FCC Part 15E Test Report
FCC ID: 2BOAH-32FBA60HZ

Applicant:	Shenzhen Soling Technology Co., LTD
Address:	1408, Baoyunda R&D Complex, Fuhua Community, Xixiang Street, Bao'an District, Shenzhen, China
Manufacturer:	SHENZHEN KTC COMMERCIAL DISPLAY TECHNOLOGY CO., LTD
Address:	KTC Park NO.4023 Wuhe Road, Bantian, LongGang District, ShenZhen
EUT:	Mobile Smart Screen
Trade Mark:	N/A
Model Number:	32FBA60HZ
Date of Receipt:	Sep. 20, 2024
Test Date:	Sep. 20, 2024 - Feb. 17, 2025
Date of Report:	Feb. 17, 2025
Prepared By:	Shenzhen DL Testing Technology Co., Ltd.
Address:	101-201, Comprehensive Building, Tongzhou Electronics Longgang Factory Area, No.1 Baolong Fifth Road, Baolong Community, Baolong Street, Longgang District, Shenzhen, China
Applicable Standards:	FCC PART 15 E 15.407 ANSI C63.10:2013
Test Result:	Pass
Report Number:	DL-240920014-4ER

Prepared (Test Engineer):	Dimon Tan
Reviewer (Supervisor):	Jack Bu
Approved (Manager):	Jade Yang

This test report is based on a single evaluation of one sample of above mentioned products. It is not permitted to be duplicated in extracts without written approval of Shenzhen DL Testing Technology Co., Ltd.

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1.. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:

FCC Part15 (15.407) , Subpart E			
Standard Section	Test Item	Judgment	Remark
15.207	Conducted Emission	PASS	
15.407(b), 15.209	Radiated Spurious Emission	PASS	
15.407 (b)	Band Edge Emission	PASS	
15.407 (a)	Peak Output Power	PASS	
15.407 (a)	Power Spectral Density	PASS	
15.403(i) 15.407(e)	26dB bandwidth and 99%dB Bandwidth	PASS	
15.407(g)	Frequency Stability	PASS	
15.407(c)	Transmission in case of Absence of Information	PASS	
15.203	Antenna Requirement	PASS	

NOTE:

(1)" N/A" denotes test is not applicable in this Test Report

1.1. MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement **y** ± **U**, where expended uncertainty **U** is based on a standard uncertainty multiplied by a coverage factor of **k=2**，providing a level of confidence of approximately **95** %。

No.	Item	Uncertainty
1	Conducted Emission Test	±2.56dB
2	RF power,conducted	±0.42dB
3	Spurious emissions,conducted	±2.76dB
4	All emissions,radiated(<1G)	±3.65dB
5	All emissions,radiated(>1G)	±4.89dB
6	Temperature	±0.5°C
7	Humidity	±2%
8	Bandwidth	±0.2%
9	Power Spectral Density	±2.45dBm
10	Frequency Stability	±0.3MHz
11	DUTY CYCLE	±0.53dB

2.. GENERAL INFORMATION

2.1. GENERAL DESCRIPTION OF EUT

Product Name:	Mobile Smart Screen
Trademark	N/A
Model No.:	32FBA60HZ
Model Difference	N/A
Operation Frequency:	5180-5240MHz(802.11a/n/ac(HT20)) 5190-5230MHz(802.11n/ac(HT40)) 5210MHzMHz (802.11ac(HT80))
Channel numbers:	See channel list
Channel separation:	20MHz/40MHz/80MHz
Modulation technology:	64QAM, 16QAM, QPSK, BPSK for OFDM
Rate of Transmitter	802.11a: 6Mbps, 9Mbps, 12Mbps, 18Mbps, 24Mbps, 36Mbps, 48Mbps,54Mbps 802.11n: Up to 500Mbps 802.11ac: up to 867Mbps
Antenna Type:	Internal Antenna
Antenna gain:	0.84dBi
Power supply:	DC 14.4V from battery DC 19V from adapter
Adapter:	MODEL: SOY-1900474 INPUT: 100-240V~50/60Hz 1.8A Max OUTPUT: 19.0V⎓4.74A 90.06W Shenzhen SOY Technology Co., Ltd 4F, 5F 501, A building, No.11, Dakan Industrial2nd Road, xili Town, Nanshan District,ShenzhenClty, China

Note:

1.For a more detailed features description, please refer to the manufacturer’s specifications or the User's Manual.

2.The EUT’s all information provided by client.

2. Channel List

Channel List for 802.11a/n(HT20)/ac(HT20)			
Channel	Frequency (MHz)	Channel	Frequency (MHz)
36	5180	44	5220
40	5200	48	5240

Channel List for 802.11n(HT40)/ac(HT40)			
Channel	Frequency (MHz)	Channel	Frequency (MHz)
38	5190	46	5230

Channel List for 802.11ac(HT80)			
Channel	Frequency (MHz)	Channel	Frequency (MHz)
42	5210	/	/

2.2. DESCRIPTION OF TEST MODES

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

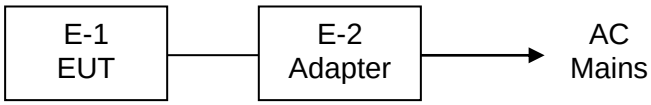
Description		
Pretest Mode	Channel	Band 1
Mode 1	802.11a/n/acHT20	CH36, CH44, CH48
Mode 2	802.11n/acHT40	CH38, CH46
Mode 3	802.11acHT80	CH42
Mode 4	Other	Link Mode

For Radiated Emission		
Pretest Mode	Channel	Band 1
Mode 1	802.11a/n/acHT20	CH36, CH44, CH48
Mode 2	802.11n/acHT40	CH38, CH46
Mode 3	802.11acHT80	CH42
Mode 4	Other	Link Mode

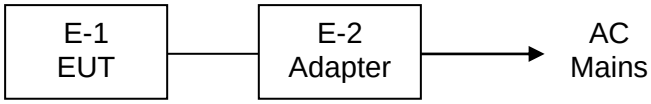
Note: 1. The measurements are performed at the highest, middle, lowest available channels.
2. During the test, the test voltage was tuned from 85% to 115% of the nominal rated supply voltage, and found that the worst case was under the nominal rated supply condition. So the report just shows that condition's data.

2.3. BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

Radiated Spurious Emission Test



Conducted Emission Test



2.4. DESCRIPTION OF SUPPORT UNITS(CONDUCTED MODE)

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Item	Equipment	Model/Type No.	Series No.	Note
E-1	Mobile Smart Screen	32FBA60HZ	N/A	EUT
E-2	Adapter	SOY-1900474	N/A	EUT

Item	Shielded Type	Ferrite Core	Length	Note

Note:

(1) For detachable type I/O cable should be specified the length in cm in 『Length』 column.

2.5. TABLE OF PARAMETERS OF TEST SOFTWARE SETTING

During testing, channel & power controlling software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the end product.

Max output power Setting				
Test software Version	Test program: FCC_assist_1.0.2.3			
Mode	802.11a	802.11n HT20	802.11n HT40	802.11ac HT20/HT40/HT80
Data Rate	6Mbps	MSC0	MSC0	MSC0
Power Setting of Softwave	60	60	66	66

2.6. EQUIPMENTS LIST FOR ALL TEST ITEMS

Radiation test, Band-edge test and 6db bandwidth test equipment

Item	Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
1	Spectrum Analyzer (9kHz-26.5GHz)	Agilent	E4408B	MY50140780	Nov. 01, 2024	Oct. 31, 2025
2	Test Receiver (9kHz-7GHz)	R&S	ESRP7	101393	Nov. 01, 2024	Oct. 31, 2025
3	Bilog Antenna (30MHz-1GHz)	R&S	VULB9162	00306	Nov. 01, 2024	Oct. 31, 2025
4	Horn Antenna (1GHz-18GHz)	Schwarzbeck	BBHA9120D	02139	Nov. 01, 2024	Oct. 31, 2025
5	Horn Antenna (18GHz-40GHz)	A.H. Systems	SAS-574	588	Nov. 01, 2024	Oct. 31, 2025
6	Amplifier (9KHz-6GHz)	Schwarzbeck	BBV9743B	00153	Nov. 01, 2024	Oct. 31, 2025
7	Amplifier (1GHz-18GHz)	EMEC	EM01G8GA	00270	Nov. 01, 2024	Oct. 31, 2025
8	Amplifier (18GHz-40GHz)	Quanjuda	DLE-161	97	Nov. 01, 2024	Oct. 31, 2025
9	Loop Antenna (9KHz-30MHz)	Schwarzbeck	FMZB1519B	00014	Nov. 01, 2024	Oct. 31, 2025
10	RF cables1 (9kHz-1GHz)	ChengYu	966	004	Nov. 01, 2024	Oct. 31, 2025
11	RF cables2 (1GHz-40GHz)	ChengYu	966	003	Nov. 01, 2024	Oct. 31, 2025
12	Antenna connector	Florida RF Labs	N/A	RF 01#	Nov. 01, 2024	Oct. 31, 2025
13	Power probe	KEYSIGHT	U2021XA	MY55210018	Nov. 01, 2024	Oct. 31, 2025
14	Signal Analyzer 9kHz-26.5GHz	Agilent	N9020A	MY55370280	Nov. 01, 2024	Oct. 31, 2025
15	Test Receiver 20kHz-40GHz	R&S	ESU 40	100376	Nov. 01, 2024	Oct. 31, 2025
16	D.C. Power Supply	LongWei	PS-305D	010964729	Nov. 01, 2024	Oct. 31, 2025
17	Temperature & humidity chamber	Changfeng	CF-150-40-P	CF170802-01	Nov. 01, 2024	Oct. 31, 2025

Conduction Test equipment

Item	Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
1	843 Shielded Room	YIHENG	843 Room	843	Nov. 05, 2023	Nov. 04, 2026
2	EMI Receiver	R&S	ESR	101421	Nov. 01, 2024	Oct. 31, 2025
3	LISN	R&S	ENV216	102417	Nov. 01, 2024	Oct. 31, 2025
4	843 Cable 1#	ChengYu	CE Cable	001	Nov. 01, 2024	Oct. 31, 2025

Other

Item	Name	Manufacturer	Model	Software version
1	EMC Conduction Test System	FALA	EZ_EMC	EMC-CON 3A1.1
2	EMC radiation test system	FALA	EZ_EMC	FA-03A2
3	RF test system	MAIWEI	MTS8310	2.0.0.0
4	RF communication test system	MAIWEI	MTS8200	2.0.0.0

3.. EMC EMISSION TEST

3.1. CONDUCTED EMISSION MEASUREMENT

3.1.1. POWER LINE CONDUCTED EMISSION Limits (Frequency Range 150KHz-30MHz)

FREQUENCY (MHz)	Limit (dBuV)		Standard
	Quasi-peak	Average	
0.15 -0.5	66 - 56 *	56 - 46 *	FCC
0.5 -5.0	56.00	46.00	FCC
5.0 -30.0	60.00	50.00	FCC

Note:

(1) The tighter limit applies at the band edges.

(2) The limit of " * " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

The following table is the setting of the receiver

Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz

3.1.2. TEST PROCEDURE

a. The EUT was placed 0.1 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.

b. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.

c. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.

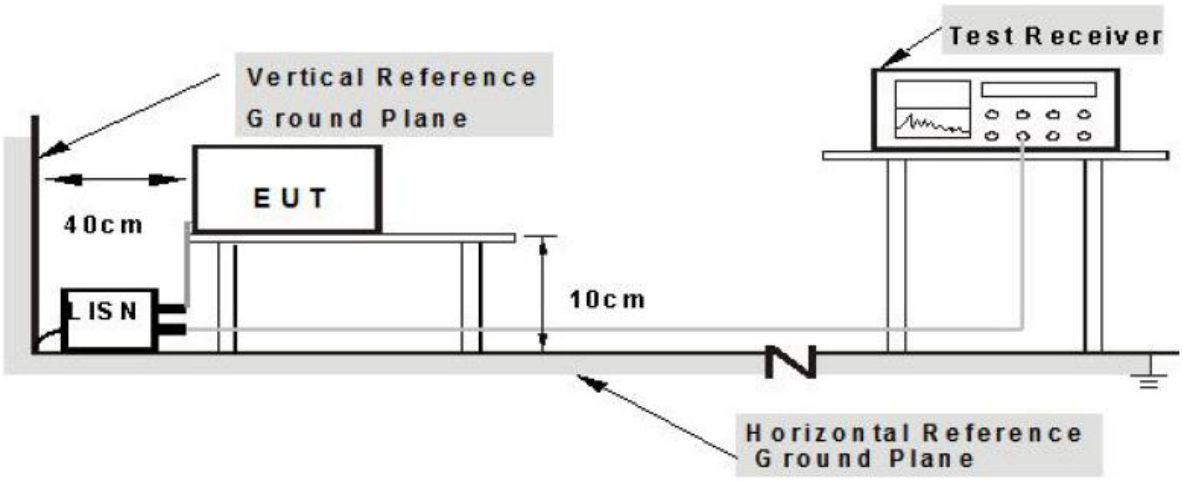
d. LISN at least 80 cm from nearest part of EUT chassis.

e. For the actual test configuration, please refer to the related Item –EUT Test Photos.

3.1.3. DEVIATION FROM TEST STANDARD

No deviation

3.1.4. TEST SETUP



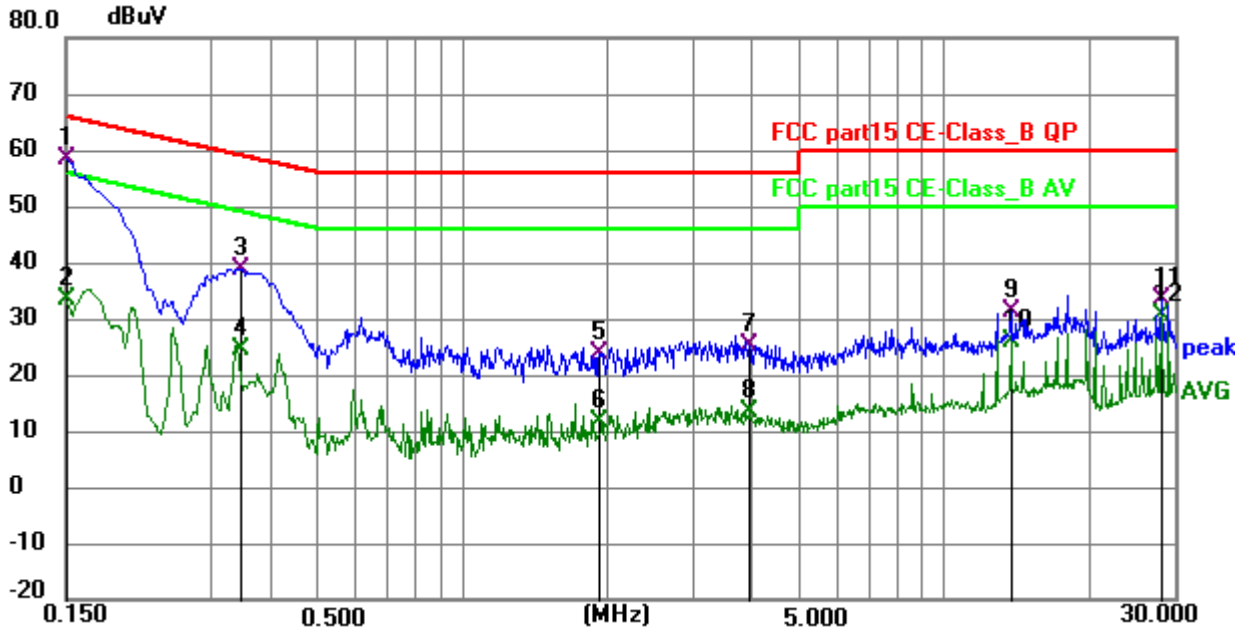
Note: 1.Support units were connected to second LISN.
2.Both of LISNs (AMN) are 10 cm from EUT and at least 10
from other units and other metal planes

3.1.5. EUT OPERATING CONDITIONS

The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.

3.1.6. TEST RESULTS

Temperature:	25 ℃	Relative Humidity:	54%
Pressure:	1010hPa	Phase :	L
Test Voltage :	AC 120V/60Hz	Test Mode:	Mode 4

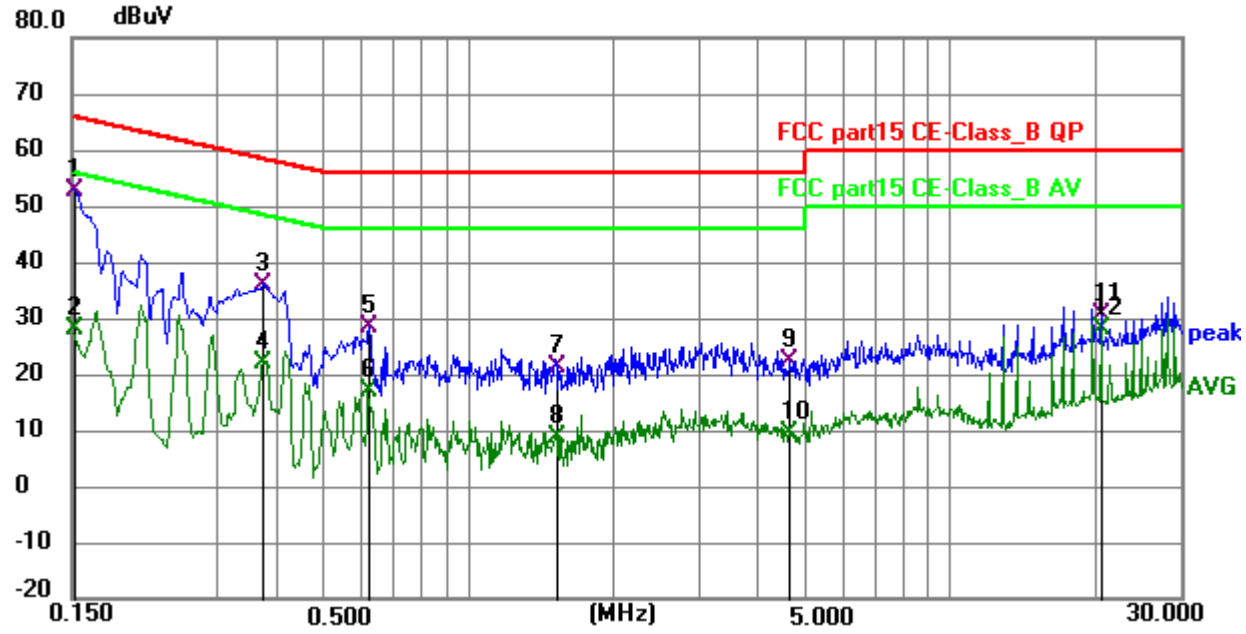


Remark:

Margin = Limit – Level, Correct Factor = Cable lose + LISN insertion loss, Level= Reading + Correct factor

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1 *	0.1508	48.47	9.98	58.45	65.96	-7.51	QP	P	
2	0.1508	23.42	9.98	33.40	55.96	-22.56	AVG	P	
3	0.3480	28.95	9.96	38.91	59.01	-20.10	QP	P	
4	0.3480	14.59	9.96	24.55	49.01	-24.46	AVG	P	
5	1.9275	13.81	10.00	23.81	56.00	-32.19	QP	P	
6	1.9275	1.52	10.00	11.52	46.00	-34.48	AVG	P	
7	3.9390	15.43	9.90	25.33	56.00	-30.67	QP	P	
8	3.9390	3.49	9.90	13.39	46.00	-32.61	AVG	P	
9	13.7220	21.45	9.94	31.39	60.00	-28.61	QP	P	
10	13.7220	15.94	9.94	25.88	50.00	-24.12	AVG	P	
11	28.2975	23.07	10.33	33.40	60.00	-26.60	QP	P	
12	28.2975	20.14	10.33	30.47	50.00	-19.53	AVG	P	

Temperature:	25 ℃	Relative Humidity:	54%
Pressure:	1010hPa	Phase :	N
Test Voltage :	AC 120V/60Hz	Test Mode:	Mode 4



Remark:

Margin = Limit – Level, Correct Factor = Cable lose + LISN insertion loss, Level= Reading + Correct factor

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector	P/F	Remark
1 *	0.1524	42.62	9.94	52.56	65.87	-13.31	QP	P	
2	0.1524	18.05	9.94	27.99	55.87	-27.88	AVG	P	
3	0.3750	26.00	9.91	35.91	58.39	-22.48	QP	P	
4	0.3750	12.00	9.91	21.91	48.39	-26.48	AVG	P	
5	0.6225	18.55	9.80	28.35	56.00	-27.65	QP	P	
6	0.6225	7.14	9.80	16.94	46.00	-29.06	AVG	P	
7	1.5225	11.12	9.99	21.11	56.00	-34.89	QP	P	
8	1.5225	-1.29	9.99	8.70	46.00	-37.30	AVG	P	
9	4.6545	12.44	9.92	22.36	56.00	-33.64	QP	P	
10	4.6545	-0.47	9.92	9.45	46.00	-36.55	AVG	P	
11	20.5800	20.35	10.05	30.40	60.00	-29.60	QP	P	
12	20.5800	17.85	10.05	27.90	50.00	-22.10	AVG	P	

3.2. RADIATED EMISSION MEASUREMENT

3.2.1. RADIATED EMISSION LIMITS (Frequency Range 9kHz-1000MHz)

15.407(b)Undesirable emission limits. Except as shown in paragraph (b) (10) 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 5.15-5.25GHz 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 5.47-5.725GHz 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 5.725-5.850GHz band:
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 to10dBm/MHzat25 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.

In case the emission fall within the restricted band specified on 15.205(a), then the 15.209(a) limit in the table below has to be followed.

Frequencies (MHz)	Field Strength (micorvolts/meter)	Measurement Distance (meters)
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

LIMITS OF RADIATED EMISSION MEASUREMENT (Above 1000MHz)

FREQUENCY (MHz)	Limit (dBuV/m) (at 3M)	
	PEAK	AVERAGE
Above 1000	74	54

Notes:

(1) The limit for radiated test was performed according to FCC PART 15C.

(2) The tighter limit applies at the band edges.

(3) Emission level (dBuV/m)=20log Emission level (uV/m).

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	40GHz
RB / VB (emission in restricted band)	1 MHz / 1 MHz for Peak, 1 MHz / 10Hz for Average

Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~150kHz / RB 200Hz for QP
Start ~ Stop Frequency	150kHz~30MHz / RB 9kHz for QP
Start ~ Stop Frequency	30MHz~1000MHz / RB 120kHz for QP

3.2.2. TEST PROCEDURE

Below 1GHz test procedure as below:

a. The EUT was placed on the top of a rotating table 0.1 meters above the ground at a 3 meter semi-anechoic camber. The table was rotated 360 degrees to determine the position of the highest radiation.
b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

Above 1GHz test procedure as below:

g. The EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter semi-anechoic camber.
h. Test the EUT in the lowest channel, the middle channel, the Highest channel

Note:

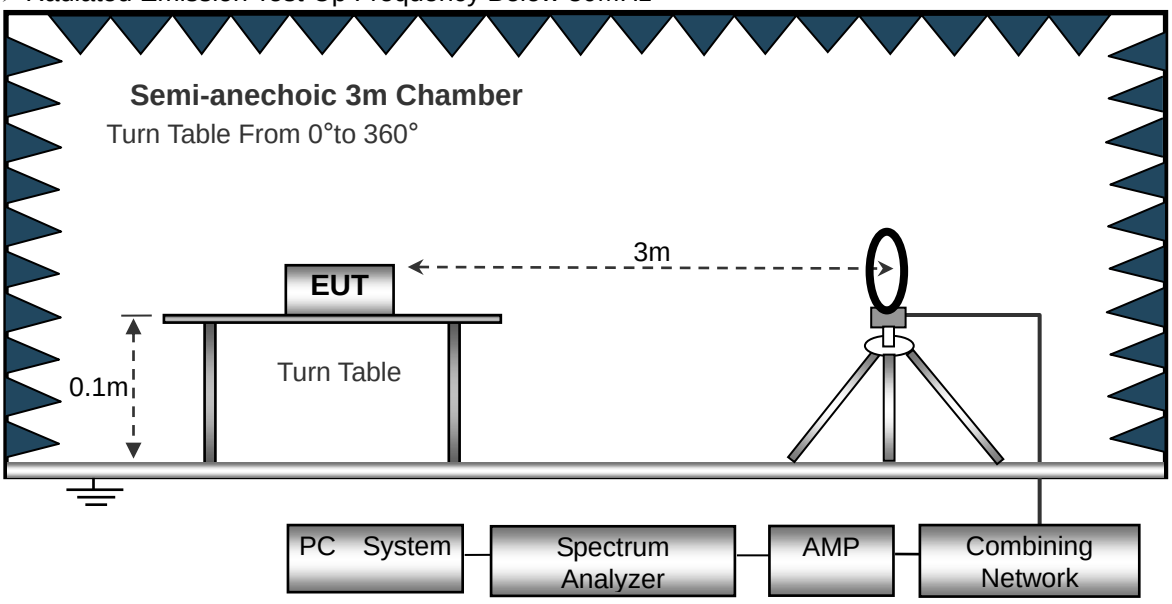
Both horizontal and vertical antenna polarities were tested
and performed pretest to three orthogonal axis. The worst case emissions were reported

3.2.3. DEVIATION FROM TEST STANDARD

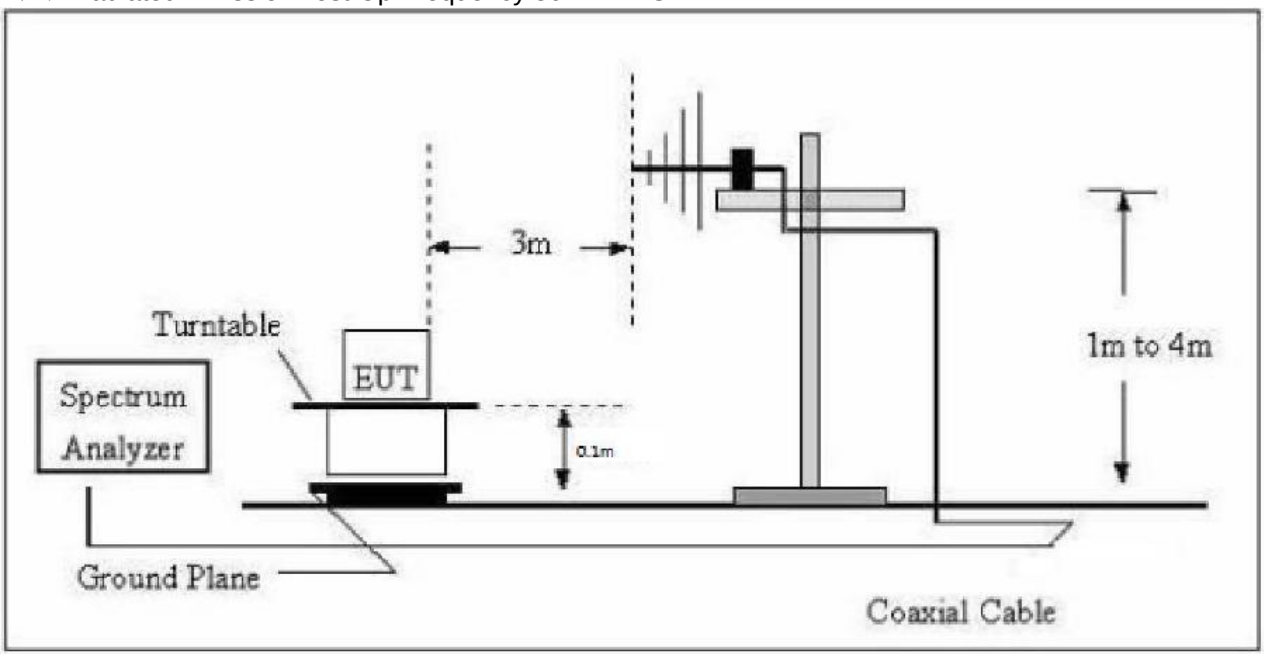
No deviation

3.2.4. TEST SETUP

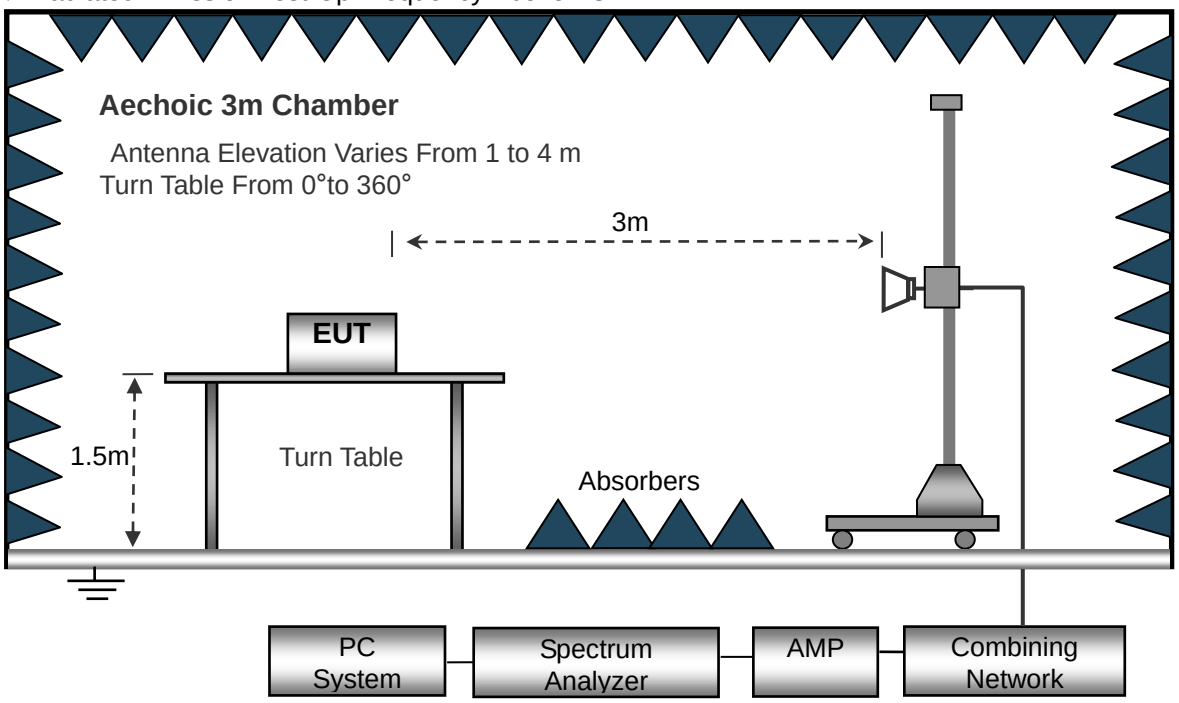
（A）Radiated Emission Test-Up Frequency Below 30MHz



（B）Radiated Emission Test-Up Frequency 30MHz~1GHz



（C）Radiated Emission Test-Up Frequency Above 1GHz



3.2.5. EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of 2.3 Unless otherwise a special operating condition is specified in the follows during the testing.

3.2.6. TEST RESULTS (Between 9KHz – 30 MHz)

Temperature:	20℃	Relative Humidtity:	48%
Pressure:	1010 hPa	Test Voltage :	DC 14.4V
Test Mode :	Mode 4	Polarization :	--

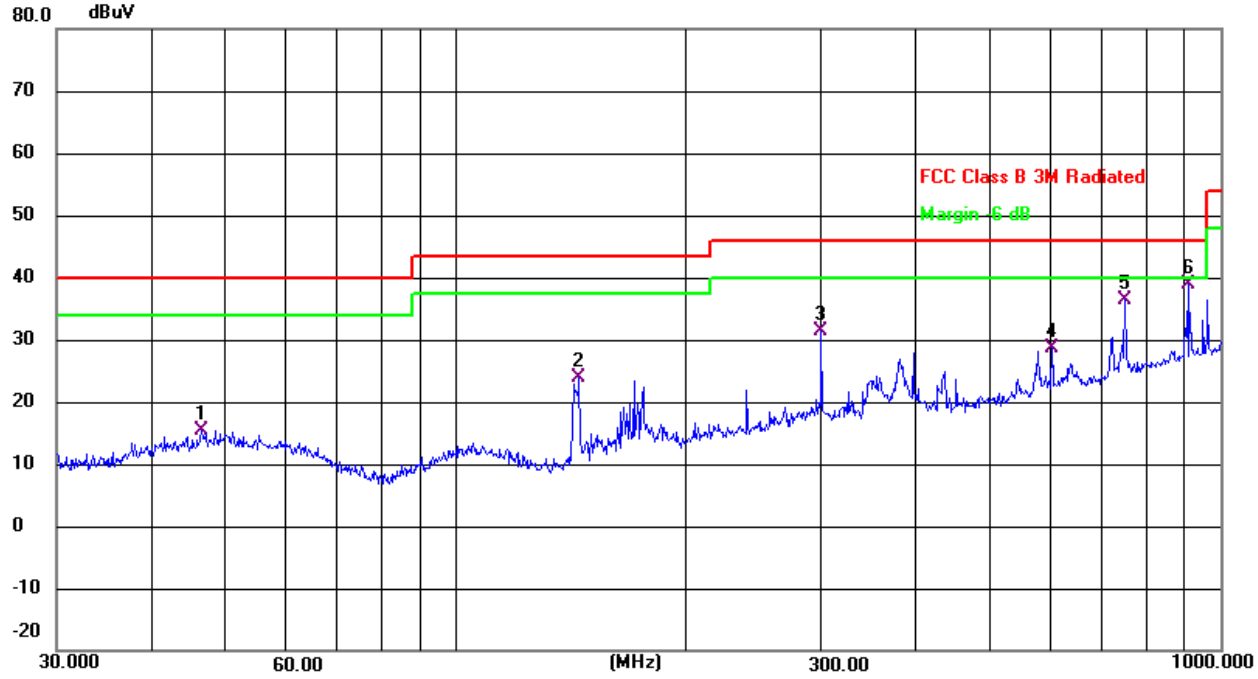
Freq.	Reading	Limit	Margin	State
(MHz)	(dBuV/m)	(dBuV/m)	(dB)	P/F
--	--	--	--	PASS
--	--	--	--	PASS

NOTE:

The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.
Distance extrapolation factor =40 log (specific distance/test distance)(dB);
Limit line = specific limits(dBuv) + distance extrapolation factor.

3.2.7. TEST RESULTS (Between 30MHz – 1GHz)

Temperature:	26℃	Relative Humidity:	54%
Pressure:	1010 hPa	Polarization :	Horizontal
Test Voltage :	DC 14.4V		
Test Mode :	Mode 4		



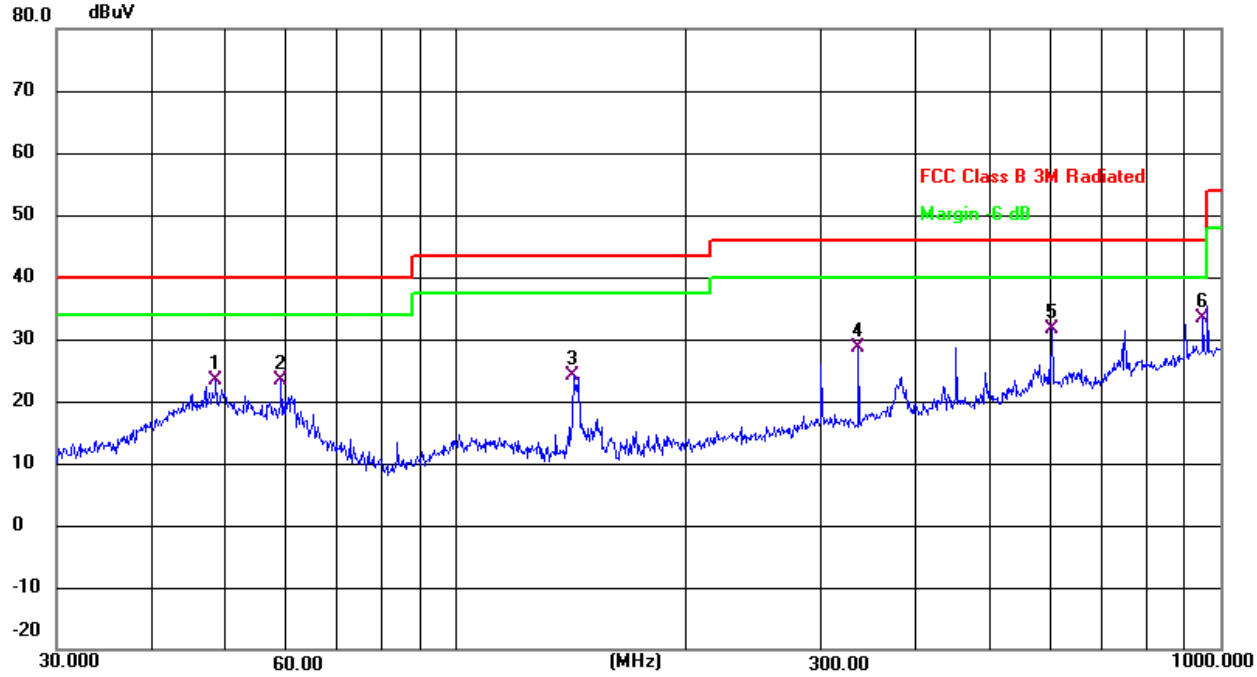
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin	
		MHz	dBuV	dB	dBuV	dB	dB	Detector
1		46.3402	27.94	-12.59	15.35	40.00	-24.65	QP
2		144.8418	42.32	-18.39	23.93	43.50	-19.57	QP
3		300.3672	43.10	-11.64	31.46	46.00	-14.54	QP
4		601.4265	34.03	-5.52	28.51	46.00	-17.49	QP
5		750.1083	39.63	-3.13	36.50	46.00	-9.50	QP
6	*	906.4824	39.40	-0.63	38.77	46.00	-7.23	QP

Remark:

Correct Factor = Cable loss + Antenna factor – Preamplifier;

Level = Reading Level + Correct Factor; Margin = Level - Limit;

Temperature:	26℃	Relative Humidity:	54%
Pressure:	1010 hPa	Polarization :	Vertical
test voltage :	DC 14.4V		
Test Mode :	Mode 4		



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin	
		MHz	dBuV	dB	dBuV	dB	dB	Detector
1		48.5016	36.37	-13.04	23.33	40.00	-16.67	QP
2		59.0251	37.11	-13.62	23.49	40.00	-16.51	QP
3		142.3243	42.52	-18.49	24.03	43.50	-19.47	QP
4		336.0352	39.80	-11.14	28.66	46.00	-17.34	QP
5		601.4265	37.19	-5.52	31.67	46.00	-14.33	QP
6	*	948.7610	33.65	-0.27	33.38	46.00	-12.62	QP

Remark:

Correct Factor = Cable loss + Antenna factor – Preamplifier;

Level = Reading Level + Correct Factor; Margin = Level - Limit;

3.2.8. TEST RESULTS (1ghz~40ghZ)

802.11a band 1

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Pre-amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB/m)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
operation frequency:5180									
V	10360	56.25	49.05	15.3	37.39	59.89	68.2	-8.31	PK
V	10360	41.85	49.05	15.3	37.39	45.49	54	-8.51	AV
V	15540	52.81	49.16	15.27	40.45	59.37	74	-14.63	PK
V	15540	39.63	49.16	15.27	40.45	46.19	54	-7.81	AV
H	10360	56.32	49.05	15.3	37.39	59.96	68.2	-8.24	PK
H	10360	40.17	49.05	15.3	37.39	43.81	54	-10.19	AV
H	15540	51.46	49.16	15.27	40.45	58.02	74	-15.98	PK
H	15540	38.84	49.16	15.27	40.45	45.4	54	-8.60	AV
operation frequency:5200									
V	10400	57.63	49.09	15.34	37.42	61.3	68.2	-6.90	PK
V	10400	39.68	49.09	15.34	37.42	43.35	54	-10.65	AV
V	15600	52.84	49.18	15.29	40.47	59.42	74	-14.58	PK
V	15600	38.63	49.18	15.29	40.47	45.21	54	-8.79	AV
H	10400	56.84	49.09	15.34	37.42	60.51	68.2	-7.69	PK
H	10400	39.87	49.09	15.34	37.42	43.54	54	-10.46	AV
H	15600	53.16	49.18	15.29	40.47	59.74	74	-14.26	PK
H	15600	38.87	49.18	15.29	40.47	45.45	54	-8.55	AV
operation frequency:5240									
V	10480	58.52	49.11	15.37	37.46	62.24	68.2	-5.96	PK
V	10480	39.63	49.11	15.37	37.46	43.35	54	-10.65	AV
V	15720	53.87	49.21	15.34	40.51	60.51	74	-13.49	PK
V	15720	38.34	49.21	15.34	40.51	44.98	54	-9.02	AV
H	10480	57.52	49.11	15.37	31.31	55.09	68.2	-13.11	PK
H	10480	45.36	49.11	15.37	31.31	42.93	54	-11.07	AV
H	15720	54.84	49.21	15.34	40.51	61.48	74	-12.52	PK
H	15720	37.14	49.21	15.34	40.51	43.78	54	-10.22	AV

Remark:

1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier,
   Margin= Emission Level - Limit
2. If peak below the average limit, the average emission was no test.
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

802.11n HT20

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Pre-amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB/m)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
operation frequency:5180									
V	10360	56.25	49.05	15.3	37.39	59.89	68.2	-8.31	PK
V	10360	38.63	49.05	15.3	37.39	42.27	54	-11.73	AV
V	15540	52.57	49.16	15.27	40.45	59.13	74	-14.87	PK
V	15540	38.52	49.16	15.27	40.45	45.08	54	-8.92	AV
H	10360	56.63	49.05	15.3	37.39	60.27	68.2	-7.93	PK
H	10360	39.82	49.05	15.3	37.39	43.46	54	-10.54	AV
H	15540	51.37	49.16	15.27	40.45	57.93	74	-16.07	PK
H	15540	38.52	49.16	15.27	40.45	45.08	54	-8.92	AV
operation frequency:5200									
V	10400	56.96	49.09	15.34	37.42	60.63	68.2	-7.57	PK
V	10400	39.67	49.09	15.34	37.42	43.34	54	-10.66	AV
V	15600	52.84	49.18	15.29	40.47	59.42	74	-14.58	PK
V	15600	38.92	49.18	15.29	40.47	45.5	54	-8.50	AV
H	10400	55.85	49.09	15.34	37.42	59.52	68.2	-8.68	PK
H	10400	40.21	49.09	15.34	37.42	43.88	54	-10.12	AV
H	15600	53.63	49.18	15.29	40.47	60.21	74	-13.79	PK
H	15600	39.21	49.18	15.29	40.47	45.79	54	-8.21	AV
operation frequency:5240									
V	10480	57.28	49.11	15.37	37.46	61	68.2	-7.20	PK
V	10480	40.66	49.11	15.37	37.46	44.38	54	-9.62	AV
V	15720	52.21	49.21	15.34	40.51	58.85	74	-15.15	PK
V	15720	38.86	49.21	15.34	40.51	45.5	54	-8.50	AV
H	10480	57.58	49.11	15.37	31.31	55.15	68.2	-13.05	PK
H	10480	44.25	49.11	15.37	31.31	41.82	54	-12.18	AV
H	15720	51.63	49.21	15.34	40.51	58.27	74	-15.73	PK
H	15720	39.52	49.21	15.34	40.51	46.16	54	-7.84	AV

Remark:

1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier,
   Margin= Emission Level - Limit
2. If peak below the average limit, the average emission was no test.
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

802.11n HT40

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Pre-amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB/m)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
operation frequency:5190									
V	10380	56.52	49.07	15.33	37.41	60.19	68.2	-8.01	PK
V	10380	39.54	49.07	15.33	37.41	43.21	54	-10.79	AV
V	15570	52.21	49.17	15.28	40.46	58.78	74	-15.22	PK
V	15570	38.83	49.17	15.28	40.46	45.4	54	-8.60	AV
H	10380	56.27	49.07	15.33	37.41	59.94	68.2	-8.26	PK
H	10380	40.85	49.07	15.33	37.41	44.52	54	-9.48	AV
H	15570	52.33	49.17	15.28	40.46	58.9	74	-15.10	PK
H	15570	38.87	49.17	15.28	40.46	45.44	54	-8.56	AV
operation frequency:5230									
V	10460	57.21	49.11	15.37	37.46	60.93	68.2	-7.27	PK
V	10460	39.63	49.11	15.37	37.46	43.35	54	-10.65	AV
V	15690	52.84	49.21	15.34	40.51	59.48	74	-14.52	PK
V	15690	38.28	49.21	15.34	40.51	44.92	54	-9.08	AV
H	10460	57.86	49.11	15.37	31.31	55.43	68.2	-12.77	PK
H	10460	44.84	49.11	15.37	31.31	42.41	54	-11.59	AV
H	15690	52.85	49.21	15.34	40.51	59.49	74	-14.51	PK
H	15690	39.63	49.21	15.34	40.51	46.27	54	-7.73	AV

Remark:

1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier,
   Margin= Emission Level - Limit
2. If peak below the average limit, the average emission was no test.
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

802.11ac HT20

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Pre-amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB/m)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
operation frequency:5180									
V	10360	56.58	49.05	15.3	37.39	60.22	68.2	-7.98	PK
V	10360	39.16	49.05	15.3	37.39	42.8	54	-11.20	AV
V	15540	51.34	49.16	15.27	40.45	57.9	74	-16.10	PK
V	15540	38.38	49.16	15.27	40.45	44.94	54	-9.06	AV
H	10360	56.26	49.05	15.3	37.39	59.9	68.2	-8.30	PK
H	10360	38.35	49.05	15.3	37.39	41.99	54	-12.01	AV
H	15540	52.63	49.16	15.27	40.45	59.19	74	-14.81	PK
H	15540	39.48	49.16	15.27	40.45	46.04	54	-7.96	AV
operation frequency:5200									
V	10400	56.21	49.09	15.34	37.42	59.88	68.2	-8.32	PK
V	10400	41.58	49.09	15.34	37.42	45.25	54	-8.75	AV
V	15600	52.16	49.18	15.29	40.47	58.74	74	-15.26	PK
V	15600	40.58	49.18	15.29	40.47	47.16	54	-6.84	AV
H	10400	55.52	49.09	15.34	37.42	59.19	68.2	-9.01	PK
H	10400	40.54	49.09	15.34	37.42	44.21	54	-9.79	AV
H	15600	53.88	49.18	15.29	40.47	60.46	74	-13.54	PK
H	15600	41.63	49.18	15.29	40.47	48.21	54	-5.79	AV
operation frequency:5240									
V	10480	57.52	49.11	15.37	37.46	61.24	68.2	-6.96	PK
V	10480	40.66	49.11	15.37	37.46	44.38	54	-9.62	AV
V	15720	51.47	49.21	15.34	40.51	58.11	74	-15.89	PK
V	15720	39.65	49.21	15.34	40.51	46.29	54	-7.71	AV
H	10480	57.63	49.11	15.37	31.31	55.2	68.2	-13.00	PK
H	10480	44.22	49.11	15.37	31.31	41.79	54	-12.21	AV
H	15720	52.41	49.21	15.34	40.51	59.05	74	-14.95	PK
H	15720	40.76	49.21	15.34	40.51	47.4	54	-6.60	AV

Remark:

1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier,
   Margin= Emission Level - Limit
2. If peak below the average limit, the average emission was no test.
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

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Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Pre-amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB/m)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
operation frequency:5190									
V	10380	56.85	49.07	15.33	37.41	60.52	68.2	-7.68	PK
V	10380	40.21	49.07	15.33	37.41	43.88	54	-10.12	AV
V	15570	52.73	49.17	15.28	40.46	59.3	74	-14.70	PK
V	15570	39.74	49.17	15.28	40.46	46.31	54	-7.69	AV
H	10380	56.63	49.07	15.33	37.41	60.3	68.2	-7.90	PK
H	10380	40.52	49.07	15.33	37.41	44.19	54	-9.81	AV
H	15570	51.48	49.17	15.28	40.46	58.05	74	-15.95	PK
H	15570	39.16	49.17	15.28	40.46	45.73	54	-8.27	AV
operation frequency:5230									
V	10460	57.27	49.11	15.37	37.46	60.99	68.2	-7.21	PK
V	10460	41.21	49.11	15.37	37.46	44.93	54	-9.07	AV
V	15690	52.19	49.21	15.34	40.51	58.83	74	-15.17	PK
V	15690	39.25	49.21	15.34	40.51	45.89	54	-8.11	AV
H	10460	57.96	49.11	15.37	31.31	55.53	68.2	-12.67	PK
H	10460	44.52	49.11	15.37	31.31	42.09	54	-11.91	AV
H	15690	52.85	49.21	15.34	40.51	59.49	74	-14.51	PK
H	15690	40.63	49.21	15.34	40.51	47.27	54	-6.73	AV

Remark:

1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier,
   Margin= Emission Level - Limit
2. If peak below the average limit, the average emission was no test.
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

802.11ac HT80

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Pre-amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB/m)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
operation frequency:5210									
V	10420	56.52	49.07	15.33	37.41	60.19	68.2	-8.01	PK
V	10420	41.63	49.07	15.33	37.41	45.3	54	-8.70	AV
V	15630	51.57	49.17	15.28	40.46	58.14	74	-15.86	PK
V	15630	39.54	49.17	15.28	40.46	46.11	54	-7.89	AV
H	10420	56.14	49.07	15.33	37.41	59.81	68.2	-8.39	PK
H	10420	41.63	49.07	15.33	37.41	45.3	54	-8.70	AV
H	15630	52.85	49.17	15.28	40.46	59.42	74	-14.58	PK
H	15630	40.33	49.17	15.28	40.46	46.9	54	-7.10	AV

Remark:

1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier,
   Margin= Emission Level - Limit
2. If peak below the average limit, the average emission was no test.
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

3.3 RADIATED BAND EMISSION MEASUREMENT

3.3.1 TEST REQUIREMENT:

15.407 (b)

LIMITS OF RADIATED EMISSION MEASUREMENT (Above 1000MHz)

FREQUENCY (MHz)	Limit (dBuV/m) (at 3M)	
	PEAK	AVERAGE
Above 1000	74	54

Notes:

(1) The limit for radiated test was performed according to FCC PART 15C.

(2) The tighter limit applies at the band edges.

(3) Emission level (dBuV/m)=20log Emission level (uV/m).

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	5000MHz
Stop Frequency	5420MHz
RB / VB (emission in restricted band)	1 MHz / 1 MHz for Peak, 1 MHz / 10Hz for Average

3.3.2 TEST PROCEDURE

Above 1GHz test procedure as below:

a. 1. The EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation.

b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading.

e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

g. Test the EUT in the lowest channel,the Highest channel

Note:

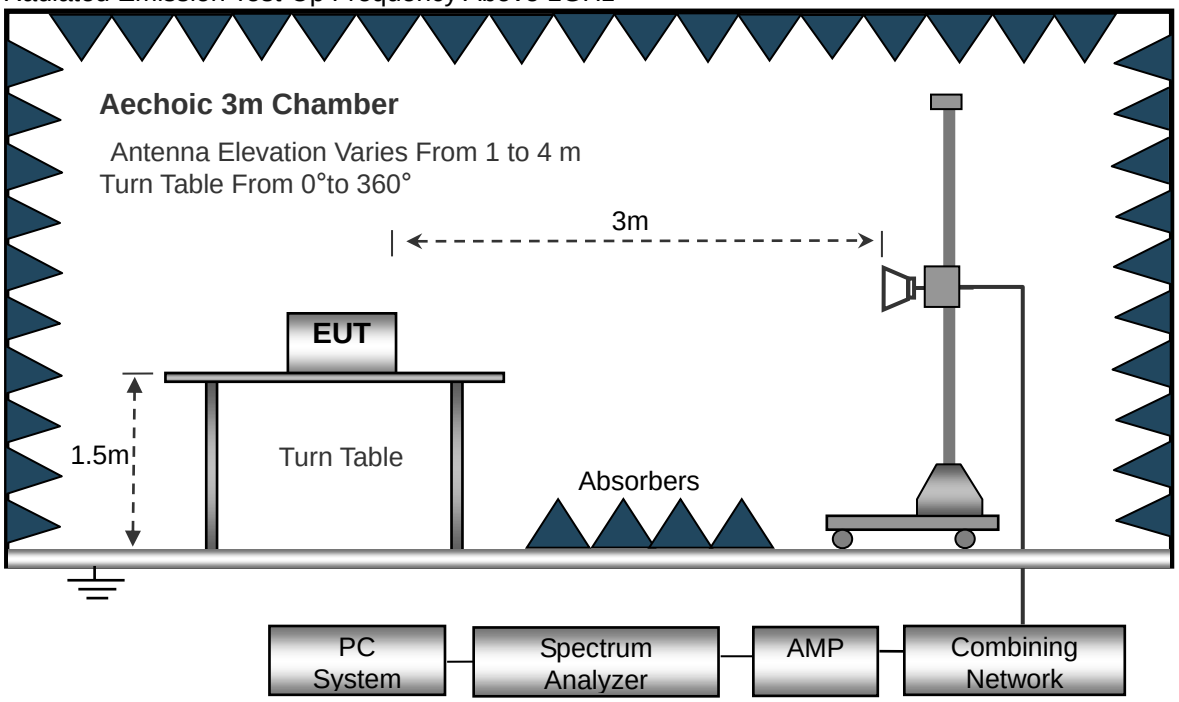
Both horizontal and vertical antenna polarities were tested
and performed pretest to three orthogonal axis. The worst case emissions were reported

3.3.3 DEVIATION FROM TEST STANDARD

No deviation

3.3.4 TEST SETUP

Radiated Emission Test-Up Frequency Above 1GHz



3.3.5 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of 2.3 Unless otherwise a special operating condition is specified in the follows during the testing.

3.3.6 TEST RESULT

802.11a

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Pre-amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB/m)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
operation frequency:5180									
V	5150	57.66	49.07	15.31	37.41	61.31	74	-12.69	PK
V	5150	46.66	49.07	15.31	37.41	50.31	54	-3.69	AV
V	5145	57.21	49.18	15.26	40.43	63.72	74	-10.28	PK
V	5145	43.89	49.18	15.26	40.43	50.4	54	-3.60	AV
H	5150	57.21	49.07	15.31	37.41	60.86	74	-13.14	PK
H	5150	46.69	49.07	15.31	37.41	50.34	54	-3.66	AV
H	5145	60.21	49.18	15.26	40.43	66.72	74	-7.28	PK
H	5145	43.02	49.18	15.26	40.43	49.53	54	-4.47	AV
operation frequency:5240									
V	5350	58.99	49.1	15.35	37.44	62.68	74	-11.32	PK
V	5350	46.21	49.1	15.35	37.44	49.9	54	-4.10	AV
V	5370	60.66	49.19	15.31	40.49	67.27	74	-6.73	PK
V	5370	43.09	49.19	15.31	40.49	49.7	54	-4.30	AV
H	5350	57.21	49.1	15.35	37.44	60.9	74	-13.10	PK
H	5350	46.21	49.1	15.35	37.44	49.9	54	-4.10	AV
H	5370	60.99	49.19	15.31	40.49	67.6	74	-6.40	PK
H	5370	43.78	49.19	15.31	40.49	50.39	54	-3.61	AV

Remark:

1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier,
   Margin= Emission Level - Limit
2. If peak below the average limit, the average emission was no test.
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

802.11n HT20

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Pre-amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB/m)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
operation frequency:5180									
V	5150	59.63	49.13	15.39	37.48	63.37	74	-10.63	PK
V	5150	46.22	49.13	15.39	37.48	49.96	54	-4.04	AV
V	5145	60.95	49.23	15.36	40.54	67.62	74	-6.38	PK
V	5145	44.11	49.23	15.36	40.54	50.78	54	-3.22	AV
H	5150	58.06	49.13	15.39	37.48	61.8	74	-12.20	PK
H	5150	46.99	49.13	15.39	37.48	50.73	54	-3.27	AV
H	5145	58.01	49.23	15.36	40.54	64.68	74	-9.32	PK
H	5145	43.99	49.23	15.36	40.54	50.66	54	-3.34	AV
operation frequency:5240									
V	5350	57.77	49.07	15.31	37.41	61.42	74	-12.58	PK
V	5350	45.02	49.07	15.31	37.41	48.67	54	-5.33	AV
V	5370	56.31	49.18	15.26	40.43	62.82	74	-11.18	PK
V	5370	43.96	49.18	15.26	40.43	50.47	54	-3.53	AV
H	5350	56.66	49.07	15.31	37.41	60.31	74	-13.69	PK
H	5350	45.59	49.07	15.31	37.41	49.24	54	-4.76	AV
H	5370	54.31	49.18	15.26	40.43	60.82	74	-13.18	PK
H	5370	42.84	49.18	15.26	40.43	49.35	54	-4.65	AV

Remark:

1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier,
   Margin= Emission Level - Limit
2. If peak below the average limit, the average emission was no test.
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

802.11ac HT20

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Pre-amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB/m)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
operation frequency:5180									
V	5150	56.66	49.1	15.35	37.44	60.35	74	-13.65	PK
V	5150	45.21	49.1	15.35	37.44	48.9	54	-5.10	AV
V	5145	55.62	49.19	15.31	40.49	62.23	74	-11.77	PK
V	5145	43.11	49.19	15.31	40.49	49.72	54	-4.28	AV
H	5150	55.36	49.1	15.35	37.44	59.05	74	-14.95	PK
H	5150	43.47	49.1	15.35	37.44	47.16	54	-6.84	AV
H	5145	55.31	49.19	15.31	40.49	61.92	74	-12.08	PK
H	5145	43.69	49.19	15.31	40.49	50.3	54	-3.70	AV
operation frequency:5240									
V	5350	56.32	49.13	15.39	37.48	60.06	74	-13.94	PK
V	5350	44.21	49.13	15.39	37.48	47.95	54	-6.05	AV
V	5370	54.99	49.23	15.36	40.54	61.66	74	-12.34	PK
V	5370	43.23	49.23	15.36	40.54	49.9	54	-4.10	AV
H	5350	56.47	49.13	15.39	37.48	60.21	74	-13.79	PK
H	5350	44.32	49.13	15.39	37.48	48.06	54	-5.94	AV
H	5370	55.69	49.23	15.36	40.54	62.36	74	-11.64	PK
H	5370	42.21	49.23	15.36	40.54	48.88	54	-5.12	AV

Remark:

1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier,
   Margin= Emission Level - Limit
2. If peak below the average limit, the average emission was no test.
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

802.11n HT40

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Pre-amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB/m)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
operation frequency:5190									
V	5150	57.96	49.07	15.31	37.41	61.61	74	-12.39	PK
V	5150	45.54	49.07	15.31	37.41	49.19	54	-4.81	AV
V	5145	56.32	49.18	15.26	40.43	62.83	74	-11.17	PK
V	5145	43.69	49.18	15.26	40.43	50.2	54	-3.80	AV
H	5150	57.21	49.07	15.31	37.41	60.86	74	-13.14	PK
H	5150	45.88	49.07	15.31	37.41	49.53	54	-4.47	AV
H	5145	55.66	49.18	15.26	40.43	62.17	74	-11.83	PK
H	5145	42.21	49.18	15.26	40.43	48.72	54	-5.28	AV
operation frequency:5230									
V	5350	57.61	49.13	15.39	37.48	61.35	74	-12.65	PK
V	5350	44.62	49.13	15.39	37.48	48.36	54	-5.64	AV
V	5370	54.66	49.23	15.36	40.54	61.33	74	-12.67	PK
V	5370	43.41	49.23	15.36	40.54	50.08	54	-3.92	AV
H	5350	57.02	49.13	15.39	37.48	60.76	74	-13.24	PK
H	5350	45.63	49.13	15.39	37.48	49.37	54	-4.63	AV
H	5370	55.15	49.23	15.36	40.54	61.82	74	-12.18	PK
H	5370	43.96	49.23	15.36	40.54	50.63	54	-3.37	AV

Remark:

1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier,
   Margin= Emission Level - Limit
2. If peak below the average limit, the average emission was no test.
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

802.11ac HT40

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Pre-amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB/m)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
operation frequency:5190									
V	5150	57.32	49.07	15.31	37.41	60.97	74	-13.03	PK
V	5150	45.28	49.07	15.31	37.41	48.93	54	-5.07	AV
V	5145	57.95	49.18	15.26	40.43	64.46	74	-9.54	PK
V	5145	44.36	49.18	15.26	40.43	50.87	54	-3.13	AV
H	5150	56.21	49.07	15.31	37.41	59.86	74	-14.14	PK
H	5150	45.02	49.07	15.31	37.41	48.67	54	-5.33	AV
H	5145	59.39	49.18	15.26	40.43	65.9	74	-8.10	PK
H	5145	43.47	49.18	15.26	40.43	49.98	54	-4.02	AV
operation frequency:5230									
V	5350	58.96	49.1	15.35	37.44	62.65	74	-11.35	PK
V	5350	45.62	49.1	15.35	37.44	49.31	54	-4.69	AV
V	5370	60.21	49.19	15.31	40.49	66.82	74	-7.18	PK
V	5370	43.36	49.19	15.31	40.49	49.97	54	-4.03	AV
H	5350	57.21	49.1	15.35	37.44	60.9	74	-13.10	PK
H	5350	46.66	49.1	15.35	37.44	50.35	54	-3.65	AV
H	5370	60.26	49.19	15.31	40.49	66.87	74	-7.13	PK
H	5370	43.78	49.19	15.31	40.49	50.39	54	-3.61	AV

Remark:

1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier,
   Margin= Emission Level - Limit
2. If peak below the average limit, the average emission was no test.
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

802.11ac HT80

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Pre-amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB/m)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
operation frequency:5210									
V	5350	59.69	49.13	15.39	37.48	63.43	74	-10.57	PK
V	5350	45.52	49.13	15.39	37.48	49.26	54	-4.74	AV
V	5370	59.31	49.23	15.36	40.54	65.98	74	-8.02	PK
V	5370	43.89	49.23	15.36	40.54	50.56	54	-3.44	AV
H	5350	57.21	49.13	15.39	37.48	60.95	74	-13.05	PK
H	5350	46.66	49.13	15.39	37.48	50.4	54	-3.60	AV
H	5370	58.41	49.23	15.36	40.54	65.08	74	-8.92	PK
H	5370	43.69	49.23	15.36	40.54	50.36	54	-3.64	AV

Remark:

1. Emission Level = Meter Reading + Antenna Factor + Cable Loss – Pre-amplifier,
   Margin= Emission Level - Limit
2. If peak below the average limit, the average emission was no test.
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

4.. AVERAGE OUTPUT POWER

4.1. APPLIED PROCEDURES / LIMIT

For mobile and portable 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.

4.1.1. TEST PROCEDURE

Method SA-2 uses trace averaging across ON and OFF times of the EUT transmissions, followed by duty cycle correction. The procedure for this method is as follows:
a)Measure the duty cycle D of the transmitter output signal as described in 12.2.
b)Set span to encompass the entire 26 dB EBW or 99% OBW of the signal.
c)Set RBW=1 MHz.
d)Set VBW ≥3 MHz.
e)Number of points in sweep ≥ [2 x span / RBW]. (This gives bin-to-bin spacing ≤ RBW / 2, so that narrowband signals are not lost between frequency bins.)
f)Sweep time = auto.
g) Detector = RMS (i.e., power averaging), if available. Otherwise, use sample detector mode.
h) Do not use sweep triggering. Allow the sweep to "free run."
i) Trace average at least 100 traces in power averaging (rms) mode; however, the number of traces to be averaged shall be increased above 100 as needed such that the average accurately represents the true average over the ON and OFF periods of the transmitter.
j)Compute power by integrating the spectrum across the 26 dB EBW or 99% OBW of the signal using the instrument's band power measurement function with band limits set equal to the EBW or OBW band edges. If the instrument does not have a band power function, then sum the spectrum levels (in power units) at 1MHz intervals extending across the 26 dB EBW or 99% OBW of the spectrum.
k) Add [10 log (1 / D)], where D is the duty cycle, to the measured power to compute the average power during the actual transmission times (because the measurement represents an average over both the ON and ofF times of the transmission). For example, add [10 log (1 / 0.25)] = 6 dB if the duty cycle is 25%.

4.1.2. DEVIATION FROM STANDARD

No deviation.

4.1.3. TEST SETUP

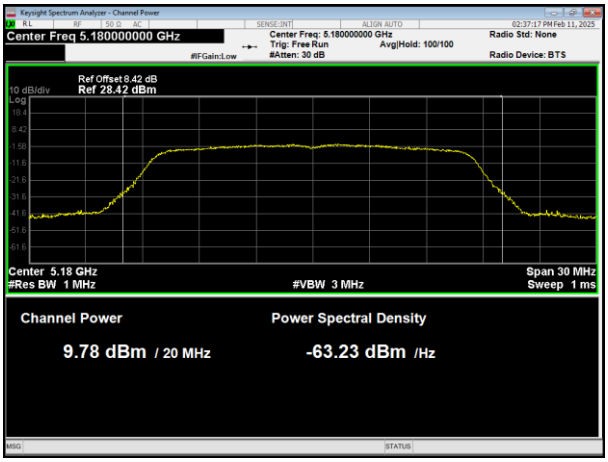
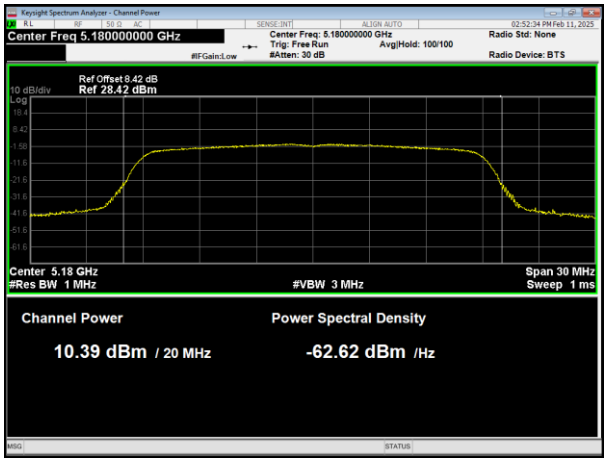
4.1.4. EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

4.1.5. TEST RESULTS

Temperature:	25 ℃	Relative Humidity:	60%
Pressure:	1012 hPa	Test Voltage :	DC 14.4V

Band	Mode	Test Channel	Average Output Power (dBm)	Duty factor (dB)	Total Output Power(dB)	LIMIT (dBm)
Band 1	802.11a	Low	9.782	1.06	10.842	23.98
		Middle	9.876	1.06	10.936	23.98
		High	9.72	1.06	10.78	23.98
	802.11ac HT20	Low	10.394	0.13	10.524	23.98
		Middle	10.481	0.13	10.611	23.98
		High	10.69	0.13	10.82	23.98
	802.11ac HT40	Low	10.183	0.26	10.443	23.98
		High	10.342	0.26	10.602	23.98
	802.11ac HT80	/	10.618	0.5	11.118	23.98
	802.11n HT20	Low	10.539	0.13	10.669	23.98
		Middle	10.598	0.13	10.728	23.98
		High	10.531	0.13	10.661	23.98
	802.11n HT40	Low	10.256	0.26	10.516	23.98
		High	10.282	0.26	10.542	23.98

802.11a	802.11ac HT20
	
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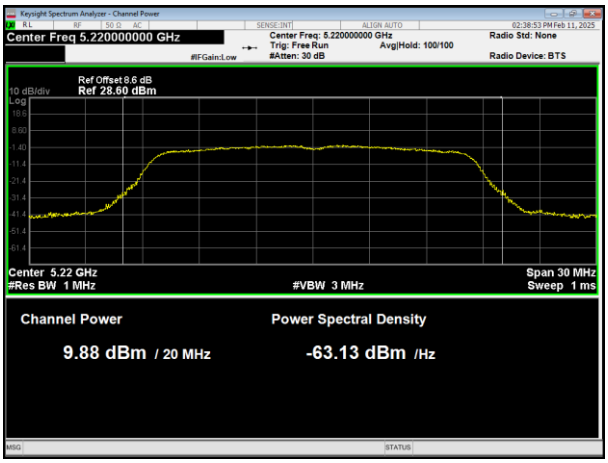	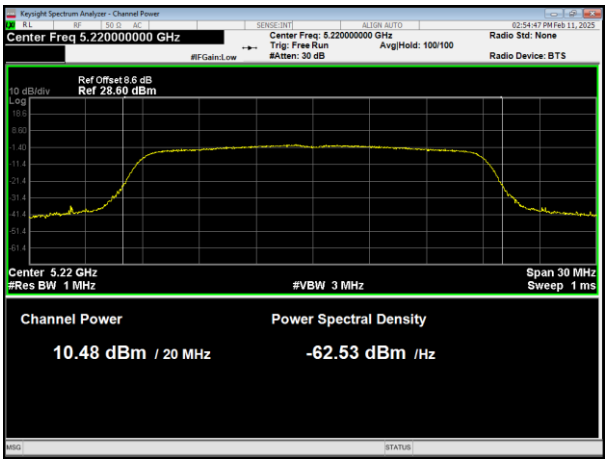
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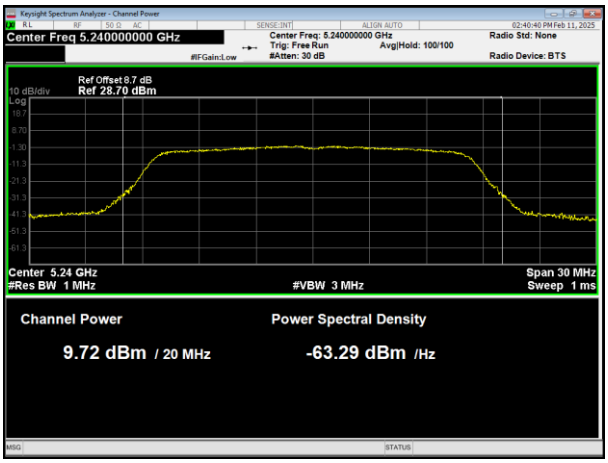
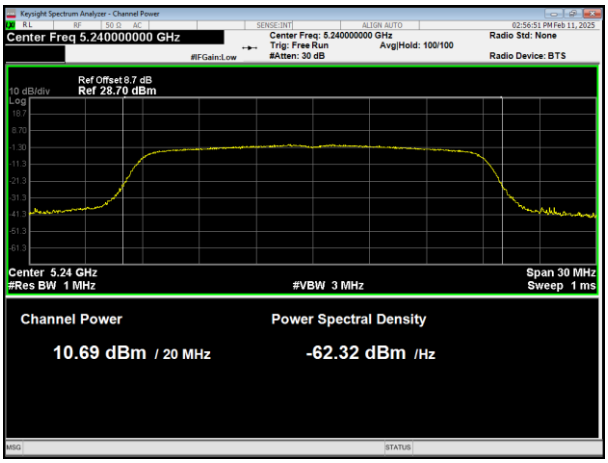
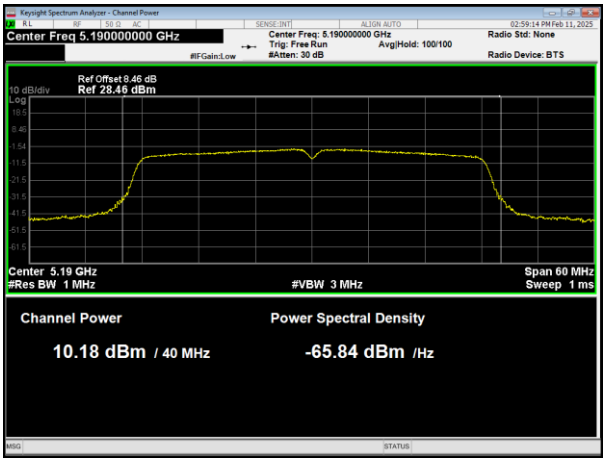
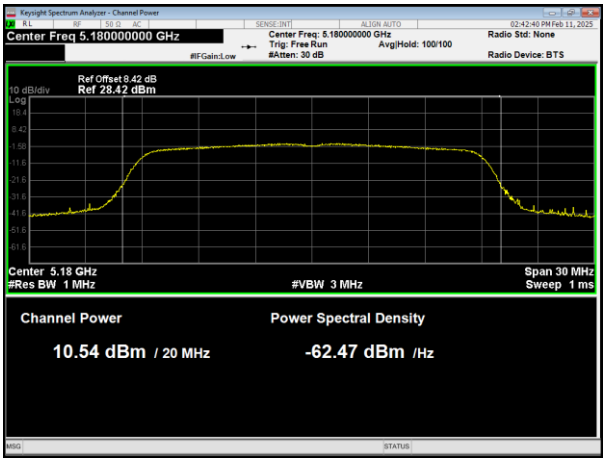
	
5240MHz	5240MHz

802.11ac HT40	802.11n HT20
	
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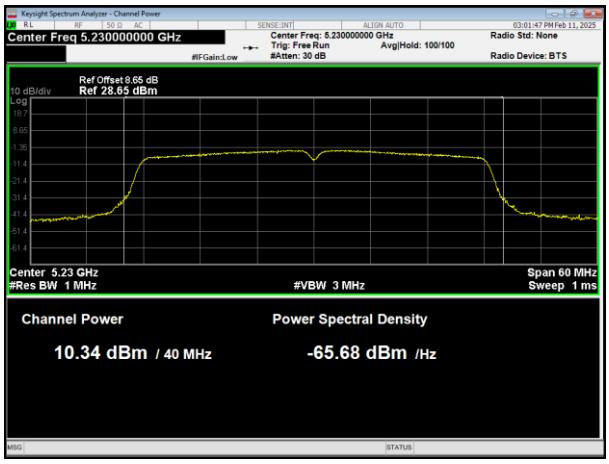	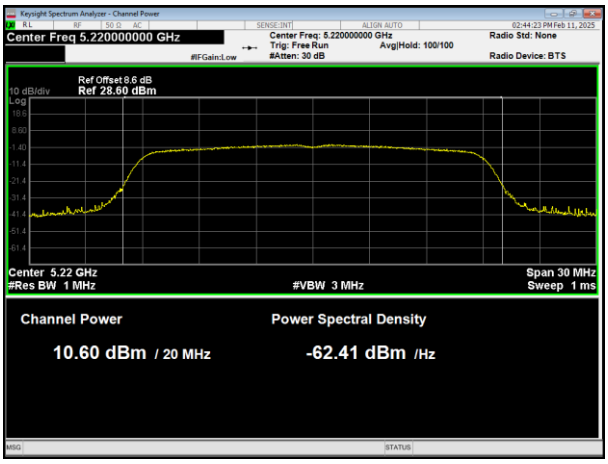
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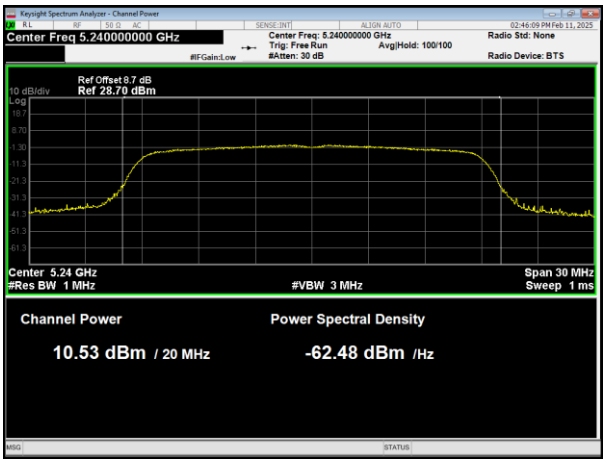
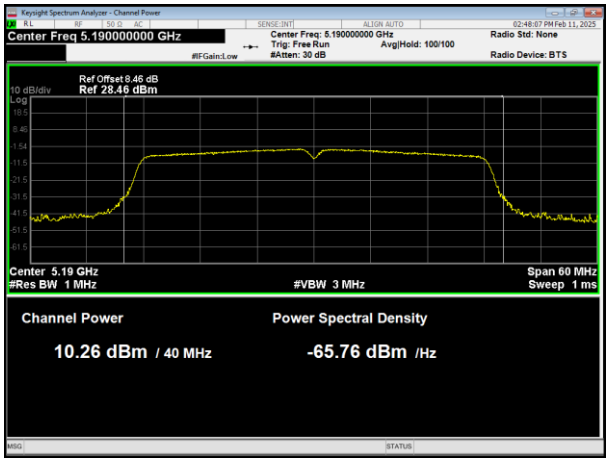
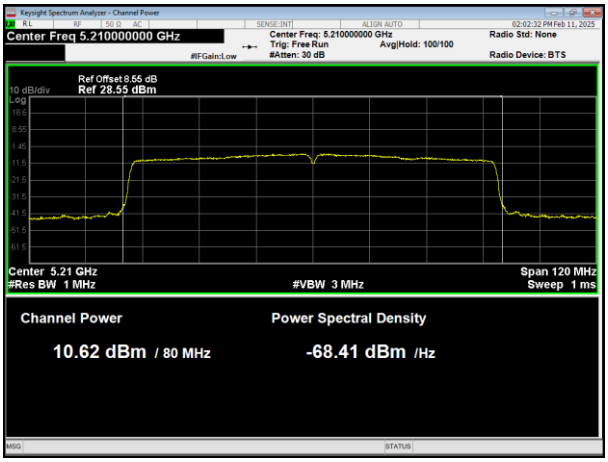
	
	5240MHz

802.11n HT40	802.11ac HT80
	
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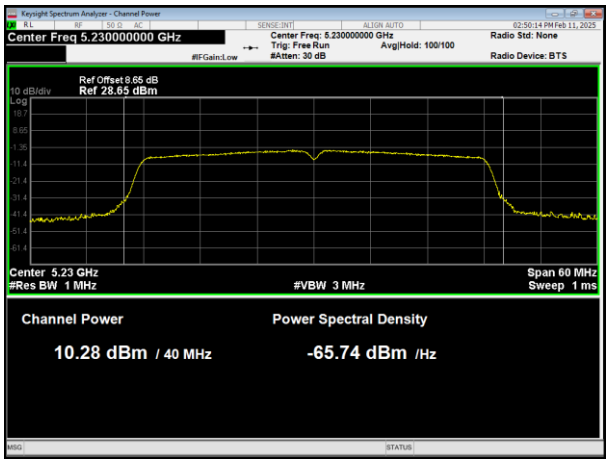
	
5230MHz	

5.. POWER SPECTRAL DENSITY TEST

5.1. APPLIED PROCEDURES / LIMIT

In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band.

Spectrum Parameters	Setting
Attenuation	Auto
Span Frequency	= the frequency band of operation
RB	RBW ≥ 1MHz for band 1 RBW ≥ 510KHz for band 4
VB	VBW ≥ 3RBW
Detector	RMS (i.e., power averaging).
Trace	Max Hold
Sweep Time	Auto

5.1.1. TEST PROCEDURE

Method SA-2 uses trace averaging across ON and OFF times of the EUT transmissions, followed by duty cycle correction. The procedure for this method is as follows:
a)Measure the duty cycle D of the transmitter output signal as described in 12.2.
b)Set span to encompass the entire 26 dB EBW or 99% OBW of the signal.
c)Set RBW=1 MHz.
d)Set VBW ≥3 MHz.
e)Number of points in sweep ≥ [2 x span / RBW]. (This gives bin-to-bin spacing ≤ RBW / 2, so that narrowband signals are not lost between frequency bins.)
f)Sweep time = auto.
g) Detector = RMS (i.e., power averaging), if available. Otherwise, use sample detector mode.
h) Do not use sweep triggering. Allow the sweep to "free run."
i) Trace average at least 100 traces in power averaging (rms) mode; however, the number of traces to be averaged shall be increased above 100 as needed such that the average accurately represents the true average over the ON and OFF periods of the transmitter.
j)Compute power by integrating the spectrum across the 26 dB EBW or 99% OBW of the signal using the instrument's band power measurement function with band limits set equal to the EBW or OBW band edges. If the instrument does not have a band power function, then sum the spectrum levels (in power units) at 1MHz intervals extending across the 26 dB EBW or 99% OBW of the spectrum.
k) Add [10 log (1 / D)], where D is the duty cycle, to the measured power to compute the average power during the actual transmission times (because the measurement represents an average over both the ON and ofF times of the transmission). For example, add [10 log (1 / 0.25)] = 6 dB if the duty cycle is 25%.

5.1.2. DEVIATION FROM STANDARD

No deviation.

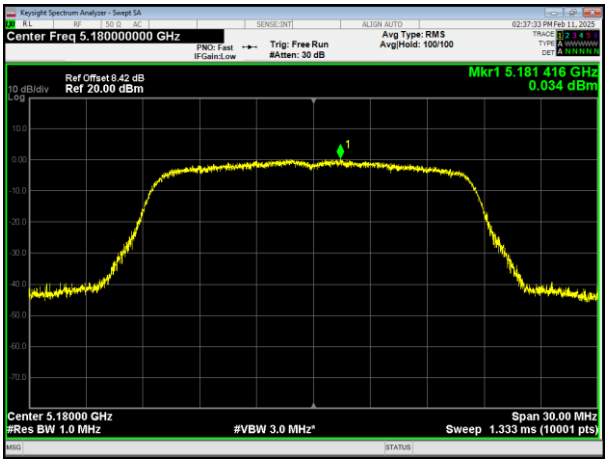
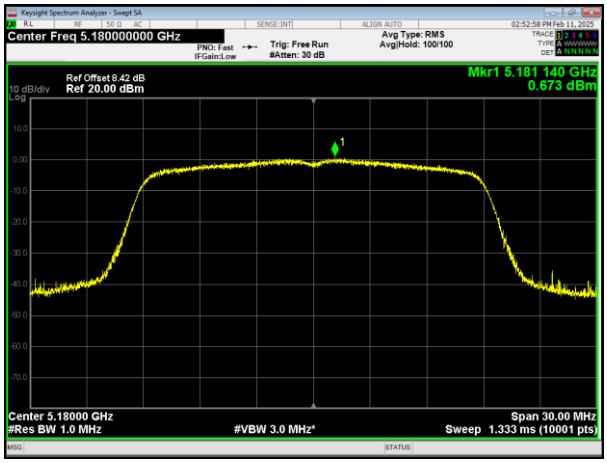
5.1.3. TEST SETUP

5.1.4. EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

5.1.5. TEST RESULTS

	Mode	Test Channel	Reading Level (dBm/MHz)	Duty factor (dB)	PSD (dBm/MHz)	Limit (dBm/MHz)	Result
Band1	802.11a	Low	0.034	1.06	1.094	11.00	PASS
		Middle	0.672	1.06	1.732	11.00	PASS
		High	0.049	1.06	1.109	11.00	PASS
	802.11ac20	Low	0.673	0.13	0.803	11.00	PASS
		Middle	0.665	0.13	0.795	11.00	PASS
		High	1.109	0.13	1.239	11.00	PASS
	802.11ac40	Low	-2.444	0.26	-2.184	11.00	PASS
		High	-2.488	0.26	-2.228	11.00	PASS
	802.11ac80	/	-5.191	0.5	-4.691	11.00	PASS
	802.11n20	Low	0.868	0.13	0.998	11.00	PASS
		Middle	0.681	0.13	0.811	11.00	PASS
		High	0.612	0.13	0.742	11.00	PASS
	802.11n40	Low	-2.638	0.26	-2.378	11.00	PASS
		High	-2.432	0.26	-2.172	11.00	PASS

802.11a	802.11ac HT20
	
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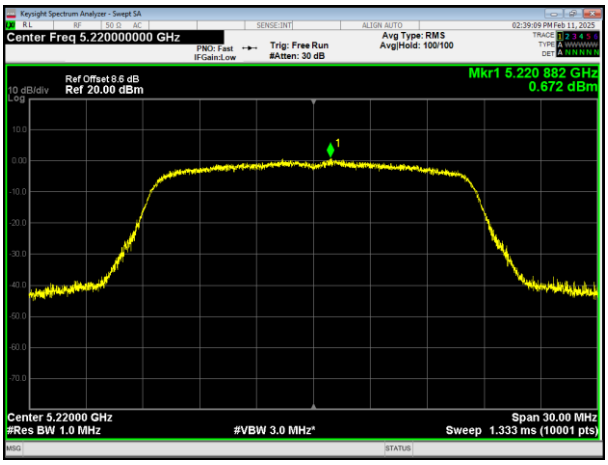
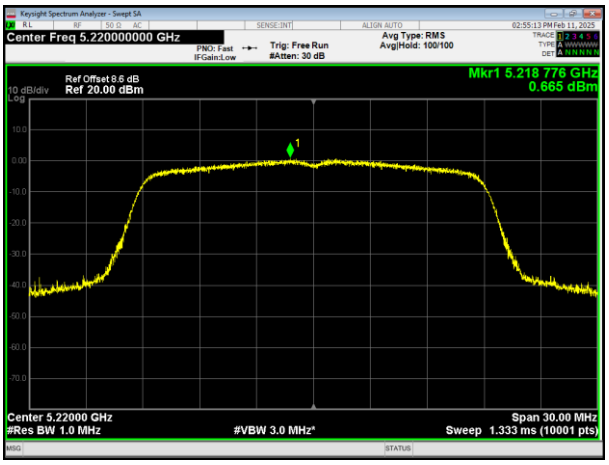
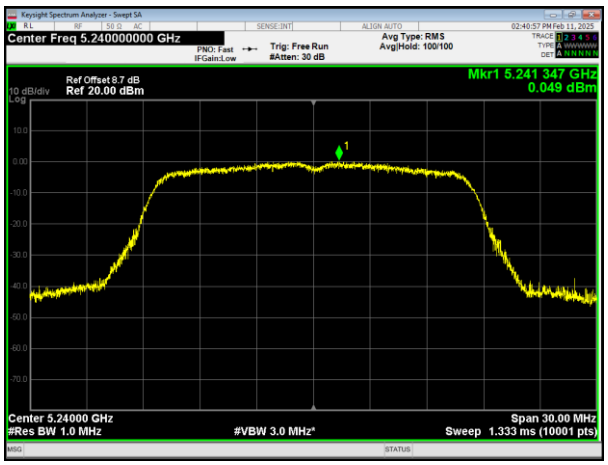
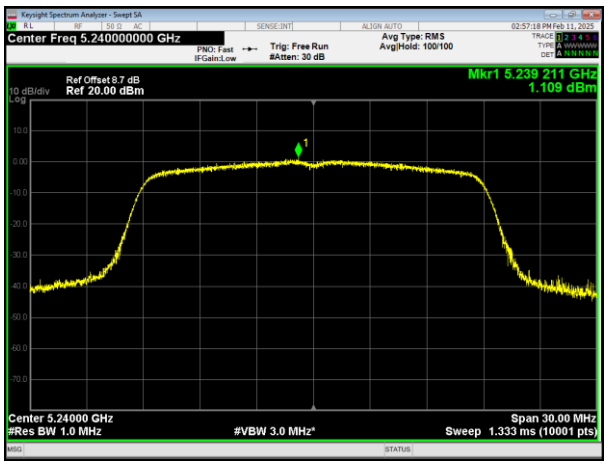
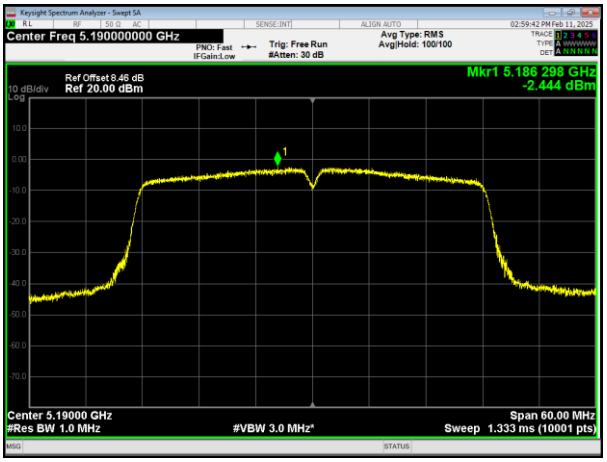
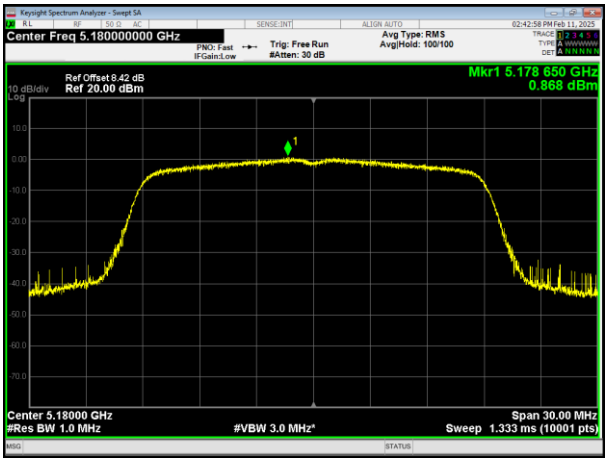
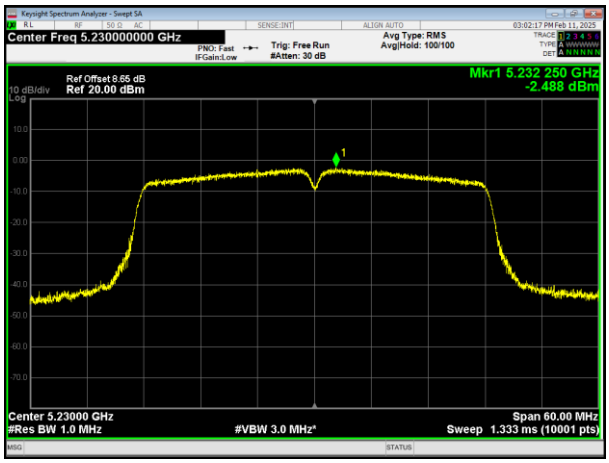
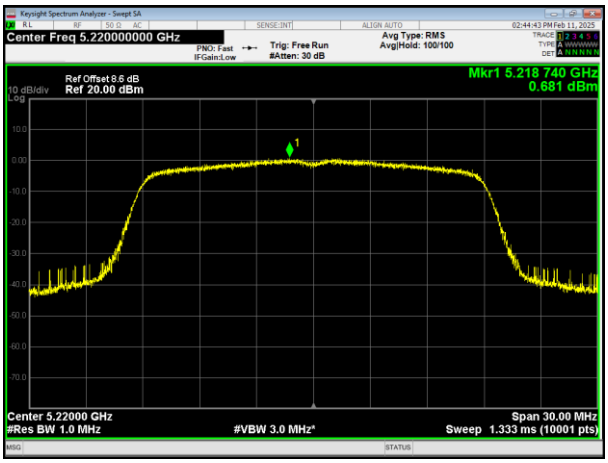
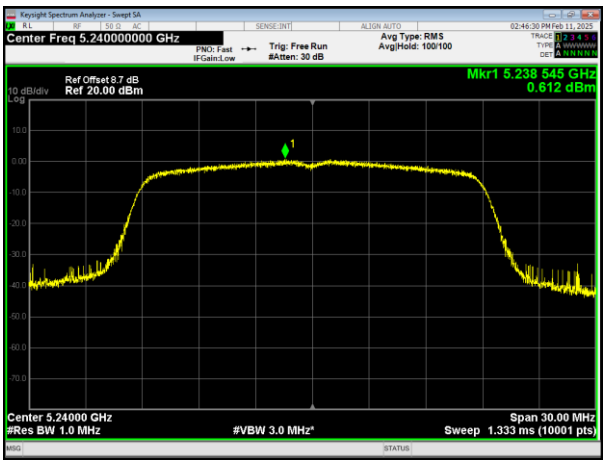
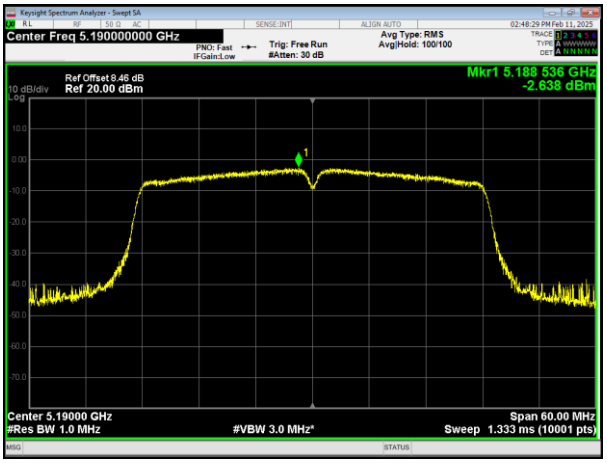
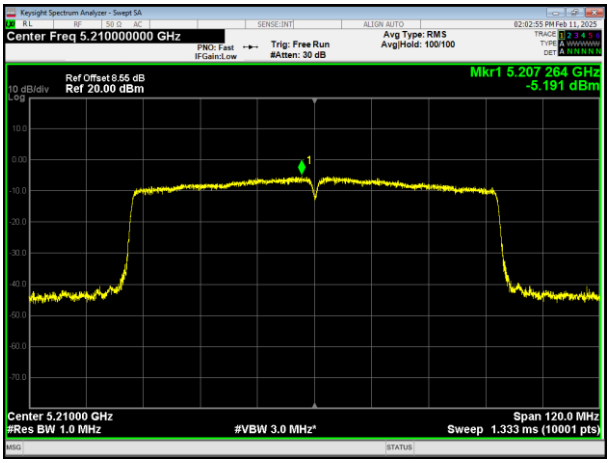
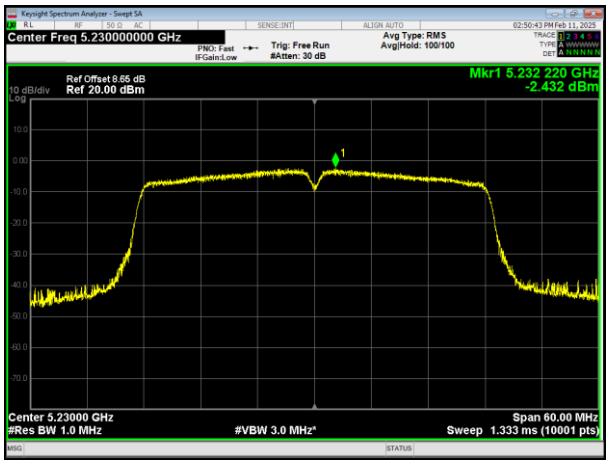
	
5200MHz	5200MHz
	
5240MHz	5240MHz

802.11ac HT40	802.11n HT20
	
5190MHz	5180MHz
	
5230MHz	5200MHz
	
	5240MHz

802.11n HT40	802.11ac HT80
	
5190MHz	5210MHz
	
5230MHz	

6.. 26DB&99% BANDWIDTH TEST

6.1. APPLIED PROCEDURES / LIMIT

The 26 dB bandwidth is used to determine the conducted power limits. There is no limit bandwidth for U-NII-1, U-NII-2-A and U-NII-2-C.

6.1.1. TEST PROCEDURE

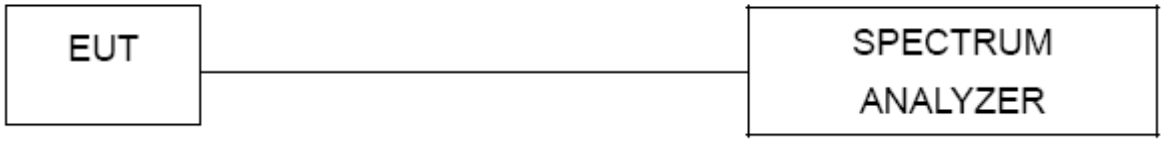
26dB Bandwidth	
Spectrum Parameters	Setting
RBW	approximately 1% of the emission bandwidth
VBW	>RBW
Span	30MHz(20MHz Bandwidth mode) 60MHz(40MHz Bandwidth mode) 120MHz(80MHz Bandwidth mode)
Sweep Time	Auto
Detector	Peak
Trace Mode	Max Hold

99% Occupied Bandwidth	
Spectrum Parameters	Setting
RBW	1% to 5% of the OBW
VBW	Approximately three times the RBW
Span	between 1.5 times and 5.0 times the OBW
Sweep Time	Auto
Detector	Peak
Trace Mode	Max Hold

6.1.2. DEVIATION FROM STANDARD

No deviation.

6.1.3. TEST SETUP



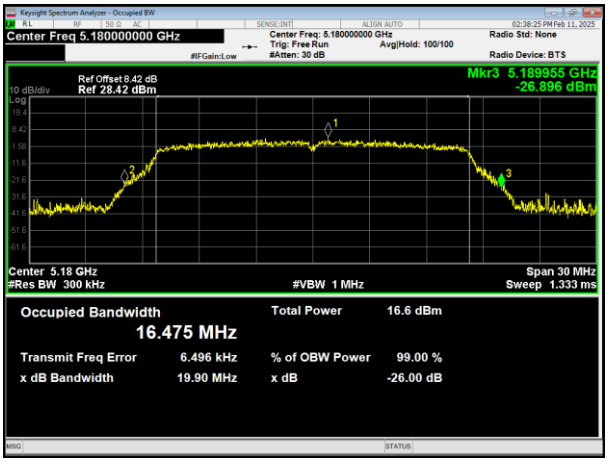
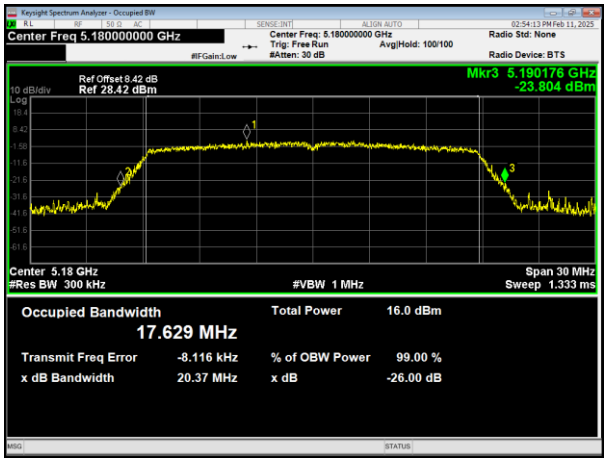
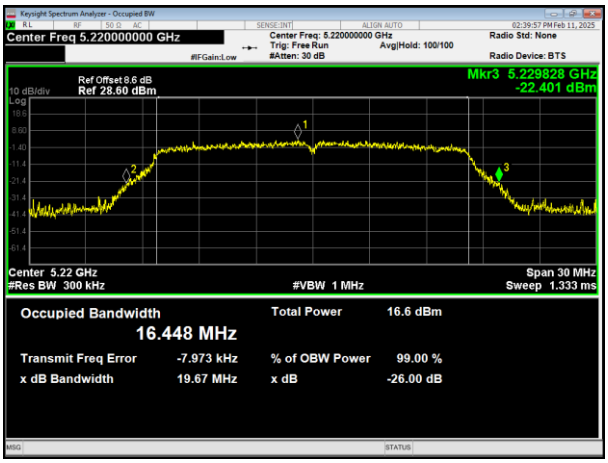
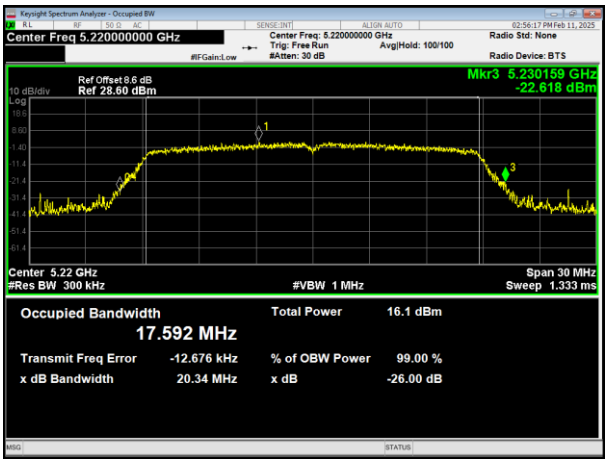
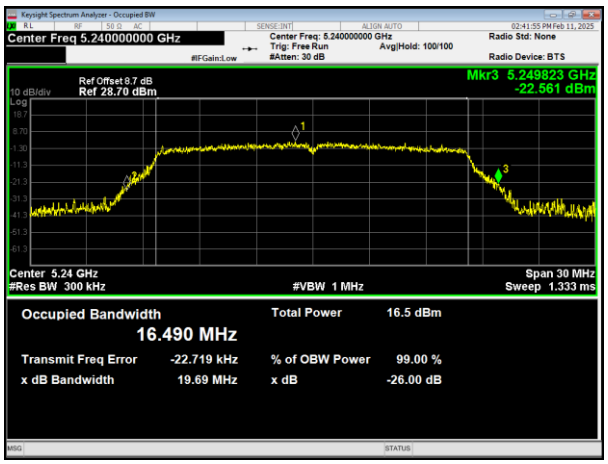
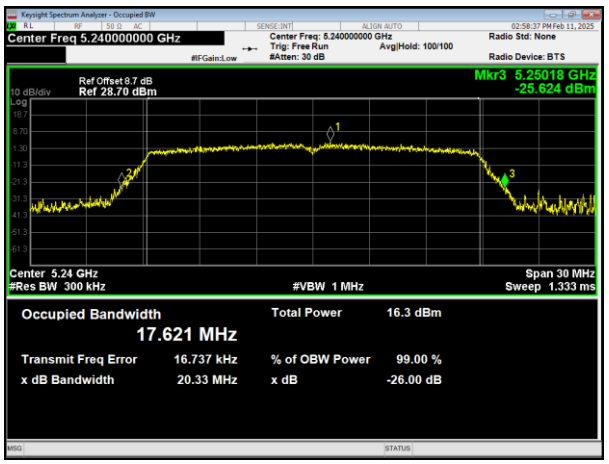
6.1.4. EUT OPERATION CONDITIONS

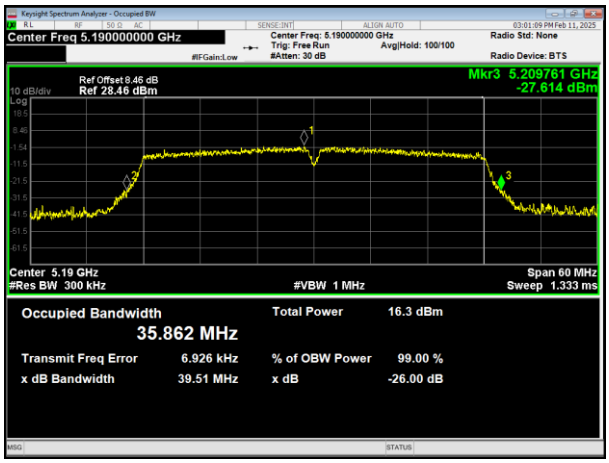
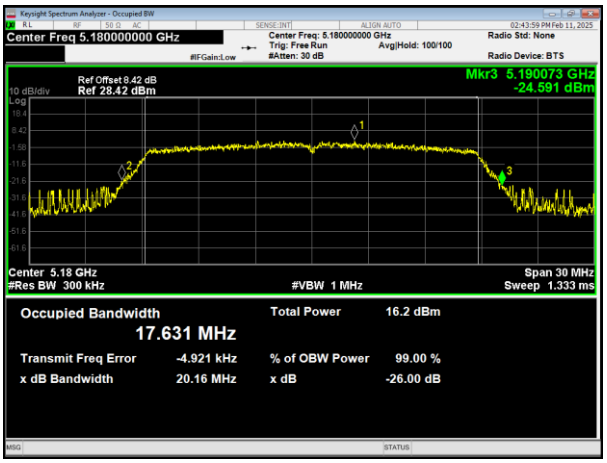
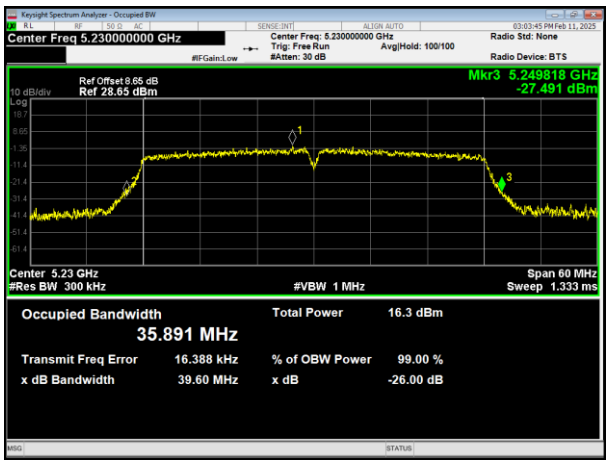
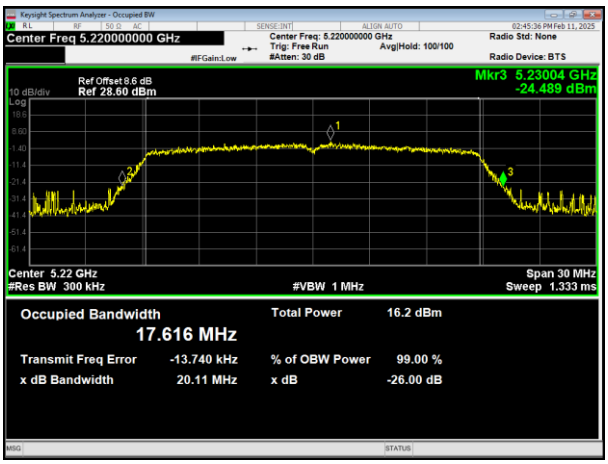
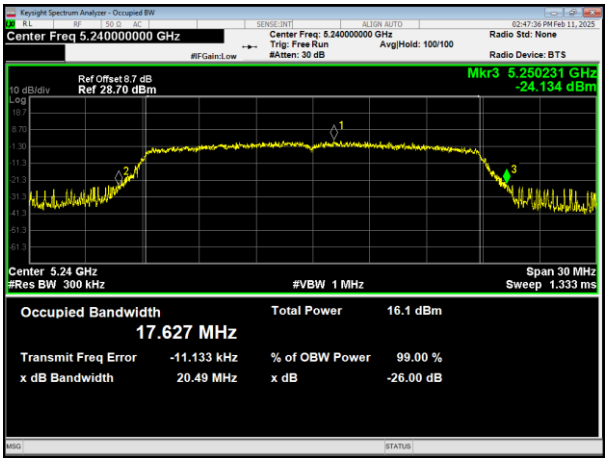
The EUT tested system was configured as the statements of 2.3 Unless otherwise a special operating condition is specified in the follows during the testing.

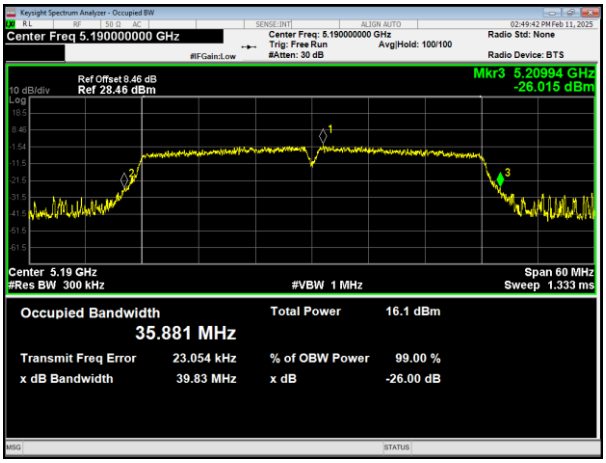
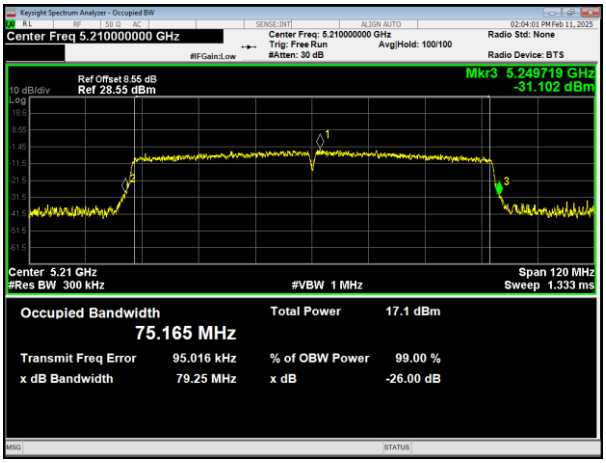
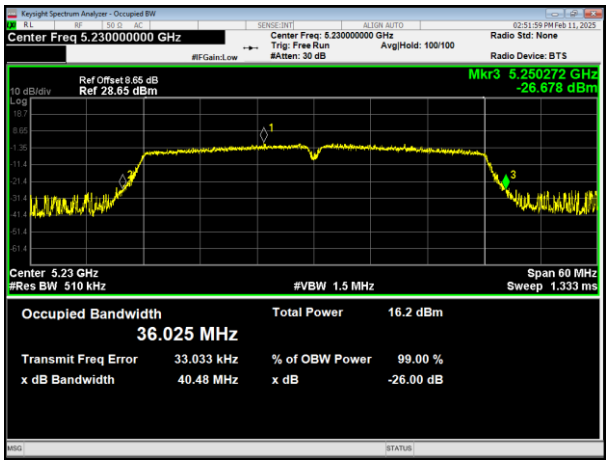
6.1.5. TEST RESULTS

		Test Channel	26dB Bandwidth (MHz)	99% Bandwidth (MHz)	Result
Band 1	802.11a	Low	19.897	16.364	Pass
		Middle	19.673	16.379	Pass
		High	19.691	16.352	Pass
	802.11ac HT20	Low	20.368	17.564	Pass
		Middle	20.343	17.553	Pass
		High	20.326	17.537	Pass
	802.11ac HT40	Low	39.509	35.921	Pass
		High	39.603	35.944	Pass
	802.11ac HT80	/	79.248	75.235	Pass
	802.11n HT20	Low	20.156	17.560	Pass
		Middle	20.108	17.565	Pass
		High	20.485	17.557	Pass
	802.11n HT40	Low	39.834	36.007	Pass
		High	40.478	35.974	Pass

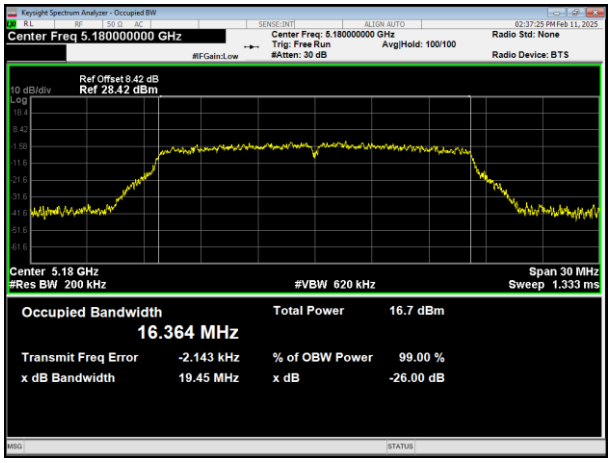
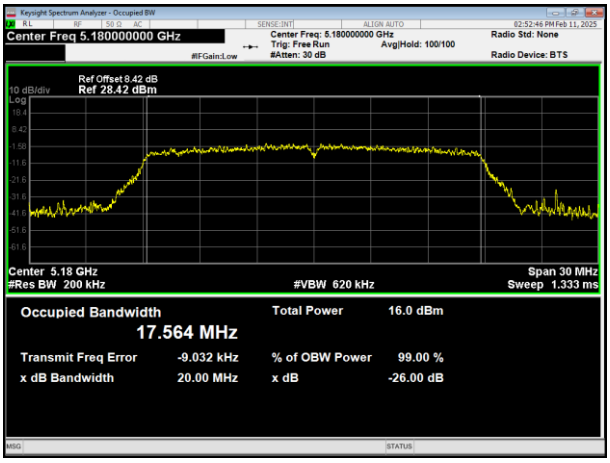
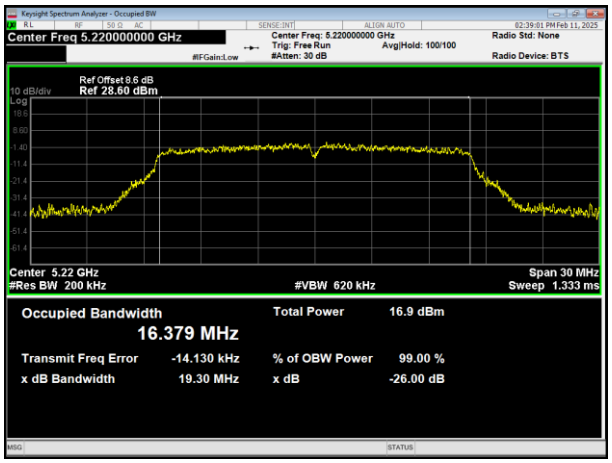
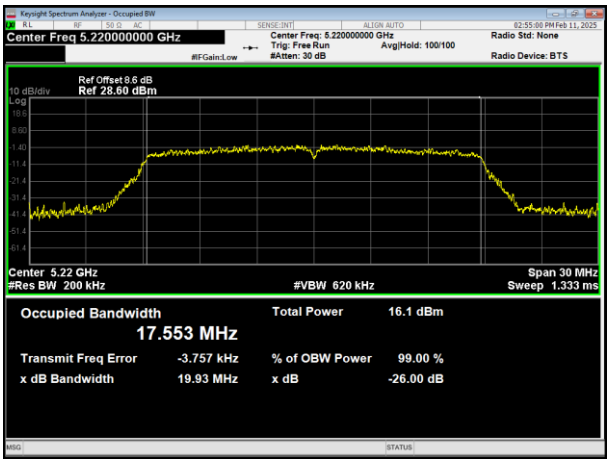
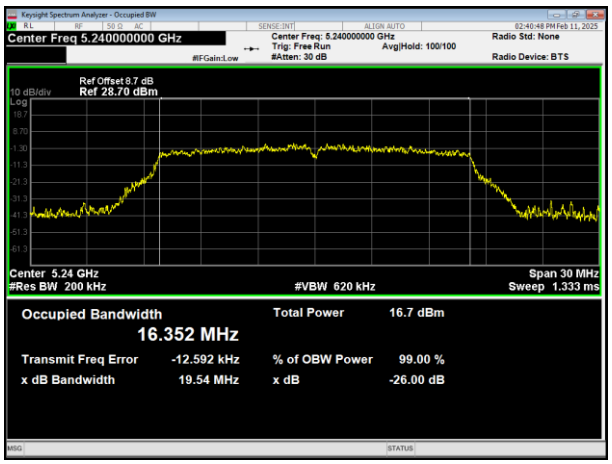
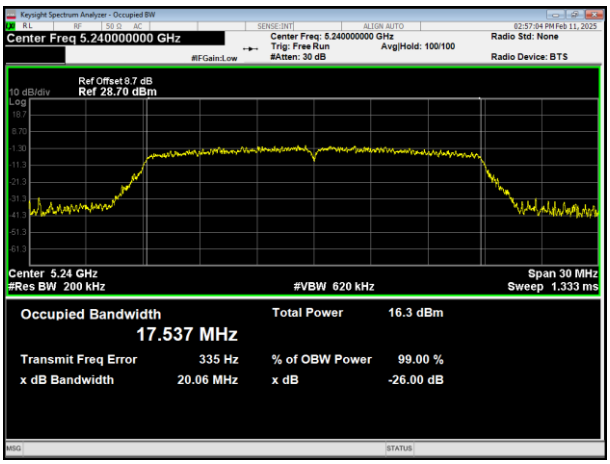
26dB Bandwidth

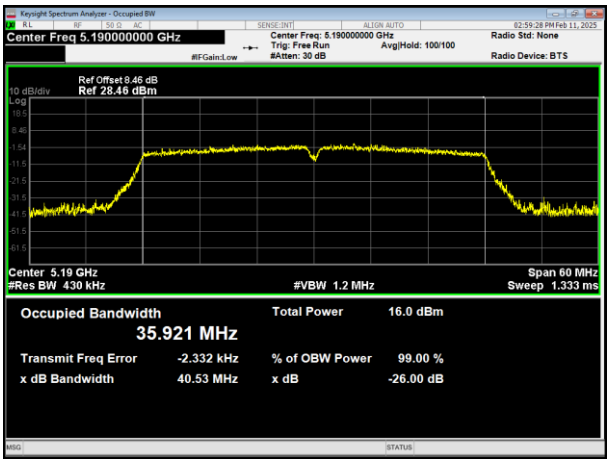
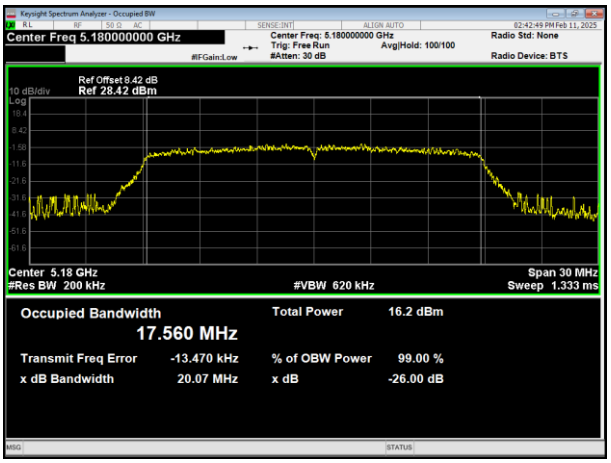
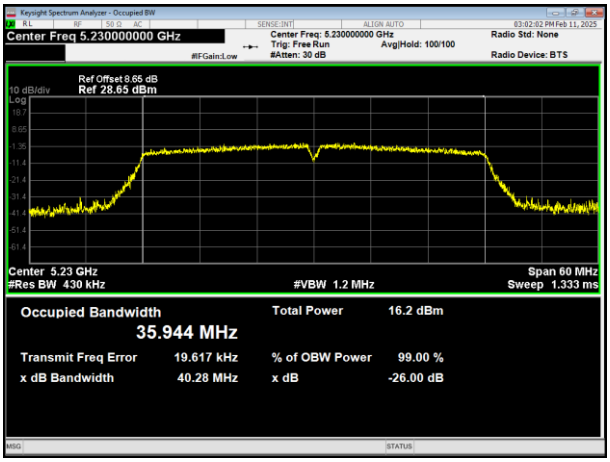
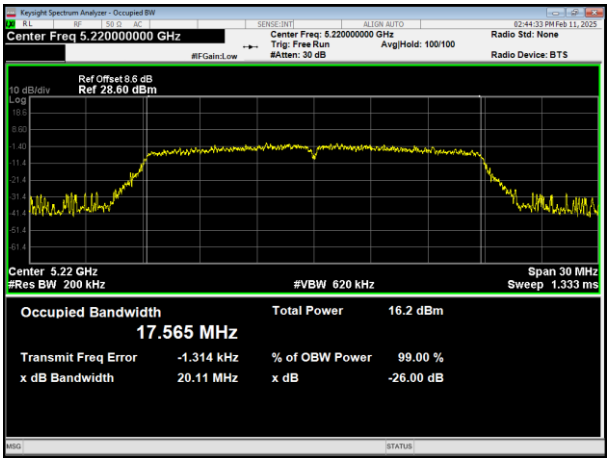
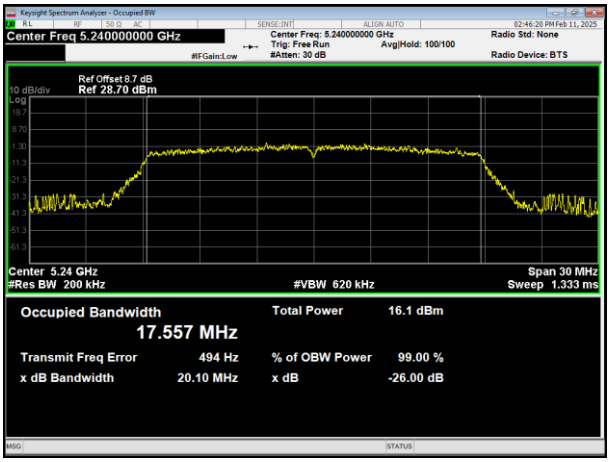
802.11a	802.11ac HT20
	
5180MHz	5180MHz
	
5200MHz	5200MHz
	
5240MHz	5240MHz

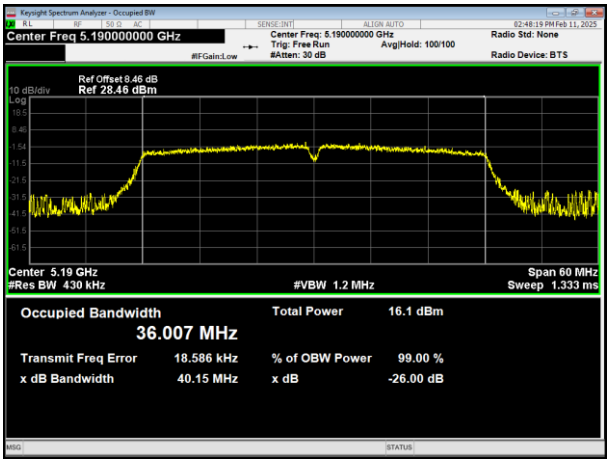
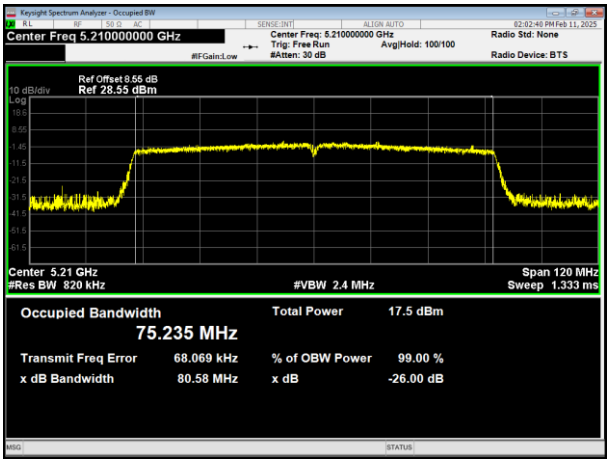
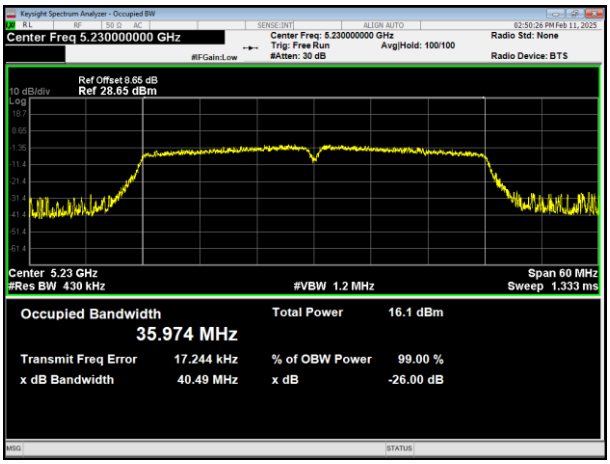
802.11ac HT40	802.11n HT20
	
5190MHz	5180MHz
	
5230MHz	5200MHz
	
	5240MHz

802.11n HT40	802.11ac HT80
	
5190MHz	5210MHz
	
5230MHz	

99% Bandwidth

802.11a	802.11ac HT20
	
5180MHz	5180MHz
	
5200MHz	5200MHz
	
5240MHz	5240MHz

802.11ac HT40	802.11n HT20
	
5190MHz	5180MHz
	
5230MHz	5200MHz
	
	5240MHz

802.11n HT40	802.11ac HT80
	
5190MHz	5210MHz
	
5230MHz	

7.. DUTY CYCLE TEST SIGNAL

7.1. APPLIED PROCEDURES / LIMIT

Pre-analysis Check: While conducting average power measurement, duty cycle of each mode shall be checked to ensure its duty cycle in order to compensate for the loss due to insufficient ratio of duty cycle. All duty cycle is pre-scanned, and result as obtained below shows only the most representative ones where duty cycle is conducted as the given transmission with given virtual operation that expresses the percentage.

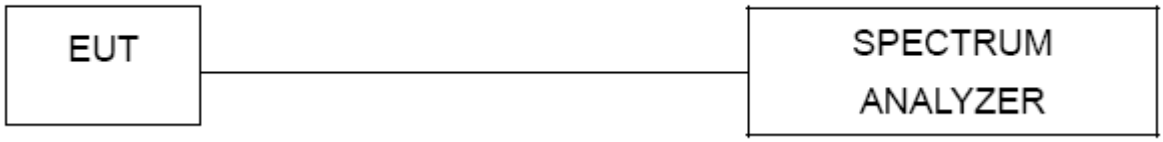
7.1.1. TEST PROCEDURE

1. Set RBW = 1 MHz.
2. Set the video bandwidth (VBW) ≥RBW.
3. Detector = Peak.
4. Sweep = auto couple.
5. Allow the trace to stabilize.
6. Span=0

7.1.2. DEVIATION FROM STANDARD

No deviation.

7.1.3. TEST SETUP

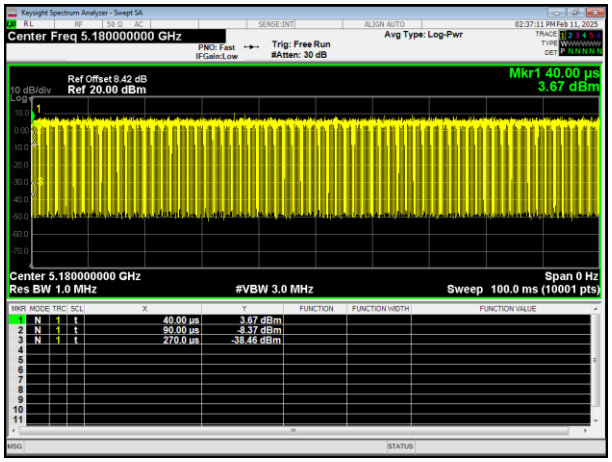
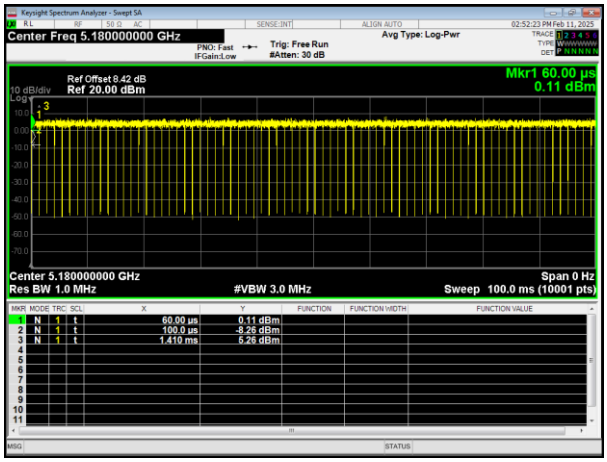
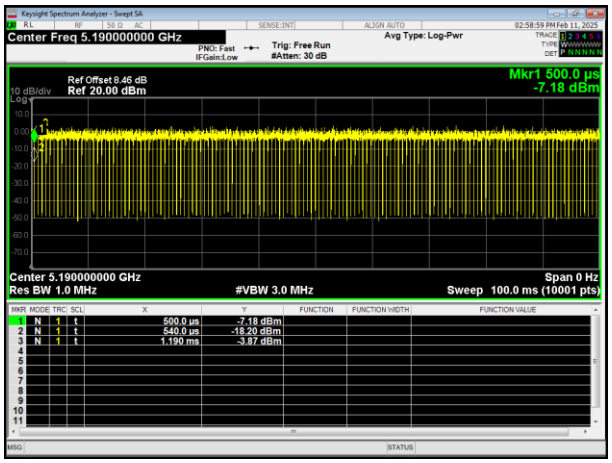
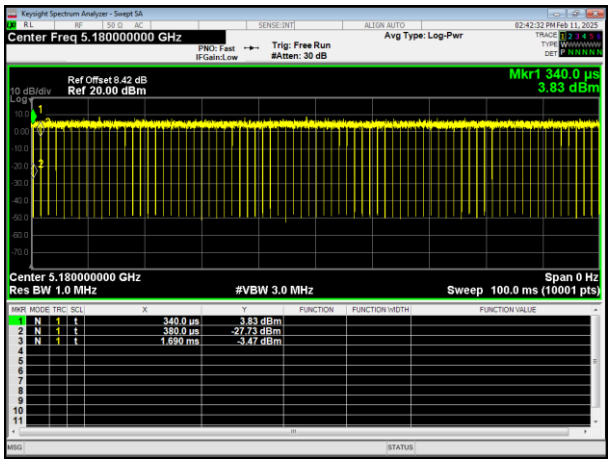
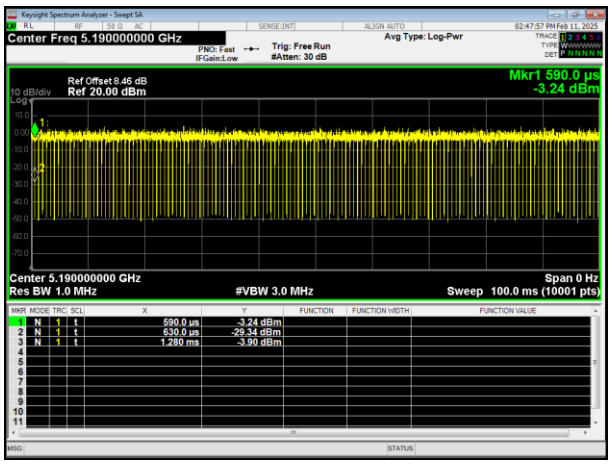
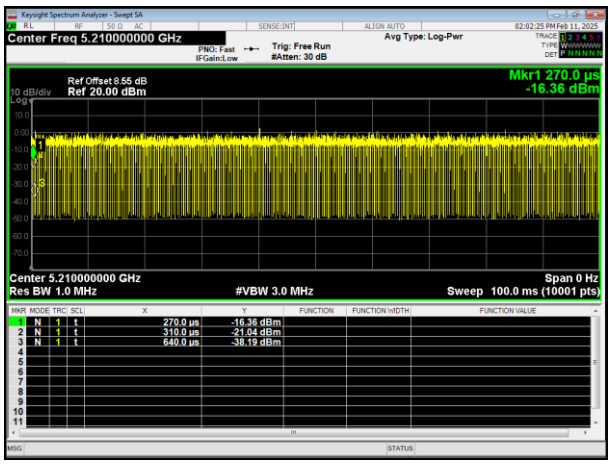


7.1.4. EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.3 Unless otherwise a special operating condition is specified in the follows during the testing.

7.1.5. TEST RESULTS

Operation Mode		Duty Cycle(%)	Duty Fator (dB) 10 * log (1/ Duty cycle)
Band 1	802.11a	78.26	1.06
	802.11ac(HT20)	97.04	0.13
	802.11ac(HT40)	94.2	0.26
	802.11ac(HT80)	89.19	0.5
	802.11n(HT20)	97.04	0.13
	802.11n(HT40)	94.2	0.26

802.11a	802.11ac HT20
	
802.11ac HT40	802.11n HT20
	
802.11n HT40	802.11ac HT80
	

8.. FREQUENCY STABILITY

8.1. APPLIED PROCEDURES / LIMIT

Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual.

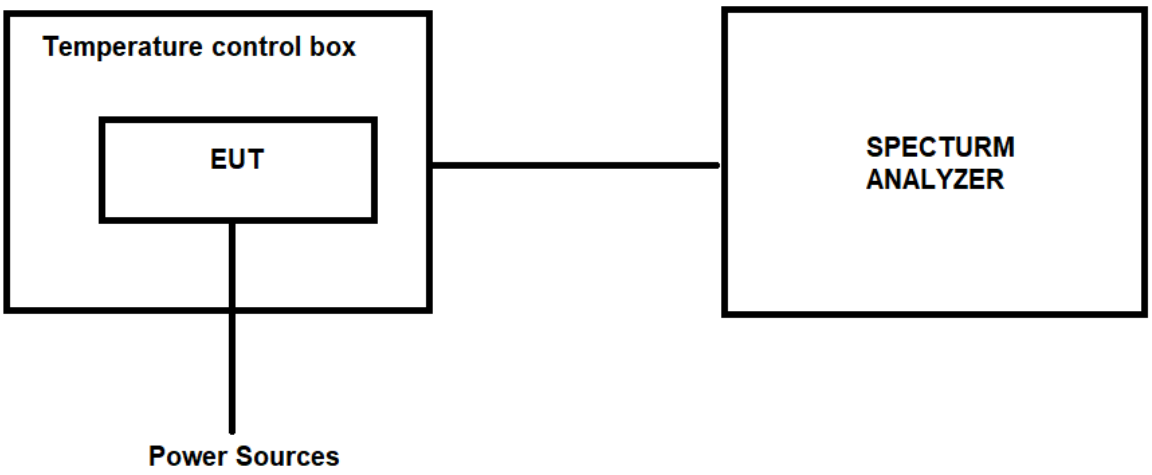
8.1.1. TEST PROCEDURE

1. The EUT was placed inside temperature chamber and powered and powered by nominal DC voltage.
2. Set EUT as normal operation.
3. Turn the EUT on and couple its output to spectrum.
4. Turn the EUT off and set the chamber to the highest temperature specified.
5. Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize, turn the EUT and measure the operating frequency.
6. Repeat step with the temperature chamber set to the lowest temperature.
7. The EUT was placed inside of an environmental chamber as the temperature in the chamber was varied between -20°C to 55°C. The temperature was incremented by 10°C intervals and the unit was allowed to stabilize at each temperature before each measurement. The center frequency of the transmitting channel was evaluated at each temperature and the frequency deviation from the channel's center frequency was recorded. Data for the worst case channel is shown below.

8.1.2. DEVIATION FROM STANDARD

No deviation.

8.1.3. TEST SETUP



8.1.4. EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.3 Unless otherwise a special operating condition is specified in the follows during the testing.

8.1.5. TEST RESULTS

Test Voltage	Test Temp.	Measured Frequency (MHz)	Spectrum Frequency (MHz)			Δ Frequency (PPM)		
			802.11a	802.11n HT20	802.11ac HT20	802.11a	802.11n HT20	802.11ac HT20
15.84V	-20℃	5180	5180.0324	5180.0341	5180.0356	6.2548	6.5830	6.8726
		5220	5220.0336	5220.0352	5220.0334	6.4368	6.7433	6.3985
		5240	5240.0252	5240.0247	5240.0226	4.8092	4.7137	4.3130
12.96V		5180	5180.0258	5180.0241	5180.0218	4.9807	4.6525	4.2085
		5220	5220.0364	5220.0341	5220.0365	6.9732	6.5326	6.9923
		5240	5240.0246	5240.0266	5240.0236	4.6947	5.0763	4.5038
14.4V	25℃	5180	5180.0555	5180.0548	5180.0545	10.7143	10.5792	10.5212
		5220	5220.0248	5220.0256	5220.0226	4.7510	4.9042	4.3295
		5240	5240.0352	5240.0367	5240.0368	6.7176	7.0038	7.0229
15.84V	50℃	5180	5180.0358	5180.0315	5180.0324	6.9112	6.0811	6.2548
		5220	5220.0251	5220.0236	5220.0226	4.8084	4.5211	4.3295
		5240	5240.0359	5240.0328	5240.0318	6.8511	6.2595	6.0687
12.96V	50℃	5180	5180.0345	5180.0334	5180.0324	6.6602	6.4479	6.2548
		5220	5220.0254	5220.0246	5220.0245	4.8659	4.7126	4.6935
		5240	5240.0359	5240.0347	5240.0363	6.8511	6.6221	6.9275

Test Voltage	Test Temp.	Measured Frequency (MHz)	Spectrum Frequency (MHz)		Δ Frequency (PPM)	
			802.11n HT40	802.11ac HT40	802.11n HT40	802.11ac HT40
15.84V	-20℃	5190	5190.0252	5190.0252	4.8555	4.8555
		5230	5230.0363	5230.0314	6.9407	6.0038
12.96V		5190	5190.0251	5190.0289	4.8362	5.5684
		5230	5230.0354	5230.0364	6.7686	6.9598
14.4V	25℃	5190	5190.0263	5190.0263	5.0674	5.0674
		5230	5230.0638	5230.0585	12.1989	11.1855
15.84V	50℃	5190	5190.0615	5190.0665	11.8497	12.8131
		5230	5230.0584	5230.0556	11.1663	10.6310
12.96V	50℃	5190	5190.0566	5190.0527	10.9056	10.1541
		5230	5230.0348	5230.0369	6.6539	7.0554

Test Voltage	Test Temp.	Measured Frequency (MHz)	Spectrum Frequency (MHz)	Δ Frequency (PPM)
			802.11ac HT80	802.11ac HT80
15.84V	-20℃	5210	5210.0152	2.9175
12.96V		5210	5210.0226	4.3378
14.4V	25℃	5210	5210.0465	8.9251
15.84V	50℃	5210	5210.0314	6.0269
12.96V	50℃	5210	5210.0328	6.2956

9.. TRANSMISSION IN THE ABSENCE OF DATA

9.1. STANDARD REQUIREMENT

According to §15.407(c)

The device shall automatically discontinue transmission in case of either absence of information to transmit or operational failure. These provisions are not intended to preclude the transmission of control or signaling information or the use of repetitive codes used by certain digital technologies to complete frame or burst intervals. Applicants shall include in their application for equipment authorization a description of how this requirement is met.

9.2. TEST RESULT

No non-compliance noted:
Refer to the theory of operation.

10.. ANTENNA REQUIREMENT

10.1. STANDARD REQUIREMENT

15.203 requirement: For intentional device, according to 15.203: an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

10.2. EUT ANTENNA

The EUT antenna is Internal Antenna, It comply with the standard requirement.

11.. TEST SEUUP PHOTO

Reference to the appendix I for details.

12.. EUT PHOTO

Reference to the appendix II for details.

※※※※※ END OF REPORT ※※※※※