TEST REPORT

Report No.:	BCTC2011000673-2E
Applicant:	SHENZHEN TOPWAY TECHNOLOGY CO., LTD
Product Name:	Dual Band Wi-Fi Repeater and Extender
Model/Type Ref.:	KN1200AC
Tested Date:	Nov. 09, 2020 to Nov. 24, 2020
Issued Date:	Nov. 25, 2020

Shenzhen BCTC Testing Co., Ltd.

FCC ID: 2AYJCKN1200AC

Product Name:	Dual Band Wi-Fi Repeater and Extender
Trademark:	N/A
Model/Type Ref.:	KN1200AC TBW1200AC, HY1200AC, LX1200AC, F1200AC, M1200AC
Prepared For:	SHENZHEN TOPWAY TECHNOLOGY CO., LTD
Address:	The west side 5F, No.4 building, Pengtengda industrial park, Dalang street, Longhua District, Shenzhen, Guangdong provice, China
Manufacturer:	SHENZHEN TOPWAY TECHNOLOGY CO., LTD
Address:	The west side 5F, No.4 building, Pengtengda industrial park, Dalang street, Longhua District, Shenzhen, Guangdong provice, China
Prepared By:	Shenzhen BCTC Testing Co., Ltd.
Address:	1-2F, East of B Building, Pengzhou Industrial, Fuyuan 1st Road, Qiaotou Community, Fuyong Street, Bao'an District, Shenzhen, China
Sample Received Date:	Nov. 09, 2020
Sample tested Date:	Nov. 09, 2020 to Nov. 24, 2020
Issue Date:	Nov. 25, 2020
Report No.:	BCTC2011000673-1E
Test Standards	FCC Part15 15.407 ANSI C63.10-2013 KDB 662911 D01 v02r01 KDB 789033 D02 v02r01
Test Results	PASS

Tested by:

Eric Yang/Project Handler

Approved by:

Zero Zhou/Reviewer

The test report is effective only with both signature and specialized stamp.This result(s) shown in this report refer only to the sample(s) tested. Without written approval of Shenzhen BCTC Testing Co., Ltd, this report can't be reproduced except in full.The tested sample(s) and the sample information are provided by the client.

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(Note: N/A means not applicable)

1. VERSION

Report No.	Issue Date	Description	Approved
BCTC2011000673-2E	Nov. 25, 2020	Original	Valid

2. TEST SUMMARY

The Product has been tested according to the following specifications:

No.	Test Parameter	Clause No	Results
1	Spurious Radiated Emissions	15.209(a), 15.407 (b)(1) 15.407 (b)(4) 15.407 (b)(6)	PASS
2	Conducted Emission	15.207	PASS
3	26 dB and 99% Emission Bandwidth	15.407 (a)(5) 15.1049	PASS
4	Minimum 6 dB bandwidth	15.407(e)	PASS
5	Maximum Conducted Output Power	15.407 (a)(1) 15.407 (a)(3)	PASS
6	Band Edge	2.1051, 15.407(b)(1) 15.407(b)(4)	PASS
7	Power Spectral Density	15.407 (a)(1) 15.407 (a)(3)	PASS
8	Spurious Emissions at Antenna Terminals	2.1051, 15.407(b)	PASS
9	Frequency Stability Measurement	15.407(g)	PASS
10	Antenna Requirement	15.203	PASS

3. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the Product as specified in CISPR 16-4-2. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

No.	Item	Uncertainty
1	3m camber Radiated spurious emission(30MHz-1GHz)	U=4.3dB
2	3m chamber Radiated spurious emission(1GHz-18GHz)	U=4.5dB
3	3m chamber Radiated spurious emission(18GHz-40GHz)	U=3.34dB
4	Conducted Adjacent channel power	U=1.38dB
5	Conducted output power uncertainty Above 1G	U=1.576dB
6	Conducted output power uncertainty below 1G	U=1.28dB
7	humidity uncertainty	U=5.3%
8	Temperature uncertainty	U=0.59℃

4. PRODUCT INFORMATION AND TEST SETUP

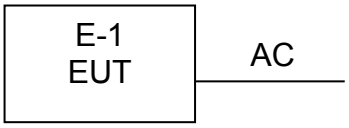
4.1 Product Information

Model/Type Ref.:	KN1200AC TBW1200AC, HY1200AC, LX1200AC, F1200AC, M1200AC
Model differences:	All the model are the same circuit and RF module, except model names.
IEEE 802.11 WLAN Mode Supported	802.11a/n/ac(20MHz channel bandwidth) 802.11n/ac(40MHz channel bandwidth) 802.11ac(80MHz channel bandwidth)
Operation Frequency:	5180-5240MHz for 802.11a/n(HT20)/ac20; 5190-5230MHz for 802.11n(HT40)/ac40; 5210MHz for 802.11 ac80; 5745-5825 MHz for 802.11a/n(HT20)/ac20; 5755-5795 MHz for 802.11a/n(HT40)/ac40; 5775MHz for 802.11 ac80;
Data Rate	802.11a: 6,9,12,18,24,36,48,54Mbps; 802.11n(HT20/HT40):MCS0-MCS15; 802.11ac(VHT20): NSS1, MCS0-MCS8 802.11ac(VHT40/VHT80):NSS1, MCS0-MCS
Type of Modulation:	OFDM with BPSK/QPSK/16QAM/64QAM/256QAM for 802.11a/n/ac;
Number Of Channel	4 channels for 802.11a/n20 in the 5180-5240MHz band ; 2 channels for 802.11 n40 in the 5190-5230MHz band ; 1 channels for 802.11 ac80 in the 5210MHz band ; 5 channels for 802.11a/n20 in the 5745-5825MHz band ; 2 channels for 802.11 n40 in the 5755-5795MHz band ; 1 channels for 802.11 ac80 in the 5775MHz band ;
Antenna installation:	External antenna
Antenna Gain:	Antenna A: 2dBi Antenna B: 2dBi
Ratings:	AC120V/60Hz

4.2 Test Setup Configuration

See test photographs attached in *EUT TEST SETUP PHOTOGRAPHS* for the actual connections between Product and support equipment.

Conducted Emission Test /Radiated Spurious Emission



4.3 Support Equipment

No.	Device Type	Brand	Model	Series No.	Note
E-1	Dual Band Wi-Fi Repeater and Extender	N/A	KN1200AC	N/A	EUT

Item	Shielded Type	Ferrite Core	Length	Note

Notes:

1. All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.
2. Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.

4.4 Channel List

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

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

802.11ac (80MHz) Carrier Frequency Channel	
Channel	Frequency (MHz)
42	5210

Frequency and Channel list for 802.11a/n/ac(20 MHz) band IV (5745-5825MHz):

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

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

802.11ac 80MHz Carrier Frequency Channel	
Channel	Frequency (MHz)
155	5775

4.5 Test Mode

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.

Pretest Mode	Description
Mode 1	802.11a / n /ac 20 CH36/ CH40/ CH 48
Mode 2	802.11a /n /ac 20 CH149/ CH157/ CH 165
Mode 3	802.11n/ac 40 CH38/ CH 46
Mode 4	802.11n/ac 40 CH 151 / CH 159
Mode 5	802.11 ac80 CH 42/CH 155
Mode 6	Link Mode

Note:

(1) The measurements are performed at all Bit Rate of Transmitter, the worst data was reported.

4.6 Antenna

EUT has two External antennas with Max gain GANT 2dBi on every antenna, CDD device with two spatial streams, also can operat with one spatial streams according to KDB662911 D01 v02r01,

Directional gain= GANT + Array Gain, where Array Gain is as follows.

1)For power spectral density(PSD) measurements,

Array Gain=10log(NANT/NSS)dB=10log(2/1)=3.01dBi,

So the directional gain for PSD is 5.01dBi

2)For power measurements,

The Array gain=0 dB for NANT⩽4,

So the directional gain for Power measurements is 2dBi

Antenna	Brand	Model Name	Antenna Type	Gain (dBi)	NOTE
A	N/A	N/A	External antenna	2	
B	N/A	N/A	External antenna	2	

5. TEST FACILITY AND TEST INSTRUMENT USED

5.1 Test Facility

All measurement facilities used to collect the measurement data are located at Shenzhen BCTC Testing Co., Ltd. Address: 1-2F, East of B Building, Pengzhou Industrial, Fuyuan 1st Road, Qiaotou Community, Fuyong Street, Bao'an District, Shenzhen, China. The site and apparatus are constructed in conformance with the requirements of ANSI C63.4 and CISPR 16-1-1 other equivalent standards.

FCC Test Firm Registration Number: 712850

IC Registered No.: 23583

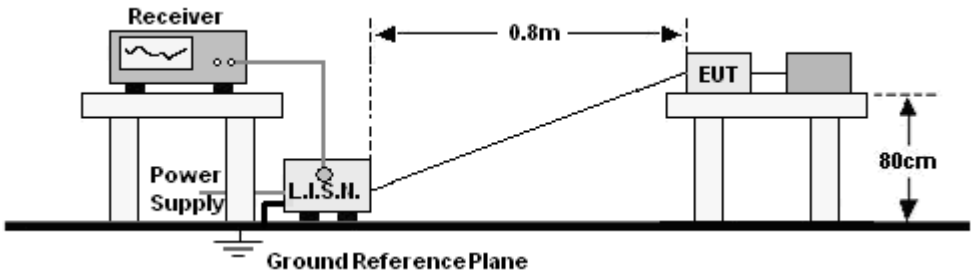
5.2 Test Instrument Used

Conducted emissions Test					
Equipment	**Manufacturer**	**Model#**	**Serial#**	**Last Cal.**	**Next Cal.**
Receiver	R&S	ESR3	102075	Jun. 08, 2020	Jun. 07, 2021
LISN	R&S	ENV216	101375	Jun. 04, 2020	Jun. 03, 2021
ISN	HPX	ISN T800	S1509001	Jun. 04, 2020	Jun. 03, 2021
Software	Frad	EZ-EMC	EMC-CON 3A1	\	\

Radiated emissions Test (966 chamber)					
Equipment	**Manufacturer**	**Model#**	**Serial#**	**Last Cal.**	**Next Cal.**
966 chamber	ChengYu	966 Room	966	Jun. 06. 2020	Jun. 05, 2023
Receiver	R&S	ESR3	102075	Jun. 08, 2020	Jun. 07, 2021
Receiver	R&S	ESRP	101154	Jun. 08, 2020	Jun. 07, 2021
Amplifier	Schwarzbeck	BBV9718	9718-309	Jun. 04, 2020	Jun. 03, 2021
Amplifier	Schwarzbeck	BBV9744	9744-0037	Jun. 04, 2020	Jun. 03, 2021
TRILOG Broadband Antenna	schwarzbeck	VULB 9163	VULB9163-942	Jun. 08, 2020	Jun. 07, 2021
Horn Antenna	SCHWARZBECK	BBHA9120D	1201	Jun. 10, 2020	Jun. 09, 2021
Horn Antenna (18GHz-40GHz)	SCHWARZBECK	BBHA9170	822	Jun. 10, 2020	Jun. 09, 2021
Amplifier (18GHz-40GHz)	MITEQ	TTA1840-35-HG	2034381	Jun. 08, 2020	Jun. 07, 2021
Loop Antenna (9KHz-30MHz)	SCHWARZBECK	FMZB1519B	014	Jun. 08, 2020	Jun. 07, 2021
RF cables1 (9kHz-30MHz)	Huber+Suhnar	9kHz-30MHz	B1702988-0008	Jun. 08, 2020	Jun. 07, 2021
RF cables2 (30MHz-1GHz)	Huber+Suhnar	30MHz-1GHz	1486150	Jun. 08, 2020	Jun. 07, 2021
RF cables3 (1GHz-40GHz)	Huber+Suhnar	1GHz-40GHz	1607106	Jun. 08, 2020	Jun. 07, 2021
Power Metter	Keysight	E4419B	\	Jun. 08, 2020	Jun. 07, 2021
Power Sensor (AV)	Keysight	E9 300A	\	Jun. 08, 2020	Jun. 07, 2021
Signal Analyzer 20kHz-26.5GHz	KEYSIGHT	N9020A	MY49100060	Jun. 04, 2020	Jun. 03, 2021
Spectrum Analyzer 9kHz-40GHz	Agilent	FSP40	100363	Jun. 13, 2020	Jun. 12, 2021
Software	Frad	EZ-EMC	FA-03A2RE	\	\

6. CONDUCTED EMISSIONS

6.1 Block Diagram Of Test Setup



6.2 Limit

FREQUENCY (MHz)	Limit (dBuV)	
	Quas-peak	Average
0.15 -0.5	66 - 56 *	56 - 46 *
0.50 -5.0	56.00	46.00
5.0 -30.0	60.00	50.00

Notes:
1. *Decreasing linearly with logarithm of frequency.
2. The lower limit shall apply at the transition frequencies.

6.3 Test procedure

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

a. The Product was placed on a nonconductive table 0.8 m above the horizontal ground reference plane, and 0.4 m from the vertical ground reference plane, and connected to the main through Line Impedance Stability Network (L.I.S.N).

b. The RBW of the receiver was set at 9 kHz in 150 kHz ~ 30MHz with Peak and AVG detector in Max Hold mode. Run the receiver's pre-scan to record the maximum disturbance generated from Product in all power lines in the full band.

c. For each frequency whose maximum record was higher or close to limit, measure its QP and AVG values and record.

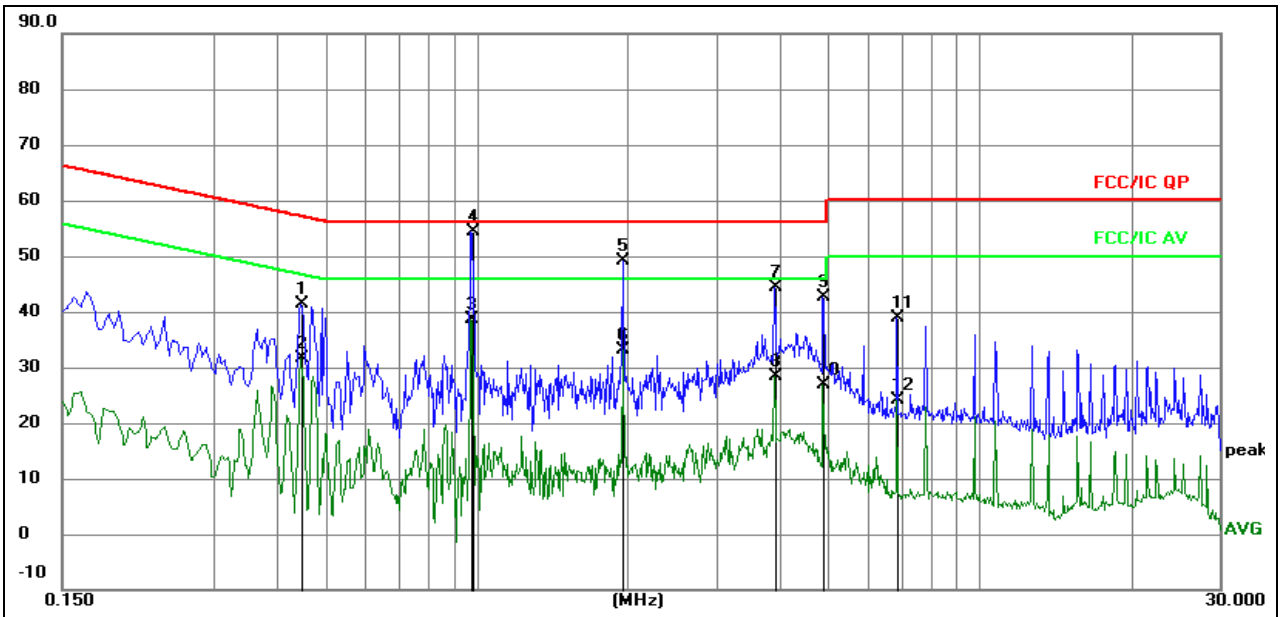
6.4 EUT operating Conditions

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.

We pretest AC 120V and AC 240V, the worst voltage was AC 120V and the data recording in the report.

6.5 Test Result

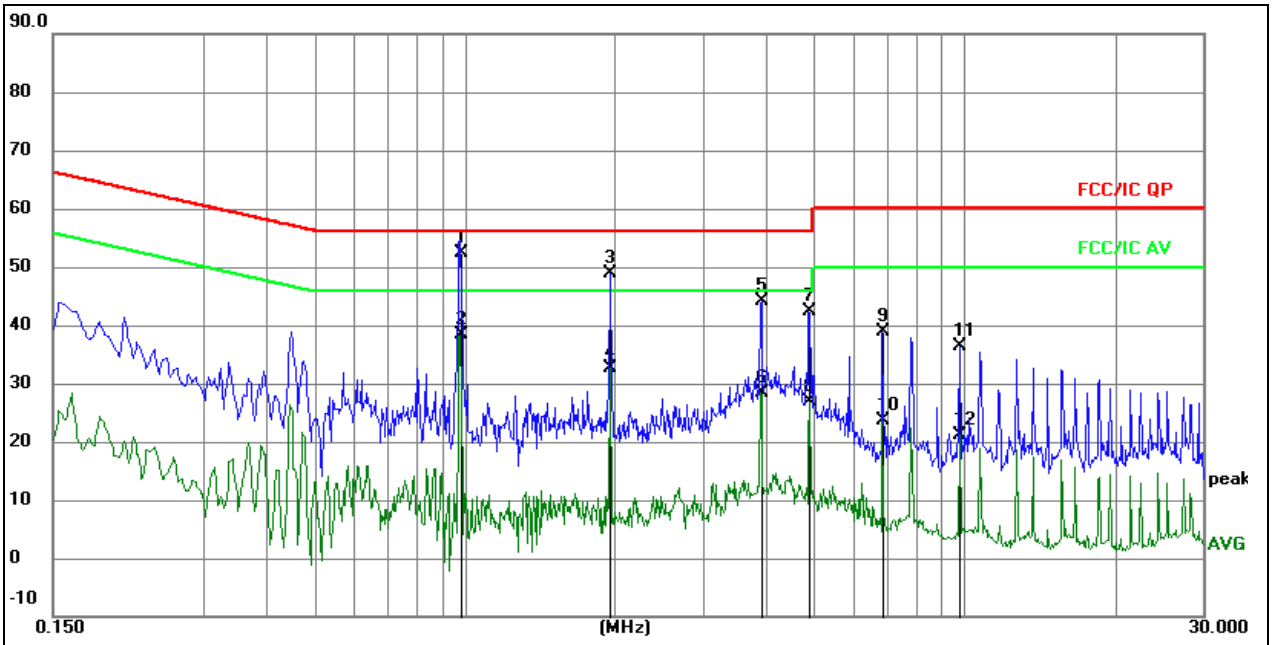
Temperature：	26 ℃	Relative Humidity：	54%
Pressure：	101kPa	Phase：	L
Test Voltage ：	AC 120V/60Hz	Test Mode：	Mode 6



Remark:
1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz		dB	dBuV	dBuV	dB	Detector
1		0.4470	31.77	9.54	41.31	56.93	-15.62	QP
2		0.4470	22.13	9.54	31.67	46.93	-15.26	AVG
3		0.9779	29.14	9.58	38.72	46.00	-7.28	AVG
4	*	0.9790	44.91	9.58	54.49	56.00	-1.51	QP
5		1.9589	39.52	9.59	49.11	56.00	-6.89	QP
6		1.9589	23.52	9.59	33.11	46.00	-12.89	AVG
7		3.9210	34.57	9.72	44.29	56.00	-11.71	QP
8		3.9210	18.55	9.72	28.27	46.00	-17.73	AVG
9		4.8975	32.93	9.79	42.72	56.00	-13.28	QP
10		4.8975	17.14	9.79	26.93	46.00	-19.07	AVG
11		6.8595	29.07	9.73	38.80	60.00	-21.20	QP
12		6.8595	14.33	9.73	24.06	50.00	-25.94	AVG

Temperature：	26 ℃	Relative Humidity：	54%
Pressure：	101kPa	Phase：	N
Test Voltage ：	AC 120V/60Hz	Test Mode：	Mode 6



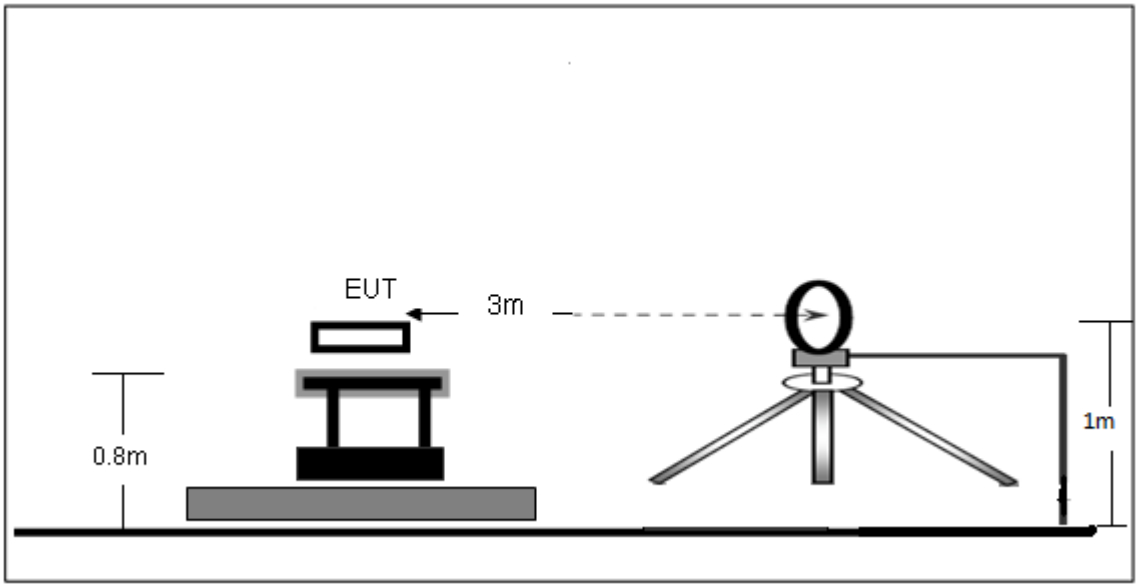
Remark:
1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz		dB	dBuV	dBuV	dB	Detector
1	*	0.9824	42.89	9.58	52.47	56.00	-3.53	QP
2		0.9824	28.79	9.58	38.37	46.00	-7.63	AVG
3		1.9589	39.23	9.59	48.82	56.00	-7.18	QP
4		1.9589	22.98	9.59	32.57	46.00	-13.43	AVG
5		3.9210	34.31	9.72	44.03	56.00	-11.97	QP
6		3.9210	18.70	9.72	28.42	46.00	-17.58	AVG
7		4.8975	32.52	9.79	42.31	56.00	-13.69	QP
8		4.8975	17.11	9.79	26.90	46.00	-19.10	AVG
9		6.8640	29.11	9.73	38.84	60.00	-21.16	QP
10		6.8640	13.95	9.73	23.68	50.00	-26.32	AVG
11		9.8070	26.78	9.69	36.47	60.00	-23.53	QP
12		9.8070	11.34	9.69	21.03	50.00	-28.97	AVG

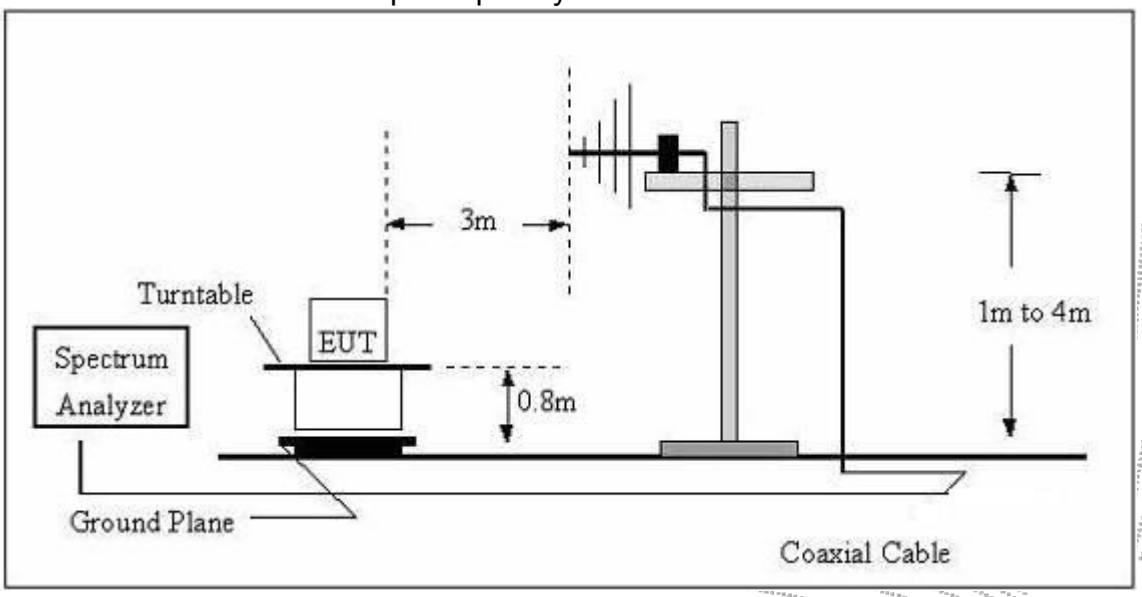
7. RADIATED EMISSIONS

7.1 Block Diagram Of Test Setup

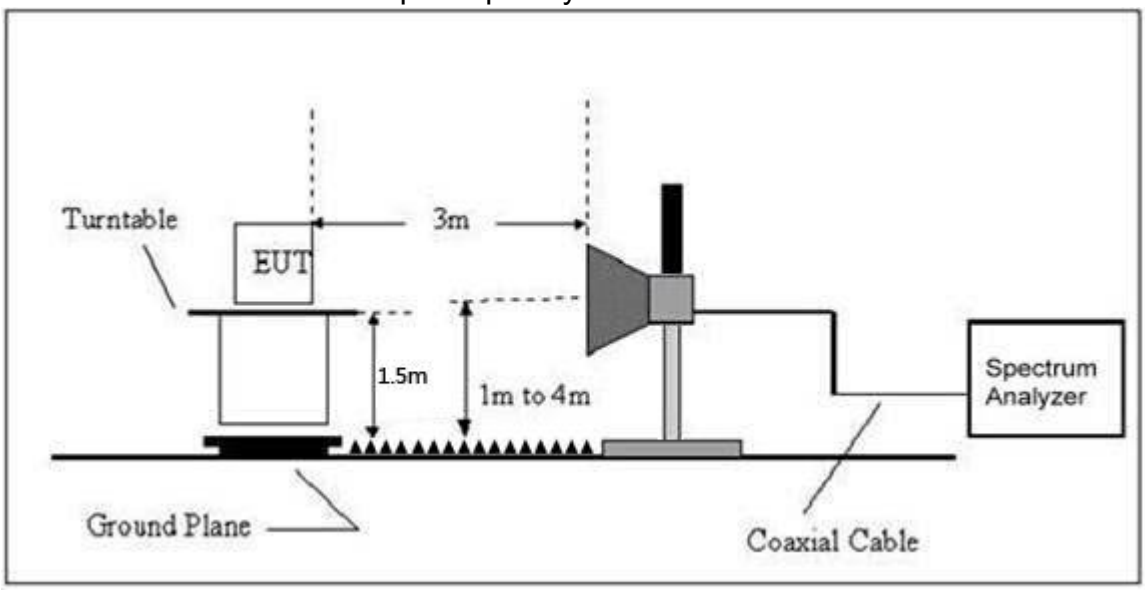
（A）Radiated Emission Test-Up Frequency Below 30MHz



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



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



7.2 Limit

20dBc in any 100 kHz bandwidth outside the operating frequency band. 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.

Frequency	Field Strength	Distance	Field Strength Limit at 3m Distance	
(MHz)	uV/m	(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	$20\log^{(500)}$

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).

7.3 Test procedure

The test site semi-anechoic chamber has met the requirement of NSA tolerance 4 dB according to the standards: ANSI C63.10-2013. The test distance is 3m.The setup is according to the requirements in Section 13.1.4.1 of ANSI C63.10-2013 and CAN/CSA-CEI/IEC CISPR 22.
This test is required for any spurious emission that falls in a Restricted Band, as defined in Section 15.205.
It must be performed with the highest gain of each type of antenna proposed for use with the EUT.
Use the following spectrum analyzer settings:

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	10th carrier harmonic
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

a. The measuring distance of at 3 m shall be used for measurements at frequency up to 1GHz. For frequencies above 1GHz, any suitable measuring distance may be used.
b. The EUT was placed on the top of a rotating table 0.8 m for below 1GHz and 1.5m for above 1GHz the ground at a 3 meter. The table was rotated 360 degrees to determine the position of the highest radiation.
c. The height of the equipment or of the substitution antenna shall be 0.8 m for below 1GHz and 1.5m for above 1GHz; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
d. The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
e. If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed.
f. For the actual test configuration, please refer to the related Item –EUT Test Photos.
Note:
Both horizontal and vertical antenna polarities were tested
and performed pretest to three orthogonal axis. The worst case emissions were reported

During the radiated emission test, the Spectrum Analyzer was set with the following configurations:

Frequency Band (MHz)	Function	Resolution bandwidth	Video Bandwidth
30 to 1000	QP	120 kHz	300 kHz
Above 1000	Peak	1 MHz	1 MHz
	Average	1 MHz	10 Hz

Note: for the frequency ranges below 30 MHz, a narrower RBW is used for these ranges but the measured value should add a RBW correction factor (RBWCF) where RBWCF [dB] =10*lg(100 [kHz]/narrower RBW [kHz]). , the narrower RBW is 1 kHz and RBWCF is 20 dB for the frequency 9 kHz to 150 kHz, and the
narrower RBW is 10 kHz and RBWCF is 10 dB for the frequency 150 kHz to 30 MHz.

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7.4 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.

7.5 Test Result

Below 30MHz

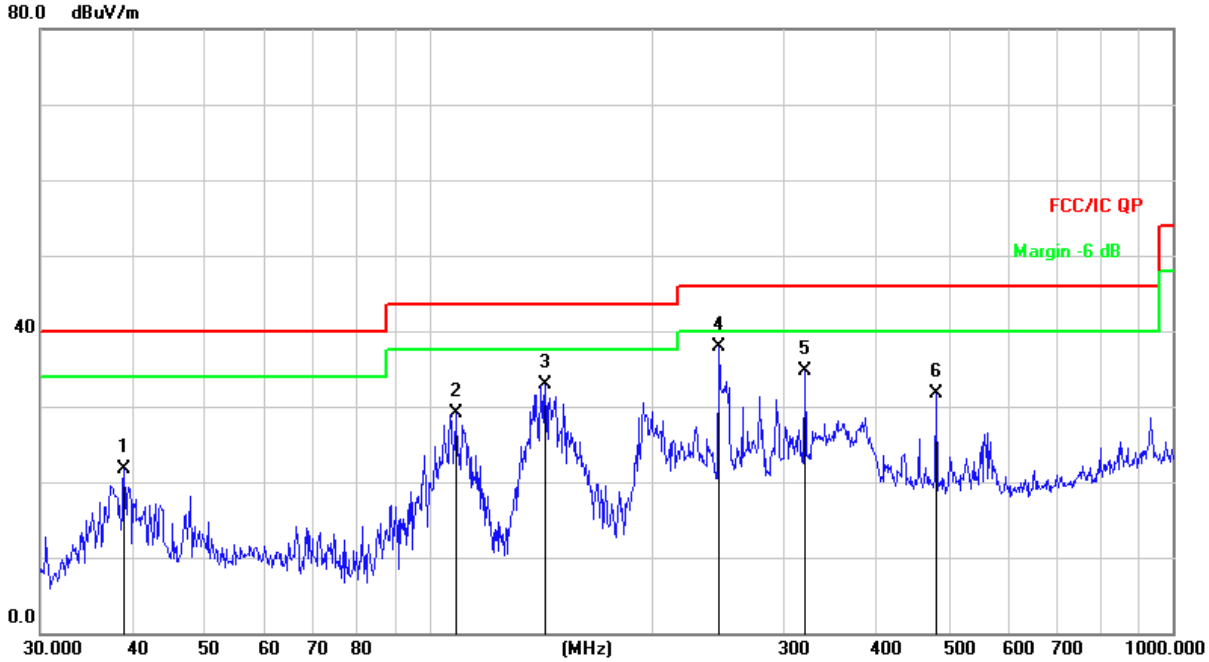
Temperature:	26℃	Relative Humidtity:	24%
Pressure:	101 kPa	Test Voltage :	AC120V/60Hz
Test Mode :	Mode 6	Polarization :	--

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.

Between 30MHz – 1GHz

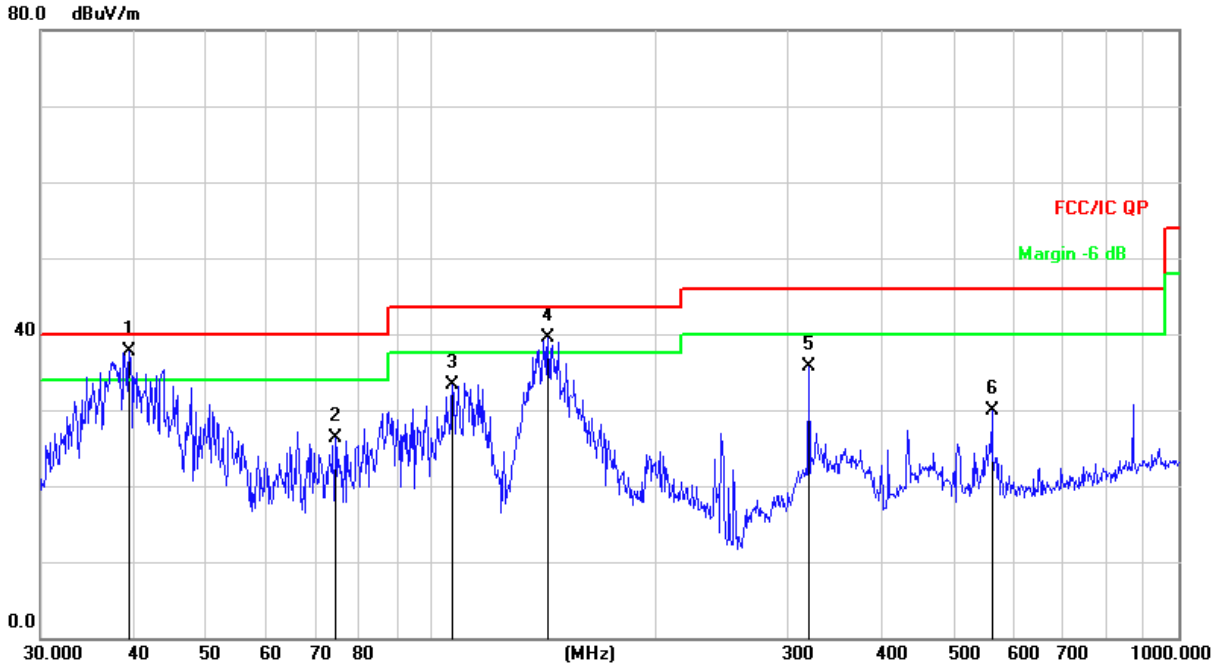
Temperature:	26℃	Relative Humidtity:	54%
Pressure:	101 kPa	Test Voltage :	AC120V/60Hz
Test Mode :	Mode 6	Polarization :	Horizontal



Remark:
Factor = Antenna Factor + Cable Loss – Pre-amplifier.

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector
1		38.8878	36.82	-15.07	21.75	40.00	-18.25	QP
2		108.6470	45.12	-16.03	29.09	43.50	-14.41	QP
3		143.3261	51.20	-18.28	32.92	43.50	-10.58	QP
4	*	245.0900	52.15	-14.33	37.82	46.00	-8.18	QP
5		319.9370	46.63	-11.87	34.76	46.00	-11.24	QP
6		480.5276	39.78	-7.98	31.80	46.00	-14.20	QP

Temperature:	26℃	Relative Humidtity:	54%
Pressure:	101 kpa	Test Voltage :	AC120V/60Hz
Test Mode :	Mode 6	Polarization :	Vertical



Remark:
Factor = Antenna Factor + Cable Loss – Pre-amplifier.

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector
1	*	39.4371	52.73	-15.01	37.72	40.00	-2.28	QP
2		74.3955	44.55	-18.24	26.31	40.00	-13.69	QP
3		106.7587	49.17	-15.91	33.26	43.50	-10.24	QP
4	!	143.3261	57.75	-18.28	39.47	43.50	-4.03	QP
5		319.9370	47.55	-11.87	35.68	46.00	-10.32	QP
6		562.6624	35.81	-5.99	29.82	46.00	-16.18	QP

Between 1GHz – 40GHz

Test Mode :	TX(5.2G) - 802.11a

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Cable loss (dB)	Antenna Factor dB/m	Preamp Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
Low Channel (5180 MHz)-Above 1G									
V	4434.088	60.57	5.94	35.40	44.00	57.91	68.20	-10.29	PK
V	4434.088	43.64	5.94	35.40	44.00	40.98	54.00	-13.02	AV
V	10360.139	63.30	8.46	39.75	44.50	67.01	74.00	-6.99	PK
V	10360.139	43.88	8.46	39.75	44.50	47.59	54.00	-6.41	AV
V	15540.109	60.19	10.12	38.80	44.10	65.01	74.00	-8.99	PK
V	15540.109	43.24	10.12	38.80	42.70	49.46	54.00	-4.54	AV
H	4434.136	62.92	5.94	35.18	44.00	60.04	68.20	-8.16	PK
H	4434.136	43.31	5.94	35.18	44.00	40.43	54.00	-13.57	AV
H	10360.029	50.36	8.46	38.71	44.50	53.03	74.00	-20.97	PK
H	10360.029	40.75	8.46	38.71	44.50	43.42	54.00	-10.58	AV
H	15540.137	53.14	10.12	38.38	44.10	57.54	74.00	-16.46	PK
H	15540.137	42.56	10.12	38.38	44.10	46.96	54.00	-7.04	AV
middle Channel (5200 MHz)-Above 1G									
V	4592.082	64.39	6.48	36.35	44.05	63.17	74.00	-10.83	PK
V	4592.082	43.44	6.48	36.35	44.05	42.22	54.00	-11.78	AV
V	10400.060	63.09	8.47	37.88	44.51	64.93	68.20	-3.27	PK
V	10400.060	43.48	8.47	37.88	44.51	45.32	54.00	-8.68	AV
V	15600.051	61.98	10.12	38.80	44.10	66.80	74.00	-7.20	PK
V	15600.051	43.99	10.12	38.80	42.70	50.21	54.00	-3.79	AV
H	4592.015	64.03	6.48	36.37	44.05	62.83	74.00	-11.17	PK
H	4592.015	43.60	6.48	36.37	44.05	42.40	54.00	-11.60	AV
H	10400.123	52.71	8.47	38.64	44.50	55.32	68.20	-12.88	PK
H	10400.123	41.56	8.47	38.64	44.50	44.17	54.00	-9.83	AV
H	15600.135	54.97	10.12	38.38	44.10	59.37	74.00	-14.63	PK
H	15600.135	40.74	10.12	38.38	44.10	45.14	54.00	-8.86	AV
High Channel (5240 MHz)-Above 1G									
V	4739.187	60.82	7.10	37.24	43.50	61.66	74.00	-12.34	PK
V	4739.187	43.72	7.10	37.24	43.50	44.56	54.00	-9.44	AV
V	10480.034	60.91	8.46	37.68	44.50	62.55	68.20	-5.65	PK
V	10480.034	43.46	8.46	37.68	44.50	45.10	54.00	-8.90	AV
V	15720.026	61.05	10.12	38.80	44.10	65.87	74.00	-8.13	PK
V	15720.026	43.92	10.12	38.80	42.70	50.14	54.00	-3.86	AV
H	4739.159	60.43	7.10	37.24	43.50	61.27	74.00	-12.73	PK
H	4739.159	43.39	7.10	37.24	43.50	44.23	54.00	-9.77	AV
H	10480.181	52.28	8.46	38.57	44.50	54.81	68.20	-13.39	PK
H	10480.181	43.76	8.46	38.57	44.50	46.29	54.00	-7.71	AV
H	15720.110	51.76	10.12	38.38	44.10	56.16	74.00	-17.84	PK
H	15720.110	42.17	10.12	38.38	44.10	46.57	54.00	-7.43	AV

Note: PK value is lower than the Average value limit, So average didn't record.
The 26.5-40G amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value has no need to be reported.
Emission level (dBuV/m) = 20 log Emission level (uV/m).
Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.
The worst case is Antenna A.

Test Mode :	TX(5.2G) - 802.11n-HT20

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Cable loss (dB)	Antenna Factor dB/m	Preamp Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
Low Channel (5180 MHz)-Above 1G									
V	4434.063	60.18	5.94	35.40	44.00	57.52	68.20	-10.68	PK
V	4434.063	43.98	5.94	35.40	44.00	41.32	54.00	-12.68	AV
V	10360.199	63.23	8.46	39.75	44.50	66.94	68.20	-1.26	PK
V	10360.199	43.06	8.46	39.75	44.50	46.77	54.00	-7.23	AV
V	15540.174	63.28	10.12	38.80	44.10	68.10	74.00	-5.90	PK
V	15540.174	43.75	10.12	38.80	42.70	49.97	54.00	-4.03	AV
H	4434.050	61.97	5.94	35.18	44.00	59.09	68.20	-9.11	PK
H	4434.050	43.92	5.94	35.18	44.00	41.04	54.00	-12.96	AV
H	10360.078	53.18	8.46	38.71	44.50	55.85	68.20	-12.35	PK
H	10360.078	41.61	8.46	38.71	44.50	44.28	54.00	-9.72	AV
H	15540.076	51.46	10.12	38.38	44.10	55.86	74.00	-18.14	PK
H	15540.076	43.01	10.12	38.38	44.10	47.41	54.00	-6.59	AV
middle Channel (5200 MHz)-Above 1G									
V	4592.015	61.75	6.48	36.35	44.05	60.53	74.00	-13.47	PK
V	4592.015	43.90	6.48	36.35	44.05	42.68	54.00	-11.32	AV
V	10400.043	62.25	8.47	37.88	44.51	64.09	68.20	-4.11	PK
V	10400.043	43.97	8.47	37.88	44.51	45.81	54.00	-8.19	AV
V	15600.194	63.24	10.12	38.80	44.10	68.06	74.00	-5.94	PK
V	15600.194	43.56	10.12	38.80	42.70	49.78	54.00	-4.22	AV
H	4592.190	61.93	6.48	36.37	44.05	60.73	74.00	-13.27	PK
H	4592.190	43.85	6.48	36.37	44.05	42.65	54.00	-11.35	AV
H	10400.010	54.39	8.47	38.64	44.50	57.00	68.20	-11.20	PK
H	10400.010	40.65	8.47	38.64	44.50	43.26	54.00	-10.74	AV
H	15600.004	50.72	10.12	38.38	44.10	55.12	74.00	-18.88	PK
H	15600.004	44.89	10.12	38.38	44.10	49.29	54.00	-4.71	AV
High Channel (5240 MHz)-Above 1G									
V	4739.040	61.90	7.10	37.24	43.50	62.74	74.00	-11.26	PK
V	4739.040	43.31	7.10	37.24	43.50	44.15	54.00	-9.85	AV
V	10480.058	60.96	8.46	37.68	44.50	62.60	68.20	-5.60	PK
V	10480.058	43.26	8.46	37.68	44.50	44.90	54.00	-9.10	AV
V	15720.073	62.05	10.12	38.80	44.10	66.87	74.00	-7.13	PK
V	15720.073	43.61	10.12	38.80	42.70	49.83	54.00	-4.17	AV
H	4739.045	64.33	7.10	37.24	43.50	65.17	74.00	-8.83	PK
H	4739.045	43.86	7.10	37.24	43.50	44.70	54.00	-9.30	AV
H	10480.151	50.71	8.46	38.57	44.50	53.24	68.20	-14.96	PK
H	10480.151	40.98	8.46	38.57	44.50	43.51	54.00	-10.49	AV
H	15720.053	50.80	10.12	38.38	44.10	55.20	74.00	-18.80	PK
H	15720.053	44.81	10.12	38.38	44.10	49.21	54.00	-4.79	AV

Note: PK value is lower than the Average value limit, So average didn't record.
The 26.5-40G amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value has no need to be reported.
Emission level (dBuV/m) = 20 log Emission level (uV/m).
Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.
Test Mode is MIMO Mode.

Test Mode :	TX(5.2G) - 802.11n-HT40

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Cable loss (dB)	Antenna Factor dB/m	Preamp Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
Low Channel (5190 MHz)-Above 1G									
V	4434.048	61.99	5.94	35.40	44.00	59.33	74.00	-14.67	PK
V	4434.048	43.19	5.94	35.40	44.00	40.53	54.00	-13.47	AV
V	10380.030	61.34	8.46	39.75	44.50	65.05	68.20	-3.15	PK
V	10380.030	43.31	8.46	39.75	44.50	47.02	54.00	-6.98	AV
V	15570.128	63.27	10.12	38.80	44.10	68.09	74.00	-5.91	PK
V	15570.128	43.73	10.12	38.80	42.70	49.95	54.00	-4.05	AV
H	4434.110	62.57	5.94	35.18	44.00	59.69	74.00	-14.31	PK
H	4434.110	43.86	5.94	35.18	44.00	40.98	54.00	-13.02	AV
H	10380.179	51.45	8.46	38.71	44.50	54.12	68.20	-14.08	PK
H	10380.179	41.31	8.46	38.71	44.50	43.98	54.00	-10.02	AV
H	15570.165	54.68	10.12	38.38	44.10	59.08	74.00	-14.92	PK
H	15570.165	42.32	10.12	38.38	44.10	46.72	54.00	-7.28	AV
middle Channel (5230 MHz)-Above 1G									
V	4739.171	63.65	6.48	36.35	44.05	62.43	74.00	-11.57	PK
V	4739.171	43.75	6.48	36.35	44.05	42.53	54.00	-11.47	AV
V	10460.184	64.46	8.47	37.88	44.51	66.30	68.20	-1.90	PK
V	10460.184	43.30	8.47	37.88	44.51	45.14	54.00	-8.86	AV
V	15690.130	62.67	10.12	38.80	44.10	67.49	74.00	-6.51	PK
V	15690.130	43.61	10.12	38.80	42.70	49.83	54.00	-4.17	AV
H	4739.105	62.90	6.48	36.37	44.05	61.70	74.00	-12.30	PK
H	4739.105	43.23	6.48	36.37	44.05	42.03	54.00	-11.97	AV
H	10460.109	50.77	8.47	38.64	44.50	53.38	68.20	-14.82	PK
H	10460.109	40.44	8.47	38.64	44.50	43.05	54.00	-10.95	AV
H	15690.157	52.46	10.12	38.38	44.10	56.86	74.00	-17.14	PK
H	15690.157	43.58	10.12	38.38	44.10	47.98	54.00	-6.02	AV

Note: PK value is lower than the Average value limit, So average didn't record.
The 26.5-40G amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value has no need to be reported.
Emission level (dBuV/m) = 20 log Emission level (uV/m).
Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.
Test Mode is MIMO Mode.

Test Mode :	TX(5.2G) - 802.11ac-HT20

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Cable loss (dB)	Antenna Factor dB/m	Preamp Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
Low Channel (5180 MHz)-Above 1G									
V	4434.058	61.74	5.94	35.40	44.00	59.08	68.20	-9.12	PK
V	4434.058	43.75	5.94	35.40	44.00	41.09	54.00	-12.91	AV
V	10360.096	60.73	8.46	39.75	44.50	64.44	74.00	-9.56	PK
V	10360.096	43.99	8.46	39.75	44.50	47.70	54.00	-6.30	AV
V	15540.117	64.37	10.12	38.80	44.10	69.19	74.00	-4.81	PK
V	15540.117	43.52	10.12	38.80	42.70	49.74	54.00	-4.26	AV
H	4434.108	62.59	5.94	35.18	44.00	59.71	68.20	-8.49	PK
H	4434.108	43.16	5.94	35.18	44.00	40.28	54.00	-13.72	AV
H	10360.081	50.04	8.46	38.71	44.50	52.71	74.00	-21.29	PK
H	10360.081	40.10	8.46	38.71	44.50	42.77	54.00	-11.23	AV
H	15540.166	54.75	10.12	38.38	44.10	59.15	74.00	-14.85	PK
H	15540.166	40.62	10.12	38.38	44.10	45.02	54.00	-8.98	AV
middle Channel (5200 MHz)-Above 1G									
V	4592.013	61.22	6.48	36.35	44.05	60.00	74.00	-14.00	PK
V	4592.013	43.27	6.48	36.35	44.05	42.05	54.00	-11.95	AV
V	10400.019	64.59	8.47	37.88	44.51	66.43	68.20	-1.77	PK
V	10400.019	43.03	8.47	37.88	44.51	44.87	54.00	-9.13	AV
V	15600.074	60.39	10.12	38.80	44.10	65.21	74.00	-8.79	PK
V	15600.074	43.62	10.12	38.80	42.70	49.84	54.00	-4.16	AV
H	4592.076	64.53	6.48	36.37	44.05	63.33	74.00	-10.67	PK
H	4592.076	43.22	6.48	36.37	44.05	42.02	54.00	-11.98	AV
H	10400.016	52.23	8.47	38.64	44.50	54.84	68.20	-13.36	PK
H	10400.016	43.19	8.47	38.64	44.50	45.80	54.00	-8.20	AV
H	15600.041	51.49	10.12	38.38	44.10	55.89	74.00	-18.11	PK
H	15600.041	41.24	10.12	38.38	44.10	45.64	54.00	-8.36	AV
High Channel (5240 MHz)-Above 1G									
V	4739.119	61.06	7.10	37.24	43.50	61.90	74.00	-12.10	PK
V	4739.119	43.54	7.10	37.24	43.50	44.38	54.00	-9.62	AV
V	10480.042	62.55	8.46	37.68	44.50	64.19	68.20	-4.01	PK
V	10480.042	43.33	8.46	37.68	44.50	44.97	54.00	-9.03	AV
V	15720.063	60.15	10.12	38.80	44.10	64.97	74.00	-9.03	PK
V	15720.063	43.11	10.12	38.80	42.70	49.33	54.00	-4.67	AV
H	4739.125	62.78	7.10	37.24	43.50	63.62	74.00	-10.38	PK
H	4739.125	43.06	7.10	37.24	43.50	43.90	54.00	-10.10	AV
H	10480.006	51.72	8.46	38.57	44.50	54.25	68.20	-13.95	PK
H	10480.006	41.79	8.46	38.57	44.50	44.32	54.00	-9.68	AV
H	15720.166	54.11	10.12	38.38	44.10	58.51	74.00	-15.49	PK
H	15720.166	40.78	10.12	38.38	44.10	45.18	54.00	-8.82	AV

Note: PK value is lower than the Average value limit, So average didn't record.
The 26.5-40G amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value has no need to be reported.
Emission level (dBuV/m) = 20 log Emission level (uV/m).
Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.
Test Mode is MIMO Mode.

Test Mode :	TX(5.2G) - 802.11ac-HT40

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Cable loss (dB)	Antenna Factor dB/m	Preamp Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
Low Channel (5190 MHz)-Above 1G									
V	4434.105	61.78	5.94	35.40	44.00	59.12	74.00	-14.88	PK
V	4434.105	43.41	5.94	35.40	44.00	40.75	54.00	-13.25	AV
V	10380.147	62.65	8.46	39.75	44.50	66.36	68.20	-1.84	PK
V	10380.147	43.35	8.46	39.75	44.50	47.06	54.00	-6.94	AV
V	15570.115	60.40	10.12	38.80	44.10	65.22	74.00	-8.78	PK
V	15570.115	43.28	10.12	38.80	42.70	49.50	54.00	-4.50	AV
H	4434.121	62.73	5.94	35.18	44.00	59.85	74.00	-14.15	PK
H	4434.121	43.97	5.94	35.18	44.00	41.09	54.00	-12.91	AV
H	10380.015	52.42	8.46	38.71	44.50	55.09	68.20	-13.11	PK
H	10380.015	40.51	8.46	38.71	44.50	43.18	54.00	-10.82	AV
H	15570.076	50.58	10.12	38.38	44.10	54.98	74.00	-19.02	PK
H	15570.076	43.33	10.12	38.38	44.10	47.73	54.00	-6.27	AV
middle Channel (5230 MHz)-Above 1G									
V	4739.143	62.25	6.48	36.35	44.05	61.03	74.00	-12.97	PK
V	4739.143	43.04	6.48	36.35	44.05	41.82	54.00	-12.18	AV
V	10460.132	60.84	8.47	37.88	44.51	62.68	68.20	-5.52	PK
V	10460.132	43.46	8.47	37.88	44.51	45.30	54.00	-8.70	AV
V	15690.193	61.89	10.12	38.80	44.10	66.71	74.00	-7.29	PK
V	15690.193	43.16	10.12	38.80	42.70	49.38	54.00	-4.62	AV
H	4739.154	63.02	6.48	36.37	44.05	61.82	74.00	-12.18	PK
H	4739.154	43.65	6.48	36.37	44.05	42.45	54.00	-11.55	AV
H	10460.120	54.23	8.47	38.64	44.50	56.84	68.20	-11.36	PK
H	10460.120	43.64	8.47	38.64	44.50	46.25	54.00	-7.75	AV
H	15690.085	51.98	10.12	38.38	44.10	56.38	74.00	-17.62	PK
H	15690.085	44.94	10.12	38.38	44.10	49.34	54.00	-4.66	AV

Note: PK value is lower than the Average value limit, So average didn't record.
The 26.5-40G amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value has no need to be reported.
Emission level (dBuV/m) = 20 log Emission level (uV/m).
Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.
Test Mode is MIMO Mode.

Test Mode :	TX(5.1G) - 802.11 AC80

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Cable loss (dB)	Antenna Factor dB/m	Preamp Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
(5210 MHz)-Above 1G									
V	4434.062	64.37	5.94	35.40	44.00	61.71	74.00	-12.29	PK
V	4434.062	43.28	5.94	35.40	44.00	40.62	54.00	-13.38	AV
V	10420.004	61.08	8.46	39.75	44.50	64.79	68.20	-3.41	PK
V	10420.004	43.89	8.46	39.75	44.50	47.60	54.00	-6.40	AV
V	15630.049	61.32	10.12	38.80	44.10	66.14	74.00	-7.86	PK
V	15630.049	43.33	10.12	38.80	42.70	49.55	54.00	-4.45	AV
H	4434.043	61.25	5.94	35.18	44.00	58.37	74.00	-15.63	PK
H	4434.043	43.33	5.94	35.18	44.00	40.45	54.00	-13.55	AV
H	10420.187	51.82	8.46	38.71	44.50	54.49	68.20	-13.71	PK
H	10420.187	41.71	8.46	38.71	44.50	44.38	54.00	-9.62	AV
H	15630.041	52.66	10.12	38.38	44.10	57.06	74.00	-16.94	PK
H	15630.041	40.48	10.12	38.38	44.10	44.88	54.00	-9.12	AV

Note: PK value is lower than the Average value limit, So average didn't record.
The 26.5-40G amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value has no need to be reported.
Emission level (dBuV/m) = 20 log Emission level (uV/m).
Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.
Test Mode is MIMO Mode.

Test Mode :	TX (5.8G) -- 802.11a

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Cable loss (dB)	Antenna Factor dB/m	Preamp Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
Low Channel (5745 MHz)-Above 1G									
V	4679.107	62.47	5.94	35.40	44.00	59.81	74.00	-14.19	PK
V	4679.107	43.85	5.94	35.40	44.00	41.19	54.00	-12.81	AV
V	11490.098	61.82	8.46	39.75	44.50	65.53	68.20	-2.67	PK
V	11490.098	43.87	8.46	39.75	44.50	47.58	54.00	-6.42	AV
V	17235.018	64.34	10.12	38.80	44.10	69.16	74.00	-4.84	PK
V	17235.018	43.76	10.12	38.80	42.70	49.98	54.00	-4.02	AV
H	4679.039	63.83	5.94	35.18	44.00	60.95	74.00	-13.05	PK
H	4679.039	43.71	5.94	35.18	44.00	40.83	54.00	-13.17	AV
H	11490.162	54.97	8.46	38.71	44.50	57.64	68.20	-10.56	PK
H	11490.162	42.62	8.46	38.71	44.50	45.29	54.00	-8.71	AV
H	17235.174	51.86	10.12	38.38	44.10	56.26	74.00	-17.74	PK
H	17235.174	43.23	10.12	38.38	44.10	47.63	54.00	-6.37	AV
middle Channel (5785 MHz)-Above 1G									
V	4592.188	60.95	6.48	36.35	44.05	59.73	74.00	-14.27	PK
V	4592.188	43.63	6.48	36.35	44.05	42.41	54.00	-11.59	AV
V	11570.130	63.38	8.47	37.88	44.51	65.22	68.20	-2.98	PK
V	11570.130	43.25	8.47	37.88	44.51	45.09	54.00	-8.91	AV
V	17355.001	60.27	10.12	38.80	44.10	65.09	74.00	-8.91	PK
V	17355.001	43.08	10.12	38.80	42.70	49.30	54.00	-4.70	AV
H	4592.194	64.63	6.48	36.37	44.05	63.43	74.00	-10.57	PK
H	4592.194	43.97	6.48	36.37	44.05	42.77	54.00	-11.23	AV
H	11570.157	50.26	8.47	38.64	44.50	52.87	68.20	-15.33	PK
H	11570.157	44.27	8.47	38.64	44.50	46.88	54.00	-7.12	AV
H	17355.003	51.91	10.12	38.38	44.10	56.31	74.00	-17.69	PK
H	17355.003	40.58	10.12	38.38	44.10	44.98	54.00	-9.02	AV
High Channel (5825 MHz)-Above 1G									
V	6039.058	60.90	7.10	37.24	43.50	61.74	68.20	-6.46	PK
V	6039.058	43.47	7.10	37.24	43.50	44.31	54.00	-9.69	AV
V	11650.096	60.24	8.46	37.68	44.50	61.88	74.00	-12.12	PK
V	11650.096	43.35	8.46	37.68	44.50	44.99	54.00	-9.01	AV
V	17475.043	64.72	10.12	38.80	44.10	69.54	68.20	1.34	PK
V	17475.043	43.65	10.12	38.80	42.70	49.87	54.00	-4.13	AV
H	6039.087	64.50	7.10	37.24	43.50	65.34	68.20	-2.86	PK
H	6039.087	43.19	7.10	37.24	43.50	44.03	54.00	-9.97	AV
H	11650.149	50.47	8.46	38.57	44.50	53.00	74.00	-21.00	PK
H	11650.149	44.53	8.46	38.57	44.50	47.06	54.00	-6.94	AV
H	17475.117	50.60	10.12	38.38	44.10	55.00	68.20	-13.20	PK
H	17475.117	43.05	10.12	38.38	44.10	47.45	54.00	-6.55	AV

Note: PK value is lower than the Average value limit, So average didn't record.
The 26.5-40G amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value has no need to be reported.
Emission level (dBuV/m) = 20 log Emission level (uV/m).
Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.
The Worst mode is Antenna A.

Test Mode :	TX (5.8G) --802.11n-HT20

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Cable loss (dB)	Antenna Factor dB/m	Preamp Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
Low Channel (5745 MHz)-Above 1G									
V	4679.124	63.24	5.94	35.40	44.00	60.58	74.00	-13.42	PK
V	4679.124	43.72	5.94	35.40	44.00	41.06	54.00	-12.94	AV
V	11490.099	60.04	8.46	39.75	44.50	63.75	68.20	-4.45	PK
V	11490.099	43.88	8.46	39.75	44.50	47.59	54.00	-6.41	AV
V	17235.193	61.30	10.12	38.80	44.10	66.12	74.00	-7.88	PK
V	17235.193	43.36	10.12	38.80	42.70	49.58	54.00	-4.42	AV
H	4679.025	61.77	5.94	35.18	44.00	58.89	74.00	-15.11	PK
H	4679.025	43.24	5.94	35.18	44.00	40.36	54.00	-13.64	AV
H	11490.116	54.09	8.46	38.71	44.50	56.76	68.20	-11.44	PK
H	11490.116	43.88	8.46	38.71	44.50	46.55	54.00	-7.45	AV
H	17235.135	53.56	10.12	38.38	44.10	57.96	74.00	-16.04	PK
H	17235.135	43.02	10.12	38.38	44.10	47.42	54.00	-6.58	AV
middle Channel (5785 MHz)-Above 1G									
V	4592.192	61.22	6.48	36.35	44.05	60.00	74.00	-14.00	PK
V	4592.192	43.98	6.48	36.35	44.05	42.76	54.00	-11.24	AV
V	11570.007	64.60	8.47	37.88	44.51	66.44	68.20	-1.76	PK
V	11570.007	43.07	8.47	37.88	44.51	44.91	54.00	-9.09	AV
V	17355.157	64.19	10.12	38.80	44.10	69.01	74.00	-4.99	PK
V	17355.157	43.64	10.12	38.80	42.70	49.86	54.00	-4.14	AV
H	4592.138	60.25	6.48	36.37	44.05	59.05	74.00	-14.95	PK
H	4592.138	43.56	6.48	36.37	44.05	42.36	54.00	-11.64	AV
H	11570.167	50.32	8.47	38.64	44.50	52.93	68.20	-15.27	PK
H	11570.167	43.65	8.47	38.64	44.50	46.26	54.00	-7.74	AV
H	17355.069	50.55	10.12	38.38	44.10	54.95	74.00	-19.05	PK
H	17355.069	42.03	10.12	38.38	44.10	46.43	54.00	-7.57	AV
High Channel (5825 MHz)-Above 1G									
V	6039.173	63.87	7.10	37.24	43.50	64.71	68.20	-3.49	PK
V	6039.173	43.95	7.10	37.24	43.50	44.79	54.00	-9.21	AV
V	11650.090	63.65	8.46	37.68	44.50	65.29	74.00	-8.71	PK
V	11650.090	43.06	8.46	37.68	44.50	44.70	54.00	-9.30	AV
V	17475.160	61.03	10.12	38.80	44.10	65.85	68.20	-2.35	PK
V	17475.160	43.90	10.12	38.80	42.70	50.12	54.00	-3.88	AV
H	6039.099	64.87	7.10	37.24	43.50	65.71	68.20	-2.49	PK
H	6039.099	43.26	7.10	37.24	43.50	44.10	54.00	-9.90	AV
H	11650.115	51.51	8.46	38.57	44.50	54.04	74.00	-19.96	PK
H	11650.115	41.43	8.46	38.57	44.50	43.96	54.00	-10.04	AV
H	17475.033	54.30	10.12	38.38	44.10	58.70	68.20	-9.50	PK
H	17475.033	40.97	10.12	38.38	44.10	45.37	54.00	-8.63	AV

Note: PK value is lower than the Average value limit, So average didn't record.
The 26.5-40G amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value has no need to be reported.
Emission level (dBuV/m) = 20 log Emission level (uV/m).
Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.
Test Mode is MIMO Mode.

Test Mode :	TX (5.8G) -- 802.11n-HT40

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Cable loss (dB)	Antenna Factor dB/m	Preamp Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
Low Channel (5755 MHz)-Above 1G									
V	4679.077	61.85	5.94	35.40	44.00	59.19	74.00	-14.81	PK
V	4679.077	43.23	5.94	35.40	44.00	40.57	54.00	-13.43	AV
V	11510.171	60.56	8.46	39.75	44.50	64.27	68.20	-3.93	PK
V	11510.171	43.22	8.46	39.75	44.50	46.93	54.00	-7.07	AV
V	17265.020	61.54	10.12	38.80	44.10	66.36	74.00	-7.64	PK
V	17265.020	43.42	10.12	38.80	42.70	49.64	54.00	-4.36	AV
H	4679.052	60.43	5.94	35.18	44.00	57.55	74.00	-16.45	PK
H	4679.052	43.27	5.94	35.18	44.00	40.39	54.00	-13.61	AV
H	11510.198	54.76	8.46	38.71	44.50	57.43	68.20	-10.77	PK
H	11510.198	42.67	8.46	38.71	44.50	45.34	54.00	-8.66	AV
H	17265.163	53.17	10.12	38.38	44.10	57.57	74.00	-16.43	PK
H	17265.163	41.50	10.12	38.38	44.10	45.90	54.00	-8.10	AV
middle Channel (5795 MHz)-Above 1G									
V	6039.041	60.90	6.48	36.35	44.05	59.68	68.20	-8.52	PK
V	6039.041	43.37	6.48	36.35	44.05	42.15	54.00	-11.85	AV
V	11590.158	60.92	8.47	37.88	44.51	62.76	74.00	-11.24	PK
V	11590.158	43.93	8.47	37.88	44.51	45.77	54.00	-8.23	AV
V	17385.056	60.22	10.12	38.80	44.10	65.04	68.20	-3.16	PK
V	17385.056	43.60	10.12	38.80	42.70	49.82	54.00	-4.18	AV
H	6039.157	62.42	6.48	36.37	44.05	61.22	68.20	-6.98	PK
H	6039.157	43.79	6.48	36.37	44.05	42.59	54.00	-11.41	AV
H	11590.008	50.88	8.47	38.64	44.50	53.49	74.00	-20.51	PK
H	11590.008	40.60	8.47	38.64	44.50	43.21	54.00	-10.79	AV
H	17385.038	53.84	10.12	38.38	44.10	58.24	68.20	-9.96	PK
H	17385.038	42.43	10.12	38.38	44.10	46.83	54.00	-7.17	AV

Note: PK value is lower than the Average value limit, So average didn't record.
The 26.5-40G amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value has no need to be reported.
Emission level (dBuV/m) = 20 log Emission level (uV/m).
Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.
The Worst mode is Antenna A.

Test Mode :	TX (5.8G) --802.11ac-HT20

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Cable loss (dB)	Antenna Factor dB/m	Preamp Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
Low Channel (5745 MHz)-Above 1G									
V	4679.061	62.77	5.94	35.40	44.00	60.11	74.00	-13.89	PK
V	4679.061	43.17	5.94	35.40	44.00	40.51	54.00	-13.49	AV
V	11490.091	60.71	8.46	39.75	44.50	64.42	68.20	-3.78	PK
V	11490.091	43.89	8.46	39.75	44.50	47.60	54.00	-6.40	AV
V	17235.024	64.07	10.12	38.80	44.10	68.89	74.00	-5.11	PK
V	17235.024	43.85	10.12	38.80	42.70	50.07	54.00	-3.93	AV
H	4679.162	63.64	5.94	35.18	44.00	60.76	74.00	-13.24	PK
H	4679.162	43.94	5.94	35.18	44.00	41.06	54.00	-12.94	AV
H	11490.184	52.23	8.46	38.71	44.50	54.90	68.20	-13.30	PK
H	11490.184	41.57	8.46	38.71	44.50	44.24	54.00	-9.76	AV
H	17235.032	54.58	10.12	38.38	44.10	58.98	74.00	-15.02	PK
H	17235.032	43.82	10.12	38.38	44.10	48.22	54.00	-5.78	AV
middle Channel (5785 MHz)-Above 1G									
V	4592.167	60.18	6.48	36.35	44.05	58.96	74.00	-15.04	PK
V	4592.167	43.08	6.48	36.35	44.05	41.86	54.00	-12.14	AV
V	11570.037	60.85	8.47	37.88	44.51	62.69	68.20	-5.51	PK
V	11570.037	43.86	8.47	37.88	44.51	45.70	54.00	-8.30	AV
V	17355.170	64.46	10.12	38.80	44.10	69.28	74.00	-4.72	PK
V	17355.170	43.68	10.12	38.80	42.70	49.90	54.00	-4.10	AV
H	4592.133	63.67	6.48	36.37	44.05	62.47	74.00	-11.53	PK
H	4592.133	43.15	6.48	36.37	44.05	41.95	54.00	-12.05	AV
H	11570.086	50.83	8.47	38.64	44.50	53.44	68.20	-14.76	PK
H	11570.086	44.87	8.47	38.64	44.50	47.48	54.00	-6.52	AV
H	17355.173	52.03	10.12	38.38	44.10	56.43	74.00	-17.57	PK
H	17355.173	44.26	10.12	38.38	44.10	48.66	54.00	-5.34	AV
High Channel (5825 MHz)-Above 1G									
V	6039.084	64.41	7.10	37.24	43.50	65.25	68.20	-2.95	PK
V	6039.084	43.93	7.10	37.24	43.50	44.77	54.00	-9.23	AV
V	11650.182	60.15	8.46	37.68	44.50	61.79	74.00	-12.21	PK
V	11650.182	44.00	8.46	37.68	44.50	45.64	54.00	-8.36	AV
V	17475.118	61.83	10.12	38.80	44.10	66.65	68.20	-1.55	PK
V	17475.118	43.56	10.12	38.80	42.70	49.78	54.00	-4.22	AV
H	6039.115	62.38	7.10	37.24	43.50	63.22	68.20	-4.98	PK
H	6039.115	43.79	7.10	37.24	43.50	44.63	54.00	-9.37	AV
H	11650.031	51.78	8.46	38.57	44.50	54.31	74.00	-19.69	PK
H	11650.031	40.35	8.46	38.57	44.50	42.88	54.00	-11.12	AV
H	17475.029	52.74	10.12	38.38	44.10	57.14	68.20	-11.06	PK
H	17475.029	41.10	10.12	38.38	44.10	45.50	54.00	-8.50	AV

Note: PK value is lower than the Average value limit, So average didn't record.
The 26.5-40G amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value has no need to be reported.
Emission level (dBuV/m) = 20 log Emission level (uV/m).
Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.
Test Mode is MIMO Mode.

Test Mode :	TX (5.8G) -- 802.11ac-HT40

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Cable loss (dB)	Antenna Factor dB/m	Preamp Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
Low Channel (5755 MHz)-Above 1G									
V	4679.160	64.80	5.94	35.40	44.00	62.14	74.00	-11.86	PK
V	4679.160	43.11	5.94	35.40	44.00	40.45	54.00	-13.55	AV
V	11510.023	60.25	8.46	39.75	44.50	63.96	68.20	-4.24	PK
V	11510.023	43.62	8.46	39.75	44.50	47.33	54.00	-6.67	AV
V	17265.082	64.79	10.12	38.80	44.10	69.61	74.00	-4.39	PK
V	17265.082	43.16	10.12	38.80	42.70	49.38	54.00	-4.62	AV
H	4679.090	62.09	5.94	35.18	44.00	59.21	74.00	-14.79	PK
H	4679.090	43.84	5.94	35.18	44.00	40.96	54.00	-13.04	AV
H	11510.094	51.97	8.46	38.71	44.50	54.64	68.20	-13.56	PK
H	11510.094	43.41	8.46	38.71	44.50	46.08	54.00	-7.92	AV
H	17265.120	52.30	10.12	38.38	44.10	56.70	74.00	-17.30	PK
H	17265.120	40.57	10.12	38.38	44.10	44.97	54.00	-9.03	AV
middle Channel (5795 MHz)-Above 1G									
V	6039.049	63.22	6.48	36.35	44.05	62.00	68.20	-6.20	PK
V	6039.049	43.69	6.48	36.35	44.05	42.47	54.00	-11.53	AV
V	11590.041	60.15	8.47	37.88	44.51	61.99	74.00	-12.01	PK
V	11590.041	43.53	8.47	37.88	44.51	45.37	54.00	-8.63	AV
V	17385.175	60.57	10.12	38.80	44.10	65.39	68.20	-2.81	PK
V	17385.175	43.41	10.12	38.80	42.70	49.63	54.00	-4.37	AV
H	6039.141	62.77	6.48	36.37	44.05	61.57	68.20	-6.63	PK
H	6039.141	43.81	6.48	36.37	44.05	42.61	54.00	-11.39	AV
H	11590.045	50.15	8.47	38.64	44.50	52.76	74.00	-21.24	PK
H	11590.045	41.01	8.47	38.64	44.50	43.62	54.00	-10.38	AV
H	17385.070	50.98	10.12	38.38	44.10	55.38	68.20	-12.82	PK
H	17385.070	41.12	10.12	38.38	44.10	45.52	54.00	-8.48	AV

Note: PK value is lower than the Average value limit, So average didn't record.
The 26.5-40G amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value has no need to be reported.
Emission level (dBuV/m) = 20 log Emission level (uV/m).
Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.
The Worst mode is Antenna A.

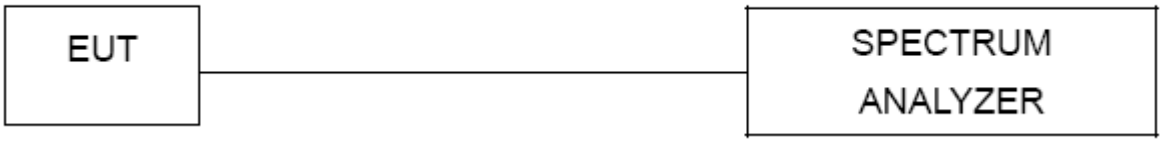
Test Mode :	TX(5.8G) - 802.11 AC80

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Cable loss (dB)	Antenna Factor dB/m	Preamp Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
(5775 MHz)-Above 1G									
V	4679.169	61.80	5.94	35.40	44.00	59.14	74.00	-14.86	PK
V	4679.169	43.11	5.94	35.40	44.00	40.45	54.00	-13.55	AV
V	11550.052	60.92	8.46	39.75	44.50	64.63	68.20	-3.57	PK
V	11550.052	43.51	8.46	39.75	44.50	47.22	54.00	-6.78	AV
V	17325.036	61.04	10.12	38.80	44.10	65.86	74.00	-8.14	PK
V	17325.036	43.99	10.12	38.80	42.70	50.21	54.00	-3.79	AV
H	4679.139	62.51	5.94	35.18	44.00	59.63	74.00	-14.37	PK
H	4679.139	43.01	5.94	35.18	44.00	40.13	54.00	-13.87	AV
H	11550.114	51.42	8.46	38.71	44.50	54.09	68.20	-14.11	PK
H	11550.114	44.56	8.46	38.71	44.50	47.23	54.00	-6.77	AV
H	17325.067	51.44	10.12	38.38	44.10	55.84	74.00	-18.16	PK
H	17325.067	41.12	10.12	38.38	44.10	45.52	54.00	-8.48	AV

Note: PK value is lower than the Average value limit, So average didn't record.
The 26.5-40G amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value has no need to be reported.
Emission level (dBuV/m) = 20 log Emission level (uV/m).
Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.
Test Mode is MIMO Mode.

8. POWER SPECTRAL DENSITY TEST

8.1 Block Diagram Of Test Setup



8.2 Limit

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.

For the band 5.725-5.85 GHz

(3)For the band 5.725-5.85 GHz, 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.

8.3 Test procedure

For devices operating in the bands 5.15-5.25 GHz, 5.25-5.35 GHz, and 5.47-5.725 GHz, the above procedures make use of 1 MHz RBW to satisfy directly the 1 MHz reference bandwidth specified in § 15.407(a)(5). For devices operating in the band 5.725-5.85 GHz, the rules specify a measurement bandwidth of 500 kHz. Many spectrum analyzers do not have 500 kHz RBW, thus a narrower RBW may need to be used. The rules permit the use of a RBWs less than 1 MHz, or 500 kHz, “provided that the measured power is integrated over the full reference bandwidth” to show the total power over the specified measurement bandwidth (i.e., 1 MHz, or 500 kHz). If measurements are performed using a reduced resolution bandwidth (< 1 MHz, or < 500 kHz) and integrated over 1 MHz, or 500 KHz bandwidth, the following adjustments to the procedures apply:

a) Set RBW ≥ 1/T, where T is defined in section II.B.I.a).

b) Set VBW ≥ 3 RBW.

c) If measurement bandwidth of Maximum PSD is specified in 500 kHz, add 10log(500kHz/RBW) to the measured result, whereas RBW (< 500 KHz) is the reduced resolution bandwidth of the spectrum analyzer set during measurement.

d) If measurement bandwidth of Maximum PSD is specified in 1 MHz, add 10log(1MHz/RBW) to the measured result, whereas RBW (< 1 MHz) is the reduced resolution bandwidth of spectrum analyzer set during measurement.

e) Care must be taken to ensure that the measurements are performed during a period of continuous transmission or are corrected upward for duty cycle.

Note: As a practical matter, it is recommended to use reduced RBW of 100 KHz for the sections 5.c) and 5.d) above, since RBW=100 KHZ is available on nearly all spectrum analyzers.

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8.4 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.

8.5 Test Result

Temperature :	26 ℃	Relative Humidity :	54%
Pressure :	101kPa	Test Voltage :	AC120V/60Hz
Test Mode :	TX Frequency U-NII-1 (5180-5240MHz)		

Note: A(B) Represent the value of antenna A and B, The worst data is Antenna A, only shown Antenna A Plot.

Mode	Frequency	Measured Power Density (dBm/MHz)			Limit (dBm/MHz)	Result
		ANT A	ANT B	Total		
802.11 a	5180 MHz	5.314	3.711	/	17	PASS
	5200 MHz	4.167	2.741	/	17	PASS
	5240 MHz	1.480	-1.141	/	17	PASS
802.11 n20	5180 MHz	2.883	2.291	5.61	17	PASS
	5200 MHz	2.774	1.711	5.29	17	PASS
	5240 MHz	0.898	-1.969	2.71	17	PASS
802.11 n40	5190 MHz	-0.338	-0.630	2.53	17	PASS
	5230 MHz	-1.515	-2.586	0.99	17	PASS
802.11 ac20	5180 MHz	3.006	2.653	5.84	17	PASS
	5200 MHz	2.501	1.656	5.11	17	PASS
	5240 MHz	0.089	-2.725	1.92	17	PASS
802.11 ac40	5190 MHz	-0.737	-1.152	2.07	17	PASS
	5230 MHz	-2.794	-4.282	-0.46	17	PASS
802.11 AC80	5210 MHz	-3.717	-3.814	-0.75	17	PASS

(802.11a) PSD plot on channel 36

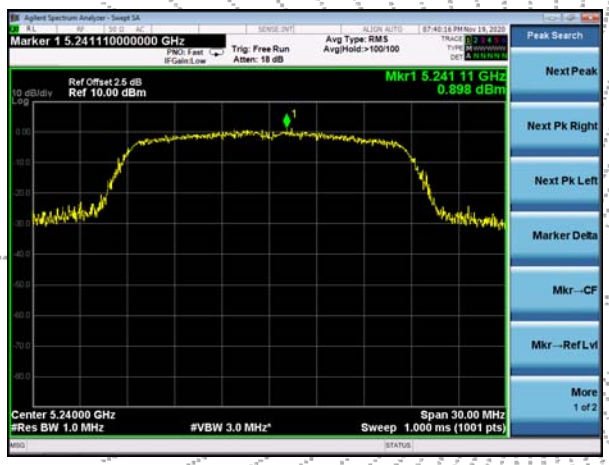
(802.11n20) PSD plot on channel 36

(802.11a) PSD plot on channel 40

(802.11n20) PSD plot on channel 40

(802.11a) PSD plot on channel 48

(802.11n20) PSD plot on channel 48



(802.11n40) PSD plot on channel 38

(802.11ac20) PSD plot on channel 36

(802.11n40) PSD plot on channel 46

(802.11ac20) PSD plot on channel 40

(802.11ac20) PSD plot on channel 48

(802.11ac40) PSD plot on channel 38

(802.11ac80) PSD plot on channel 42

(802.11ac40) PSD plot on channel 46

Temperature :	26 ℃	Relative Humidity :	54%
Pressure :	101kPa	Test Voltage :	AC120V/60Hz
Test Mode :	TX Frequency U-NII-3 (5745-5825MHz)		

Note: A(B) Represent the value of antenna A and B, The worst data is Antenna A, only shown Antenna A Plot.

Mode	Frequency	Measured Power Density (dBm/500KHz)			Limit (dBm/500kHz)	Result
		ANT A	ANT B	Total		
802.11 a	5745 MHz	1.428	1.335	/	30	PASS
	5785 MHz	-0.585	-0.377	/	30	PASS
	5825 MHz	-0.540	0.190	/	30	PASS
802.11 n20	5745 MHz	0.658	0.785	3.73	30	PASS
	5785 MHz	-2.258	-1.392	1.21	30	PASS
	5825 MHz	-1.023	-1.193	1.90	30	PASS
802.11 n40	5755 MHz	-1.935	-2.812	0.66	30	PASS
	5795 MHz	-3.236	-3.089	-0.15	30	PASS
802.11 ac20	5745 MHz	-1.285	-1.223	1.76	30	PASS
	5785 MHz	-3.215	-3.127	-0.16	30	PASS
	5825 MHz	-3.174	-3.332	-0.24	30	PASS
802.11 ac40	5755 MHz	-3.640	-3.272	-0.44	30	PASS
	5795 MHz	-4.320	-4.299	-1.30	30	PASS
802.11 AC80	5775 MHz	-7.897	-7.746	-4.81	30	PASS