TEST REPORT

FCC ID:2ASCB-DK032TL14

Product	:	**32-inch PCAP TCH KIOSK 14 OS**
Model Name	:	**DK032TL14, DK032TLB2, DK032TLW2**
Brand	:	**DISPLAYS2GO**
Report No.	:	**SZNTT26018481E1-4**

Prepared for

D2G Group LLC

81 Commerce Drive, Fall River, Massachusetts 02720, United States

Prepared by

Shenzhen NTT Testing Technology Co., Ltd.

1B, Building 2, Factory Building & 103, Building 3, Factory Building, Dayang Industrial Park No.4, Industrial Avenue, Tangwei Community, Fuhai Sub-district,Bao 'an District, Shenzhen City, China

TEL: 0755-27889935

1 TEST RESULT CERTIFICATION

Applicant	:	D2G Group LLC
Address	:	81 Commerce Drive, Fall River, Massachusetts 02720, United States
Manufacturer	:	GUANGZHOU YOUGUANG OPTOELECTRONICS CO.,LTD.
Address	:	No.75, Pacific Ind.Zone, XintangTown, Zengcheng, Guangzhou, China,511340.
Product name	:	32-inch PCAP TCH KIOSK 14 OS
Model name	:	DK032TL14
Additional model	:	DK032TLB2, DK032TLW2
Standards	:	FCC CFR47 Part 15 Section 15.247
Test procedure	:	ANSI C63.10-2020+Cor.1-2023 KDB 789033 D02 General UNII Test Procedures New Rules v02r01
Date of test	:	Apri. 29, 2026 to May 15, 2026
Date of Issue	:	May 21, 2026

This device described above has been tested by NTT, and the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.

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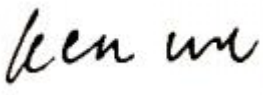
Prepared by(Test Engineer):

Zhao Di

Reviewer(Supervisor):

Ken Wu



Approved(Manager):

Abel Yu

Contents

Page

1 TEST RESULT CERTIFICATION 2
2 TEST SUMMARY 5
3 TEST FACILITY 6
4 GENERAL INFORMATION 7
4.1 GENERAL DESCRIPTION OF E.U.T. 7
4.2 TEST SETUP CONFIGURATION 9
4.3 TEST MODE 9
5 EQUIPMENT DURING TEST 10
5.1 EQUIPMENTS LIST 10
5.2 MEASUREMENT UNCERTAINTY 12
5.3 DESCRIPTION OF SUPPORT UNITS 12
6 CONDUCTED EMISSION 13
6.1 E.U.T. OPERATION 13
6.2 EUT SETUP 13
6.3 TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION) 14
6.4 MEASUREMENT PROCEDURE: 14
6.5 CONDUCTED EMISSION LIMIT 14
6.6 MEASUREMENT DESCRIPTION 15
6.7 CONDUCTED EMISSION TEST RESULT 15
7 RADIATED SPURIOUS EMISSIONS 18
7.1 EUT OPERATION 19
7.2 TEST SETUP 20
7.3 SPECTRUM ANALYZER SETUP 22
7.4 TEST PROCEDURE 23
7.5 SUMMARY OF TEST RESULTS 24
8 DUTY CYCLE 42
8.1 LIMIT 42
8.2 TEST SETUP 42
8.3 TEST PROCEDURE 42

8.4 TEST RESULT 42
9 POWER SPECTRAL DENSITY TEST 43
9.1 TEST STANDARD AND LIMIT 43
9.2 TEST SETUP 44
9.3 TEST PROCEDURE 44
9.4 TEST DATA 44
10 26DB & 6DB & 99% EMISSION BANDWIDTH TEST 45
10.1 TEST STANDARD 45
10.2 TEST SETUP 45
10.3 TEST PROCEDURE 45
10.4 TEST DATA 46
11 MAXIMUM CONDUCTED OUTPUT POWER 47
11.1 TEST STANDARD AND LIMIT 47
11.2 TEST SETUP 48
11.3 TEST PROCEDURE 48
11.4 TEST DATA 49
12 OUT OF BAND EMISSIONS AND SPURIOUS EMISSION 50
12.1 TEST STANDARD AND LIMIT 50
12.2 TEST SETUP 50
12.3 TEST PROCEDURE 50
12.4 TEST DATA 50
13 FREQUENCY STABILITY MEASUREMENT 51
13.1 TEST STANDARD AND LIMIT 51
13.2 TEST SETUP 51
13.3 TEST PROCEDURE 51
13.4 TEST DATA 51
14 ANTENNA REQUIREMENT 52
14.1 TEST STANDARD AND REQUIREMENT 52
14.2 ANTENNA CONNECTED CONSTRUCTION 52
15 TEST SETUP & EUT PHOTOGRAPH 53

2 Test Summary

FCC Part15 (15.407) , Subpart E			
Standard Section	Test Item	Judgment	Remark
15.407(b), 15.209	Radiated Spurious Emission	PASS	
15.207	AC Power Line conducted emission	PASS	
15.407 (a) 15.407 (e)	99% , 6dB and 26dB Bandwidth	PASS	
15.407 (a)	Maximum Conducted Output Power	PASS	
15.407(b)	Band Edge	PASS	
15.407 (a)	Power Spectral Density	PASS	
15.407(g)	Frequency Stability	PASS	
15.203	Antenna Requirement	PASS	

Remark:

1. “N/A” denotes test is not applicable in this Test Report.

3 TEST FACILITY

Site Description

EMC Lab.	:	Designation Number: CN3446 Test Firm Registration Number: 129414 Accredited by ANAB, Dec. 19, 2025 The Certificate Registration Number is AT-3446
Name of Firm	:	Shenzhen NTT Testing Technology Co., Ltd.
Site Location	:	1B, Building 2, Factory Building & 103, Building 3, Factory Building, Dayang Industrial Park No.4, Industrial Avenue, Tangwei Community, Fuhai Sub-district,Bao 'an District, Shenzhen City, China

4 General Information

4.1 General Description of E.U.T.

Product Name:	32-inch PCAP TCH KIOSK 14 OS
Model No.:	DK032TL14
Sample ID:	SZNTT26018477E1-001#
Sample(s) Status:	Engineer sample
Series model:	DK032TLB2, DK032TLW2
Model Different.:	All the models are the same circuit and RF module, except the model name and color. DK032TL14: (The color is white and black) DK032TLB2: (The color is black) DK032TLW2: (The color is white)
Operation Frequency:	UNII-1: 5180MHz~5240MHz(20MHz bandwidth) 5190MHz~5230MHz(40MHz bandwidth) UNII-3: 5745MHz~5825MHz(20MHz bandwidth) 5755MHz~5795MHz(40MHz bandwidth)
Number of Channel:	UNII-1: 4 channels for 20MHz bandwidth 2 channels for 40MHz bandwidth UNII-3: 5 channels for 20MHz bandwidth 2 channels for 40MHz bandwidth
Modulation type:	802.11a: (64-QAM, 16-QAM, QPSK, BPSK) OFDM 802.11n: (64-QAM, 16-QAM, QPSK, BPSK) OFDM 802.11ac: (256-QAM, 64-QAM, 16-QAM, QPSK, BPSK) OFDM 802.11ax:(1024-QAM,256-QAM,64-QAM,16-QAM, QPSK, BPSK) OFDMA
Antenna Type:	External antenna
Antenna gain:	WIFI 5.1G:-2.07dBi; WIFI 5.8G:1.12dBi
Power supply:	AC 100-240V 50/60Hz
Hardware Version:	N/A
Software Version:	N/A
Note:	During 802.11ax mode testing, the device was configured to operate with full channel bandwidth Resource Unit (RU) allocation
Remark:	the Antenna gain is provided by customer from Antenna spec. and the laboratory will not be responsible for the accumulated calculation results which covers the information provided by the applicant.

802.11a/n/ac/ax(20MHz) Frequency Channel							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
36	5180	40	5200	44	5220	48	5240

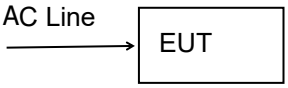
802.11/n/ac/ax(40MHz) Frequency Channel							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
38	5190	46	5230	-	-	-	-

802.11a/n/ac/ax(20 MHz) Frequency Channel							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
149	5745	153	5765	157	5785	161	5805
165	5825	-	-	-	-	-	-

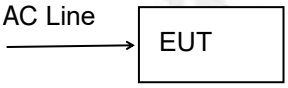
802.11/n/ac/ax(40MHz) Frequency Channel					
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
151	5755	159	5795	-	-

4.2 Test Setup Configuration

Conducted Emission

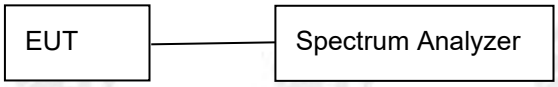


Radiated Emission(30MHz-1GHz)



Radiated Emission(above 1GHz)

RF Conducted Test



4.3 Test Mode

Transmitting mode	Keep the EUT in continuously transmitting mode.
Remark: 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.	

Test Software	The EUT enters engineering mode
Power level setup	Default

5 Equipment During Test

5.1 Equipments List

Conducted emission Test Equipment

Name	Model No.	Serial No.	Manufacturer	Date of Cal.	Due Date
944 Shielded Room	HSRCE944	/	HTEC	2025/4/30	2028/4/29
EMI Test Receiver	ESCI	/	RS	2025/9/8	2026/9/7
LISN	NNLK 8129	00603	Schwarzbeck	2025/9/8	2026/9/7
LISN	NNHV 8123-400	00694	Schwarzbeck	2025/9/8	2026/9/7
LISN	NNHV 8123-400	00680	Schwarzbeck	2025/9/8	2026/9/7
Cable	RG223-1500MM	NA	RG	2025/9/8	2026/9/7

Radiated emission & Radio Frequency Test Equipment

Name	Model No.	Serial No.	Manufacturer	Date of Cal.	Due Date
966 Shielded Room	966 Room	/	EMToni	2025/7/24	2028/7/23
EMI Test Receiver	ESCI	101018	RS	2025/9/8	2026/9/7
Amplifi（30MHz-1GHz）	BBV 9718D	00042	SCHWARZBECK	2025/9/8	2026/9/7
Bilog Antenna（30MHz-1GHz）	VULB9168	1858	SCHWARZBECK	2025/9/9	2026/9/8
Horn antenna（1GHz-18GHz）	BBHA 9120 D	02622	SCHWARZBECK	2025/9/9	2026/9/8
Pream plifier（1GHz-18GHz）	BBV 9718D	0024	SCHWARZBECK	2025/9/8	2026/9/7
Spectrum Analyze（10Hz-40GHz）	FSV 40	100952	Rohde & Schwarz	2025/9/8	2026/9/7
Pream plifier（18GHz-40GHz）	BBV 9721	0056	SCHWARZBECK	2025/9/8	2026/9/7
Double Ridge Guide Horn Antenna（18GHz-40GHz）	SAS-574	588	A.H.System	2025/9/8	2026/9/7

Loop Antenna (9KHz-30MHz)	FMZB1519B	014	SCHWARZBECK	2025/9/8	2026/9/7
Amplifier (9KHz-30MHz)	CVP 9222 C	00109	SCHWARZBECK	2025/9/8	2026/9/7
MXG Signal Analyzer	N9020A	MY50510202	Agilent	2025/9/8	2026/9/7
MXG Vector Signal Generator	N5182A	MY50140020	Agilent	2025/9/8	2026/9/7
MXG Analog Signal Generator	N5181A	MY47420919	Agilent	2025/9/8	2026/9/7
Power Sensor	TR1029-2	512364	Techoy	2025/9/8	2026/9/7
Power Meter	ML2495A	/	Anritsu	2025/9/8	2026/9/7
RF Swith	TR1029-1	512364	Techoy	2025/9/8	2026/9/7
Cable	DA800-4000MM	NA	DA	2025/9/8	2026/9/7
Cable	DA800-11000MM	NA	DA	2025/9/8	2026/9/7
Oven	GX-3020-M150	NA	GAOXIN	2026/03/10	2027/03/09

Other

Item	Name	Manufacturer	Model	Software version
1	EMC Conduction Test System	FALA	EZ-EMC	Ver.EMC-CON 3A1.1+
2	EMC radiation test system	FALA	EZ-EMC	Ver.FA-03A2 RE+
3	RF test system	TACHOY	RFTest	V1.0.0
4	RF communication test system	TACHOY	RFTest	V1.0.0

5.2 Measurement Uncertainty

Parameter	Uncertainty
RF output power, conducted	±1.0dB
Power Spectral Density, conducted	±2.2dB
Radio Frequency	± 1 x 10-6
Bandwidth	± 1.5 x 10-6
Time	±2%
Duty Cycle	±2%
Temperature	±1°C
Humidity	±5%
DC and low frequency voltages	±3%
Conducted Emissions (150kHz~30MHz)	±3.64dB
Radiated Emission(9KHz~30MHz)	±4.51dB
Radiated Emission(30MHz~1GHz)	±5.03dB
Radiated Emission(1GHz~25GHz)	±4.74dB
Remark:When making a conformity declaration based on test results for regulations/standards or specifications,the default is to use Clause 4.2.1of ILAC-G8:09/2019 and the guidelines on decision rules and conformity declaration in IEC Guide 115:2023.	

5.3 Description of Support Units

The EUT has been tested as an independent unit .

6 Conducted Emission

Test Requirement:	:	FCC CFR 47 Part 15 Section 15.207
Test Method:	:	ANSI C63.10-2020+Cor.1-2023
Test Result:	:	PASS
Frequency Range:	:	150kHz to 30MHz
Class/Severity:	:	Class B
Detector:	:	Peak for pre-scan (9kHz Resolution Bandwidth)

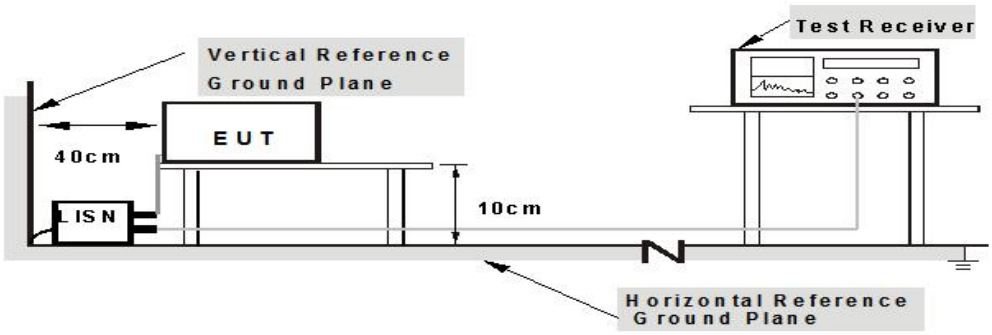
6.1 E.U.T. Operation

Operating Environment :

Temperature:	:	26°C
Humidity:	:	54 % RH
Atmospheric Pressure:	:	101.12 kPa
Test Voltage	:	AC 120V/60Hz

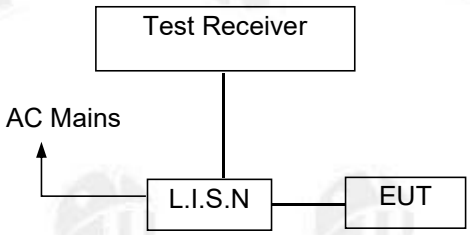
6.2 EUT Setup

The conducted emission tests were performed using the setup accordance with the ANSI C63.10-2020+Cor.1-2023.



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

6.3 Test SET-UP (Block Diagram of Configuration)



6.4 Measurement Procedure:

1. 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.

2. 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.

3. 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.

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

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

6.5 Conducted Emission Limit

Conducted Emission

Frequency(MHz)	Quasi-peak	Average
0.15-0.5	66-56	56-46
0.5-5.0	56	46
5.0-30.0	60	50

Note:

1. The lower limit shall apply at the transition frequencies

2.The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.

6.6 Measurement Description

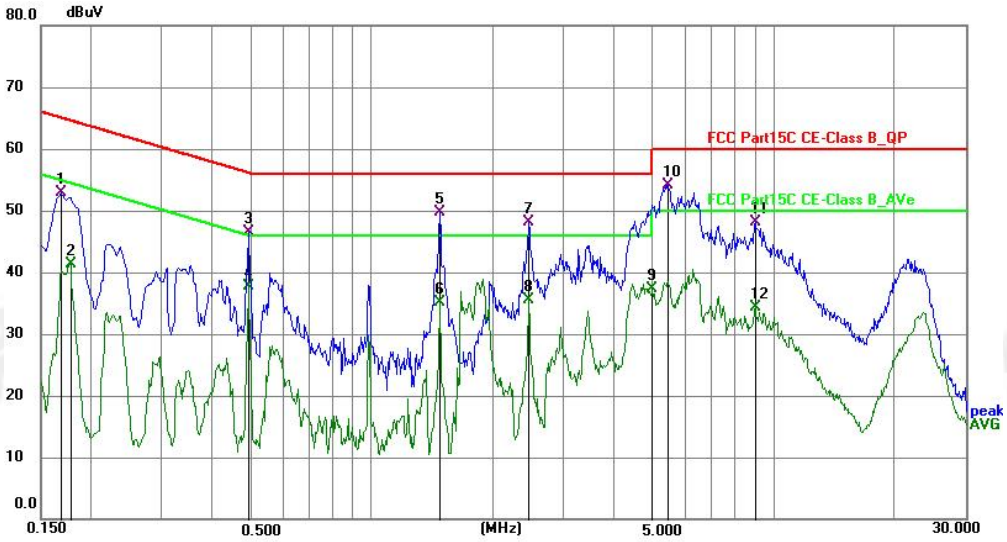
The maximised peak emissions from the EUT was scanned and measured for both the Live and Neutral Lines. Quasi-peak & average measurements were performed if peak emissions were within 6dB of the average limit line.

6.7 Conducted Emission Test Result

Pass

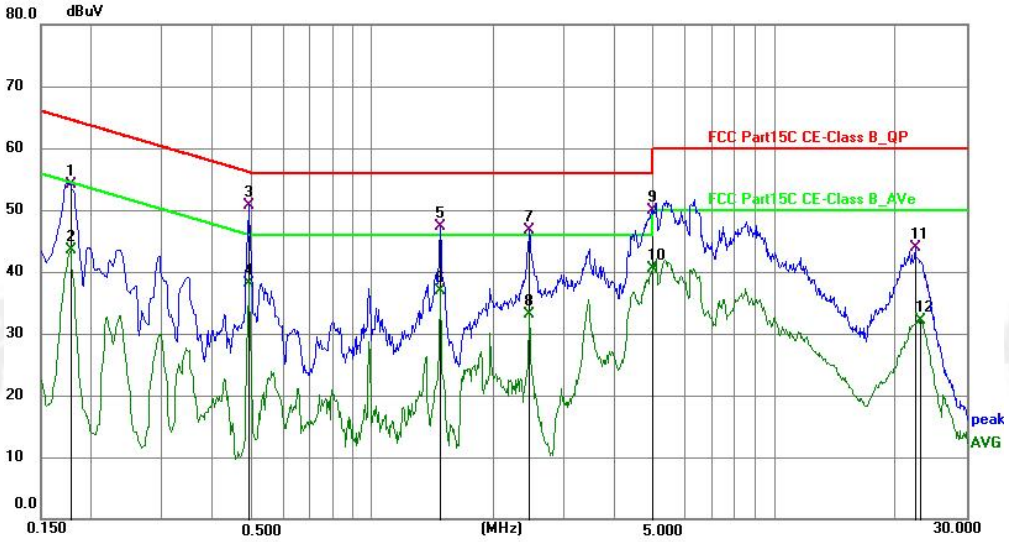
All the modulation modes were tested the data of the worst mode (802.11a,Lowest channel) are recorded in the following pages and the others modulation methods do not exceed the limits.

Temperature：	26℃	Relative Humidity：	54%
Pressure：	101kPa	Phase：	L
Test Voltage ：	AC 120V/60Hz		



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.1680	42.70	10.18	52.88	65.06	-12.18	QP
2	0.1770	31.17	10.17	41.34	54.63	-13.29	AVG
3	0.4920	36.41	10.13	46.54	56.13	-9.59	QP
4	0.4920	27.49	10.13	37.62	46.13	-8.51	AVG
5	1.4730	39.54	10.14	49.68	56.00	-6.32	QP
6	1.4730	25.00	10.14	35.14	46.00	-10.86	AVG
7	2.4584	37.91	10.16	48.07	56.00	-7.93	QP
8	2.4584	25.39	10.16	35.55	46.00	-10.45	AVG
9	4.9830	27.06	10.22	37.28	46.00	-8.72	AVG
10 *	5.4600	43.95	10.23	54.18	60.00	-5.82	QP
11	8.9832	37.70	10.32	48.02	60.00	-11.98	QP
12	8.9832	23.90	10.32	34.22	50.00	-15.78	AVG

Temperature:	26℃	Relative Humidity:	54%
Pressure:	101kPa	Phase :	N
Test Voltage :	AC 120V/60Hz		



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.1770	44.02	10.17	54.19	64.63	-10.44	QP
2	0.1770	33.32	10.17	43.49	54.63	-11.14	AVG
3 *	0.4920	40.62	10.12	50.74	56.13	-5.39	QP
4	0.4920	27.95	10.12	38.07	46.13	-8.06	AVG
5	1.4730	37.20	10.13	47.33	56.00	-8.67	QP
6	1.4730	26.74	10.13	36.87	46.00	-9.13	AVG
7	2.4584	36.55	10.16	46.71	56.00	-9.29	QP
8	2.4584	22.92	10.16	33.08	46.00	-12.92	AVG
9	4.9650	39.67	10.24	49.91	56.00	-6.09	QP
10	4.9650	30.32	10.24	40.56	46.00	-5.44	AVG
11	22.4024	33.29	10.69	43.98	60.00	-16.02	QP
12	23.1132	21.36	10.73	32.09	50.00	-17.91	AVG

Notes:
1.An initial pre-scan was performed on the line and neutral lines with peak detector.
2.Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.
3.Mesurement Level = Reading level + Correct Factor
Correct Factor = Insertion loss of LISN + Cable loss.
4.Margin= Mesurement Level - Limit

7 Radiated Spurious Emissions

Test Requirement	:	FCC CFR47 Part 15 Section 15.209 & 15.407
Test Method	:	ANSI C63.10-2020+Cor.1-2023
Test Result	:	PASS
Measurement Distance	:	3m
Limit	:	See the follow table

Frequency (MHz)	Field Strength		Field Strength Limit at 3m Measurement Dist	
	uV/m	Distance (m)	uV/m	dBuV/m
0.009 ~ 0.490	2400/F(kHz)	300	10000 * 2400/F(kHz)	$20\log^{(2400/F(kHz))}$ + 80
0.490 ~ 1.705	24000/F(kHz)	30	100 * 24000/F(kHz)	$20\log^{(24000/F(kHz))}$ + 40
1.705 ~ 30	30	30	100 * 30	$20\log^{(30)}$ + 40
30 ~ 88	100	3	100	$20\log^{(100)}$
88 ~ 216	150	3	150	$20\log^{(150)}$
216 ~ 960	200	3	200	$20\log^{(200)}$
Above 960	500	3	500	$20\log^{(500)}$

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

Undesirable emission limits

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 in the 5.725-5.85 GHz 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 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

Requirement	Limit(EIRP)	Limit (Field strength at 3m)
15.407(b)(1)	PK:-27(dBm/MHz)	PK:68.2(dBμV/m)
15.407(b)(2)		
15.407(b)(3)		
15.407(b)(4)		

7.1 EUT Operation

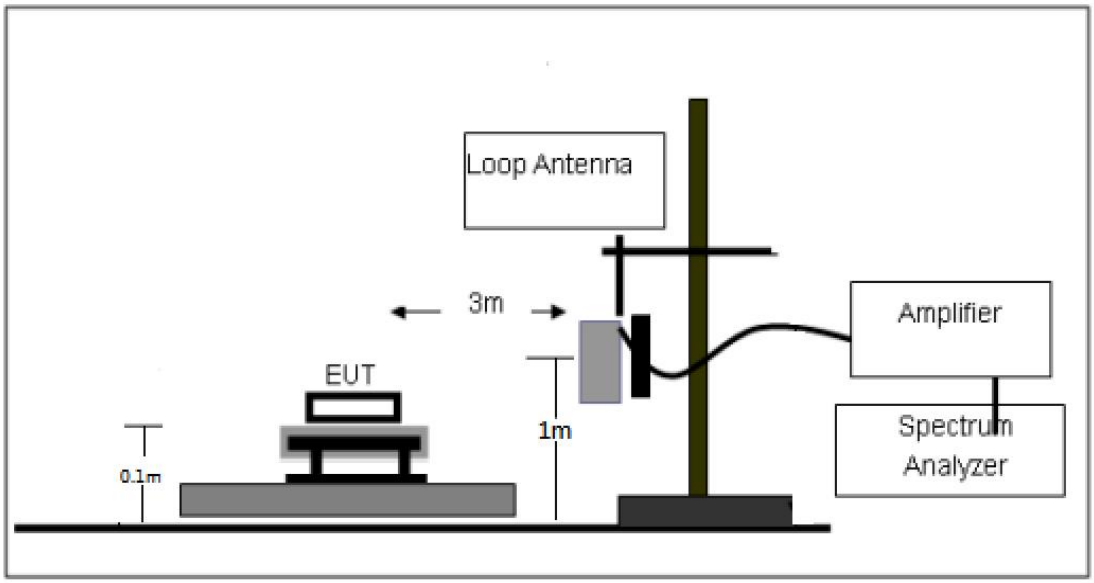
Operating Environment :

Temperature	:	26 °C
Humidity	:	54% RH
Atmospheric Pressure	:	101.3kPa
Test Voltage	:	AC 120V60Hz

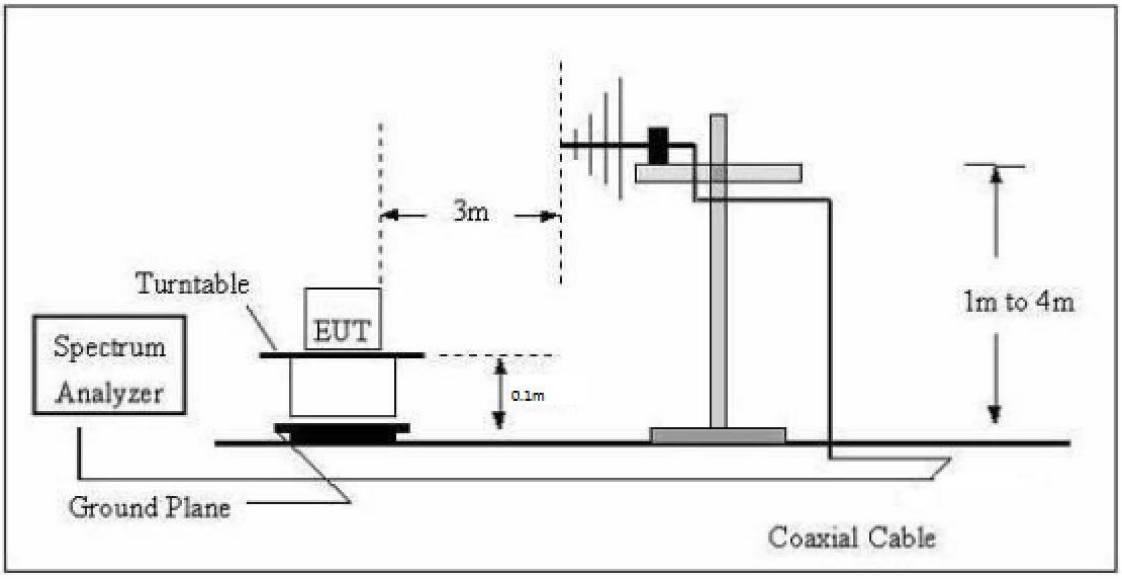
7.2 Test Setup

The radiated emission tests were performed in the 3m Semi- Anechoic Chamber test site

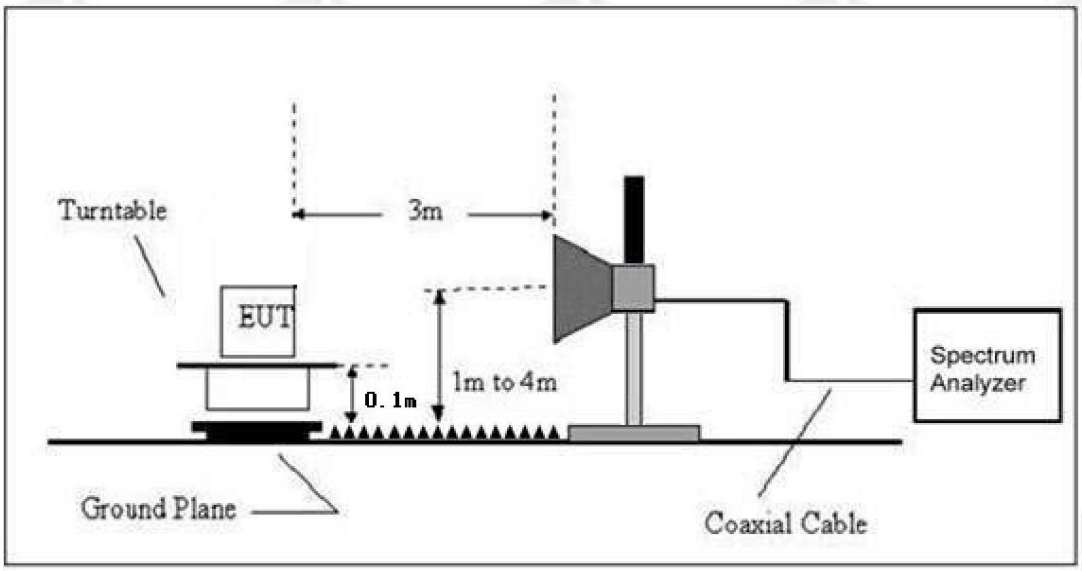
The test setup for emission measurement below 30MHz



The test setup for emission measurement from 30 MHz to 1 GHz.



The test setup for emission measurement above 1 GHz


Turntable
3m
EUT
0.1m
1m to 4m
Spectrum Analyzer
Ground Plane
Coaxial Cable

7.3 Spectrum Analyzer Setup

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	10th carrier harmonic
RB / VB (emission in restricted band)	1 MHz / 3 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

7.4 Test Procedure

1. The testing follows the guidelines in Spurious Radiated Emissions of ANSI C63.10-2020+Cor.1-2023.

2. Below 1000MHz, The EUT was placed on a turn table which is 0.1m above ground plane. And above 1000MHz, The EUT was placed on a styrofoam table which is 0.1m above ground plane.

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

4. For each suspected emission, the EUT was arranged to its worst case and then tune the Antenna tower (From 1m to 4m) and turntable (from 0 degree to 360 degree) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level to comply with the guidelines.

5. Set to the maximum power setting and enable the EUT transmit continuously.

6. Final measurement (Above 1GHz): The frequency range will be divided into different sub ranges depending of the frequency range of the used horn antenna. The EMI Receiver set to peak and average mode and a resolution bandwidth of 1MHz. The measurement will be performed in horizontal and vertical polarization of the measuring antenna and while rotating the EUT in its vertical axis in the range of 0 degree to 360 degree in order to have the antenna inside the cone of radiation.

7. Test Procedure of measurement (For Above 1GHz):

1) Monitor the frequency range at horizontal polarization and move the antenna over all sides of the EUT(if necessary move the EUT to another orthogonal axis).

2) Change the antenna polarization and repeat 1) with vertical polarization.

3) Make a hardcopy of the spectrum.

4) Measure the frequency of the detected emissions with a lower span and resolution bandwidth to increase the accuracy and note the frequency value.

5) Change the analyser mode to Clear/ Write and found the cone of emission.

6) Rotate and move the EUT, so that the measuring distance can be enlarged to 3m and the antenna will be still inside the cone of emission.

7) Measure the level of the detected frequency with the correct resolution bandwidth, with the antenna polarization and azimuth and the peak and average detector, which causes the maximum emission.

8) Repeat steps 1) to 7) for the next antenna spot if the EUT is larger than the antenna beamwidth.

7. The radiation measurements are tested under 3-axes(X,Y,Z) position(X denotes lying on the table, Y denotes side stand and Z denotes vertical stand), After pre-test, It was found that the worse radiation emission was get at the X position. So the data shown was the X position only.

7.5 Summary of Test Results

Test Frequency: 9KHz-30MHz

Freq. (MHz)	Ant.Pol. H/V	Emission Level (dBuV/m)	Limit 3m (dBuV/m)	Over (dB)
--	--	--	--	>20

Note:

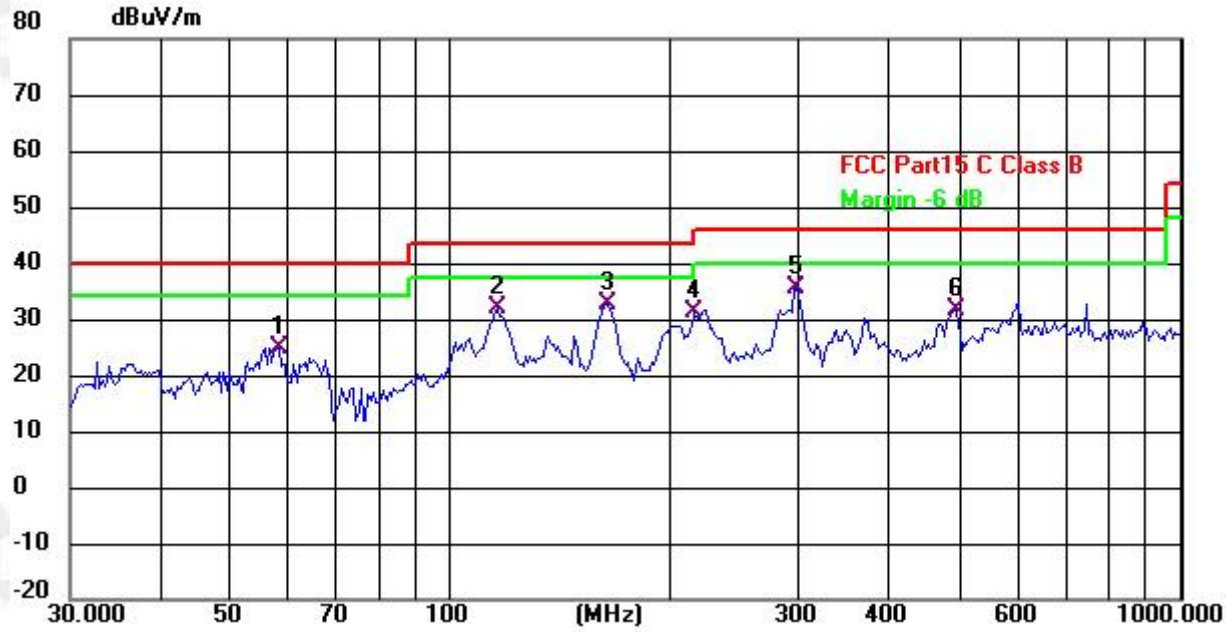
The amplitude of spurious emission that is attenuated by more than 20dB below the permissible limit has no need to be reported.

Distance extrapolation factor =40log(Specific distance/ test distance)(dB);
Limit line=Specific limits(dBuV) + distance extrapolation factor.

Test Frequency: 30MHz ~ 1GHz

Please refer to the following test plots,Low Channel Worst case 802.11a for record:

Temperature:	26℃	Relative Humidity:	54%
Pressure:	101kPa	Polarization:	Horizontal
Test Voltage:	AC 120V/60Hz		

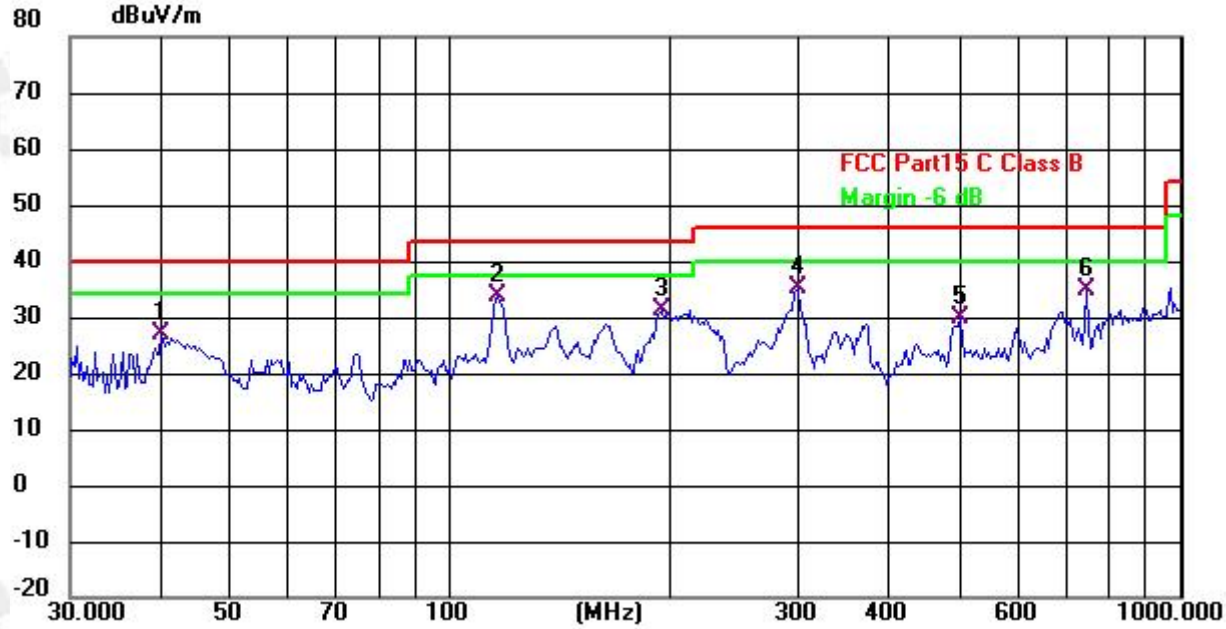


No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	57.9992	38.91	-14.03	24.88	40.00	-15.12	QP
2	116.1320	46.10	-14.28	31.82	43.50	-11.68	QP
3	163.7550	45.21	-12.43	32.78	43.50	-10.72	QP
4	215.2676	46.55	-15.17	31.38	43.50	-12.12	QP
5 *	297.2240	47.90	-12.37	35.53	46.00	-10.47	QP
6	492.4685	39.55	-7.81	31.74	46.00	-14.26	QP

Remark:Emission Level=Reading+Cable Loss+ANT Factor-AMP Factor

Margin= Emission Level - Limit

Temperature:	26℃	Relative Humidity:	54%
Pressure:	101 kPa	Polarization:	Vertical
Test Voltage:	AC 120V/60Hz		



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	39.9941	39.92	-13.08	26.84	40.00	-13.16	QP
2 *	116.1320	48.19	-14.28	33.91	43.50	-9.59	QP
3	195.1363	46.72	-15.34	31.38	43.50	-12.12	QP
4	299.3158	47.58	-12.28	35.30	46.00	-10.70	QP
5	499.4245	37.61	-7.64	29.97	46.00	-16.03	QP
6	744.8660	37.19	-2.33	34.86	46.00	-11.14	QP

Remark:Emission Level=Reading+Cable Loss+ANT Factor-AMP Factor

Margin= Emission Level - Limit

Test Frequency 1GHz-40GHz

802.11a

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Pre-amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
Low Channel:5180MHz									
V	10360	44.19	32.70	7.72	38.59	57.8	74	-16.2	PK
V	10360	22.61	32.70	7.72	38.59	36.22	54	-17.78	AV
V	15540	44.69	31.74	9.44	39.29	61.68	74	-12.32	PK
V	15540	21.43	31.74	9.44	39.29	38.42	54	-15.58	AV
V	20720	41.17	26.93	6.64	37.94	58.82	74	-15.18	PK
V	20720	18.25	26.93	6.64	37.94	35.9	54	-18.1	AV
V	25900	35.05	27.10	7.90	39.32	55.17	74	-18.83	PK
V	25900	17.83	27.10	7.90	39.32	37.95	54	-16.05	AV
H	10360	40.81	32.70	7.72	38.59	54.42	74	-19.58	PK
H	10360	26.11	32.70	7.72	38.59	39.72	54	-14.28	AV
H	15540	37.08	31.74	9.44	39.29	54.07	74	-19.93	PK
H	15540	19.95	31.74	9.44	39.29	36.94	54	-17.06	AV
H	20720	40.3	26.93	6.64	37.94	57.95	74	-16.05	PK
H	20720	15.08	26.93	6.64	37.94	32.73	54	-21.27	AV
H	25900	35.63	27.10	7.90	39.32	55.75	74	-18.25	PK
H	25900	18.41	27.10	7.90	39.32	38.53	54	-15.47	AV

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Pre-amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
Middle Channel:5200MHz									
V	10400	40.68	32.69	7.73	38.62	54.34	74	-19.66	PK
V	10400	20.79	32.69	7.73	38.62	34.45	54	-19.55	AV
V	15600	38.07	31.72	9.45	39.28	55.08	74	-18.92	PK
V	15600	21.46	31.72	9.45	39.28	38.47	54	-15.53	AV
V	20800	40.49	26.93	6.73	37.96	58.25	74	-15.75	PK
V	20800	16.58	26.93	6.73	37.96	34.34	54	-19.66	AV
V	26000	35.23	27.10	7.94	39.30	55.37	74	-18.63	PK
V	26000	13.78	27.10	7.94	39.30	33.92	54	-20.08	AV
H	10400	43.04	32.69	7.73	38.62	56.7	74	-17.3	PK
H	10400	23.53	32.69	7.73	38.62	37.19	54	-16.81	AV
H	15600	40.14	31.72	9.45	39.28	57.15	74	-16.85	PK
H	15600	18.51	31.72	9.45	39.28	35.52	54	-18.48	AV
H	20800	39.62	26.93	6.73	37.96	57.38	74	-16.62	PK
H	20800	20.35	26.93	6.73	37.96	38.11	54	-15.89	AV
H	26000	36.77	27.10	7.94	39.30	56.91	74	-17.09	PK
H	26000	13.86	27.10	7.94	39.30	34	54	-20	AV

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Pre-amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
High Channel:5240MHz									
V	10480	42	32.66	7.74	38.68	55.76	74	-18.24	PK
V	10480	21.03	32.66	7.74	38.68	34.79	54	-19.21	AV
V	15720	37.83	31.68	9.48	39.26	54.89	74	-19.11	PK
V	15720	16.92	31.68	9.48	39.26	33.98	54	-20.02	AV
V	20960	39.86	26.94	6.91	37.99	57.82	74	-16.18	PK
V	20960	20.81	26.94	6.91	37.99	38.77	54	-15.23	AV
V	26200	36.45	27.10	7.89	39.50	56.74	74	-17.26	PK
V	26200	14.79	27.10	7.89	39.50	35.08	54	-18.92	AV
H	10480	43.92	32.66	7.74	38.68	57.68	74	-16.32	PK
H	10480	24.28	32.66	7.74	38.68	38.04	54	-15.96	AV
H	15720	38.92	31.68	9.48	39.26	55.98	74	-18.02	PK
H	15720	19.19	31.68	9.48	39.26	36.25	54	-17.75	AV
H	20960	37.2	26.94	6.91	37.99	55.16	74	-18.84	PK
H	20960	20.51	26.94	6.91	37.99	38.47	54	-15.53	AV
H	26200	36.65	27.10	7.89	39.50	56.94	74	-17.06	PK
H	26200	15.75	27.10	7.89	39.50	36.04	54	-17.96	AV

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Pre-amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
Low Channel:5745MHz									
V	11490	45.66	32.29	8.39	38.90	60.66	74.00	-13.34	PK
V	11490	27.01	32.29	8.39	38.90	42.01	54.00	-11.99	AV
V	17235	41.7	31.19	9.62	40.37	60.50	74.00	-13.50	PK
V	17235	22.87	31.19	9.62	40.37	41.67	54.00	-12.33	AV
V	22980	43.13	27.02	7.20	38.98	62.29	74.00	-11.71	PK
V	22980	22.61	27.02	7.20	38.98	41.77	54.00	-12.23	AV
V	28725	43.73	27.10	7.56	40.18	64.37	74.00	-9.63	PK
V	28725	19.28	27.10	7.56	40.18	39.92	54.00	-14.08	AV
H	11490	48.35	32.29	8.39	38.90	63.35	74.00	-10.65	PK
H	11490	29.14	32.29	8.39	38.90	44.14	54.00	-9.86	AV
H	17235	42.69	31.19	9.62	40.37	61.49	74.00	-12.51	PK
H	17235	22.53	31.19	9.62	40.37	41.33	54.00	-12.67	AV
H	22980	40.98	27.02	7.20	38.98	60.14	74.00	-13.86	PK
H	22980	19.78	27.02	7.20	38.98	38.94	54.00	-15.06	AV
H	28725	38.8	27.10	7.56	40.18	59.44	74.00	-14.56	PK
H	28725	19.56	27.10	7.56	40.18	40.20	54.00	-13.80	AV

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Pre-amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
Middle Channel:5785MHz									
V	11570	40.76	32.26	8.48	38.90	55.88	74.00	-18.12	PK
V	11570	24.81	32.26	8.48	38.90	39.93	54.00	-14.07	AV
V	17355	36.84	31.08	9.67	40.61	56.04	74.00	-17.96	PK
V	17355	17.62	31.08	9.67	40.61	36.82	54.00	-17.18	AV
V	23140	37.34	27.03	7.24	39.03	56.58	74.00	-17.42	PK
V	23140	21.2	27.03	7.24	39.03	40.44	54.00	-13.56	AV
V	28925	39.63	27.10	7.58	40.34	60.45	74.00	-13.55	PK
V	28925	19.06	27.10	7.58	40.34	39.88	54.00	-14.12	AV
H	11570	45.69	32.26	8.48	38.90	60.81	74.00	-13.19	PK
H	11570	20.41	32.26	8.48	38.90	35.53	54.00	-18.47	AV
H	17355	37.3	31.08	9.67	40.61	56.50	74.00	-17.50	PK
H	17355	18.14	31.08	9.67	40.61	37.34	54.00	-16.66	AV
H	23140	39.12	27.03	7.24	39.03	58.36	74.00	-15.64	PK
H	23140	17.66	27.03	7.24	39.03	36.90	54.00	-17.10	AV
H	28925	36.52	27.10	7.58	40.34	57.34	74.00	-16.66	PK
H	28925	18.95	27.10	7.58	40.34	39.77	54.00	-14.23	AV

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Pre-amplifier (dB)	Cable Loss (dB)	Antenna Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
High Channel:5825MHz									
V	11650	43.97	32.23	8.56	38.90	59.20	74.00	-14.80	PK
V	11650	27.26	32.23	8.56	38.90	42.49	54.00	-11.51	AV
V	17475	44.08	30.97	9.73	40.85	63.69	74.00	-10.31	PK
V	17475	26.02	30.97	9.73	40.85	45.63	54.00	-8.37	AV
V	23300	37.4	27.03	7.26	39.06	56.69	74.00	-17.31	PK
V	23300	26.14	27.03	7.26	39.06	45.43	54.00	-8.57	AV
V	29125	41.22	27.10	7.61	40.40	62.13	74.00	-11.87	PK
V	29125	23.84	27.10	7.61	40.40	44.75	54.00	-9.25	AV
H	11650	44.09	32.23	8.56	38.90	59.32	74.00	-14.68	PK
H	11650	27.13	32.23	8.56	38.90	42.36	54.00	-11.64	AV
H	17475	41.27	30.97	9.73	40.85	60.88	74.00	-13.12	PK
H	17475	23.57	30.97	9.73	40.85	43.18	54.00	-10.82	AV
H	23300	43.86	27.03	7.26	39.06	63.15	74.00	-10.85	PK
H	23300	23.54	27.03	7.26	39.06	42.83	54.00	-11.17	AV
H	29125	35.43	27.10	7.61	40.40	56.34	74.00	-17.66	PK
H	29125	23.9	27.10	7.61	40.40	44.81	54.00	-9.19	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. The worst mode is 802.11a, only the worst data is recorded.
The 1-40GHz range has been tested, and the report only records the worst performance of the 1-30G range.

Restrict Band EMISSION MEASUREMENT

U-NII-1

Frequency (MHz)	Meter Reading (dBuV/m)	antenna Factor (dB)	cable loss (dB)	preamp factor (dB)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Polar (H/V)	Detector Type	Result
802.11a:5180MHz										
5150	51.58	33.14	5.29	33.88	56.13	74	-17.87	V	PK	Pass
5150	34.44	33.14	5.29	33.88	38.99	54	-15.01	V	AV	Pass
5145	51.75	33.14	5.29	33.88	56.30	74	-17.70	V	PK	Pass
5145	33.96	33.14	5.29	33.88	38.51	54	-15.49	V	AV	Pass
5150	53.87	33.14	5.29	33.88	58.42	74	-15.58	H	PK	Pass
5150	34.05	33.14	5.29	33.88	38.60	54	-15.40	H	AV	Pass
5145	50.23	33.14	5.29	33.88	54.78	74	-19.22	H	PK	Pass
5145	32.71	33.14	5.29	33.88	37.26	54	-16.74	H	AV	Pass
802.11a:5240MHz										
5350	36.06	33.06	5.44	33.72	40.84	54	-13.16	V	PK	Pass
5350	50.66	33.05	5.45	33.70	55.46	74	-18.54	V	AV	Pass
5370	34.91	33.05	5.45	33.70	39.71	54	-14.29	V	PK	Pass
5370	54.98	33.06	5.44	33.72	59.76	74	-14.24	V	AV	Pass
5350	36.79	33.06	5.44	33.72	41.57	54	-12.43	H	PK	Pass
5350	52.83	33.05	5.45	33.70	57.63	74	-16.37	H	AV	Pass
5370	33.70	33.05	5.45	33.70	38.50	54	-15.50	H	PK	Pass
5370	36.06	33.06	5.44	33.72	40.84	54	-13.16	H	AV	Pass
802.11n20:5180MHz										

5150	52.85	33.14	5.29	33.88	57.40	74	-16.60	V	PK	Pass
5150	34.64	33.14	5.29	33.88	39.19	54	-14.81	V	AV	Pass
5145	52.85	33.14	5.29	33.88	57.40	74	-16.60	V	PK	Pass
5145	34.09	33.14	5.29	33.88	38.64	54	-15.36	V	AV	Pass
5150	53.37	33.14	5.29	33.88	57.92	74	-16.08	H	PK	Pass
5150	36.26	33.14	5.29	33.88	40.81	54	-13.19	H	AV	Pass
5145	51.62	33.14	5.29	33.88	56.17	74	-17.83	H	PK	Pass
5145	33.64	33.14	5.29	33.88	38.19	54	-15.81	H	AV	Pass
802.11n20:5240MHz										
5350	54.91	33.06	5.44	33.72	59.69	74	-14.31	V	PK	Pass
5350	37.86	33.06	5.44	33.72	42.64	54	-11.36	V	AV	Pass
5370	50.33	33.05	5.45	33.70	55.13	74	-18.87	V	PK	Pass
5370	35.09	33.05	5.45	33.70	39.89	54	-14.11	V	AV	Pass
5350	54.42	33.06	5.44	33.72	59.20	74	-14.80	H	PK	Pass
5350	41.11	33.06	5.44	33.72	45.89	54	-8.11	H	AV	Pass
5370	52.28	33.05	5.45	33.70	57.08	74	-16.92	H	PK	Pass
5370	37.51	33.05	5.45	33.70	42.31	54	-11.69	H	AV	Pass
802.11ac20:5180MHz										
5150	52.91	33.14	5.29	33.88	57.46	74	-16.54	V	PK	Pass
5150	36.56	33.14	5.29	33.88	41.11	54	-12.89	V	AV	Pass
5145	53.24	33.14	5.29	33.88	57.79	74	-16.21	V	PK	Pass
5145	36.47	33.14	5.29	33.88	41.02	54	-12.98	V	AV	Pass
5150	54.44	33.14	5.29	33.88	58.99	74	-15.01	H	PK	Pass
5150	36.07	33.14	5.29	33.88	40.62	54	-13.38	H	AV	Pass
5145	51.47	33.14	5.29	33.88	56.02	74	-17.98	H	PK	Pass

5145	36.37	33.14	5.29	33.88	40.92	54	-13.08	H	AV	Pass
802.11ac20:5240MHz										
5350	55.06	33.06	5.44	33.72	59.84	74	-14.16	V	PK	Pass
5350	38.32	33.06	5.44	33.72	43.10	54	-10.90	V	AV	Pass
5370	51.29	33.05	5.45	33.70	56.09	74	-17.91	V	PK	Pass
5370	38.08	33.05	5.45	33.70	42.88	54	-11.12	V	AV	Pass
5350	55.46	33.06	5.44	33.72	60.24	74	-13.76	H	PK	Pass
5350	42.13	33.06	5.44	33.72	46.91	54	-7.09	H	AV	Pass
5370	53.89	33.05	5.45	33.70	58.69	74	-15.31	H	PK	Pass
5370	37.51	33.05	5.45	33.70	42.31	54	-11.69	H	AV	Pass
802.11n40:5190MHz										
5150	55.57	33.14	5.29	33.88	60.12	74	-13.88	V	PK	Pass
5150	37.91	33.14	5.29	33.88	42.46	54	-11.54	V	AV	Pass
5145	51.72	33.14	5.29	33.88	56.27	74	-17.73	V	PK	Pass
5145	38.07	33.14	5.29	33.88	42.62	54	-11.38	V	AV	Pass
5150	55.19	33.14	5.29	33.88	59.74	74	-14.26	H	PK	Pass
5150	41.46	33.14	5.29	33.88	46.01	54	-7.99	H	AV	Pass
5145	52.79	33.14	5.29	33.88	57.34	74	-16.66	H	PK	Pass
5145	37.01	33.14	5.29	33.88	41.56	54	-12.44	H	AV	Pass
802.11n40:5230MHz										
5350	55.31	33.06	5.44	33.72	60.09	74	-13.91	V	PK	Pass
5350	35.97	33.06	5.44	33.72	40.75	54	-13.25	V	AV	Pass
5370	53.88	33.05	5.45	33.70	58.68	74	-15.32	V	PK	Pass
5370	34.06	33.05	5.45	33.70	38.86	54	-15.14	V	AV	Pass
5350	52.44	33.06	5.44	33.72	57.22	74	-16.78	H	PK	Pass

5350	42.17	33.06	5.44	33.72	46.95	54	-7.05	H	AV	Pass
5370	54.09	33.05	5.45	33.70	58.89	74	-15.11	H	PK	Pass
5370	33.92	33.05	5.45	33.70	38.72	54	-15.28	H	AV	Pass
802.11ac40:5190MHz										
5150	54.60	33.14	5.29	33.88	59.15	74	-14.85	V	PK	Pass
5150	34.99	33.14	5.29	33.88	39.54	54	-14.46	V	AV	Pass
5145	51.19	33.14	5.29	33.88	55.74	74	-18.26	V	PK	Pass
5145	34.92	33.14	5.29	33.88	39.47	54	-14.53	V	AV	Pass
5150	55.68	33.14	5.29	33.88	60.23	74	-13.77	H	PK	Pass
5150	37.17	33.14	5.29	33.88	41.72	54	-12.28	H	AV	Pass
5145	51.37	33.14	5.29	33.88	55.92	74	-18.08	H	PK	Pass
5145	33.92	33.14	5.29	33.88	38.47	54	-15.53	H	AV	Pass
802.11ac40:5230MHz										
5350	53.71	33.06	5.44	33.72	58.49	74	-15.51	V	PK	Pass
5350	35.94	33.06	5.44	33.72	40.72	54	-13.28	V	AV	Pass
5370	51.44	33.05	5.45	33.70	56.24	74	-17.76	V	PK	Pass
5370	34.96	33.05	5.45	33.70	39.76	54	-14.24	V	AV	Pass
5350	53.21	33.06	5.44	33.72	57.99	74	-16.01	H	PK	Pass
5350	35.17	33.06	5.44	33.72	39.95	54	-14.05	H	AV	Pass
5370	50.78	33.05	5.45	33.70	55.58	74	-18.42	H	PK	Pass
5370	34.95	33.05	5.45	33.70	39.75	54	-14.25	H	AV	Pass
802.11ax20:5180MHz										
5150	55.53	33.09	5.36	33.81	60.17	74	-13.83	V	PK	Pass
5150	36.67	33.09	5.36	33.81	41.31	54	-12.69	V	AV	Pass
5145	51.24	33.09	5.36	33.81	55.88	74	-18.12	V	PK	Pass

5145	34.07	33.09	5.36	33.81	38.71	54	-15.29	V	AV	Pass
5150	53.83	33.09	5.36	33.81	58.47	74	-15.53	H	PK	Pass
5150	36.51	33.09	5.36	33.81	41.15	54	-12.85	H	AV	Pass
5145	53.39	33.09	5.36	33.81	58.03	74	-15.97	H	PK	Pass
5145	36.26	33.09	5.36	33.81	40.90	54	-13.10	H	AV	Pass
802.11ax20:5240MHz										
5350	52.02	33.14	5.29	33.88	56.57	74	-17.43	V	PK	Pass
5350	34.67	33.14	5.29	33.88	39.22	54	-14.78	V	AV	Pass
5370	52.08	33.14	5.29	33.88	56.63	74	-17.37	V	PK	Pass
5370	33.22	33.14	5.29	33.88	37.77	54	-16.23	V	AV	Pass
5350	53.05	33.14	5.29	33.88	57.60	74	-16.40	H	PK	Pass
5350	34.96	33.14	5.29	33.88	39.51	54	-14.49	H	AV	Pass
5370	50.77	33.14	5.29	33.88	55.32	74	-18.68	H	PK	Pass
5370	32.95	33.14	5.29	33.88	37.50	54	-16.50	H	AV	Pass
802.11ax40:5190MHz										
5150	36.01	33.06	5.44	33.72	40.79	54	-13.21	V	PK	Pass
5150	51.49	33.05	5.45	33.70	56.29	74	-17.71	V	AV	Pass
5145	33.71	33.05	5.45	33.70	38.51	54	-15.49	V	PK	Pass
5145	55.12	33.06	5.44	33.72	59.90	74	-14.10	V	AV	Pass
5150	36.66	33.06	5.44	33.72	41.44	54	-12.56	H	PK	Pass
5150	52.49	33.05	5.45	33.70	57.29	74	-16.71	H	AV	Pass
5145	34.82	33.05	5.45	33.70	39.62	54	-14.38	H	PK	Pass
5145	36.01	33.06	5.44	33.72	40.79	54	-13.21	H	AV	Pass
802.11ax40:5230MHz										
5350	53.39	33.14	5.29	33.88	57.94	74	-16.06	V	PK	Pass

5350	35.15	33.14	5.29	33.88	39.70	54	-14.30	V	AV	Pass
5370	52.79	33.14	5.29	33.88	57.34	74	-16.66	V	PK	Pass
5370	35.20	33.14	5.29	33.88	39.75	54	-14.25	V	AV	Pass
5350	53.02	33.14	5.29	33.88	57.57	74	-16.43	H	PK	Pass
5350	36.60	33.14	5.29	33.88	41.15	54	-12.85	H	AV	Pass
5370	51.04	33.14	5.29	33.88	55.59	74	-18.41	H	PK	Pass
5370	34.00	33.14	5.29	33.88	38.55	54	-15.45	H	AV	Pass

U-NII-3

Frequency (MHz)	Meter Reading (dB μV)	antenna Factor (dB)	cable loss (dB)	preamp factor (dB)	Emission Level (dB μV/m)	Limit (dB μV/m)	Margin (dB)	Polar (H/V)	Detector Type	Result
802.11a										
5720.00	52.23	33.33	5.70	33.42	57.84	74	-16.16	V	PK	Pass
5725.00	55.04	33.34	5.70	33.42	60.66	74	-13.34	V	PK	Pass
5850.00	55.94	33.64	5.78	33.32	62.04	74	-11.96	V	PK	Pass
5855.00	49.83	33.64	5.78	33.32	55.93	74	-18.07	V	PK	Pass
5720.00	51.74	33.33	5.70	33.42	57.35	74	-16.65	H	PK	Pass
5725.00	52.72	33.34	5.70	33.42	58.34	74	-15.66	H	PK	Pass
5850.00	48.95	33.64	5.78	33.32	55.05	74	-18.95	H	PK	Pass
5855.00	52.19	33.64	5.78	33.32	58.29	74	-15.71	H	PK	Pass
802.11n20										
5720.00	49.37	33.33	5.70	33.42	54.98	74	-19.02	V	PK	Pass
5725.00	50.09	33.34	5.70	33.42	55.71	74	-18.29	V	PK	Pass
5850.00	50.95	33.64	5.78	33.32	57.05	74	-16.95	V	PK	Pass
5855.00	52.47	33.64	5.78	33.32	58.57	74	-15.43	V	PK	Pass
5720.00	47.26	33.33	5.70	33.42	52.87	74	-21.13	H	PK	Pass
5725.00	47.67	33.34	5.70	33.42	53.29	74	-20.71	H	PK	Pass
5850.00	50.08	33.64	5.78	33.32	56.18	74	-17.82	H	PK	Pass
5855.00	49.96	33.64	5.78	33.32	56.06	74	-17.94	H	PK	Pass
802.11ac20										
5720.00	50.41	33.33	5.70	33.42	56.02	74	-17.98	V	PK	Pass

5725.00	55.95	33.34	5.70	33.42	61.57	74	-12.43	V	PK	Pass
5850.00	57.63	33.64	5.78	33.32	63.73	74	-10.27	V	PK	Pass
5855.00	53.14	33.64	5.78	33.32	59.24	74	-14.76	V	PK	Pass
5720.00	50.92	33.33	5.70	33.42	56.53	74	-17.47	H	PK	Pass
5725.00	50.21	33.34	5.70	33.42	55.83	74	-18.17	H	PK	Pass
5850.00	52.99	33.64	5.78	33.32	59.09	74	-14.91	H	PK	Pass
5855.00	53.01	33.64	5.78	33.32	59.11	74	-14.89	H	PK	Pass
802.11n40										
5720.00	49.16	33.33	5.70	33.42	54.77	74	-19.23	V	PK	Pass
5725.00	55.97	33.34	5.70	33.42	61.59	74	-12.41	V	PK	Pass
5850.00	54.56	33.64	5.78	33.32	60.66	74	-13.34	V	PK	Pass
5855.00	52.79	33.64	5.78	33.32	58.89	74	-15.11	V	PK	Pass
5720.00	49.95	33.33	5.70	33.42	55.56	74	-18.44	H	PK	Pass
5725.00	50.08	33.34	5.70	33.42	55.70	74	-18.3	H	PK	Pass
5850.00	51.49	33.64	5.78	33.32	57.59	74	-16.41	H	PK	Pass
5855.00	50.26	33.64	5.78	33.32	56.36	74	-17.64	H	PK	Pass
802.11ac40										
5720.00	49.66	33.33	5.70	33.42	55.27	74	-18.73	V	PK	Pass
5725.00	56.27	33.34	5.70	33.42	61.89	74	-12.11	V	PK	Pass
5850.00	56.66	33.64	5.78	33.32	62.76	74	-11.24	V	PK	Pass
5855.00	49.59	33.64	5.78	33.32	55.69	74	-18.31	V	PK	Pass
5720.00	49.85	33.33	5.70	33.42	55.46	74	-18.54	H	PK	Pass
5725.00	52.28	33.34	5.70	33.42	57.90	74	-16.1	H	PK	Pass
5850.00	53.19	33.64	5.78	33.32	59.29	74	-14.71	H	PK	Pass
5855.00	48.46	33.64	5.78	33.32	54.56	74	-19.44	H	PK	Pass

802.11ax20										
5720.00	48.83	33.33	5.70	33.42	54.44	74	-19.56	V	PK	Pass
5725.00	56.04	33.34	5.70	33.42	61.66	74	-12.34	V	PK	Pass
5850.00	53.64	33.64	5.78	33.32	59.74	74	-14.26	V	PK	Pass
5855.00	54.33	33.64	5.78	33.32	60.43	74	-13.57	V	PK	Pass
5720.00	54.54	33.33	5.70	33.42	60.15	74	-13.85	H	PK	Pass
5725.00	52.32	33.34	5.70	33.42	57.94	74	-16.06	H	PK	Pass
5850.00	53.35	33.64	5.78	33.32	59.45	74	-14.55	H	PK	Pass
5855.00	51.29	33.64	5.78	33.32	57.39	74	-16.61	H	PK	Pass
802.11ax40										
5720.00	49.66	33.33	5.70	33.42	55.27	74	-18.73	V	PK	Pass
5725.00	57.97	33.34	5.70	33.42	63.59	74	-10.41	V	PK	Pass
5850.00	58.46	33.64	5.78	33.32	64.56	74	-9.44	V	PK	Pass
5855.00	53.79	33.64	5.78	33.32	59.89	74	-14.11	V	PK	Pass
5720.00	49.65	33.33	5.70	33.42	55.26	74	-18.74	H	PK	Pass
5725.00	53.08	33.34	5.70	33.42	58.70	74	-15.3	H	PK	Pass
5850.00	50.89	33.64	5.78	33.32	56.99	74	-17.01	H	PK	Pass
5855.00	49.96	33.64	5.78	33.32	56.06	74	-17.94	H	PK	Pass

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.

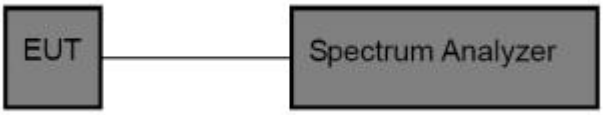
3. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

8 Duty cycle

8.1 Limit

Test Requirement:	FCC CFR Title 47 Part 15 Subpart C Section 15.407
Test Method:	ANSI C63.10-2020+Cor.1-2023
	KDB 789033 D02 General UNII Test Procedures New Rules v02r01
Test Result:	PASS

8.2 Test Setup



8.3 Test Procedure

The zero-span mode on a spectrum analyzer or EMI receiver, if the response time and spacing between bins on the sweep are sufficient to permit accurate measurements of the on and off times of the transmitted si gnal. Set the center frequency of the instrument to the center frequency of the transmission. Set RBW ≥ EBW if possible; otherwise, set RBW to the largest available value. Set VBW ≥ RBW. Set detector = peak or average. The zero-span measurement method shall not be used unless both RBW and VBW are > 50/T, where T is defined in IILB.1.a), and the number of sweep points across duration T exceeds 100. (For example, if VBW and/or RBW are limited to 3 MHz, then the zero-span method of measuring duty cycle shall not be used if T ≤ 16.7 microseconds.)

8.4 Test Result

Please see the attachment for WIFI5.1G and WIFI5.8G data.

9 POWER SPECTRAL DENSITY TEST

9.1 Test Standard and Limit

According to FCC §15.407(3)

(1) For the band 5.15-5.25 GHz.

(i) For an outdoor access point operating in the band 5.15-5.25 GHz, the maximum power spectral density shall not exceed 17 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. The maximum e.i.r.p. at any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm).

(ii) For an indoor access point operating in the band 5.15-5.25 GHz, the maximum power spectral density shall not exceed 17 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.

(iii) For fixed point-to-point access points operating in the band 5.15-5.25 GHz, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. Fixed point-to-point U-NII devices may employ antennas with directional gain up to 23 dBi without any corresponding reduction in the maximum conducted output power or maximum power spectral density. For fixed point-to-point transmitters that employ a directional antenna gain greater than 23 dBi, a 1 dB reduction in maximum conducted output power and maximum power spectral density is required for each 1 dB of antenna gain in excess of 23 dBi. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

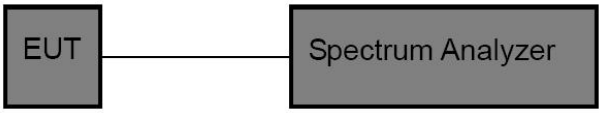
(iv) For client devices in the 5.15-5.25 GHz band, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced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

(2) 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.

(3) For the band 5.725-5.85 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. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi

without any corresponding reduction in transmitter conducted power. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

9.2 Test Setup



9.3 Test Procedure

1. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram above,

2. The testing follows FCC KDB 789033 D02.

3. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to Spectrum.

4. For U-NII1, U-NII-2A, U-NII-2C Band:

Set RBW=1MHz, VBW=3MHz, where span is enough to capture the entire bandwidth, Sweep time = Auto (601 pts), detector = sample, traces 100 sweeps of video averaging. (SA-2 with the omission of procedure x, the integration with 26dB EBW bandwidth)

For U-NII-3 Band:

Set RBW=510 kHz, VBW=3*RBW, where span is enough to capture the entire bandwidth, Sweep time = Auto (601 pts), detector = sample, traces 100 sweeps of video averaging. (SA-2 with the omission of procedure x, the integration with 26dB EBW bandwidth)

5. User the cursor on spectrum to peak search the highest level of trace

6. Record the max. reading and add 10 log(1/duty cycle).

9.4 Test Data

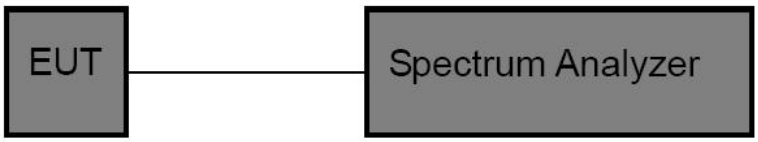
Please see the attachment for WIFI5.1G and WIFI5.8G data.

10 26DB & 6DB & 99% Emission Bandwidth Test

10.1 Test Standard

Test Standard	FCC Part15 C Section 15.407
	The maximum power spectral density is measured as a conducted emission by direct connection of a calibrated test instrument to the equipment under test. If the device cannot be connected directly, alternative techniques acceptable to the Commission may be used. Measurements in the 5.725-5.85 GHz band, the minimum bandwidth 6 dB bandwidth of U-NII devices shall be at least 500KHz. Measurements in the 5.15-5.25 GHz, 5.25-5.35 GHz, and the 5.47-5.725 GHz bands are made over a bandwidth of 1 MHz or the 26 dB emission bandwidth of the device, whichever is less. A narrower resolution bandwidth can be used, provided that the measured power is integrated over the full reference bandwidth.

10.2 Test Setup



10.3 Test Procedure

The following procedure shall be used for measuring 6db bandwidth:

a) Set RBW = 100KHz.

b) Set the VBW > RBW.

c) Detector = Peak.

d) Trace mode = max hold.

e) Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

The following procedure shall be used for measuring (99 %) power bandwidth:

1. Set center frequency to the nominal EUT channel center frequency.

2. Set span = 1.5 times to 3.3 times the OBW.

3. Set RBW = 1 % to 5 % of the OBW

4. Set VBW ≥ 3 · RBW

5. Video averaging is not permitted. Where practical, a sample detection and single sweep mode shall be used. Otherwise, peak detection and max hold mode (until the trace stabilizes) shall be used.

6. Use the 99 % power bandwidth fuNCTion of the instrument (if available).

7. If the instrument does not have a 99 % power bandwidth fuNCTion, the trace data points are recovered and directly summed in power units. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5 % of the total is reached; that frequency is recorded as the lower frequency. The process is repeated until 99.5 % of the total is reached; that frequency is recorded as the upper frequency. The 99% occupied bandwidth is the difference between these two frequencies.

The following procedure shall be used for measuring 26db bandwidth:

1) Set RBW = approximately 1% of the emission bandwidth.

2) Set the VBW > RBW.

3) Detector = Peak

4) Trace mode = max hold.

5) Measure the maximum width of the emission that is 26 dB down from the peak of the

emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat

measurement as needed until the RBW/EBW ratio is approximately 1%.

10.4 Test Data

Please see the attachment for WIFI5.1G and WIFI5.8G data.

11 Maximum Conducted Output Power

11.1 Test Standard and Limit

According to FCC §15.407

For an outdoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi.
If transmitting antennas of directional gain greater than 6 dBi are used, the maximum conducted output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. The maximum e.i.r.p. at any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm).

For an indoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi.
If transmitting antennas of directional gain greater than 6 dBi are used, the maximum conducted output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

For fixed point-to-point access points operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W.
Fixed point-to-point U-NII devices may employ antennas with directional gain up to 23 dBi without any corresponding reduction in the maximum conducted output power.
For fixed point-to-point transmitters that employ a directional antenna gain greater than 23 dBi, a 1 dB reduction in maximum conducted output power is required for each 1 dB of antenna gain in excess of 23 dBi.
Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

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.
If transmitting antennas of directional gain greater than 6 dBi are used, the maximum conducted output power 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.
If transmitting antennas of directional gain greater than 6 dBi are used, the maximum conducted output power 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.
If transmitting antennas of directional gain greater than 6 dBi are used, the maximum conducted output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.
However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power.
Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications,

and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

11.2 Test Setup

11.3 Test Procedure

The EUT was directly connected to the Power meter

1. Device Configuration

If possible, configure or modify the operation of the EUT so that it transmits continuously at its maximum power control level (see section II.B.).

The intent is to test at 100 percent duty cycle; however a small reduction in duty cycle (to no lower than 98 percent) is permitted if required by the EUT for amplitude control purposes. Manufacturers are expected to provide software to the test lab to permit such continuous operation.

b) If continuous transmission (or at least 98 percent duty cycle) cannot be achieved due to hardware limitations (e.g., overheating), the EUT shall be operated at its maximum power control level with the transmit duration as long as possible and the duty cycle as high as possible.

Measurement using a Power Meter(PM)

a) Method PM (Measurement using an RF average power meter):

(i)Measurements may be performed using a wideband RF power meter with a thermocouple

detector or equivalent if all of the following conditions are satisfied:

● The EUT is configured to transmit continuously or to transmit with a constant duty cycle.

●At all times when the EUT is transmitting, it must be transmitting at its maximum power

control level.

● The integration period of the power meter exceeds the repetition period of the

transmitted signal by at least a factor of five.

(i) If the transmitter does not transmit continuously, measure the duty cycle, x, of the

transmitter output signal as described in IIL.B.

(ii) Measure the average power of the transmitter. This measurement is an average over both

the on and off periods of the transmitter.

(iv) Adjust the measurement in dBm by adding 10 log (1/x) where x is the duty cycle (e.g. 10 log (1/0.25) if the duty cycle is 25%).

b) Method PM-G (Measurement using a gated RF average power meter):

Measurements may be performed using a wideband gated RF power meter provided that the gate parameters are adjusted such that the power is measured only when the EUT is transmitting at its maximum power control level. Since the measurement is made only during the ON time of the transmitter, no duty cycle correction factor is required.

11.4 Test Data

Please see the attachment for WIFI5.1G and WIFI5.8G data.

12 Out of Band Emissions and Spurious Emission

12.1 Test Standard and Limit

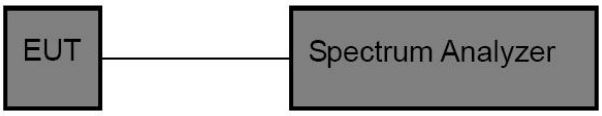
According to FCC §15.407(b)

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 5.725-5.85 GHz band: All emissions within the frequency range from the band edge to 10 MHz above or below the band edge shall not exceed an e.i.r.p. of −17 dBm/MHz; for frequencies 10 MHz or greater above or below the band edge, emissions shall not exceed an e.i.r.p. of −27 dBm/MHz.

12.2 Test Setup



12.3 Test Procedure

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.

2. Position the EUT without connection to measurement instrument. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Then set it to any one measured frequency within its operating range, and make sure the instrument is operated in its linear range.

3. Set RBW of spectrum analyzer to 1 MHz with a convenient frequency span.

4. Measure the highest amplitude appearing on spectral display and set it as a reference level. Plot the graph with marking the highest point and edge frequency.

5. Repeat above procedures until all measured frequencies were complete.

12.4 Test Data

Please see the attachment for WIFI5.1G and WIFI5.8G data.

13 Frequency Stability Measurement

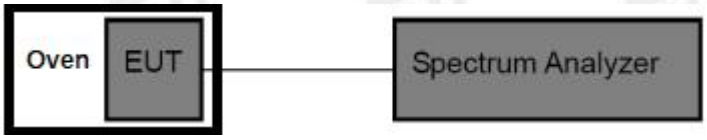
13.1 Test Standard and Limit

FCC

Manufactures 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.

The transmitter center frequency tolerance shall be ± 20 ppm maximum for the 5 GHz band (IEEE 802.11n specification).

13.2 Test Setup



13.3 Test Procedure

1. The transmitter output (antenna port) was connected to the spectrum analyzer.

2. EUT have transmitted absence of modulation signal and fixed channelize.

3. Set the spectrum analyzer span to view the entire absence of modulation emissions bandwidth.

4. Set RBW = 10 kHz, VBW = 10 kHz with peak detector and maxhold settings.

5. fc is declaring of channel frequency. Then the frequency error formula is (fc-f)/fc × 106 ppm and the limit is less than ±20ppm (IEEE 802.11nspecification).

6. The test extreme voltage is to change the primary supply voltage from 85 to 115 percent of the nominal value

7. Extreme temperature is -20°C~50°C.

13.4 Test Data

Please see the attachment for WIFI5.1G and WIFI5.8G data.

14 Antenna Requirement

14.1 Test Standard and Requirement

Test Standard	FCC Part15 Section 15.203
Requirement	1) 15.203 requirement: 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. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

14.2 Antenna Connected Construction

The antenna is Internal Antenna which permanently attached, and the best case gain of the antenna is -2.07 dBi(WIFI 5.1G); 1.12 dBi(WIFI5.8G). It complies with the standard requirement.

15 TEST SETUP & EUT PHOTOGRAPH

Please see the attachment for details.

---------- End of Report ----------