

TEST REPORT

Report No.: BCTC2108106705-4E

Applicant: CHINA DRAGON TECHNOLOGY LIMITED

Product Name: WLAN 11a/b/g/n/ac PCIe 2T2R + Bluetooth 5.0 module

Model/Type reference: CDW-61822CE-00

Tested Date: 2021-08-17 to 2021-08-30

Issued Date: 2021-09-01

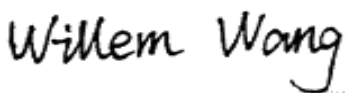
Shenzhen **BCTC** Testing Co., Ltd.



FCC ID: ROW-CDW61822CE

Product Name: WLAN 11a/b/g/n/ac PCIe 2T2R + Bluetooth 5.0 module
Trademark: N/A
Model/Type reference: CDW-61822CE-00
Prepared For: CHINA DRAGON TECHNOLOGY LIMITED
Address: B4 Bldg. Haosan NO.1 Industry Park, Shajing street, B, Shenzhen, China
Manufacturer: CHINA DRAGON TECHNOLOGY LIMITED
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Sample Received Date: 2021-08-17
Sample tested Date: 2021-08-17 to 2021-08-30
Issue Date: 2021-09-01
Report No.: BCTC2108106705-4E
FCC Part15 15.407
ANSI C63.10-2013
Test Standards: KDB 662911 D01 v02r01
KDB 789033 D02 v02r01
Test Results: PASS

Tested by:



Willem Wang/Project Handler

Approved by:



Zero Zhou/Reviewer

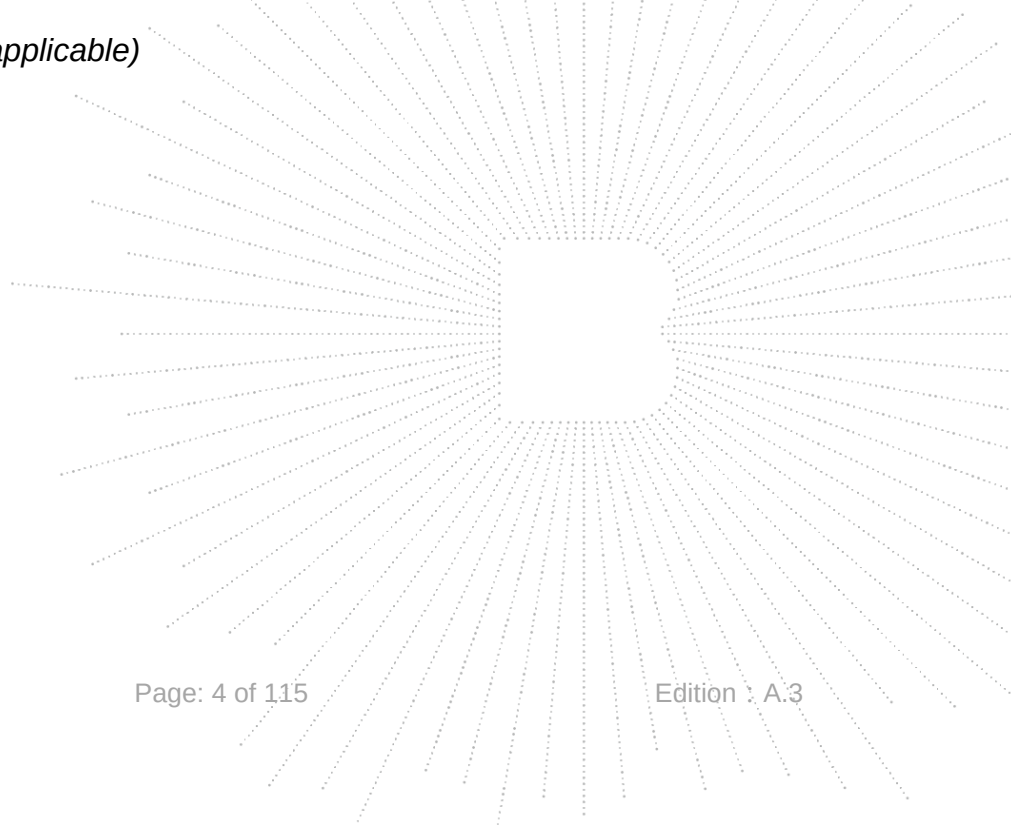
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(Note: N/A means not applicable)



1. VERSION

Report No.	Issue Date	Description	Approved
BCTC2108106705-4E	2021-09-01	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)(8)	PASS
2	Conducted Emission	15.207	PASS
3	26 dB and 99% Emission Bandwidth	15.407 (a)(12) 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	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 chamber Radiated spurious emission(9kHz-30MHz)	U=3.7dB
2	3m chamber Radiated spurious emission(30MHz-1GHz)	U=4.3dB
3	3m chamber Radiated spurious emission(1GHz-18GHz)	U=4.5dB
4	3m chamber Radiated spurious emission(18GHz-40GHz)	U=3.34dB
5	Conducted Emission(150kHz-30MHz)	U=3.20dB
6	Conducted Adjacent channel power	U=1.38dB
7	Conducted output power uncertainty Above 1G	U=1.576dB
8	Conducted output power uncertainty below 1G	U=1.28dB
9	humidity uncertainty	U=5.3%
10	Temperature uncertainty	U=0.59°C

4. PRODUCT INFORMATION AND TEST SETUP

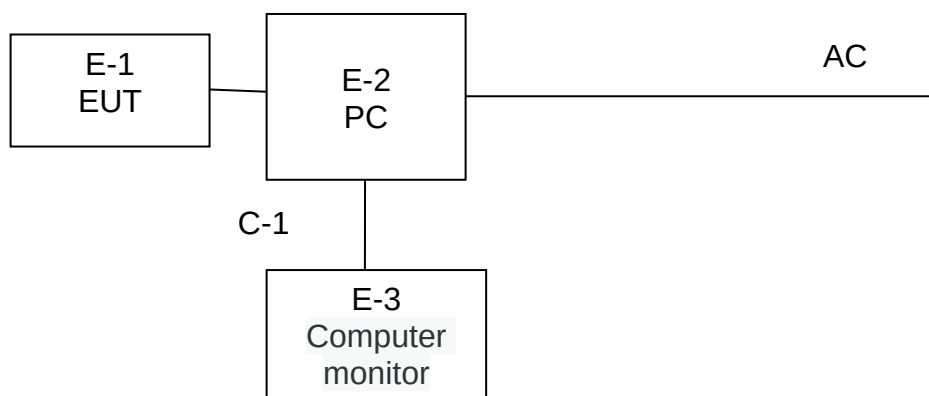
4.1 Product Information

Model/Type reference:	CDW-61822CE-00
Model differences:	N/A
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/ac(HT20); 5190-5230MHz for 802.11n/ac(HT40); 5210MHz for 802.11 ac80; 5745-5825 MHz for 802.11a/n/ac(HT20); 5755-5795 MHz for 802.11a/n/ac(HT40); 5775MHz for 802.11 ac80;
Data Rate	802.11a: 6,9,12,18,24,36,48,54Mbps; 802.11n/ac(HT20/HT40):MCS0-MCS15; 802.11ac(VHT20): NSS1, MCS0-MCS8 802.11ac(VHT40/VHT80):NSS1, MCS0-MCS9
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*2
Antenna Gain:	Antenna A:2dBi Antenna B:2dBi
Type of device:	Indoor devices
Ratings:	DC 3.3V from PC

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& Radiated Spurious Emission:



4.3 Support Equipment

No.	Device Type	Brand	Model	Series No.	Note
E-1	WLAN 11b/g/n PCIe 1T1R + Bluetooth 5.0 module	N/A	CDW-61723D E-00	N/A	EUT
E-2	PC	N/A	BTCT001	N/A	N/A
E-3	Computer monitor	N/A	BTCT004	N/A	N/A

Item	Shielded Type	Ferrite Core	Length	Note
C-1	NO	NO	0.5M	USB cable unshielded

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

Frequency and Channel list for 802.11a/n/ac(20 MHz) band IV (5180-5240MHz):

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

802.11n /ac(40MHz) Carrier Frequency Channel							
Channel	Frequen cy (MHz)	Channel	Frequen cy (MHz)	Channel	Frequen cy (MHz)	Channel	Frequen cy (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	Frequen cy (MHz)	Channel	Frequen cy (MHz)	Channel	Frequen cy (MHz)	Channel	Frequen cy (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 generated from EUT, the test system was pre-scanning tested based on the consideration of following EUT operation mode or test configuration mode which possibly 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 48 802.11a /n/ ac 20 CH149/ CH157/ CH 165
Mode 2	802.11n/ ac40 CH38/ CH 46 802.11n/ ac40 CH 151 / CH 159
Mode 3	802.11 ac80 CH 42/CH 155
Mode 4	Link Mode

Conducted Emission	
Final Test Mode	Description
Mode 5	Link Mode

For Radiated Emission	
Final Test Mode	Description
Mode 1	802.11a / n/ ac 20 CH36/ CH40/ CH 48 802.11a /n/ ac 20 CH149/ CH157/ CH 165
Mode 2	802.11n/ ac40 CH38/ CH 46 802.11n/ ac40 CH 151 / CH 159
Mode 3	802.11 ac80 CH 42/CH 155

Note:

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

4.6 table of parameters of test software setting

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

Test software Version	CMD		
Parameters	DEF	DEF	DEF

4.7 Antenna

EUT has two External antennas with Max gain GANT 1dBi on every antenna, CDD device with two spatial streams, also can operate 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,
 $\text{Array Gain} = 10\log(\text{NANT}/\text{NSS})\text{dB} = 10\log(2/1) = 3.01\text{dB}$,

So the directional gain for PSD is 5.01dBi

2)For power measurements,

The Array gain=0 dB for $\text{NANT} \leq 4$,

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	N/A
B	N/A	N/A	External antenna	2	N/A

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:1-2/F., Building B, Pengzhou Industrial Park, No.158, Fuyuan 1st Road, Tangwei, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, 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

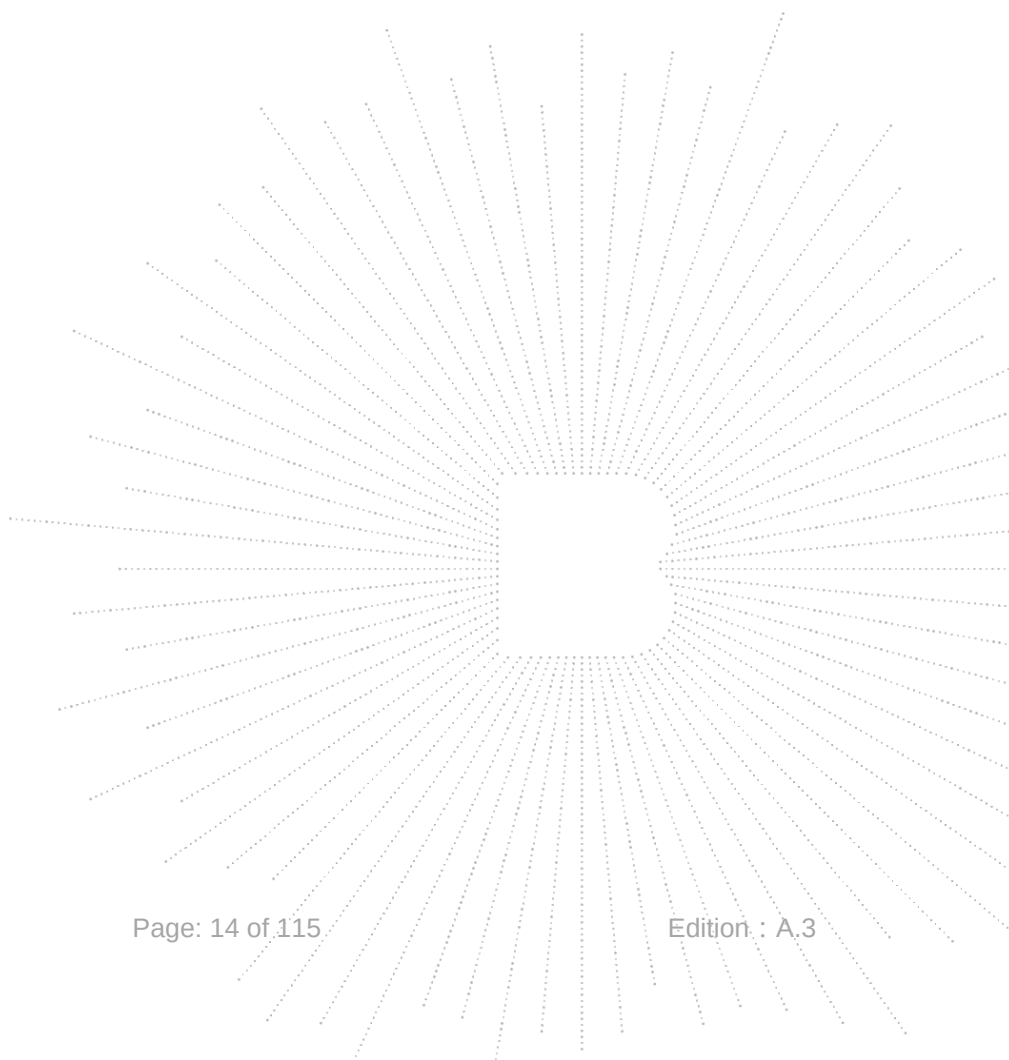
Item	Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
1	Spectrum Analyzer (9kHz-26.5GHz)	Agilent	E4407B	MY45109572	May 28, 2021	May 27, 2022
2	Test Receiver (9kHz-7GHz)	R&S	ESRP	101154	May 28, 2021	May 27, 2022
3	Bilog Antenna (30MHz-3GHz)	SCHWARZB ECK	VULB9163	VULB9163-942	Jun. 01, 2021	May 31, 2022
4	Horn Antenna (1GHz-18GHz)	SCHWARZB ECK	BBHA9120D	1541	Jun. 02, 2021	Jun. 01, 2022
5	Horn Antenna (18GHz-40GHz)	SCHWARZB ECK	BBHA9170	00822	Jun. 15, 2021	Jun. 14, 2022
6	Amplifier (9KHz-6GHz)	SCHWARZB ECK	BBV9744	9744-0037	May 28, 2021	May 27, 2022
7	Amplifier	SKET	LAPA_01G18G-45dB	\	May 28, 2021	May 27, 2022
8	Amplifier (18GHz-40GHz)	MITEQ	TTA1840-35-HG	2034381	May 28, 2021	May 27, 2022
9	Loop Antenna (9KHz-30MHz)	SCHWARZB ECK	FMZB1519B	00014	Jun. 02, 2021	Jun. 01, 2022
10	RF cables1 (9kHz-30MHz)	Huber+Suhna r	9kHz-30MHz	B1702988-0008	May 28, 2021	May 27, 2022
11	RF cables2 (30MHz-1GHz)	Huber+Suhna r	30MHz-1GHz	1486150	May 28, 2021	May 27, 2022
12	RF cables3 (1GHz-40GHz)	Huber+Suhna r	1GHz-40GHz	1607106	May 28, 2021	May 27, 2022
13	Power Metter	Keysight	E4419B	\	May 28, 2021	May 27, 2022
14	Power Sensor (AV)	Keysight	E9 300A	\	May 28, 2021	May 27, 2022
15	Signal Analyzer 20kHz-26.5GHz	KEYSIGHT	N9020A	MY49100060	May 28, 2021	May 27, 2022
16	Spectrum Analyzer 9kHz-40GHz	R&S	FSP40	100363	May 28, 2021	May 27, 2022
17	D.C. Power Supply	LongWei	TPR-6405D	\	\	\
18	Software	Frad	EZ-EMC	FA-03A2 RE	\	\

Conduction Test equipment

Item	Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
1	Test Receiver	R&S	ESR3	102075	May 28, 2021	May 27, 2022
2	AMN	SCHWHRZB ECK	NNBM8127	8127739	Jun. 03, 2021	Jun. 02, 2022
3	LISN	R&S	ENV216	101375	May 28, 2021	May 27, 2022
4	RF cables	Huber+Suhna r	9kHz-30MH z	B1702988-00 08	May 28, 2021	May 27, 2022
5	Software	Frad	EZ-EMC	EMC-CON 3A1	\	\

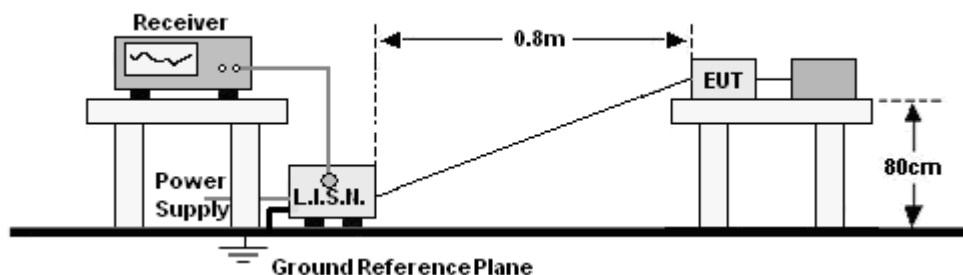
RF conducted test

Item	Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
1	Power Metter	Keysight	E4419B	\	May 28, 2021	May 27, 2022
2	Power Sensor (AV)	Keysight	E9 300A	\	May 28, 2021	May 27, 2022
3	Signal Analyzer 20kHz-26.5GHz	KEYSIGHT	N9020A	MY49100060	May 28, 2021	May 27, 2022
4	Spectrum Analyzer 9kHz-40GHz	R&S	FSP40	100363	May 28, 2021	May 27, 2022



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

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

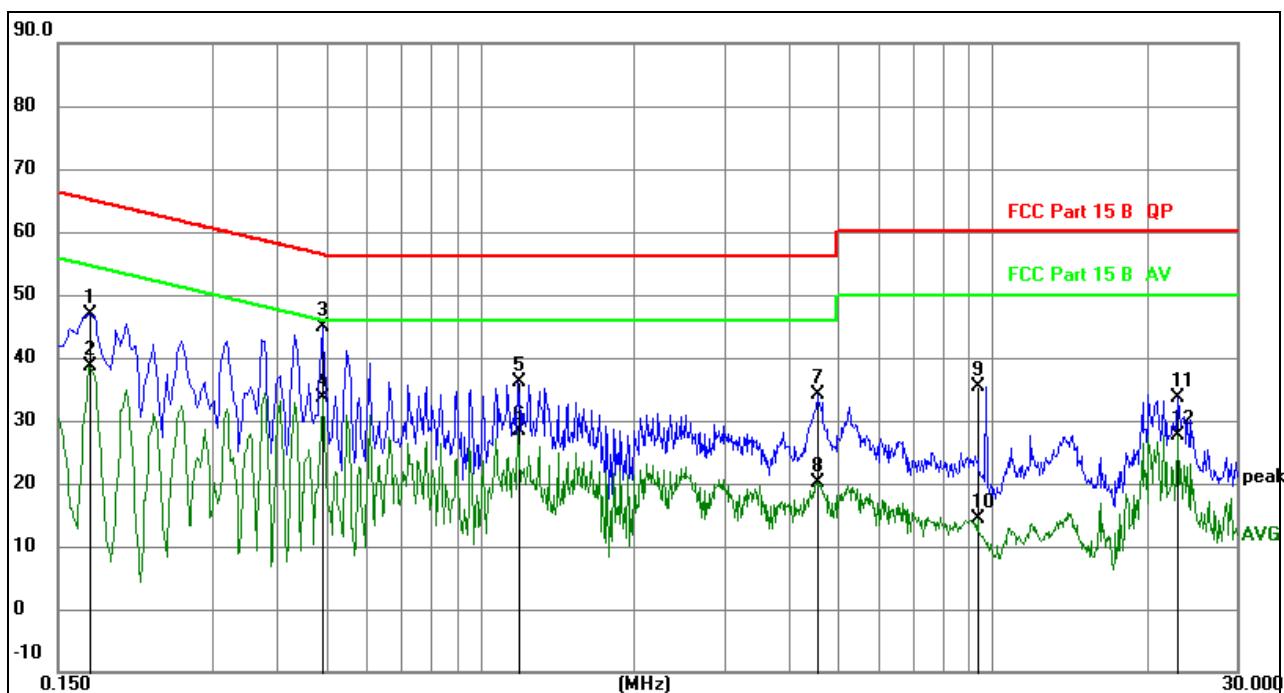
6.4 EUT operating Conditions

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 °C	Relative Humidity :	54%
Pressure :	101kPa	Phase :	L
Test Voltage :	AC 120V/60Hz	Test Mode :	Mode 4

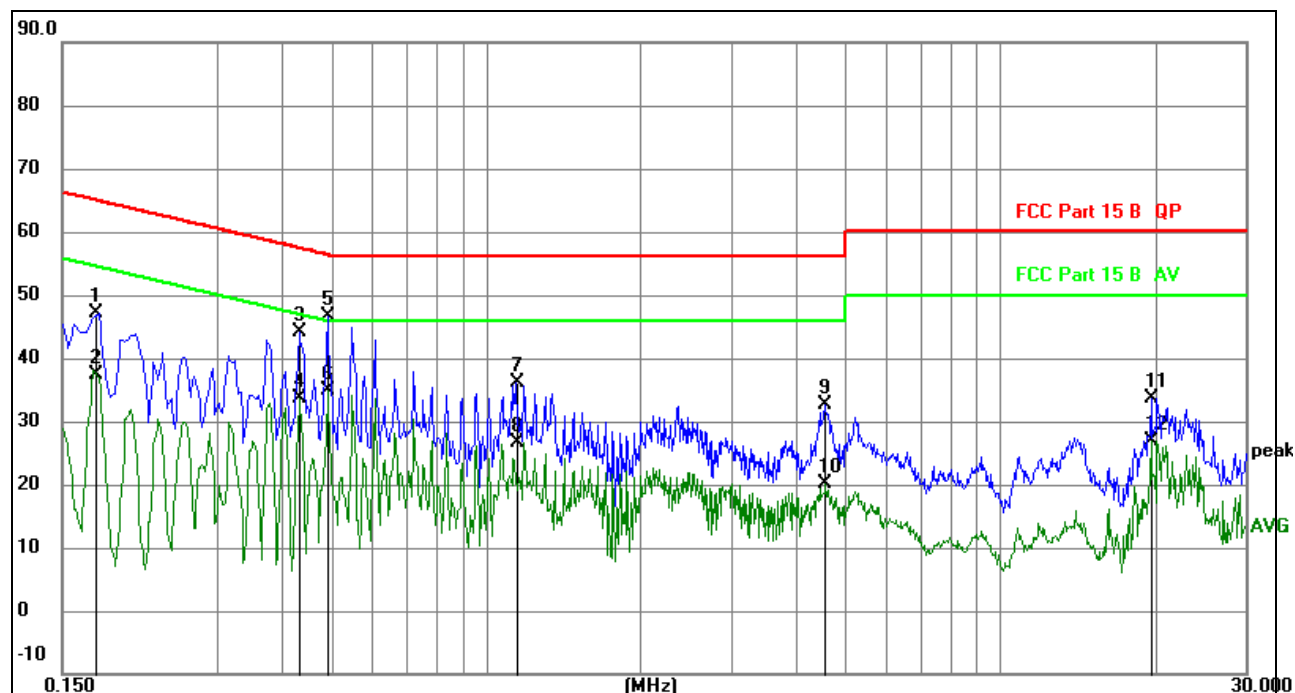


Remark:

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

No.	Mk.	Freq. MHz	Reading Level dB	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector
1		0.1722	37.23	9.61	46.84	64.85	-18.01	QP
2		0.1722	29.06	9.61	38.67	54.85	-16.18	AVG
3	*	0.4915	35.30	9.62	44.92	56.14	-11.22	QP
4		0.4915	24.12	9.62	33.74	46.14	-12.40	AVG
5		1.1844	26.55	9.63	36.18	56.00	-19.82	QP
6		1.1844	18.66	9.63	28.29	46.00	-17.71	AVG
7		4.5254	24.35	9.70	34.05	56.00	-21.95	QP
8		4.5254	10.45	9.70	20.15	46.00	-25.85	AVG
9		9.3518	25.49	9.79	35.28	60.00	-24.72	QP
10		9.3518	4.53	9.79	14.32	50.00	-35.68	AVG
11		23.0181	24.00	9.74	33.74	60.00	-26.26	QP
12		23.0181	17.92	9.74	27.66	50.00	-22.34	AVG

Temperature :	26 °C	Relative Humidity :	54%
Pressure :	101kPa	Phase :	N
Test Voltage :	AC 120V/60Hz	Test Mode :	Mode 4



Remark:

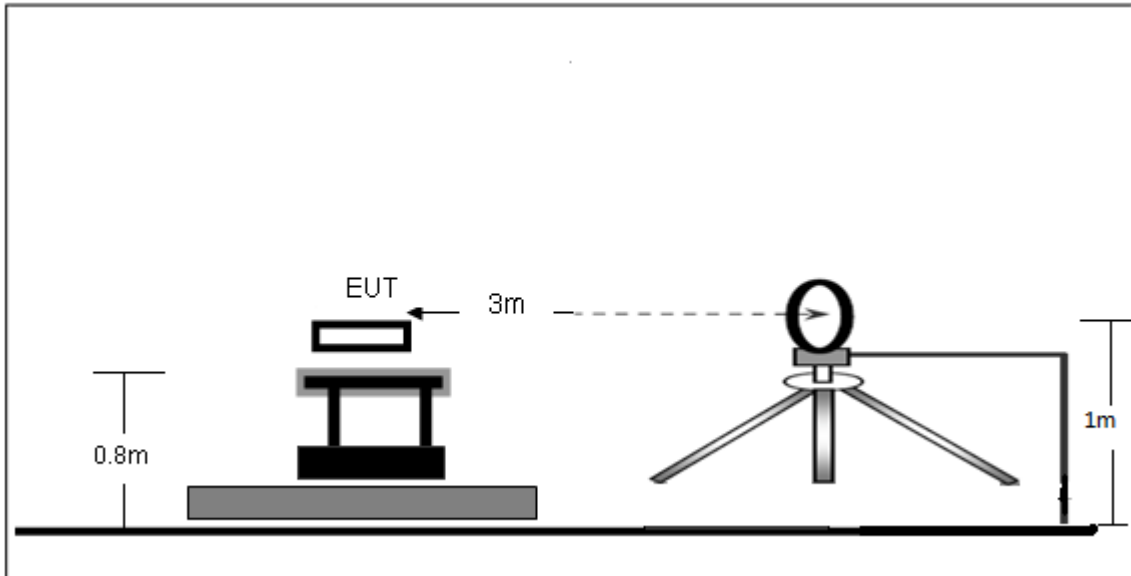
1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz		dB	dBuV	dBuV	dB	Detector
1		0.1749	37.40	9.61	47.01	64.72	-17.71	QP
2		0.1749	27.82	9.61	37.43	54.72	-17.29	AVG
3		0.4335	34.61	9.62	44.23	57.19	-12.96	QP
4		0.4335	24.01	9.62	33.63	47.19	-13.56	AVG
5	*	0.4920	37.04	9.62	46.66	56.13	-9.47	QP
6		0.4920	25.33	9.62	34.95	46.13	-11.18	AVG
7		1.1445	26.49	9.63	36.12	56.00	-19.88	QP
8		1.1445	17.02	9.63	26.65	46.00	-19.35	AVG
9		4.5555	22.99	9.70	32.69	56.00	-23.31	QP
10		4.5555	10.45	9.70	20.15	46.00	-25.85	AVG
11		19.7070	23.79	9.75	33.54	60.00	-26.46	QP
12		19.7070	17.22	9.75	26.97	50.00	-23.03	AVG

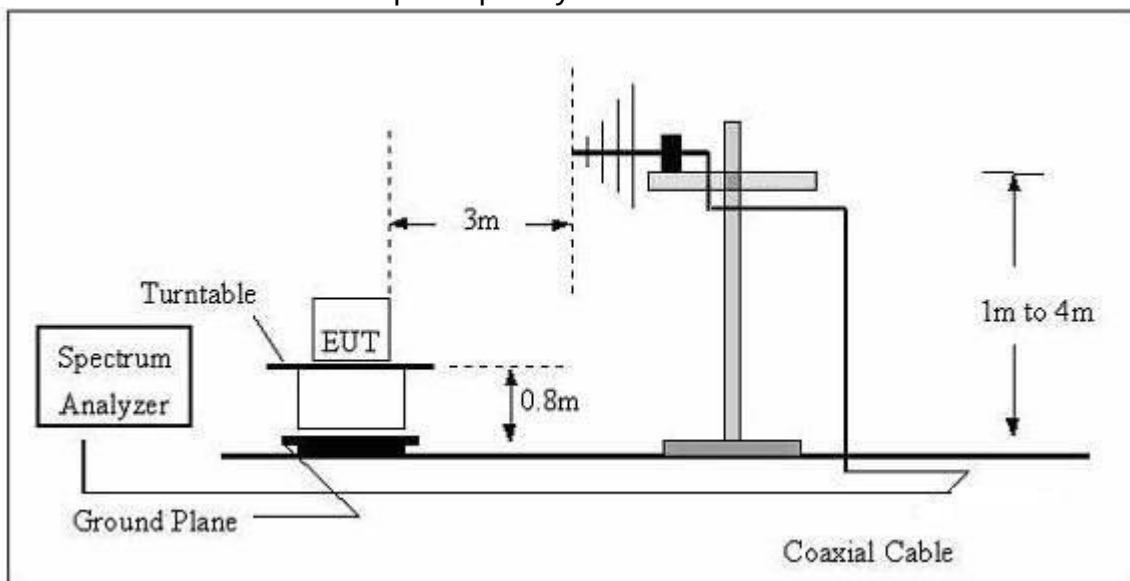
7. RADIATED EMISSIONS

7.1 Block Diagram Of Test Setup

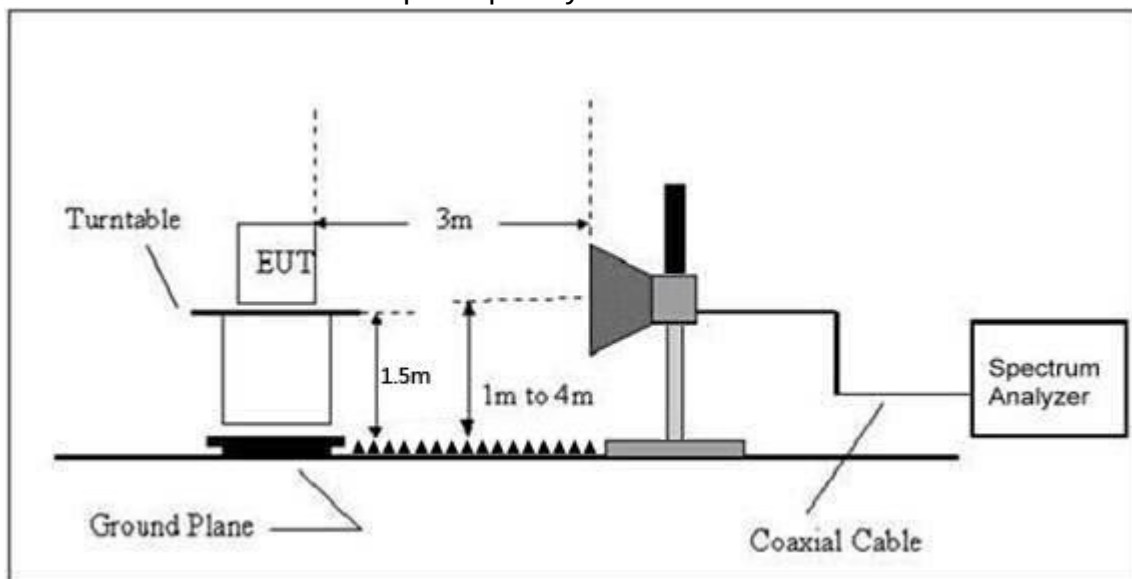
(A) Radiated Emission Test-Up Frequency Below 30MHz



(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

- 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.
- 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.
- 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.
- 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.
- 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.
- 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 $RBWCF [dB] = 10 \cdot \lg(100 [kHz] / \text{narrower RBW} [kHz])$. , 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.

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°C	Relative Humidity:	24%
Pressure:	101 kPa	Test Voltage :	AC120V/60Hz
Test Mode :	Mode 4	Polarization :	--

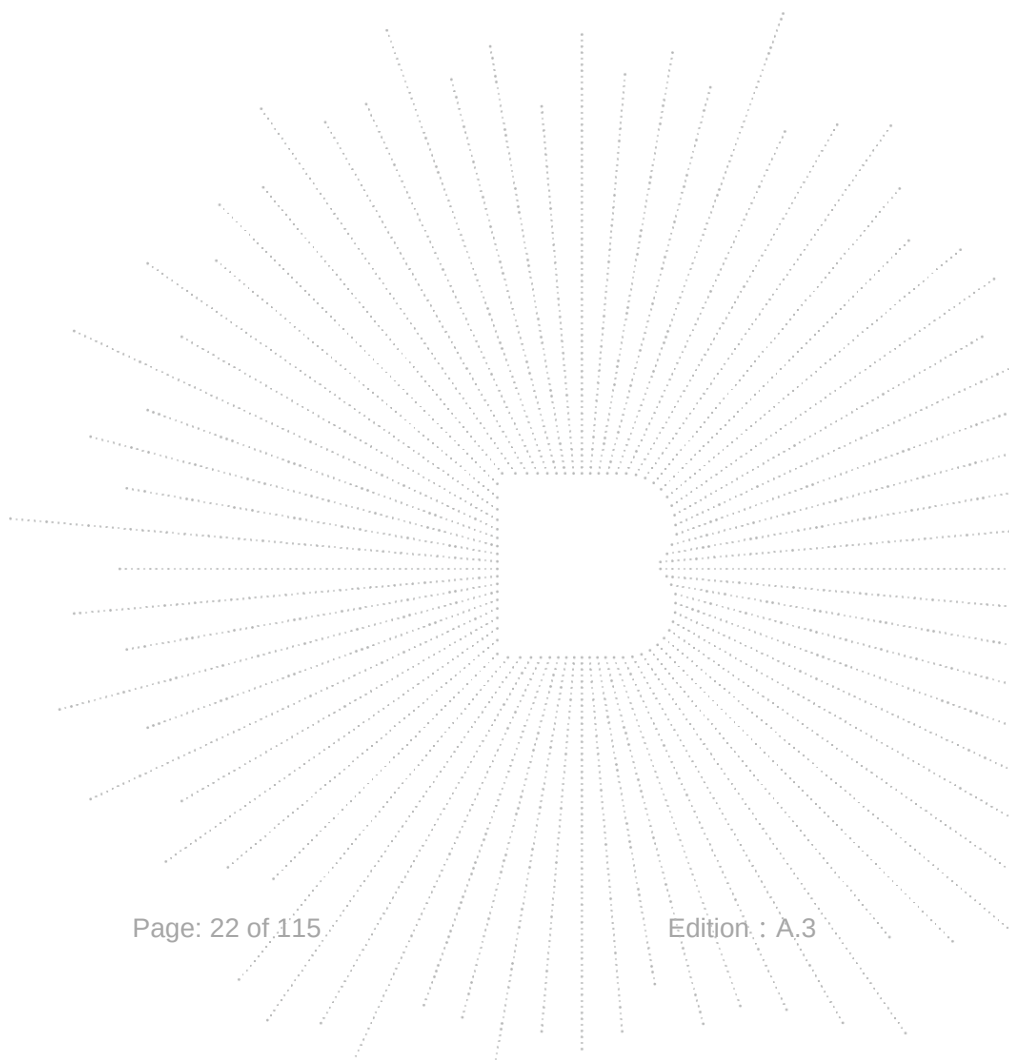
Freq. (MHz)	Reading (dBuV/m)	Limit (dBuV/m)	Margin (dB)	State P/F
--	--	--	--	PASS
--	--	--	--	PASS

Note:

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

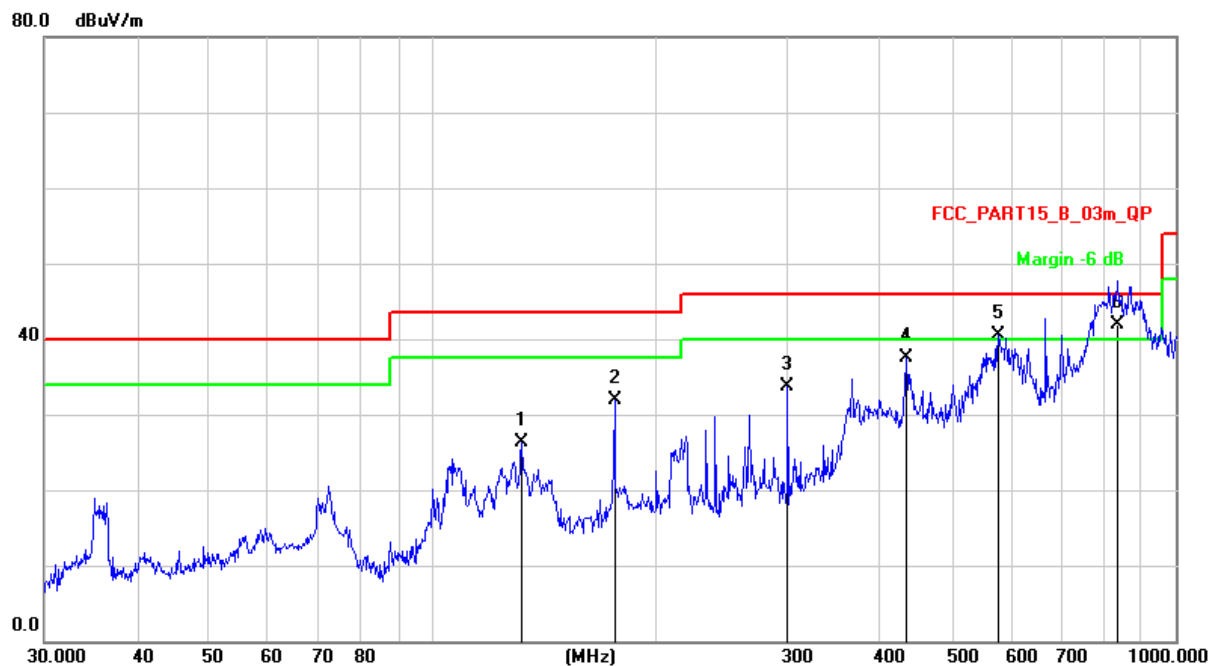
Distance extrapolation factor = $40 \log (\text{specific distance}/\text{test distance})$ (dB);

Limit line = specific limits(dBuv) + distance extrapolation factor.



Between 30MHz – 1GHz

Temperature:	26°C	Relative Humidity:	54%
Pressure:	101 kPa	Test Voltage :	AC120V/60Hz
Test Mode :	Mode 4	Polarization :	Horizontal

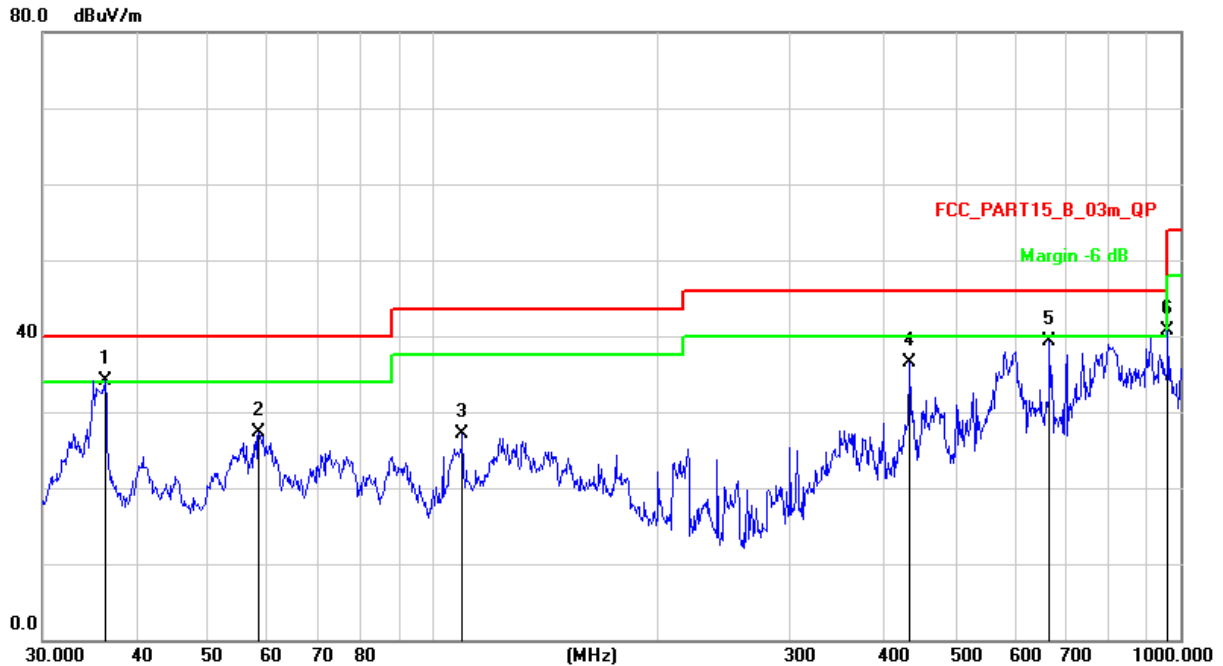


Remark:

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

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector
1		131.7577	44.71	-18.33	26.38	43.50	-17.12	QP
2		175.6516	49.82	-17.86	31.96	43.50	-11.54	QP
3		300.3672	47.36	-13.59	33.77	46.00	-12.23	QP
4		434.0651	47.83	-10.33	37.50	46.00	-8.50	QP
5	!	576.6443	47.47	-7.06	40.41	46.00	-5.59	QP
6	*	831.1093	44.90	-2.94	41.96	46.00	-4.04	QP

Temperature:	26°C	Relative Humidity:	54%
Pressure:	101 kpa	Test Voltage :	AC120V/60Hz
Test Mode :	Mode 4	Polarization :	Vertical



Remark:

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

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dB/m	Over dB	Detector
1	*	36.3814	50.25	-16.09	34.16	40.00	-5.84	QP
2		58.4074	43.07	-15.74	27.33	40.00	-12.67	QP
3		109.4116	43.99	-16.89	27.10	43.50	-16.40	QP
4		434.0651	46.83	-10.33	36.50	46.00	-9.50	QP
5		668.1423	45.52	-6.20	39.32	46.00	-6.68	QP
6		962.1623	41.66	-1.04	40.62	54.00	-13.38	QP

Between 1GHz – 40GHz

Test Mode :	TX(5.1G) - 802.11a
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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	4434.172	63.43	5.94	35.40	44.00	60.77	68.20	-7.43	PK
V	4434.172	43.61	5.94	35.40	44.00	40.95	54.00	-13.05	AV
V	10360.136	60.50	8.46	39.75	44.50	64.21	74.00	-9.79	PK
V	10360.136	43.63	8.46	39.75	44.50	47.34	54.00	-6.66	AV
V	15540.091	64.10	10.12	38.80	44.10	68.92	74.00	-5.08	PK
V	15540.091	43.01	10.12	38.80	42.70	49.23	54.00	-4.77	AV
H	4434.118	61.66	5.94	35.18	44.00	58.78	68.20	-9.42	PK
H	4434.118	43.71	5.94	35.18	44.00	40.83	54.00	-13.17	AV
H	10360.114	50.30	8.46	38.71	44.50	52.97	74.00	-21.03	PK
H	10360.114	43.32	8.46	38.71	44.50	45.99	54.00	-8.01	AV
H	15540.008	54.98	10.12	38.38	44.10	59.38	74.00	-14.62	PK
H	15540.008	41.60	10.12	38.38	44.10	46.00	54.00	-8.00	AV
middle Channel (5200 MHz)-Above 1G									
V	4592.005	61.10	6.48	36.35	44.05	59.88	74.00	-14.12	PK
V	4592.005	43.03	6.48	36.35	44.05	41.81	54.00	-12.19	AV
V	10400.176	60.19	8.47	37.88	44.51	62.03	68.20	-6.17	PK
V	10400.176	43.19	8.47	37.88	44.51	45.03	54.00	-8.97	AV
V	15600.068	60.34	10.12	38.80	44.10	65.16	74.00	-8.84	PK
V	15600.068	43.16	10.12	38.80	42.70	49.38	54.00	-4.62	AV
H	4592.067	64.72	6.48	36.37	44.05	63.52	74.00	-10.48	PK
H	4592.067	43.60	6.48	36.37	44.05	42.40	54.00	-11.60	AV
H	10400.197	53.63	8.47	38.64	44.50	56.24	68.20	-11.96	PK
H	10400.197	40.69	8.47	38.64	44.50	43.30	54.00	-10.70	AV
H	15600.113	50.49	10.12	38.38	44.10	54.89	74.00	-19.11	PK
H	15600.113	40.23	10.12	38.38	44.10	44.63	54.00	-9.37	AV
High Channel (5240 MHz)-Above 1G									
V	4739.051	60.04	7.10	37.24	43.50	60.88	74.00	-13.12	PK
V	4739.051	43.29	7.10	37.24	43.50	44.13	54.00	-9.87	AV
V	10480.122	60.92	8.46	37.68	44.50	62.56	68.20	-5.64	PK
V	10480.122	43.39	8.46	37.68	44.50	45.03	54.00	-8.97	AV
V	15720.160	62.65	10.12	38.80	44.10	67.47	74.00	-6.53	PK
V	15720.160	43.54	10.12	38.80	42.70	49.76	54.00	-4.24	AV
H	4739.059	62.67	7.10	37.24	43.50	63.51	74.00	-10.49	PK
H	4739.059	43.84	7.10	37.24	43.50	44.68	54.00	-9.32	AV
H	10480.026	52.25	8.46	38.57	44.50	54.78	68.20	-13.42	PK
H	10480.026	40.07	8.46	38.57	44.50	42.60	54.00	-11.40	AV
H	15720.064	54.98	10.12	38.38	44.10	59.38	74.00	-14.62	PK
H	15720.064	44.60	10.12	38.38	44.10	49.00	54.00	-5.00	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(5.1G) - 802.11n-HT20
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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	4434.080	63.24	5.94	35.40	44.00	60.58	68.20	-7.62	PK
V	4434.080	43.36	5.94	35.40	44.00	40.70	54.00	-13.30	AV
V	10360.154	60.21	8.46	39.75	44.50	63.92	68.20	-4.28	PK
V	10360.154	43.14	8.46	39.75	44.50	46.85	54.00	-7.15	AV
V	15540.159	64.38	10.12	38.80	44.10	69.20	74.00	-4.80	PK
V	15540.159	43.25	10.12	38.80	42.70	49.47	54.00	-4.53	AV
H	4434.190	63.43	5.94	35.18	44.00	60.55	68.20	-7.65	PK
H	4434.190	43.15	5.94	35.18	44.00	40.27	54.00	-13.73	AV
H	10360.009	53.57	8.46	38.71	44.50	56.24	68.20	-11.96	PK
H	10360.009	44.33	8.46	38.71	44.50	47.00	54.00	-7.00	AV
H	15540.100	51.42	10.12	38.38	44.10	55.82	74.00	-18.18	PK
H	15540.100	41.66	10.12	38.38	44.10	46.06	54.00	-7.94	AV
middle Channel (5200 MHz)-Above 1G									
V	4592.098	60.90	6.48	36.35	44.05	59.68	74.00	-14.32	PK
V	4592.098	43.84	6.48	36.35	44.05	42.62	54.00	-11.38	AV
V	10400.065	62.05	8.47	37.88	44.51	63.89	68.20	-4.31	PK
V	10400.065	43.70	8.47	37.88	44.51	45.54	54.00	-8.46	AV
V	15600.140	64.57	10.12	38.80	44.10	69.39	74.00	-4.61	PK
V	15600.140	43.61	10.12	38.80	42.70	49.83	54.00	-4.17	AV
H	4592.016	62.89	6.48	36.37	44.05	61.69	74.00	-12.31	PK
H	4592.016	43.87	6.48	36.37	44.05	42.67	54.00	-11.33	AV
H	10400.036	52.62	8.47	38.64	44.50	55.23	68.20	-12.97	PK
H	10400.036	40.65	8.47	38.64	44.50	43.26	54.00	-10.74	AV
H	15600.187	54.10	10.12	38.38	44.10	58.50	74.00	-15.50	PK
H	15600.187	41.73	10.12	38.38	44.10	46.13	54.00	-7.87	AV
High Channel (5240 MHz)-Above 1G									
V	4739.073	61.69	7.10	37.24	43.50	62.53	74.00	-11.47	PK
V	4739.073	43.02	7.10	37.24	43.50	43.86	54.00	-10.14	AV
V	10480.125	64.42	8.46	37.68	44.50	66.06	68.20	-2.14	PK
V	10480.125	43.28	8.46	37.68	44.50	44.92	54.00	-9.08	AV
V	15720.112	63.91	10.12	38.80	44.10	68.73	74.00	-5.27	PK
V	15720.112	43.67	10.12	38.80	42.70	49.89	54.00	-4.11	AV
H	4739.021	60.09	7.10	37.24	43.50	60.93	74.00	-13.07	PK
H	4739.021	43.96	7.10	37.24	43.50	44.80	54.00	-9.20	AV
H	10480.188	51.60	8.46	38.57	44.50	54.13	68.20	-14.07	PK
H	10480.188	41.41	8.46	38.57	44.50	43.94	54.00	-10.06	AV
H	15720.032	52.13	10.12	38.38	44.10	56.53	74.00	-17.47	PK
H	15720.032	42.98	10.12	38.38	44.10	47.38	54.00	-6.62	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) - 802.11n-HT40
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Polar (H/V)	Frequency (MHz)	Meter Reading (dBUV)	Cable loss (dB)	Antenn a Factor dB/m	Preamp Factor (dB)	Emission Level (dBUV/m)	Limits (dBUV/m)	Margin (dB)	Detector Type
Low Channel (5190 MHz)-Above 1G									
V	4434.056	64.44	5.94	35.40	44.00	61.78	74.00	-12.22	PK
V	4434.056	43.11	5.94	35.40	44.00	40.45	54.00	-13.55	AV
V	10380.114	63.27	8.46	39.75	44.50	66.98	68.20	-1.22	PK
V	10380.114	43.23	8.46	39.75	44.50	46.94	54.00	-7.06	AV
V	15570.160	64.73	10.12	38.80	44.10	69.55	74.00	-4.45	PK
V	15570.160	43.55	10.12	38.80	42.70	49.77	54.00	-4.23	AV
H	4434.137	62.98	5.94	35.18	44.00	60.10	74.00	-13.90	PK
H	4434.137	43.66	5.94	35.18	44.00	40.78	54.00	-13.22	AV
H	10380.090	53.03	8.46	38.71	44.50	55.70	68.20	-12.50	PK
H	10380.090	42.27	8.46	38.71	44.50	44.94	54.00	-9.06	AV
H	15570.048	51.72	10.12	38.38	44.10	56.12	74.00	-17.88	PK
H	15570.048	44.55	10.12	38.38	44.10	48.95	54.00	-5.05	AV
middle Channel (5230 MHz)-Above 1G									
V	4739.154	61.34	6.48	36.35	44.05	60.12	74.00	-13.88	PK
V	4739.154	43.89	6.48	36.35	44.05	42.67	54.00	-11.33	AV
V	10460.069	63.86	8.47	37.88	44.51	65.70	68.20	-2.50	PK
V	10460.069	43.86	8.47	37.88	44.51	45.70	54.00	-8.30	AV
V	15690.101	64.08	10.12	38.80	44.10	68.90	74.00	-5.10	PK
V	15690.101	43.61	10.12	38.80	42.70	49.83	54.00	-4.17	AV
H	4739.176	63.12	6.48	36.37	44.05	61.92	74.00	-12.08	PK
H	4739.176	43.78	6.48	36.37	44.05	42.58	54.00	-11.42	AV
H	10460.104	53.61	8.47	38.64	44.50	56.22	68.20	-11.98	PK
H	10460.104	42.26	8.47	38.64	44.50	44.87	54.00	-9.13	AV
H	15690.178	52.64	10.12	38.38	44.10	57.04	74.00	-16.96	PK
H	15690.178	43.29	10.12	38.38	44.10	47.69	54.00	-6.31	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) - 802.11ac-HT20
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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	4434.145	60.37	5.94	35.40	44.00	57.71	68.20	-10.49	PK
V	4434.145	43.38	5.94	35.40	44.00	40.72	54.00	-13.28	AV
V	10360.096	63.84	8.46	39.75	44.50	67.55	74.00	-6.45	PK
V	10360.096	43.55	8.46	39.75	44.50	47.26	54.00	-6.74	AV
V	15540.166	60.96	10.12	38.80	44.10	65.78	74.00	-8.22	PK
V	15540.166	43.51	10.12	38.80	42.70	49.73	54.00	-4.27	AV
H	4434.023	61.45	5.94	35.18	44.00	58.57	68.20	-9.63	PK
H	4434.023	43.86	5.94	35.18	44.00	40.98	54.00	-13.02	AV
H	10360.183	53.63	8.46	38.71	44.50	56.30	74.00	-17.70	PK
H	10360.183	42.84	8.46	38.71	44.50	45.51	54.00	-8.49	AV
H	15540.153	51.78	10.12	38.38	44.10	56.18	74.00	-17.82	PK
H	15540.153	43.52	10.12	38.38	44.10	47.92	54.00	-6.08	AV
middle Channel (5200 MHz)-Above 1G									
V	4592.000	61.67	6.48	36.35	44.05	60.45	74.00	-13.55	PK
V	4592.000	43.33	6.48	36.35	44.05	42.11	54.00	-11.89	AV
V	10400.013	63.52	8.47	37.88	44.51	65.36	68.20	-2.84	PK
V	10400.013	43.59	8.47	37.88	44.51	45.43	54.00	-8.57	AV
V	15600.039	64.89	10.12	38.80	44.10	69.71	74.00	-4.29	PK
V	15600.039	44.00	10.12	38.80	42.70	50.22	54.00	-3.78	AV
H	4592.182	62.92	6.48	36.37	44.05	61.72	74.00	-12.28	PK
H	4592.182	43.19	6.48	36.37	44.05	41.99	54.00	-12.01	AV
H	10400.028	52.65	8.47	38.64	44.50	55.26	68.20	-12.94	PK
H	10400.028	43.60	8.47	38.64	44.50	46.21	54.00	-7.79	AV
H	15600.123	54.18	10.12	38.38	44.10	58.58	74.00	-15.42	PK
H	15600.123	40.90	10.12	38.38	44.10	45.30	54.00	-8.70	AV
High Channel (5240 MHz)-Above 1G									
V	4739.163	61.11	7.10	37.24	43.50	61.95	74.00	-12.05	PK
V	4739.163	43.37	7.10	37.24	43.50	44.21	54.00	-9.79	AV
V	10480.053	62.13	8.46	37.68	44.50	63.77	68.20	-4.43	PK
V	10480.053	43.26	8.46	37.68	44.50	44.90	54.00	-9.10	AV
V	15720.089	64.38	10.12	38.80	44.10	69.20	74.00	-4.80	PK
V	15720.089	43.15	10.12	38.80	42.70	49.37	54.00	-4.63	AV
H	4739.178	60.01	7.10	37.24	43.50	60.85	74.00	-13.15	PK
H	4739.178	43.67	7.10	37.24	43.50	44.51	54.00	-9.49	AV
H	10480.182	51.98	8.46	38.57	44.50	54.51	68.20	-13.69	PK
H	10480.182	42.67	8.46	38.57	44.50	45.20	54.00	-8.80	AV
H	15720.105	52.33	10.12	38.38	44.10	56.73	74.00	-17.27	PK
H	15720.105	44.14	10.12	38.38	44.10	48.54	54.00	-5.46	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) - 802.11ac-HT40
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Polar (H/V)	Frequency (MHz)	Meter Reading (dBUV)	Cable loss (dB)	Antenn a Factor (dB/m)	Preamp Factor (dB)	Emission Level (dBUV/m)	Limits (dBUV/m)	Margin (dB)	Detector Type
Low Channel (5190 MHz)-Above 1G									
V	4434.164	60.65	5.94	35.40	44.00	57.99	74.00	-16.01	PK
V	4434.164	43.32	5.94	35.40	44.00	40.66	54.00	-13.34	AV
V	10380.159	60.33	8.46	39.75	44.50	64.04	68.20	-4.16	PK
V	10380.159	43.15	8.46	39.75	44.50	46.86	54.00	-7.14	AV
V	15570.044	64.02	10.12	38.80	44.10	68.84	74.00	-5.16	PK
V	15570.044	43.35	10.12	38.80	42.70	49.57	54.00	-4.43	AV
H	4434.155	62.51	5.94	35.18	44.00	59.63	74.00	-14.37	PK
H	4434.155	43.27	5.94	35.18	44.00	40.39	54.00	-13.61	AV
H	10380.093	51.37	8.46	38.71	44.50	54.04	68.20	-14.16	PK
H	10380.093	43.69	8.46	38.71	44.50	46.36	54.00	-7.64	AV
H	15570.141	52.85	10.12	38.38	44.10	57.25	74.00	-16.75	PK
H	15570.141	43.21	10.12	38.38	44.10	47.61	54.00	-6.39	AV
middle Channel (5230 MHz)-Above 1G									
V	4739.003	60.70	6.48	36.35	44.05	59.48	74.00	-14.52	PK
V	4739.003	43.33	6.48	36.35	44.05	42.11	54.00	-11.89	AV
V	10460.001	61.81	8.47	37.88	44.51	63.65	68.20	-4.55	PK
V	10460.001	43.68	8.47	37.88	44.51	45.52	54.00	-8.48	AV
V	15690.009	60.78	10.12	38.80	44.10	65.60	74.00	-8.40	PK
V	15690.009	43.49	10.12	38.80	42.70	49.71	54.00	-4.29	AV
H	4739.155	63.71	6.48	36.37	44.05	62.51	74.00	-11.49	PK
H	4739.155	43.16	6.48	36.37	44.05	41.96	54.00	-12.04	AV
H	10460.043	50.19	8.47	38.64	44.50	52.80	68.20	-15.40	PK
H	10460.043	44.55	8.47	38.64	44.50	47.16	54.00	-6.84	AV
H	15690.044	50.58	10.12	38.38	44.10	54.98	74.00	-19.02	PK
H	15690.044	41.77	10.12	38.38	44.10	46.17	54.00	-7.83	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
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Polar (H/V)	Frequency (MHz)	Meter Reading (dBUV)	Cable loss (dB)	Antenn a Factor dB/m	Preamp Factor (dB)	Emission Level (dBUV/m)	Limits (dBUV/m)	Margin (dB)	Detector Type
(5210 MHz)-Above 1G									
V	4434.170	60.18	5.94	35.40	44.00	57.52	74.00	-16.48	PK
V	4434.170	43.98	5.94	35.40	44.00	41.32	54.00	-12.68	AV
V	10420.087	60.31	8.46	39.75	44.50	64.02	68.20	-4.18	PK
V	10420.087	43.47	8.46	39.75	44.50	47.18	54.00	-6.82	AV
V	15630.066	60.18	10.12	38.80	44.10	65.00	74.00	-9.00	PK
V	15630.066	43.57	10.12	38.80	42.70	49.79	54.00	-4.21	AV
H	4434.086	64.79	5.94	35.18	44.00	61.91	74.00	-12.09	PK
H	4434.086	43.97	5.94	35.18	44.00	41.09	54.00	-12.91	AV
H	10420.099	52.58	8.46	38.71	44.50	55.25	68.20	-12.95	PK
H	10420.099	44.37	8.46	38.71	44.50	47.04	54.00	-6.96	AV
H	15630.168	51.52	10.12	38.38	44.10	55.92	74.00	-18.08	PK
H	15630.168	44.00	10.12	38.38	44.10	48.40	54.00	-5.60	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
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Polar (H/V)	Frequency	Meter Reading	Cable loss	Antenn a Factor	Preamp Factor	Emission Level	Limits	Margin	Detector Type
	(MHz)	(dBuV)	(dB)	dB/m	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
Low Channel (5745 MHz)-Above 1G									
V	4679.101	55.62	5.94	35.40	44.00	52.96	74.00	-21.04	PK
V	4679.101	43.30	5.94	35.40	44.00	40.64	54.00	-13.36	AV
V	11490.089	56.82	8.46	39.75	44.50	60.53	68.20	-7.67	PK
V	11490.089	43.89	8.46	39.75	44.50	47.60	54.00	-6.40	AV
V	17235.105	56.26	10.12	38.80	44.10	61.08	74.00	-12.92	PK
V	17235.105	43.49	10.12	38.80	42.70	49.71	54.00	-4.29	AV
H	4679.068	54.49	5.94	35.18	44.00	51.61	74.00	-22.39	PK
H	4679.068	43.62	5.94	35.18	44.00	40.74	54.00	-13.26	AV
H	11490.115	53.06	8.46	38.71	44.50	55.73	68.20	-12.47	PK
H	11490.115	42.39	8.46	38.71	44.50	45.06	54.00	-8.94	AV
H	17235.078	54.54	10.12	38.38	44.10	58.94	74.00	-15.06	PK
H	17235.078	44.20	10.12	38.38	44.10	48.60	54.00	-5.40	AV
middle Channel (5785 MHz)-Above 1G									
V	4592.140	58.12	6.48	36.35	44.05	56.90	74.00	-17.10	PK
V	4592.140	43.79	6.48	36.35	44.05	42.57	54.00	-11.43	AV
V	11570.186	57.42	8.47	37.88	44.51	59.26	68.20	-8.94	PK
V	11570.186	43.85	8.47	37.88	44.51	45.69	54.00	-8.31	AV
V	17355.158	59.32	10.12	38.80	44.10	64.14	74.00	-9.86	PK
V	17355.158	39.91	10.12	38.80	42.70	46.13	54.00	-7.87	AV
H	4592.096	59.75	6.48	36.37	44.05	58.55	74.00	-15.45	PK
H	4592.096	43.50	6.48	36.37	44.05	42.30	54.00	-11.70	AV
H	11570.166	50.53	8.47	38.64	44.50	53.14	68.20	-15.06	PK
H	11570.166	42.55	8.47	38.64	44.50	45.16	54.00	-8.84	AV
H	17355.021	52.98	10.12	38.38	44.10	57.38	74.00	-16.62	PK
H	17355.021	44.94	10.12	38.38	44.10	49.34	54.00	-4.66	AV
High Channel (5825 MHz)-Above 1G									
V	6039.154	58.20	7.10	37.24	43.50	59.04	68.20	-9.16	PK
V	6039.154	43.63	7.10	37.24	43.50	44.47	54.00	-9.53	AV
V	11650.084	62.65	8.46	37.68	44.50	64.29	74.00	-9.71	PK
V	11650.084	43.28	8.46	37.68	44.50	44.92	54.00	-9.08	AV
V	17475.009	53.51	10.12	38.80	44.10	58.33	68.20	-9.87	PK
V	17475.009	43.01	10.12	38.80	42.70	49.23	54.00	-4.77	AV
H	6039.137	54.69	7.10	37.24	43.50	55.53	68.20	-12.67	PK
H	6039.137	43.52	7.10	37.24	43.50	44.36	54.00	-9.64	AV
H	11650.161	51.13	8.46	38.57	44.50	53.66	74.00	-20.34	PK
H	11650.161	44.98	8.46	38.57	44.50	47.51	54.00	-6.49	AV
H	17475.168	51.00	10.12	38.38	44.10	55.40	68.20	-12.80	PK
H	17475.168	42.52	10.12	38.38	44.10	46.92	54.00	-7.08	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
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Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Cable loss (dB)	Antenn a Factor dB/m	Preamp Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
Low Channel (5745 MHz)-Above 1G									
V	4679.088	57.38	5.94	35.40	44.00	54.72	74.00	-19.28	PK
V	4679.088	43.06	5.94	35.40	44.00	40.40	54.00	-13.60	AV
V	11490.078	56.19	8.46	39.75	44.50	59.90	68.20	-8.30	PK
V	11490.078	43.99	8.46	39.75	44.50	47.70	54.00	-6.30	AV
V	17235.161	59.79	10.12	38.80	44.10	64.61	74.00	-9.39	PK
V	17235.161	43.22	10.12	38.80	42.70	49.44	54.00	-4.56	AV
H	4679.168	60.79	5.94	35.18	44.00	57.91	74.00	-16.09	PK
H	4679.168	43.78	5.94	35.18	44.00	40.90	54.00	-13.10	AV
H	11490.153	48.32	8.46	38.71	44.50	50.99	68.20	-17.21	PK
H	11490.153	40.60	8.46	38.71	44.50	43.27	54.00	-10.73	AV
H	17235.073	54.22	10.12	38.38	44.10	58.62	74.00	-15.38	PK
H	17235.073	44.31	10.12	38.38	44.10	48.71	54.00	-5.29	AV
middle Channel (5785 MHz)-Above 1G									
V	4592.109	58.99	6.48	36.35	44.05	57.77	74.00	-16.23	PK
V	4592.109	43.16	6.48	36.35	44.05	41.94	54.00	-12.06	AV
V	11570.036	54.32	8.47	37.88	44.51	56.16	68.20	-12.04	PK
V	11570.036	43.31	8.47	37.88	44.51	45.15	54.00	-8.85	AV
V	17355.035	61.37	10.12	38.80	44.10	66.19	74.00	-7.81	PK
V	17355.035	43.41	10.12	38.80	42.70	49.63	54.00	-4.37	AV
H	4592.046	58.37	6.48	36.37	44.05	57.17	74.00	-16.83	PK
H	4592.046	43.93	6.48	36.37	44.05	42.73	54.00	-11.27	AV
H	11570.046	53.85	8.47	38.64	44.50	56.46	68.20	-11.74	PK
H	11570.046	41.01	8.47	38.64	44.50	43.62	54.00	-10.38	AV
H	17355.152	51.02	10.12	38.38	44.10	55.42	74.00	-18.58	PK
H	17355.152	42.23	10.12	38.38	44.10	46.63	54.00	-7.37	AV
High Channel (5825 MHz)-Above 1G									
V	6039.012	57.01	7.10	37.24	43.50	57.85	68.20	-10.35	PK
V	6039.012	43.96	7.10	37.24	43.50	44.80	54.00	-9.20	AV
V	11650.133	57.35	8.46	37.68	44.50	58.99	74.00	-15.01	PK
V	11650.133	43.28	8.46	37.68	44.50	44.92	54.00	-9.08	AV
V	17475.126	59.92	10.12	38.80	44.10	64.74	68.20	-3.46	PK
V	17475.126	43.03	10.12	38.80	42.70	49.25	54.00	-4.75	AV
H	6039.067	57.64	7.10	37.24	43.50	58.48	68.20	-9.72	PK
H	6039.067	43.90	7.10	37.24	43.50	44.74	54.00	-9.26	AV
H	11650.029	52.37	8.46	38.57	44.50	54.90	74.00	-19.10	PK
H	11650.029	44.25	8.46	38.57	44.50	46.78	54.00	-7.22	AV
H	17475.090	50.76	10.12	38.38	44.10	55.16	68.20	-13.04	PK
H	17475.090	42.74	10.12	38.38	44.10	47.14	54.00	-6.86	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
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Polar (H/V)	Frequency (MHz)	Meter Reading (dBUV)	Cable loss (dB)	Antenn a Factor dB/m	Preamp Factor (dB)	Emission Level (dBUV/m)	Limits (dBUV/m)	Margin (dB)	Detector Type
Low Channel (5755 MHz)-Above 1G									
V	4679.133	56.06	5.94	35.40	44.00	53.40	74.00	-20.60	PK
V	4679.133	43.66	5.94	35.40	44.00	41.00	54.00	-13.00	AV
V	11510.148	55.10	8.46	39.75	44.50	58.81	68.20	-9.39	PK
V	11510.148	43.20	8.46	39.75	44.50	46.91	54.00	-7.09	AV
V	17265.131	58.83	10.12	38.80	44.10	63.65	74.00	-10.35	PK
V	17265.131	2.00	10.12	38.80	42.70	8.22	54.00	-45.78	AV
H	4679.069	59.76	5.94	35.18	44.00	56.88	74.00	-17.12	PK
H	4679.069	43.16	5.94	35.18	44.00	40.28	54.00	-13.72	AV
H	11510.194	50.14	8.46	38.71	44.50	52.81	68.20	-15.39	PK
H	11510.194	43.86	8.46	38.71	44.50	46.53	54.00	-7.47	AV
H	17265.157	52.81	10.12	38.38	44.10	57.21	74.00	-16.79	PK
H	17265.157	40.95	10.12	38.38	44.10	45.35	54.00	-8.65	AV
middle Channel (5795 MHz)-Above 1G									
V	6039.008	59.43	6.48	36.35	44.05	58.21	68.20	-9.99	PK
V	6039.008	43.60	6.48	36.35	44.05	42.38	54.00	-11.62	AV
V	11590.075	58.16	8.47	37.88	44.51	60.00	74.00	-14.00	PK
V	11590.075	43.07	8.47	37.88	44.51	44.91	54.00	-9.09	AV
V	17385.020	55.88	10.12	38.80	44.10	60.70	68.20	-7.50	PK
V	17385.020	41.35	10.12	38.80	42.70	47.57	54.00	-6.43	AV
H	6039.090	59.03	6.48	36.37	44.05	57.83	68.20	-10.37	PK
H	6039.090	43.17	6.48	36.37	44.05	41.97	54.00	-12.03	AV
H	11590.074	50.62	8.47	38.64	44.50	53.23	74.00	-20.77	PK
H	11590.074	42.75	8.47	38.64	44.50	45.36	54.00	-8.64	AV
H	17385.073	50.65	10.12	38.38	44.10	55.05	68.20	-13.15	PK
H	17385.073	43.11	10.12	38.38	44.10	47.51	54.00	-6.49	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-HT20
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Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Cable loss (dB)	Antenn a Factor dB/m	Preamp Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
Low Channel (5745 MHz)-Above 1G									
V	4679.141	57.52	5.94	35.40	44.00	54.86	74.00	-19.14	PK
V	4679.141	43.45	5.94	35.40	44.00	40.79	54.00	-13.21	AV
V	11490.033	56.84	8.46	39.75	44.50	60.55	68.20	-7.65	PK
V	11490.033	43.03	8.46	39.75	44.50	46.74	54.00	-7.26	AV
V	17235.082	60.75	10.12	38.80	44.10	65.57	74.00	-8.43	PK
V	17235.082	43.35	10.12	38.80	42.70	49.57	54.00	-4.43	AV
H	4679.070	59.84	5.94	35.18	44.00	56.96	74.00	-17.04	PK
H	4679.070	43.71	5.94	35.18	44.00	40.83	54.00	-13.17	AV
H	11490.176	49.88	8.46	38.71	44.50	52.55	68.20	-15.65	PK
H	11490.176	43.33	8.46	38.71	44.50	46.00	54.00	-8.00	AV
H	17235.166	52.47	10.12	38.38	44.10	56.87	74.00	-17.13	PK
H	17235.166	43.31	10.12	38.38	44.10	47.71	54.00	-6.29	AV
middle Channel (5785 MHz)-Above 1G									
V	4592.153	58.67	6.48	36.35	44.05	57.45	74.00	-16.55	PK
V	4592.153	43.19	6.48	36.35	44.05	41.97	54.00	-12.03	AV
V	11570.052	56.17	8.47	37.88	44.51	58.01	68.20	-10.19	PK
V	11570.052	43.58	8.47	37.88	44.51	45.42	54.00	-8.58	AV
V	17355.013	61.80	10.12	38.80	44.10	66.62	74.00	-7.38	PK
V	17355.013	43.33	10.12	38.80	42.70	49.55	54.00	-4.45	AV
H	4592.135	58.19	6.48	36.37	44.05	56.99	74.00	-17.01	PK
H	4592.135	43.52	6.48	36.37	44.05	42.32	54.00	-11.68	AV
H	11570.086	54.25	8.47	38.64	44.50	56.86	68.20	-11.34	PK
H	11570.086	44.80	8.47	38.64	44.50	47.41	54.00	-6.59	AV
H	17355.115	54.47	10.12	38.38	44.10	58.87	74.00	-15.13	PK
H	17355.115	42.20	10.12	38.38	44.10	46.60	54.00	-7.40	AV
High Channel (5825 MHz)-Above 1G									
V	6039.171	56.56	7.10	37.24	43.50	57.40	68.20	-10.80	PK
V	6039.171	43.65	7.10	37.24	43.50	44.49	54.00	-9.51	AV
V	11650.160	60.72	8.46	37.68	44.50	62.36	74.00	-11.64	PK
V	11650.160	43.91	8.46	37.68	44.50	45.55	54.00	-8.45	AV
V	17475.160	55.29	10.12	38.80	44.10	60.11	68.20	-8.09	PK
V	17475.160	43.21	10.12	38.80	42.70	49.43	54.00	-4.57	AV
H	6039.003	59.14	7.10	37.24	43.50	59.98	68.20	-8.22	PK
H	6039.003	43.53	7.10	37.24	43.50	44.37	54.00	-9.63	AV
H	11650.148	53.11	8.46	38.57	44.50	55.64	74.00	-18.36	PK
H	11650.148	42.81	8.46	38.57	44.50	45.34	54.00	-8.66	AV
H	17475.053	52.35	10.12	38.38	44.10	56.75	68.20	-11.45	PK
H	17475.053	40.81	10.12	38.38	44.10	45.21	54.00	-8.79	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 (5.8G) -- 802.11ac-HT40
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Polar (H/V)	Frequency (MHz)	Meter Reading (dBUV)	Cable loss (dB)	Antenn a Factor (dB/m)	Preamp Factor (dB)	Emission Level (dBUV/m)	Limits (dBUV/m)	Margin (dB)	Detector Type
Low Channel (5755 MHz)-Above 1G									
V	4679.159	57.22	5.94	35.40	44.00	54.56	74.00	-19.44	PK
V	4679.159	43.08	5.94	35.40	44.00	40.42	54.00	-13.58	AV
V	11510.189	55.13	8.46	39.75	44.50	58.84	68.20	-9.36	PK
V	11510.189	43.86	8.46	39.75	44.50	47.57	54.00	-6.43	AV
V	17265.132	58.45	10.12	38.80	44.10	63.27	74.00	-10.73	PK
V	17265.132	2.00	10.12	38.80	42.70	8.22	54.00	-45.78	AV
H	4679.049	57.43	5.94	35.18	44.00	54.55	74.00	-19.45	PK
H	4679.049	43.32	5.94	35.18	44.00	40.44	54.00	-13.56	AV
H	11510.019	51.94	8.46	38.71	44.50	54.61	68.20	-13.59	PK
H	11510.019	44.02	8.46	38.71	44.50	46.69	54.00	-7.31	AV
H	17265.104	52.59	10.12	38.38	44.10	56.99	74.00	-17.01	PK
H	17265.104	42.02	10.12	38.38	44.10	46.42	54.00	-7.58	AV
middle Channel (5795 MHz)-Above 1G									
V	6039.019	56.71	6.48	36.35	44.05	55.49	68.20	-12.71	PK
V	6039.019	43.98	6.48	36.35	44.05	42.76	54.00	-11.24	AV
V	11590.002	57.79	8.47	37.88	44.51	59.63	74.00	-14.37	PK
V	11590.002	43.60	8.47	37.88	44.51	45.44	54.00	-8.56	AV
V	17385.054	55.85	10.12	38.80	44.10	60.67	68.20	-7.53	PK
V	17385.054	41.50	10.12	38.80	42.70	47.72	54.00	-6.28	AV
H	6039.157	59.13	6.48	36.37	44.05	57.93	68.20	-10.27	PK
H	6039.157	43.26	6.48	36.37	44.05	42.06	54.00	-11.94	AV
H	11590.113	52.56	8.47	38.64	44.50	55.17	74.00	-18.83	PK
H	11590.113	43.87	8.47	38.64	44.50	46.48	54.00	-7.52	AV
H	17385.094	53.27	10.12	38.38	44.10	57.67	68.20	-10.53	PK
H	17385.094	43.59	10.12	38.38	44.10	47.99	54.00	-6.01	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) - 802.11 AC80
-------------	------------------------

Polar (H/V)	Frequency (MHz)	Meter Reading (dBUV)	Cable loss (dB)	Antenn a Factor (dB/m)	Preamp Factor (dB)	Emission Level (dBUV/m)	Limits (dBUV/m)	Margin (dB)	Detector Type
(5775 MHz)-Above 1G									
V	4679.150	57.86	5.94	35.40	44.00	55.20	74.00	-18.80	PK
V	4679.150	43.66	5.94	35.40	44.00	41.00	54.00	-13.00	AV
V	11550.032	57.48	8.46	39.75	44.50	61.19	68.20	-7.01	PK
V	11550.032	43.68	8.46	39.75	44.50	47.39	54.00	-6.61	AV
V	17325.116	60.19	10.12	38.80	44.10	65.01	74.00	-8.99	PK
V	17325.116	41.62	10.12	38.80	42.70	47.84	54.00	-6.16	AV
H	4679.006	58.31	5.94	35.18	44.00	55.43	74.00	-18.57	PK
H	4679.006	43.70	5.94	35.18	44.00	40.82	54.00	-13.18	AV
H	11550.011	50.86	8.46	38.71	44.50	53.53	68.20	-14.67	PK
H	11550.011	41.51	8.46	38.71	44.50	44.18	54.00	-9.82	AV
H	17325.116	52.73	10.12	38.38	44.10	57.13	74.00	-16.87	PK
H	17325.116	43.46	10.12	38.38	44.10	47.86	54.00	-6.14	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 Wifi Repeater 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 Wifi Repeater 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 Wifi Repeaters 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 $RBW \geq 1/T$, where T is defined in section II.B.I.a).
- b) Set $VBW \geq 3 RBW$.
- c) If measurement bandwidth of Maximum PSD is specified in 500 kHz, add $10\log(500\text{kHz}/RBW)$ to the measured result, whereas $RBW (< 500 \text{ KHz})$ 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 $10\log(1\text{MHz}/RBW)$ to the measured result, whereas $RBW (< 1 \text{ MHz})$ 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 $RBW=100 \text{ KHz}$ is available on nearly all spectrum analyzers.

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

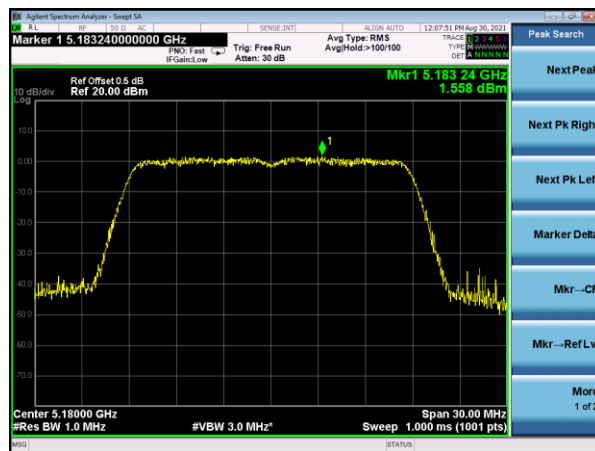
Note: A(B) Represent the value of antenna A and B, The worst data is Antenna A, only shown Antenna A Plot.

Mode	Frequency	Measured Power Density (dBm/MHz)			Limit (dBm/MHz)	Result
		ANT A	ANT B	Total		
802.11 a	5180 MHz	6.210	5.466	/	11	PASS
	5200 MHz	6.142	5.211	/	11	PASS
	5240 MHz	5.859	4.339	/	11	PASS
802.11 n20	5180 MHz	1.558	0.963	4.281	11	PASS
	5200 MHz	1.317	0.895	4.121	11	PASS
	5240 MHz	1.240	0.418	3.859	11	PASS
802.11 n40	5190 MHz	0.236	-0.167	3.049	11	PASS
	5230 MHz	0.044	-0.827	2.641	11	PASS
802.11 ac20	5180 MHz	1.487	1.788	4.650	11	PASS
	5200 MHz	1.352	0.722	4.059	11	PASS
	5240 MHz	0.398	0.994	3.717	11	PASS
802.11 ac40	5190 MHz	0.234	-0.053	3.103	11	PASS
	5230 MHz	1.629	-0.600	3.666	11	PASS
802.11 AC80	5210 MHz	-0.956	-2.104	1.518	11	PASS

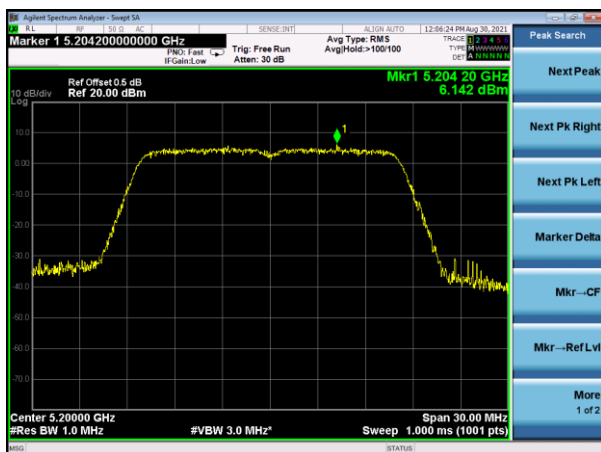
(802.11a) PSD plot on channel 36



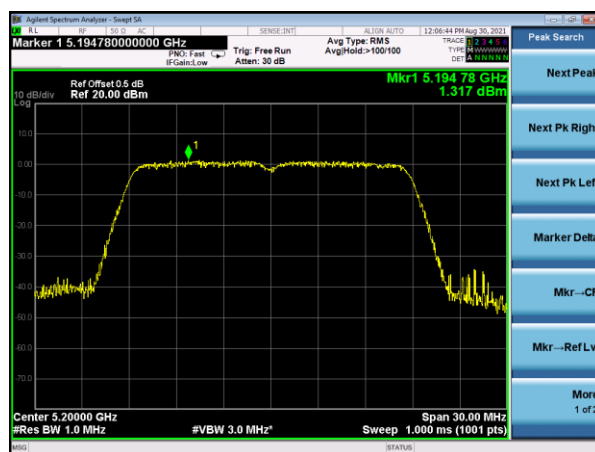
(802.11n20) PSD plot on channel 36



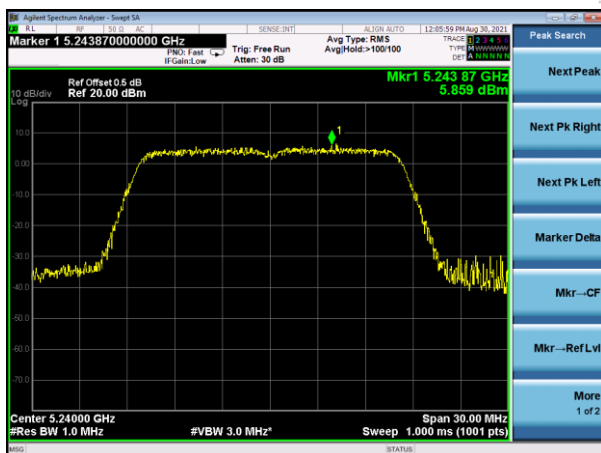
(802.11a) PSD plot on channel 40



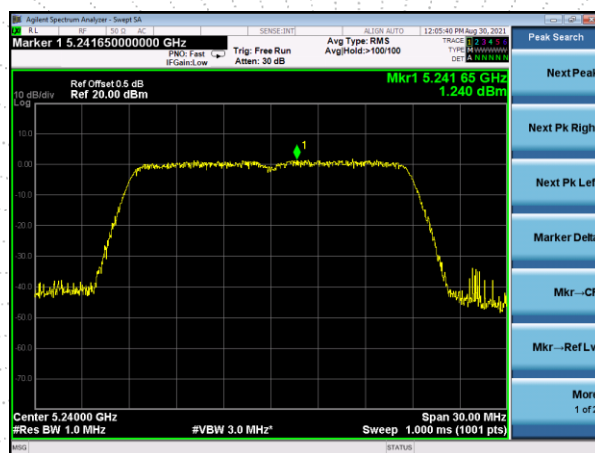
(802.11n20) PSD plot on channel 40



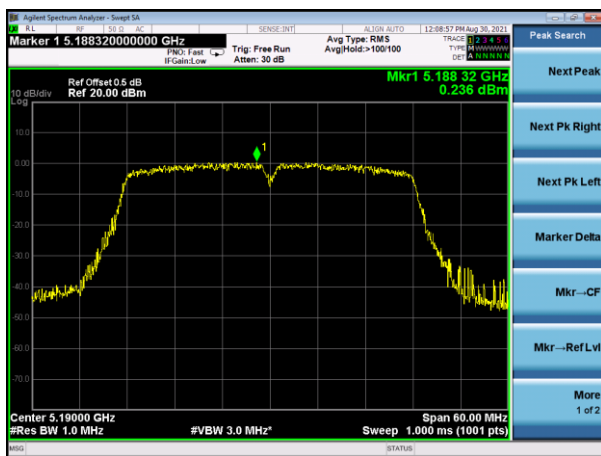
(802.11a) PSD plot on channel 48



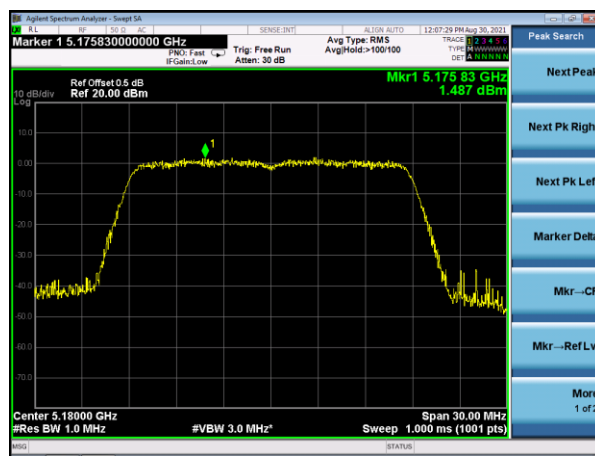
(802.11n20) PSD plot on channel 48



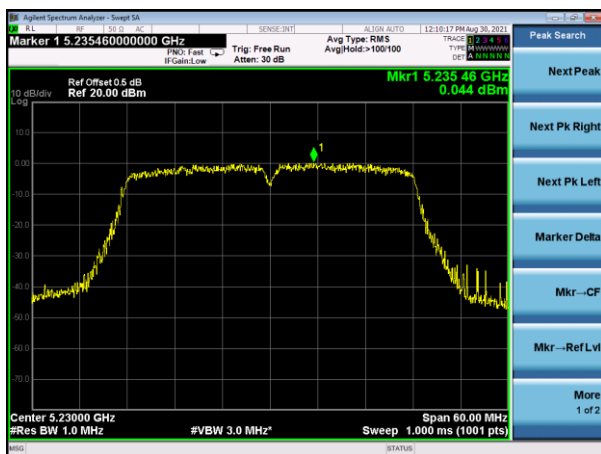
(802.11n40) PSD plot on channel 38



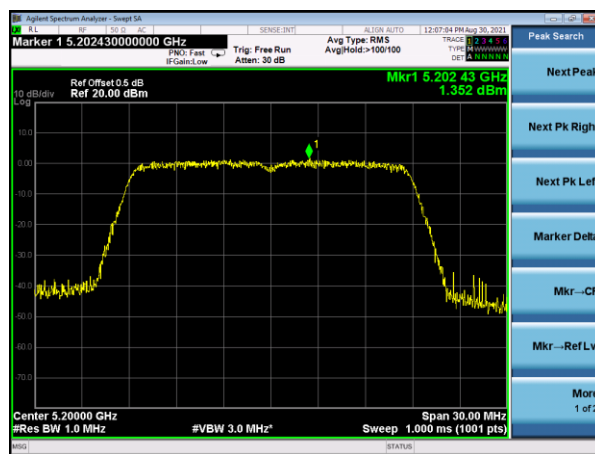
(802.11ac20) PSD plot on channel 36



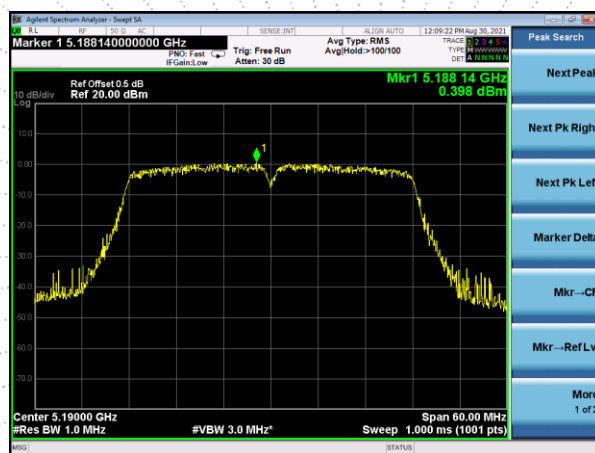
(802.11n40) PSD plot on channel 46



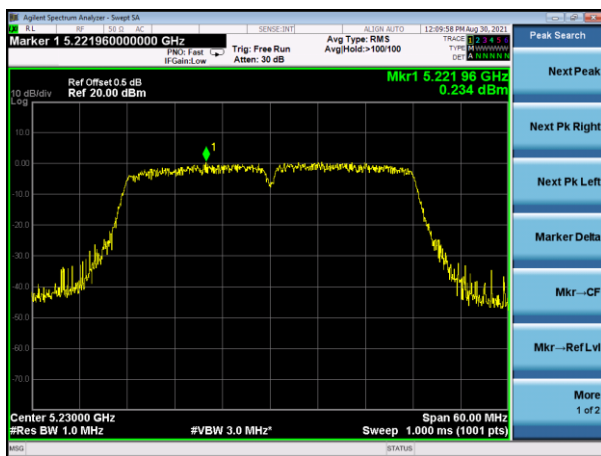
(802.11ac20) PSD plot on channel 40



(802.11ac20) PSD plot on channel 48



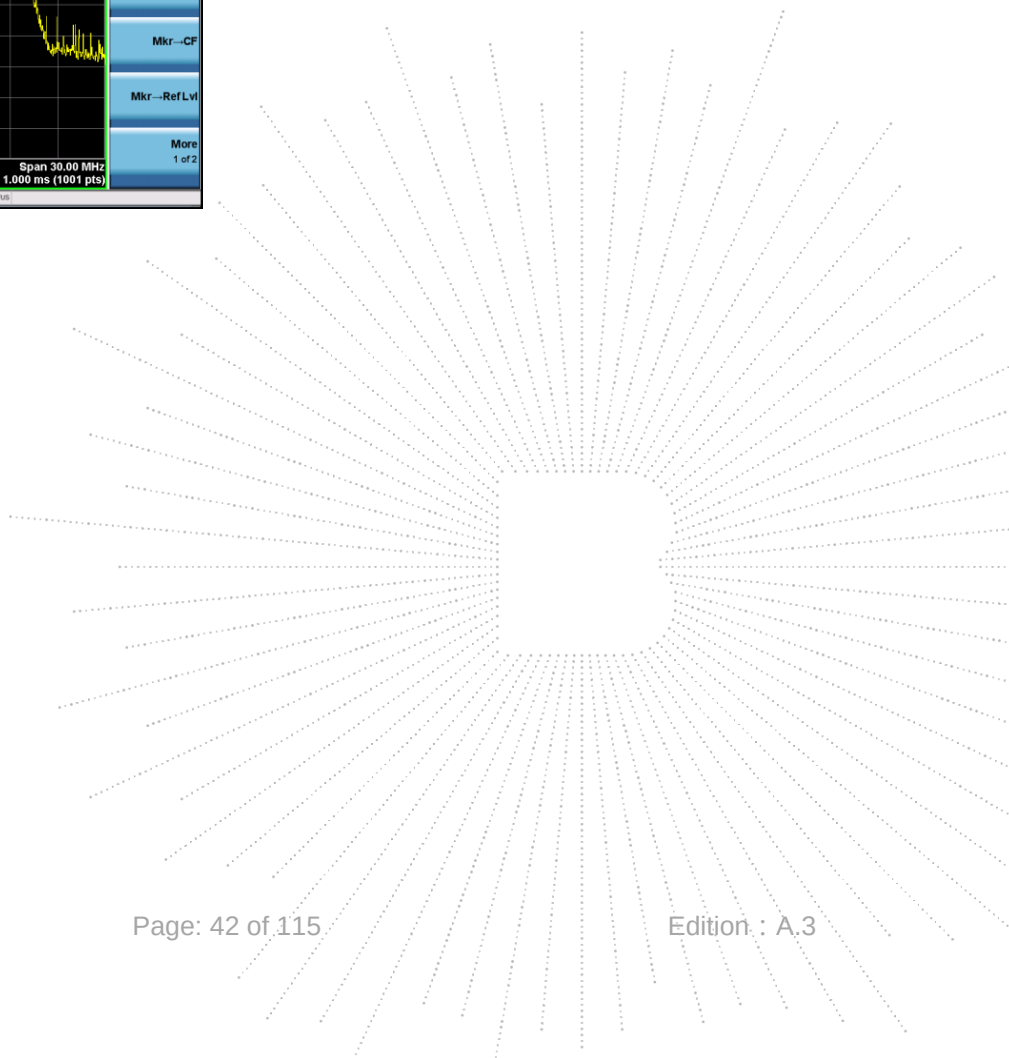
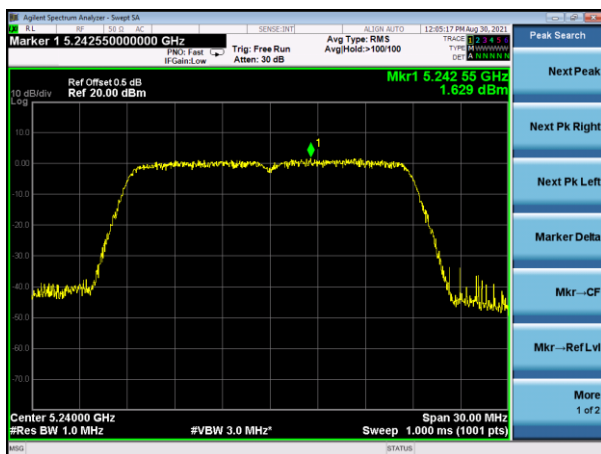
(802.11ac40) PSD plot on channel 38



(802.11ac80) PSD plot on channel 42



(802.11ac40) PSD plot on channel 46

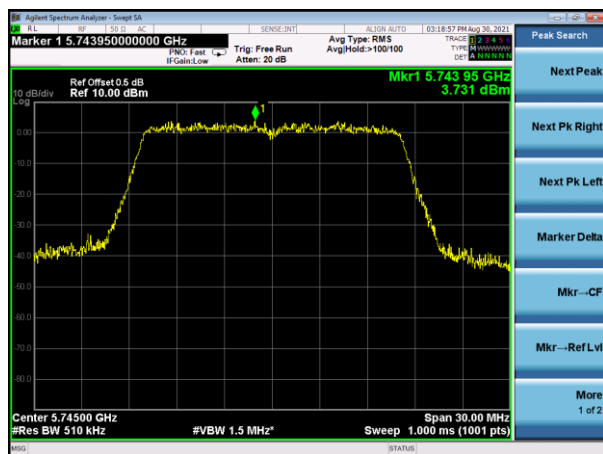


Temperature :	26 °C	Relative Humidity :	54%
Pressure :	101kPa	Test Voltage :	AC120V/60Hz
Test Mode :	TX Frequency U-NII-3 (5745-5825MHz)		

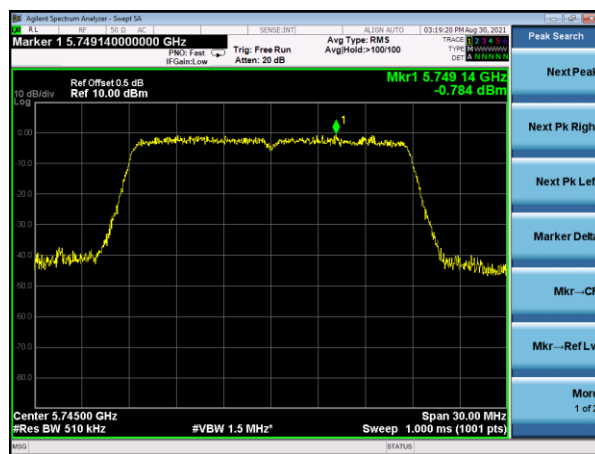
Note: A(B) Represent the value of antenna A and B, The worst data is Antenna B, only shown Antenna B Plot.

Mode	Frequency	Measured Power Density (dBm/500KHz)			Limit (dBm/500kHz)	Result
		ANT A	ANT B	Total		
802.11 a	5745 MHz	3.439	3.731	/	30	PASS
	5785 MHz	2.776	2.631	/	30	PASS
	5825 MHz	3.579	2.004	/	30	PASS
802.11 n20	5745 MHz	-0.647	-0.784	2.295	30	PASS
	5785 MHz	-1.087	-1.857	1.555	30	PASS
	5825 MHz	-0.900	-2.031	1.582	30	PASS
802.11 n40	5755 MHz	-1.708	-1.761	1.276	30	PASS
	5795 MHz	-1.193	-2.756	1.106	30	PASS
802.11 ac20	5745 MHz	-0.812	-0.448	2.384	30	PASS
	5785 MHz	-1.037	-1.903	1.562	30	PASS
	5825 MHz	-1.320	-1.914	1.403	30	PASS
802.11 ac40	5755 MHz	-1.438	-1.699	1.444	30	PASS
	5795 MHz	-1.749	-2.591	0.861	30	PASS
802.11 AC80	5775 MHz	-1.635	-2.170	1.116	30	PASS

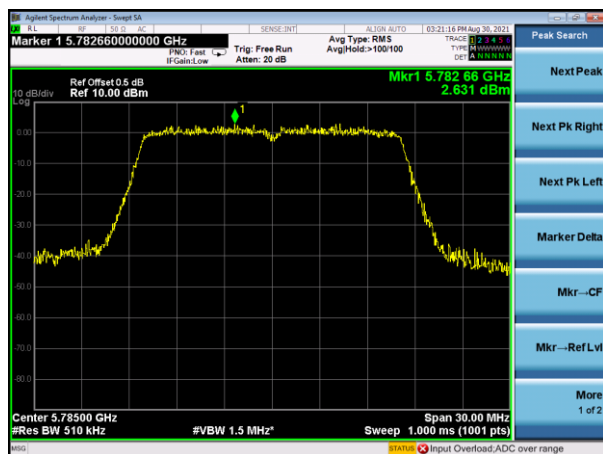
(802.11a) PSD plot on channel 149



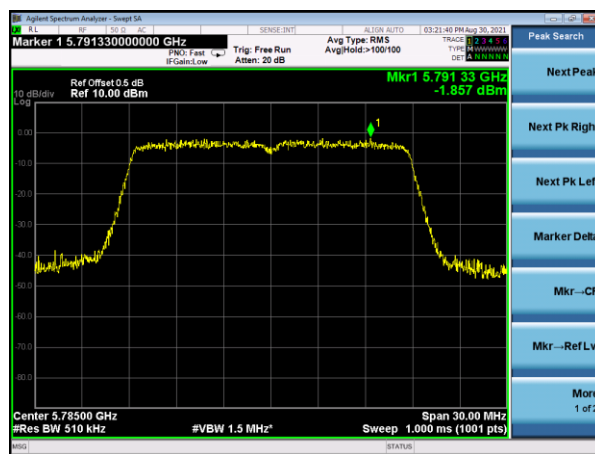
(802.11n20) PSD plot on channel 149



(802.11a) PSD plot on channel 157



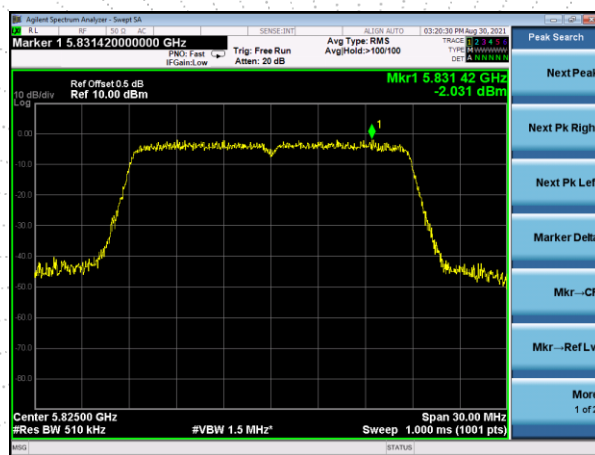
(802.11n20) PSD plot on channel 157



(802.11a) PSD plot on channel 165



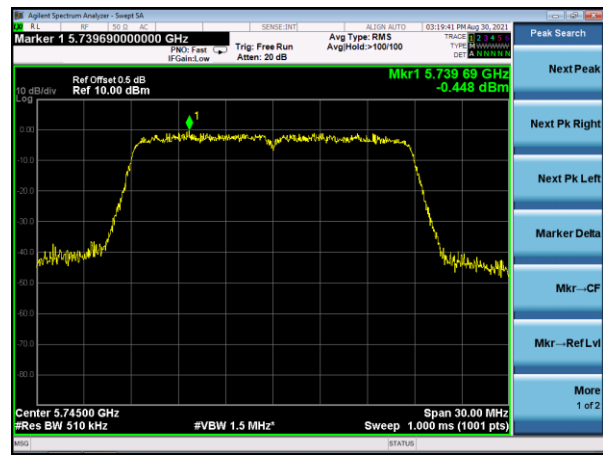
(802.11n20) PSD plot on channel 165



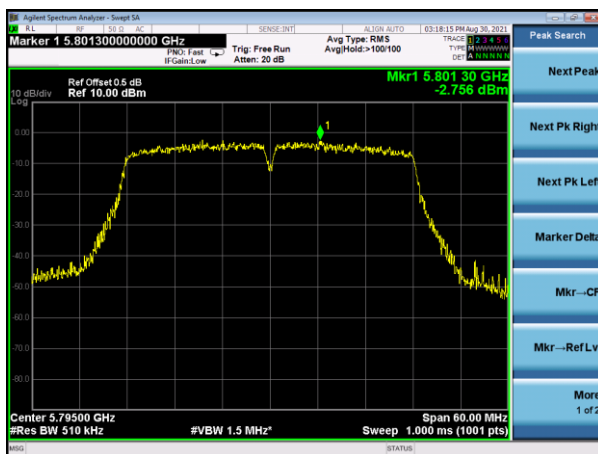
(802.11n40) PSD plot on channel 151



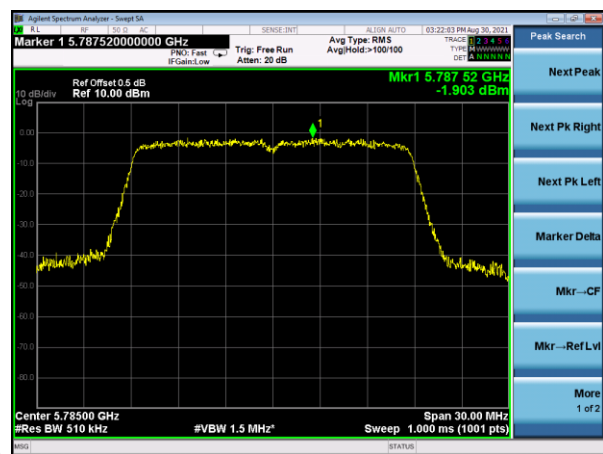
(802.11ac20) PSD plot on channel 149



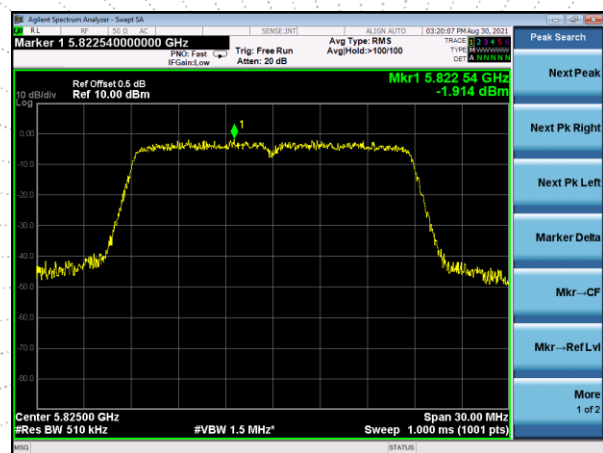
(802.11n40) PSD plot on channel 159



(802.11ac20) PSD plot on channel 157



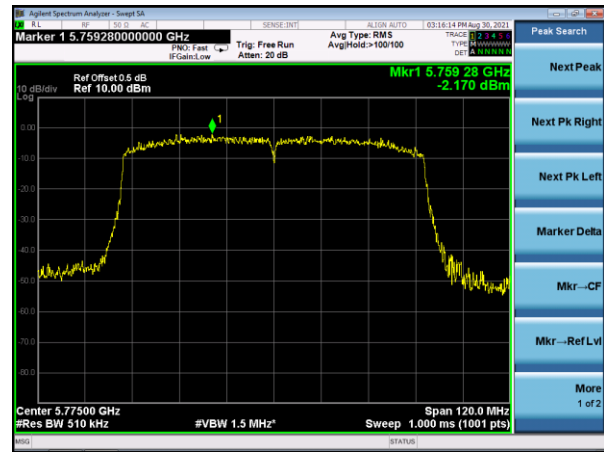
(802.11ac20) PSD plot on channel 165



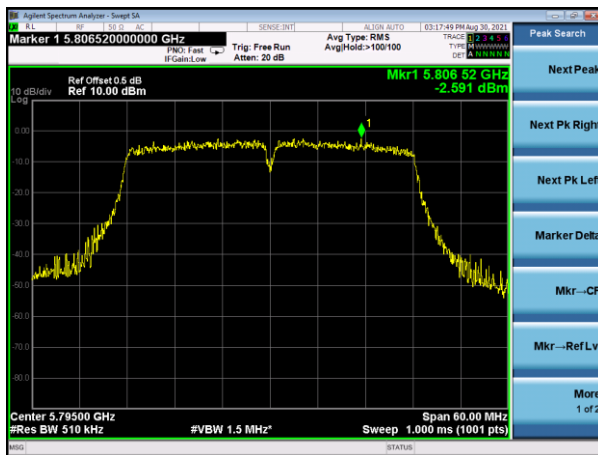
(802.11ac40) PSD plot on channel 151



(802.11ac80) PSD plot on channel 155

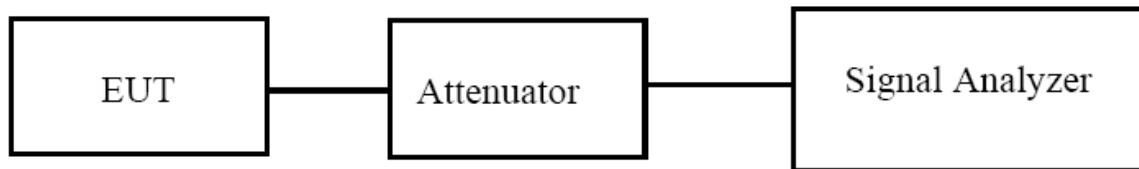


(802.11ac40) PSD plot on channel 159



9. 26DB & 6DB & 99% EMISSION BANDWIDTH

9.1 Block Diagram Of Test Setup



9.2 Limit

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 are made over a reference bandwidth of 500 kHz or the 26 dB emission bandwidth of the device, whichever is less. 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.

9.3 Test procedure

- a) Set RBW = approximately 1% of the emission bandwidth.
- b) Set the VBW > RBW.
- c) Detector = Peak.
- d) Trace mode = max hold.
- e) Measure the maximum width of the emission that is 26 dB down from the maximum 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%.

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 5.0 times the OBW.
3. Set RBW = 1 % to 5 % of the OBW
4. Set VBW $\geq 3 \cdot$ 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.

9.4 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.

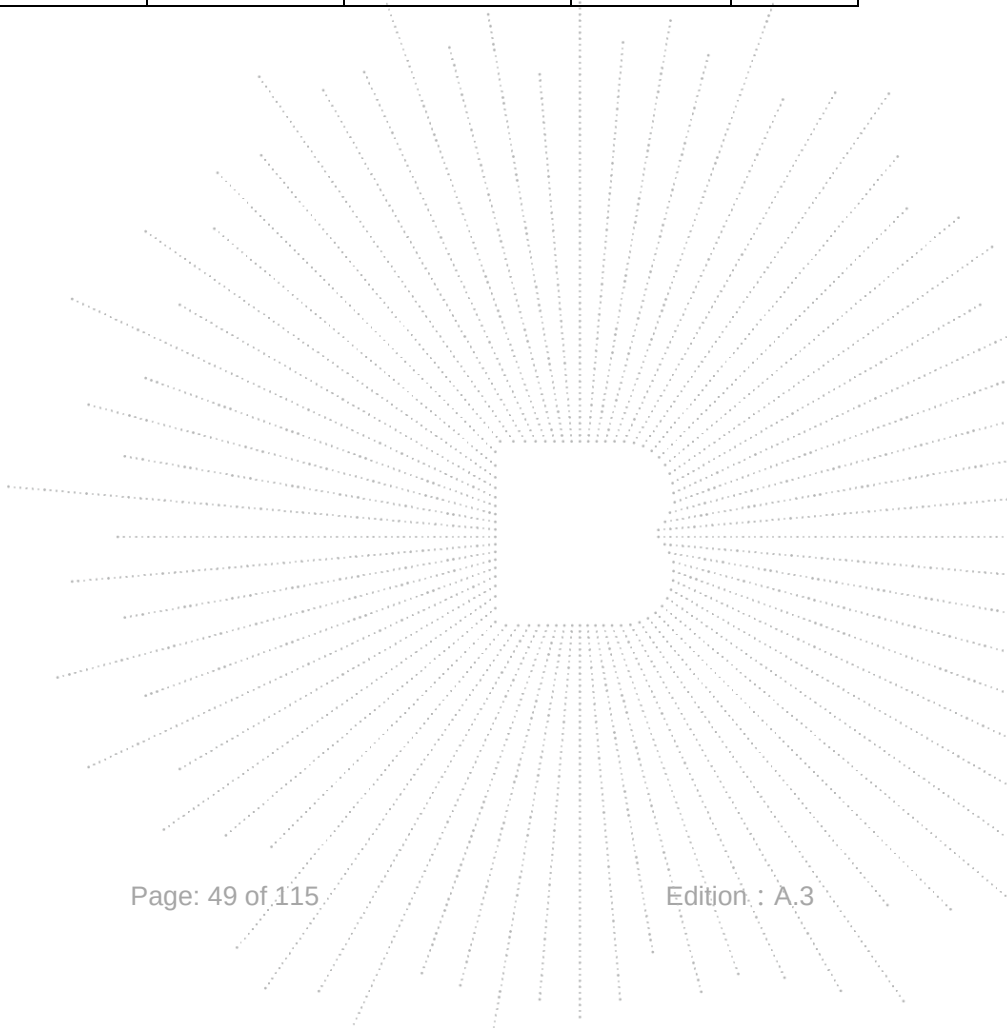
9.5 Test Result

Temperature :	26 °C	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.

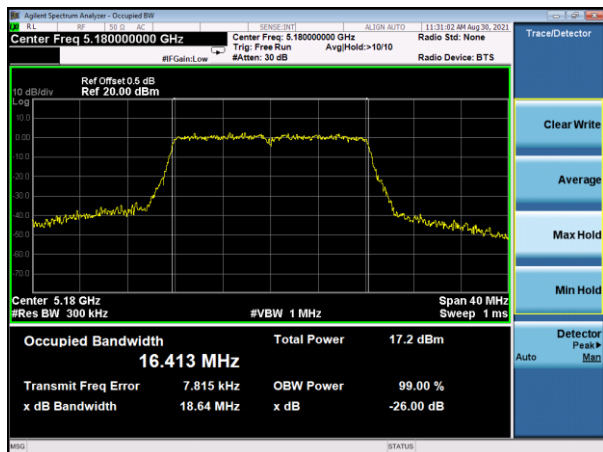
Mode	Channel	Frequency (MHz)	99% bandwidth(MHz)	26dB bandwidth (MHz)	Limit MHz	Result
			ANT A	ANT A		
802.11a	CH36	5180	16.413	18.64	N/A	Pass
	CH40	5200	16.392	18.61	N/A	Pass
	CH48	5240	16.397	18.64	N/A	Pass
802.11 n20	CH36	5180	17.559	19.46	N/A	Pass
	CH40	5200	17.583	19.61	N/A	Pass
	CH48	5240	17.584	19.53	N/A	Pass
802.11 n40	CH 38	5190	36.245	42.51	N/A	Pass
	CH 46	5230	36.542	42.87	N/A	Pass
802.11 ac20	CH36	5180	17.550	19.63	N/A	Pass
	CH40	5200	17.545	19.59	N/A	Pass
	CH48	5240	17.574	19.65	N/A	Pass
802.11 ac40	CH 38	5190	36.205	43.10	N/A	Pass
	CH 46	5230	36.410	43.50	N/A	Pass
802.11 AC80	CH 42	5210	74.668	81.04	N/A	Pass

Mode	Channel	Frequency (MHz)	99% bandwidth (MHz)	26dB bandwidth (MHz)	Limit MHz	Result
			ANT B	ANT B		
802.11a	CH36	5180	16.398	18.75	N/A	Pass
	CH40	5200	16.409	18.66	N/A	Pass
	CH48	5240	16.415	18.65	N/A	Pass
802.11 n20	CH36	5180	17.572	19.58	N/A	Pass
	CH40	5200	17.581	19.53	N/A	Pass
	CH48	5240	17.575	19.47	N/A	Pass
802.11 n40	CH 38	5190	36.197	42.19	N/A	Pass
	CH 46	5230	36.289	42.16	N/A	Pass
802.11 ac20	CH36	5180	17.568	19.53	N/A	Pass
	CH40	5200	17.547	19.56	N/A	Pass
	CH48	5240	17.574	19.61	N/A	Pass
802.11 ac40	CH 38	5190	36.170	42.38	N/A	Pass
	CH 46	5230	36.257	43.32	N/A	Pass
802.11 AC80	CH 42	5210	74.773	81.03	N/A	Pass

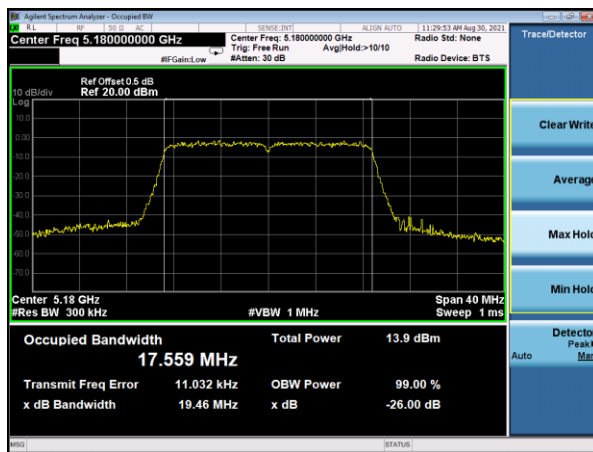


Test plot

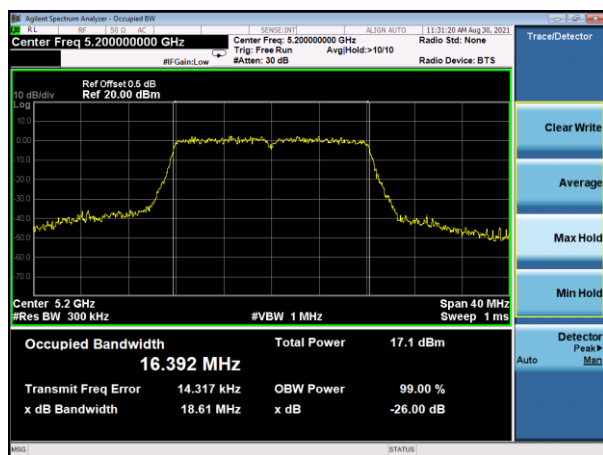
(802.11a) 26dB&99%Bandwidth plot on channel 36



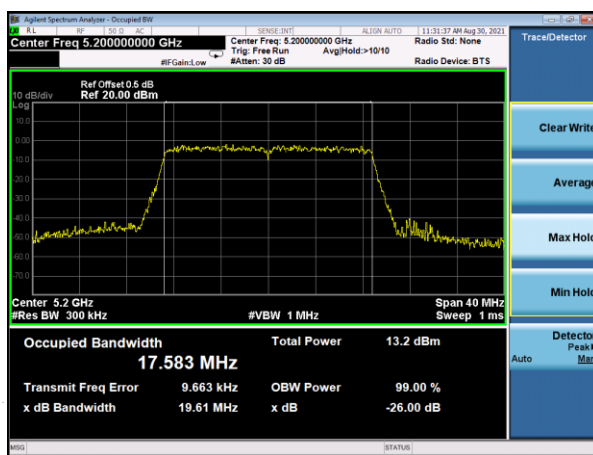
(802.11 n20) 26dB&99%Bandwidth plot on channel 36



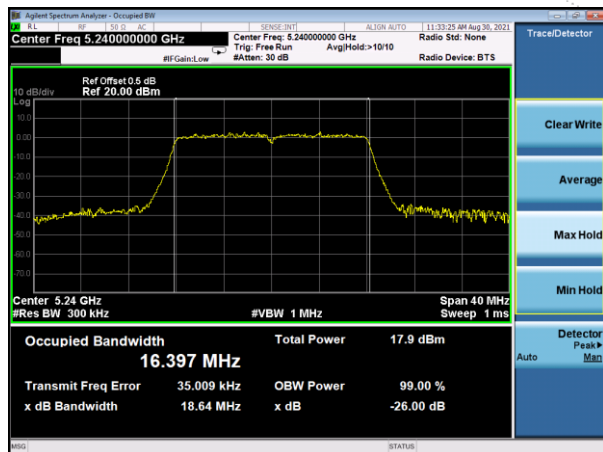
(802.11a) 26dB&99%Bandwidth plot on channel 40



(802.11 n20) 26dB&99%Bandwidth plot on channel 40



(802.11a) 26dB&99%Bandwidth plot on channel 48



(802.11 n20) 26dB&99%Bandwidth plot on channel 48

