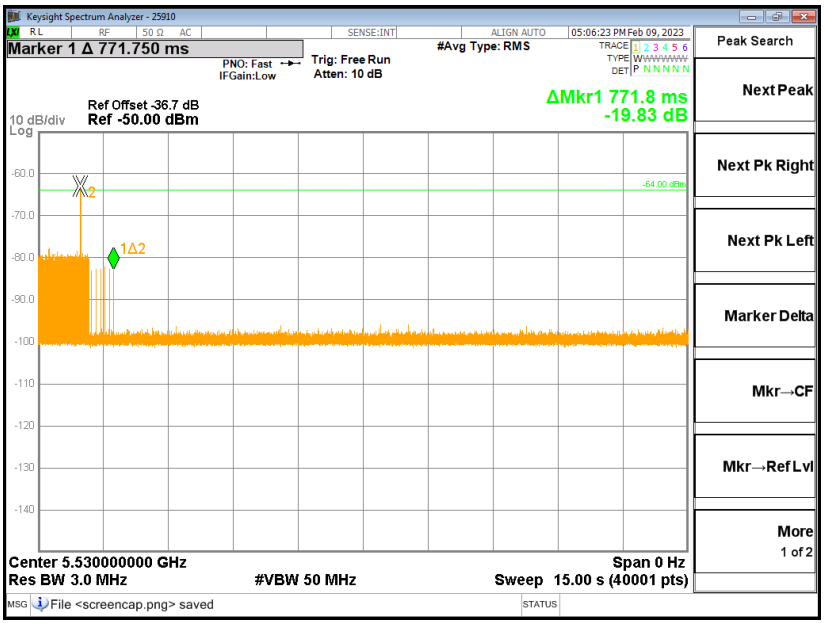
AGGREGATE CHANNEL CLOSING TRANSMISSION TIME

No transmissions are observed during the aggregate monitoring period.

MOVE TIME & AGGREGATE CHANNEL CLOSING TRANSMISSION TIME



MOVE TIME & CLOSING TIME AT IN SERVICE MONITOR



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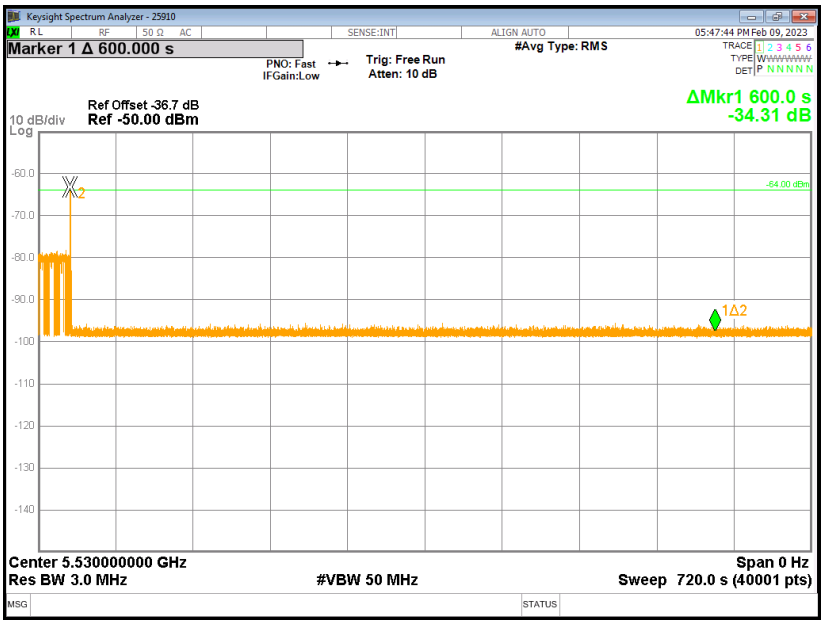
NON-OCCUPANCY PERIOD

RESULTS

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

10-MINUTE BEACON MONITORING PERIOD



END OF TEST REPORT

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