

TEST REPORT

Report No.: BCTC2105417693-3E

Applicant: Epic Video Technologies, Inc.

Product Name: EPIC Set-Top Box

Model/Type
reference: EPIC Slate

Tested Date: 2021-05-12 to 2021-06-02

Issued Date: 2021-06-11

Shenzhen BCTC Testing Co., Ltd.



FCC ID: 2A2DC-EPICSLATE

Product Name: EPIC Set-Top Box
Trademark: Epic
Model/Type reference: EPIC Slate
Prepared For: Epic Video Technologies, Inc.
Address: 3230 Peachtree Corners Circle Suite H Peachtree Corners,
GA 30092
Manufacturer: Xunison Ltd.
Address: 25A, Kilcarbery Business Park, Upper Nangor Rd, Kilcarbery,
Dublin, D22 H959
Prepared By: 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
Sample Received Date: 2021-05-11
Sample tested Date: 2021-05-12 to 2021-06-02
Issue Date: 2021-06-11
Report No.: BCTC2105417693-3E
FCC Part15 15.407
ANSI C63.10-2013
Test Standards: KDB 662911 D01 v02r01
KDB 789033 D02 v02r01
Test Results: PASS

Tested by:



Eric Yang/Project Handler

Approved by:



Zero Zhou/Reviewer

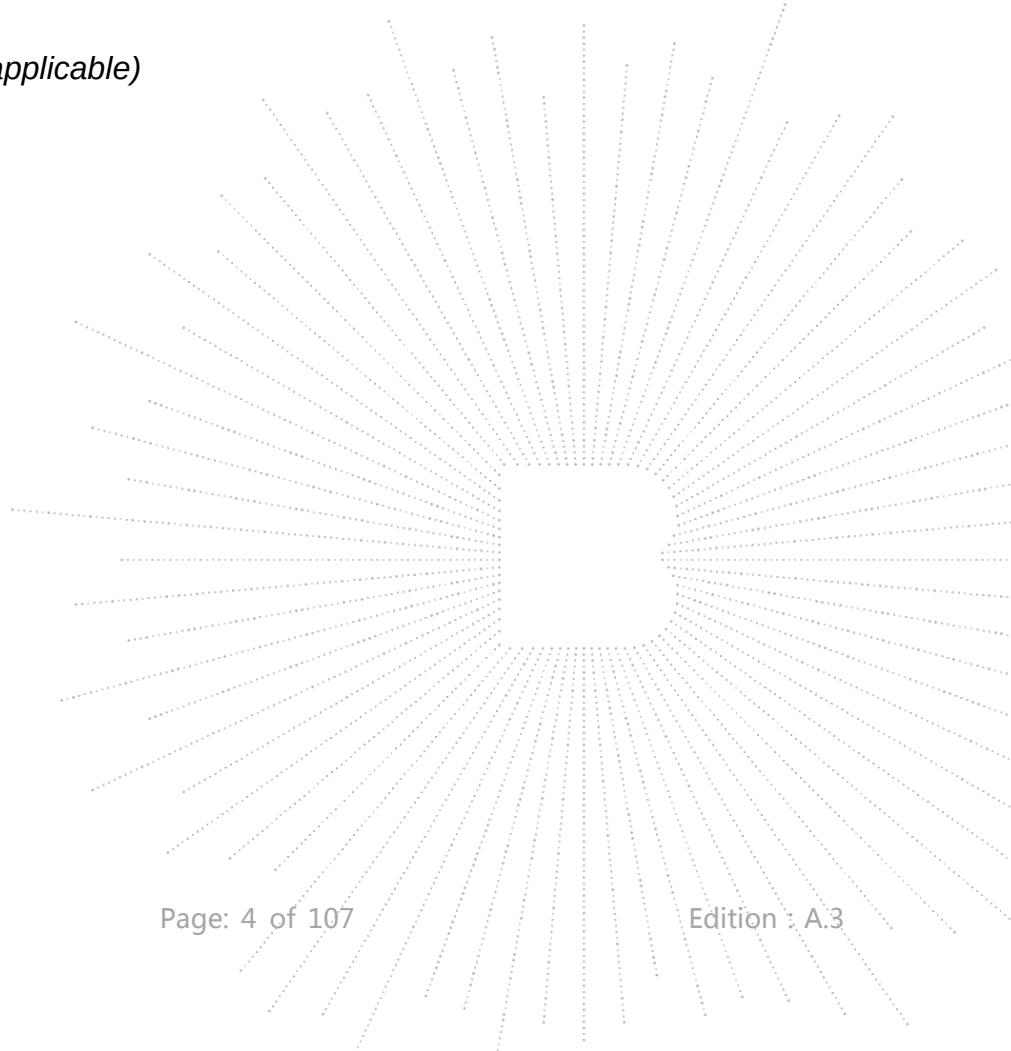
The test report is effective only with both signature and specialized stamp. This result(s) shown in this report refer only to the sample(s) tested. Without written approval of Shenzhen BCTC Testing Co., Ltd, this report can't be reproduced except in full. The tested sample(s) and the sample information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

TABLE OF CONTENT

Test Report Declaration	Page
1. VERSION	5
2. TEST SUMMARY	6
3. MEASUREMENT UNCERTAINTY	7
4. PRODUCT INFORMATION AND TEST SETUP	8
4.1 Product Information	8
4.2 Test Setup Configuration	9
4.3 Support Equipment	9
4.4 Channel List	10
4.5 Test Mode	11
4.6 table of parameters of text software setting	12
4.7 Antenna	12
5. TEST FACILITY AND TEST INSTRUMENT USED	13
5.1 Test Facility	13
5.2 Test Instrument Used	13
6. CONDUCTED EMISSIONS	15
6.1 Block Diagram Of Test Setup	15
6.2 Limit	15
6.3 Test procedure	15
6.4 EUT operating Conditions	15
6.5 Test Result	15
7. RADIATED EMISSIONS	18
7.1 Block Diagram Of Test Setup	18
7.2 Limit	19
7.3 Test procedure	20
7.4 EUT operating Conditions	21
7.5 Test Result	22
8. POWER SPECTRAL DENSITY TEST	37
8.1 Block Diagram Of Test Setup	37
8.2 Limit	37
8.3 Test procedure	38
8.4 EUT operating Conditions	38
8.5 Test Result	39
9. 26DB & 6DB & 99% EMISSION BANDWIDTH	47
9.1 Block Diagram Of Test Setup	47
9.2 Limit	47
9.3 Test procedure	47
9.4 EUT operating Conditions	48
9.5 Test Result	48
10. MAXIMUM CONDUCTED OUTPUT POWER	69

10.1	Block Diagram Of Test Setup	69
10.2	Limit	69
10.3	Test procedure	69
10.4	EUT operating Conditions	70
10.5	Test Result	71
11.	OUT OF BAND EMISSIONS	73
11.1	Block Diagram Of Test Setup	73
11.2	Limit	73
11.3	Test procedure	73
11.4	EUT operating Conditions	73
11.5	Test Result	74
12.	SPURIOUS RF CONDUCTED EMISSIONS	80
12.1	Block Diagram Of Test Setup	80
12.2	Limit	80
12.3	Test procedure	80
12.4	Test Result	81
13.	FREQUENCY STABILITY MEASUREMENT	96
14.	ANTENNA REQUIREMENT	103
14.1	Limit	103
14.2	Test Result	103
15.	EUT PHOTOGRAPHS	104
16.	EUT TEST SETUP PHOTOGRAPHS	105

(Note: N/A means not applicable)



1. VERSION

Report No.	Issue Date	Description	Approved
BCTC2105417693-3E	2021-06-11	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	Frequency Stability Measurement	15.407(g)	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 Adjacent channel power	U=1.38dB
6	Conducted output power uncertainty Above 1G	U=1.576dB
7	Conducted output power uncertainty below 1G	U=1.28dB
8	humidity uncertainty	U=5.3%
9	Temperature uncertainty	U=0.59°C
10	Conducted Emission (150kHz-30MHz)	U=3.2dB

4. PRODUCT INFORMATION AND TEST SETUP

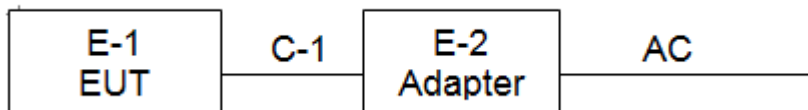
4.1 Product Information

Model/Type reference:	EPIC Slate
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-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:	Antenna A: External antenna Antenna B: FPC antenna
Antenna Gain:	Antenna A:2dBi Antenna B:1dBi
Ratings:	DC 5V Form adapter Model: GKYPN0200050UL1
Adapter	Input: AC100-240V~ 50/60Hz, 0.5A Output: 5V ~ 2000mA

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-2	Adapter	N/A	GKYPN02000 50UL1	N/A	Auxiliary

Item	Shielded Type	Ferrite Core	Length	Note
C-1	NO	NO	1.0M	DC 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	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 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 4	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 text 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 antennas with gain GANT 2dBi and 1dBi on every antenna, 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= $10 \log[(10^{G1/20} + 10^{G2/20} + \dots + 10^{GN/20})^2 / N_{ANT}]$ dBi

= $10 \log(((10^{(2/20)} + 10^{(1/20)})^2)/2)$ =4.52dB,

So the directional gain for PSD is 4.52dBi

Antenna	Brand	Model Name	Antenna Type	Gain (dBi)
A	N/A	N/A	External antenna	2
B	N/A	N/A	FPC antenna	1

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

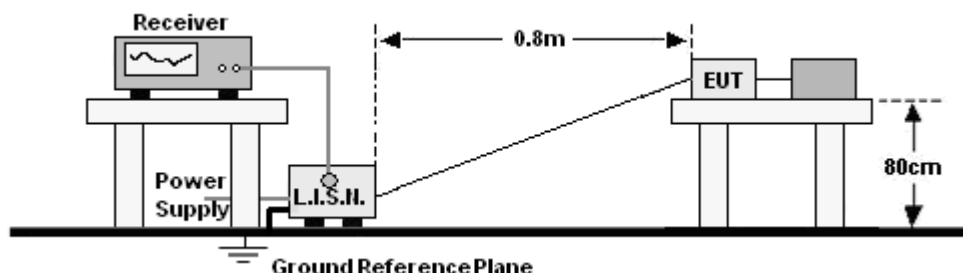
Conducted emissions Test					
Equipment	Manufacturer	Model#	Serial#	Last Cal.	Next Cal.
Receiver	R&S	ESR3	102075	Jun. 08, 2020	Jun. 07, 2021
LISN	R&S	ENV216	101375	Jun. 04, 2020	Jun. 03, 2021
ISN	HPX	ISN T800	S1509001	Jun. 04, 2020	Jun. 03, 2021
Software	Frad	EZ-EMC	EMC-CON 3A1	\	\

RF Conducted Test					
Equipment	Manufacturer	Model#	Serial#	Last Cal.	Next Cal.
Signal Analyzer 20kHz-26.5GHz	KEYSIGHT	N9020A	MY49100060	Jun. 04, 2020	Jun. 03, 2021

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	SCHWARZBEC K	BBHA9120 D	1201	Jun. 10, 2020	Jun. 09, 2021
Horn Antenna (18GHz-40GHz)	SCHWARZBEC K	BBHA9170	822	Jun. 10, 2020	Jun. 09, 2021
Amplifier (18GHz-40GHz)	MITEQ	TTA1840-3 5-HG	2034381	Jun. 08, 2020	Jun. 07, 2021
Loop Antenna (9kHz-30MHz)	SCHWARZBEC K	FMZB1519 B	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. 08, 2020	Jun. 07, 2021
Software	Frad	EZ-EMC	FA-03A2 RE	\	\

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:

- *Decreasing linearly with logarithm of frequency.
- 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.

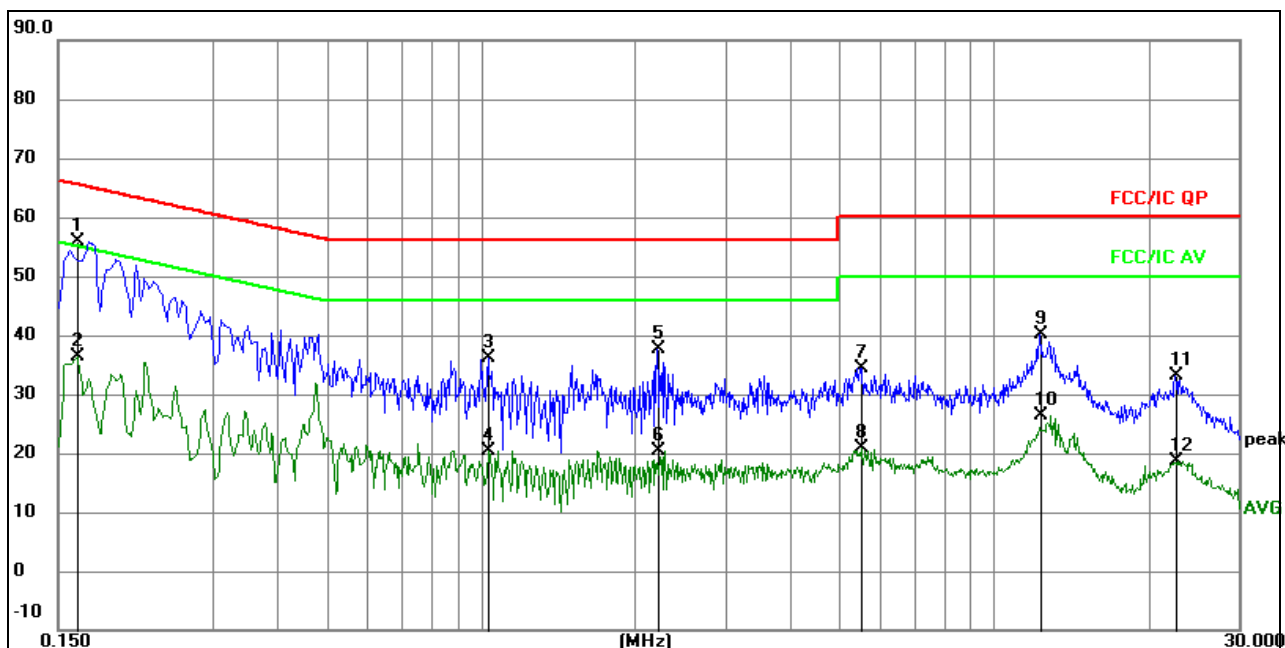
6.4 EUT operating Conditions

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

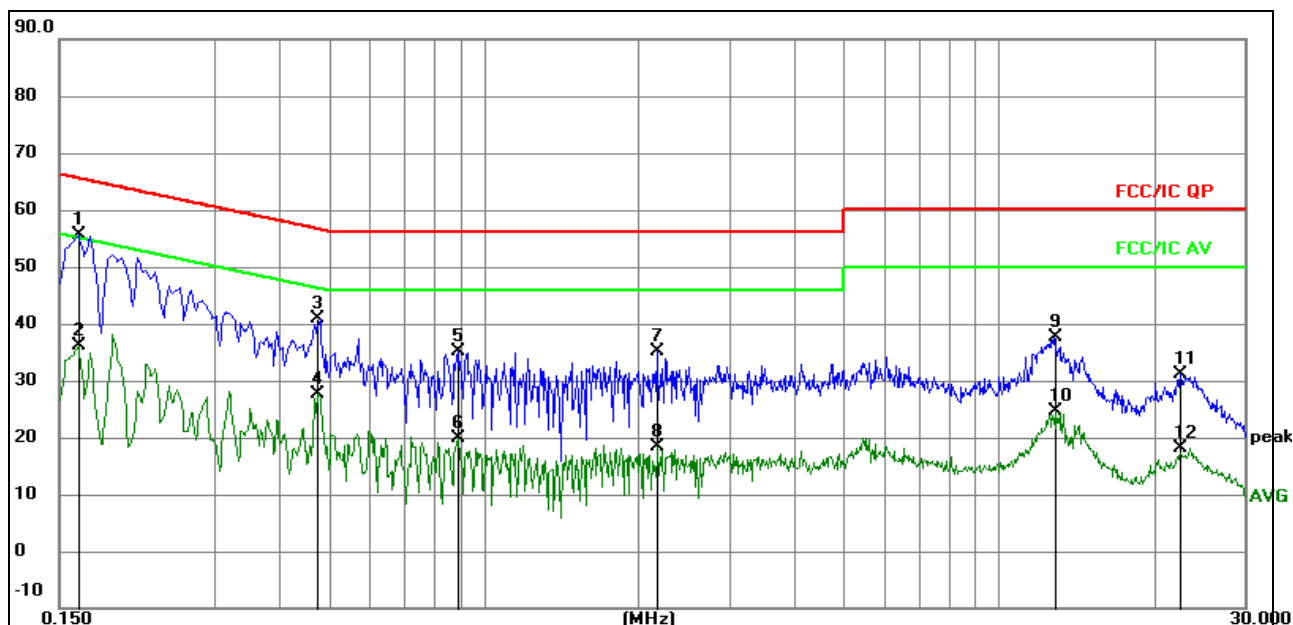


Remark:

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	*	0.1635	46.34	9.50	55.84	65.28	-9.44	QP
2		0.1635	27.00	9.50	36.50	55.28	-18.78	AVG
3		1.0365	26.53	9.57	36.10	56.00	-19.90	QP
4		1.0365	10.87	9.57	20.44	46.00	-25.56	AVG
5		2.2110	28.04	9.60	37.64	56.00	-18.36	QP
6		2.2110	10.77	9.60	20.37	46.00	-25.63	AVG
7		5.5230	24.61	9.78	34.39	60.00	-25.61	QP
8		5.5230	11.01	9.78	20.79	50.00	-29.21	AVG
9		12.2865	30.50	9.69	40.19	60.00	-19.81	QP
10		12.2865	16.75	9.69	26.44	50.00	-23.56	AVG
11		22.5690	23.44	9.77	33.21	60.00	-26.79	QP
12		22.5690	8.85	9.77	18.62	50.00	-31.38	AVG

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



Remark:

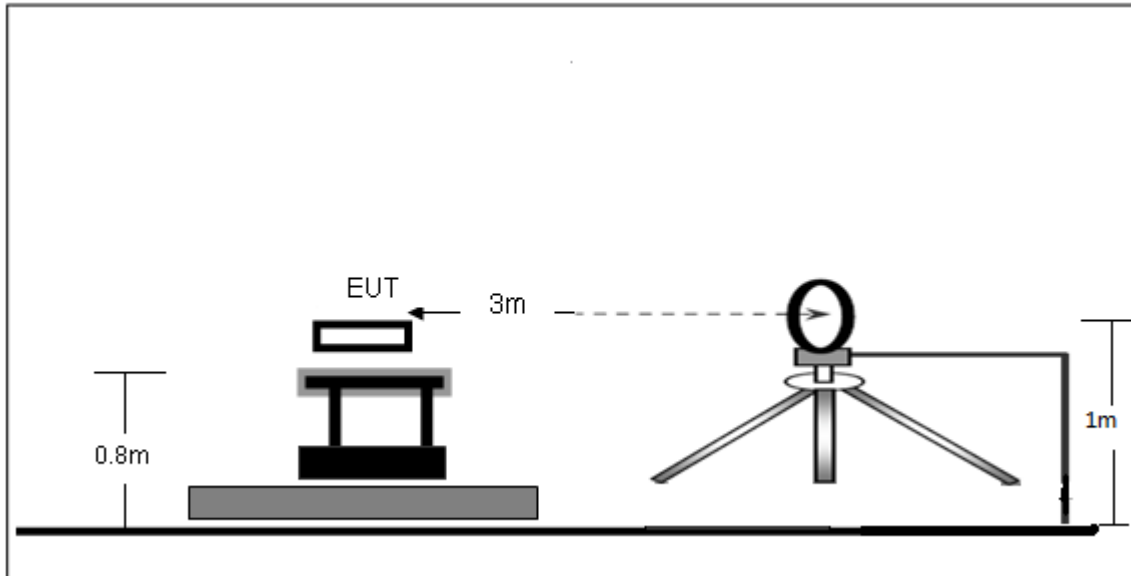
1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz		dB	dBuV	dBuV	dB	Detector
1	*	0.1633	46.07	9.50	55.57	65.29	-9.72	QP
2		0.1633	26.67	9.50	36.17	55.29	-19.12	AVG
3		0.4761	31.35	9.57	40.92	56.41	-15.49	QP
4		0.4761	18.17	9.57	27.74	46.41	-18.67	AVG
5		0.8897	25.46	9.60	35.06	56.00	-20.94	QP
6		0.8897	10.35	9.60	19.95	46.00	-26.05	AVG
7		2.1668	25.54	9.60	35.14	56.00	-20.86	QP
8		2.1668	8.73	9.60	18.33	46.00	-27.67	AVG
9		12.7837	27.81	9.70	37.51	60.00	-22.49	QP
10		12.7837	14.84	9.70	24.54	50.00	-25.46	AVG
11		22.5353	21.29	9.77	31.06	60.00	-28.94	QP
12		22.5353	8.33	9.77	18.10	50.00	-31.90	AVG

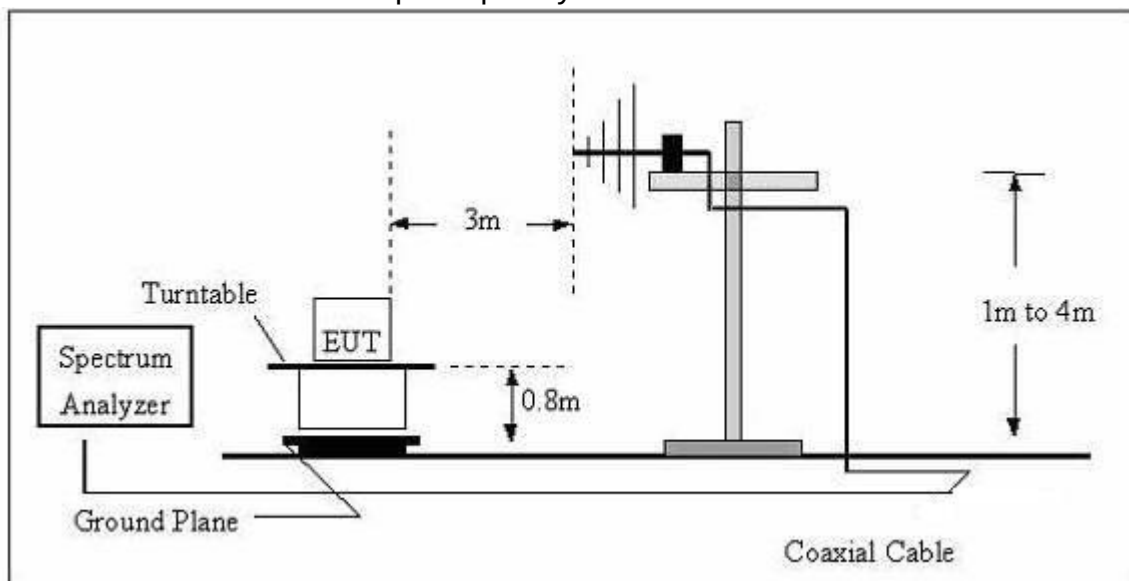
7. RADIATED EMISSIONS

7.1 Block Diagram Of Test Setup

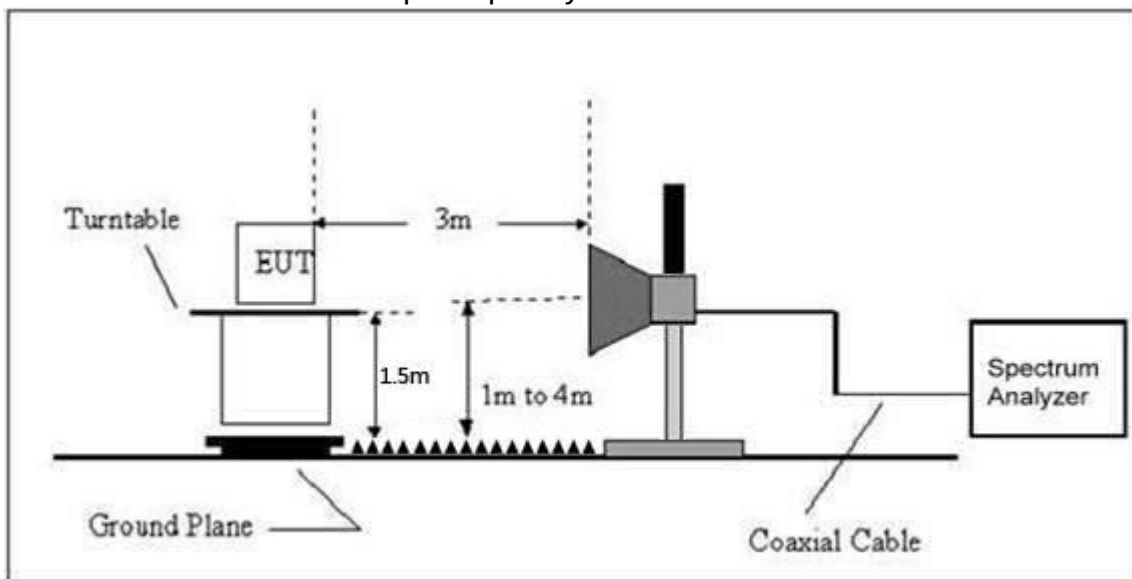
(A) Radiated Emission Test-Up Frequency Below 30MHz



(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 / 3M Average

Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~90kHz / RB 200Hz for PK & AV
Start ~ Stop Frequency	90kHz~110kHz / RB 200Hz for QP
Start ~ Stop Frequency	110kHz~490MHz / RB 200Hz for PK & AV
Start ~ Stop Frequency	490KHz~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

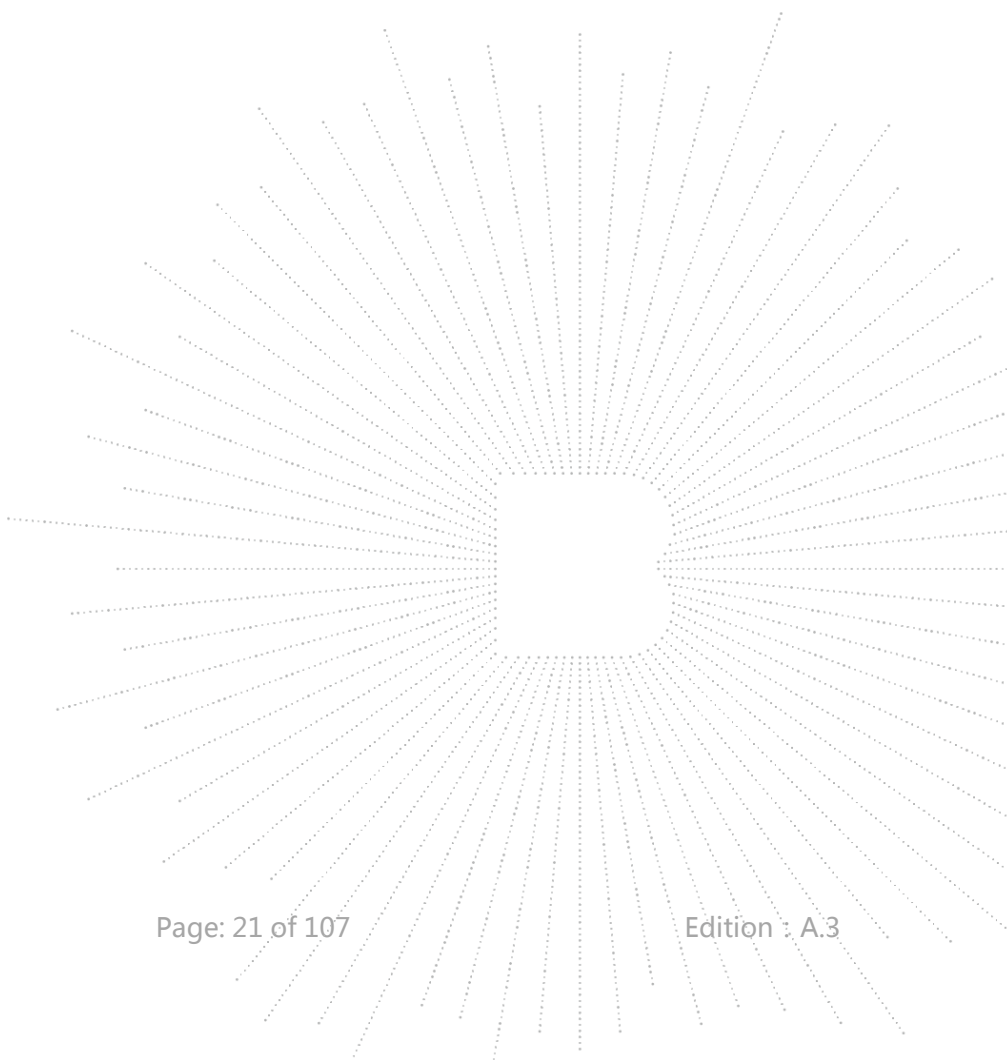
During the radiated emission test, the Spectrum Analyzer was set with the following configurations:

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 5	Polarization :	--

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

Note:

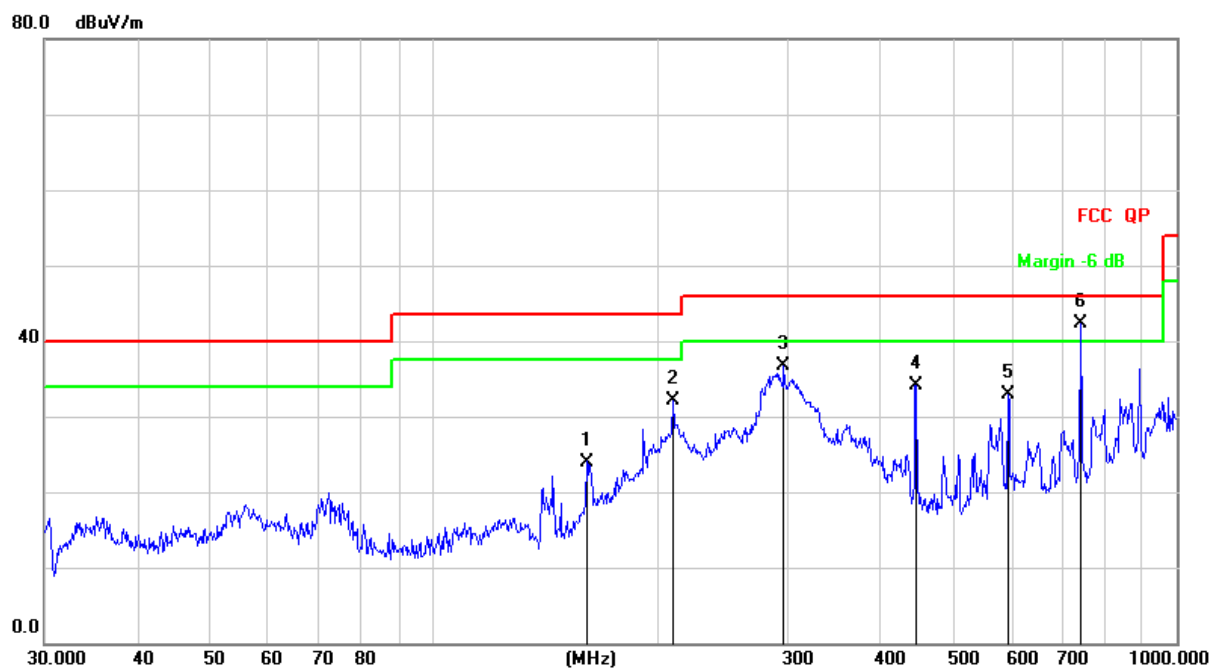
The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

Distance extrapolation factor = $40 \log (\text{specific distance/test distance})$ (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 5	Polarization :	Horizontal

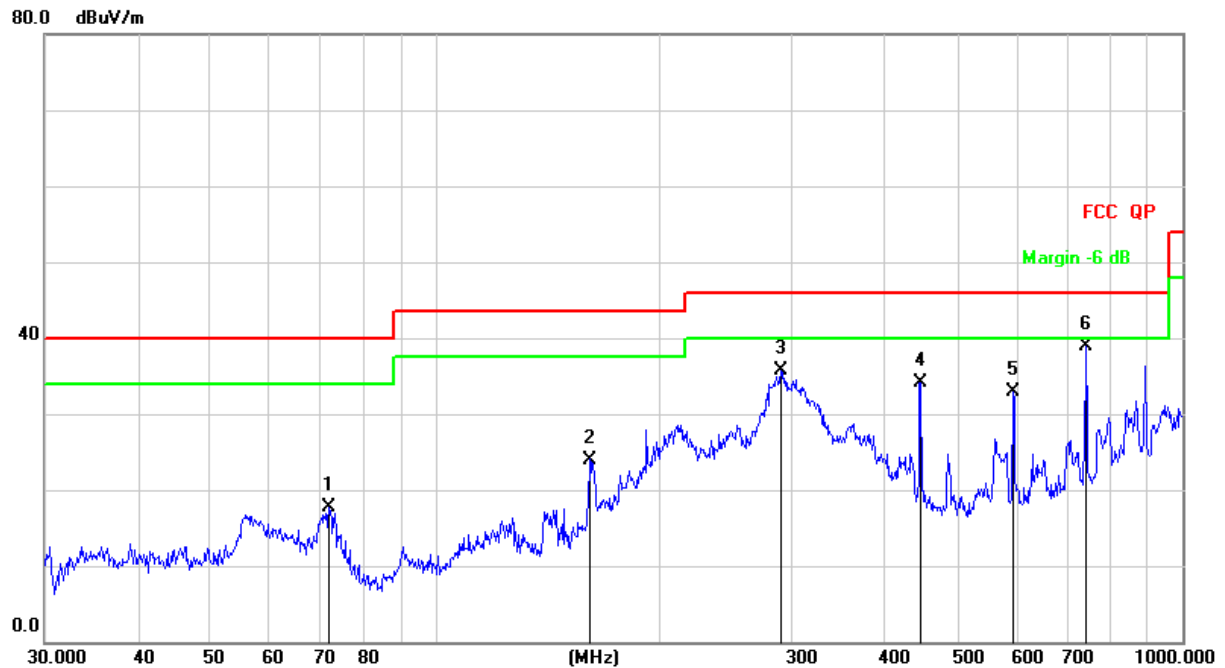


Remark:

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		160.9089	42.80	-18.80	24.00	43.50	-19.50	QP
2		210.0482	48.26	-16.07	32.19	43.50	-11.31	QP
3		296.1836	50.43	-13.72	36.71	46.00	-9.29	QP
4		446.4141	44.11	-10.05	34.06	46.00	-11.94	QP
5		593.0497	39.58	-6.68	32.90	46.00	-13.10	QP
6	*	742.2587	46.75	-4.46	42.29	46.00	-3.71	QP

Temperature:	26°C	Relative Humidity:	54%
Pressure:	101 kpa	Test Voltage :	AC120V/60Hz
Test Mode :	Mode 5	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		72.0843	36.28	-18.65	17.63	40.00	-22.37	QP
2		160.9089	42.80	-18.80	24.00	43.50	-19.50	QP
3		290.0172	49.52	-13.91	35.61	46.00	-10.39	QP
4		446.4141	44.11	-10.05	34.06	46.00	-11.94	QP
5		593.0497	39.58	-6.68	32.90	46.00	-13.10	QP
6	*	742.2587	43.37	-4.46	38.91	46.00	-7.09	QP

Between 1GHz – 40GHz

Test Mode :	TX(5.1G) - 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	4434.041	60.37	5.94	35.40	44.00	57.71	68.20	-10.49	PK
V	4434.041	43.76	5.94	35.40	44.00	41.10	54.00	-12.90	AV
V	10360.036	61.12	8.46	39.75	44.50	64.83	74.00	-9.17	PK
V	10360.036	43.02	8.46	39.75	44.50	46.73	54.00	-7.27	AV
V	15540.003	62.86	10.12	38.80	44.10	67.68	74.00	-6.32	PK
V	15540.003	43.18	10.12	38.80	42.70	49.40	54.00	-4.60	AV
H	4434.027	62.97	5.94	35.18	44.00	60.09	68.20	-8.11	PK
H	4434.027	43.57	5.94	35.18	44.00	40.69	54.00	-13.31	AV
H	10360.171	50.79	8.46	38.71	44.50	53.46	74.00	-20.54	PK
H	10360.171	40.59	8.46	38.71	44.50	43.26	54.00	-10.74	AV
H	15540.130	52.14	10.12	38.38	44.10	56.54	74.00	-17.46	PK
H	15540.130	41.29	10.12	38.38	44.10	45.69	54.00	-8.31	AV
middle Channel (5200 MHz)-Above 1G									
V	4592.150	60.75	6.48	36.35	44.05	59.53	74.00	-14.47	PK
V	4592.150	43.43	6.48	36.35	44.05	42.21	54.00	-11.79	AV
V	10400.172	62.66	8.47	37.88	44.51	64.50	68.20	-3.70	PK
V	10400.172	43.29	8.47	37.88	44.51	45.13	54.00	-8.87	AV
V	15600.059	60.09	10.12	38.80	44.10	64.91	74.00	-9.09	PK
V	15600.059	43.35	10.12	38.80	42.70	49.57	54.00	-4.43	AV
H	4592.055	61.70	6.48	36.37	44.05	60.50	74.00	-13.50	PK
H	4592.055	43.28	6.48	36.37	44.05	42.08	54.00	-11.92	AV
H	10400.090	51.10	8.47	38.64	44.50	53.71	68.20	-14.49	PK
H	10400.090	44.08	8.47	38.64	44.50	46.69	54.00	-7.31	AV
H	15600.157	54.95	10.12	38.38	44.10	59.35	74.00	-14.65	PK
H	15600.157	43.68	10.12	38.38	44.10	48.08	54.00	-5.92	AV
High Channel (5240 MHz)-Above 1G									
V	4739.119	61.64	7.10	37.24	43.50	62.48	74.00	-11.52	PK
V	4739.119	43.04	7.10	37.24	43.50	43.88	54.00	-10.12	AV
V	10480.175	60.37	8.46	37.68	44.50	62.01	68.20	-6.19	PK
V	10480.175	43.36	8.46	37.68	44.50	45.00	54.00	-9.00	AV
V	15720.076	64.81	10.12	38.80	44.10	69.63	74.00	-4.37	PK
V	15720.076	43.30	10.12	38.80	42.70	49.52	54.00	-4.48	AV
H	4739.164	64.86	7.10	37.24	43.50	65.70	74.00	-8.30	PK
H	4739.164	43.80	7.10	37.24	43.50	44.64	54.00	-9.36	AV
H	10480.160	52.40	8.46	38.57	44.50	54.93	68.20	-13.27	PK
H	10480.160	43.91	8.46	38.57	44.50	46.44	54.00	-7.56	AV
H	15720.079	54.03	10.12	38.38	44.10	58.43	74.00	-15.57	PK
H	15720.079	43.51	10.12	38.38	44.10	47.91	54.00	-6.09	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(5.1G) - 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	4434.173	63.69	5.94	35.40	44.00	61.03	68.20	-7.17	PK
V	4434.173	43.32	5.94	35.40	44.00	40.66	54.00	-13.34	AV
V	10360.059	60.34	8.46	39.75	44.50	64.05	68.20	-4.15	PK
V	10360.059	43.66	8.46	39.75	44.50	47.37	54.00	-6.63	AV
V	15540.014	61.63	10.12	38.80	44.10	66.45	74.00	-7.55	PK
V	15540.014	43.13	10.12	38.80	42.70	49.35	54.00	-4.65	AV
H	4434.182	63.31	5.94	35.18	44.00	60.43	68.20	-7.77	PK
H	4434.182	43.37	5.94	35.18	44.00	40.49	54.00	-13.51	AV
H	10360.011	53.43	8.46	38.71	44.50	56.10	68.20	-12.10	PK
H	10360.011	43.17	8.46	38.71	44.50	45.84	54.00	-8.16	AV
H	15540.046	51.39	10.12	38.38	44.10	55.79	74.00	-18.21	PK
H	15540.046	44.59	10.12	38.38	44.10	48.99	54.00	-5.01	AV
middle Channel (5200 MHz)-Above 1G									
V	4592.155	63.57	6.48	36.35	44.05	62.35	74.00	-11.65	PK
V	4592.155	43.48	6.48	36.35	44.05	42.26	54.00	-11.74	AV
V	10400.079	62.47	8.47	37.88	44.51	64.31	68.20	-3.89	PK
V	10400.079	43.76	8.47	37.88	44.51	45.60	54.00	-8.40	AV
V	15600.031	63.37	10.12	38.80	44.10	68.19	74.00	-5.81	PK
V	15600.031	43.46	10.12	38.80	42.70	49.68	54.00	-4.32	AV
H	4592.173	62.51	6.48	36.37	44.05	61.31	74.00	-12.69	PK
H	4592.173	43.49	6.48	36.37	44.05	42.29	54.00	-11.71	AV
H	10400.045	52.98	8.47	38.64	44.50	55.59	68.20	-12.61	PK
H	10400.045	42.00	8.47	38.64	44.50	44.61	54.00	-9.39	AV
H	15600.071	54.88	10.12	38.38	44.10	59.28	74.00	-14.72	PK
H	15600.071	40.74	10.12	38.38	44.10	45.14	54.00	-8.86	AV
High Channel (5240 MHz)-Above 1G									
V	4739.082	61.16	7.10	37.24	43.50	62.00	74.00	-12.00	PK
V	4739.082	43.62	7.10	37.24	43.50	44.46	54.00	-9.54	AV
V	10480.115	61.96	8.46	37.68	44.50	63.60	68.20	-4.60	PK
V	10480.115	43.44	8.46	37.68	44.50	45.08	54.00	-8.92	AV
V	15720.010	60.29	10.12	38.80	44.10	65.11	74.00	-8.89	PK
V	15720.010	43.32	10.12	38.80	42.70	49.54	54.00	-4.46	AV
H	4739.157	61.50	7.10	37.24	43.50	62.34	74.00	-11.66	PK
H	4739.157	43.40	7.10	37.24	43.50	44.24	54.00	-9.76	AV
H	10480.128	54.12	8.46	38.57	44.50	56.65	68.20	-11.55	PK
H	10480.128	42.66	8.46	38.57	44.50	45.19	54.00	-8.81	AV
H	15720.104	54.73	10.12	38.38	44.10	59.13	74.00	-14.87	PK
H	15720.104	41.90	10.12	38.38	44.10	46.30	54.00	-7.70	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
-------------	-------------------------

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	4434.035	60.49	5.94	35.40	44.00	57.83	74.00	-16.17	PK
V	4434.035	43.07	5.94	35.40	44.00	40.41	54.00	-13.59	AV
V	10380.200	60.64	8.46	39.75	44.50	64.35	68.20	-3.85	PK
V	10380.200	43.70	8.46	39.75	44.50	47.41	54.00	-6.59	AV
V	15570.159	62.32	10.12	38.80	44.10	67.14	74.00	-6.86	PK
V	15570.159	43.58	10.12	38.80	42.70	49.80	54.00	-4.20	AV
H	4434.111	63.60	5.94	35.18	44.00	60.72	74.00	-13.28	PK
H	4434.111	43.58	5.94	35.18	44.00	40.70	54.00	-13.30	AV
H	10380.041	53.54	8.46	38.71	44.50	56.21	68.20	-11.99	PK
H	10380.041	43.31	8.46	38.71	44.50	45.98	54.00	-8.02	AV
H	15570.048	50.03	10.12	38.38	44.10	54.43	74.00	-19.57	PK
H	15570.048	44.07	10.12	38.38	44.10	48.47	54.00	-5.53	AV
middle Channel (5230 MHz)-Above 1G									
V	4739.028	60.47	6.48	36.35	44.05	59.25	74.00	-14.75	PK
V	4739.028	43.98	6.48	36.35	44.05	42.76	54.00	-11.24	AV
V	10460.149	60.37	8.47	37.88	44.51	62.21	68.20	-5.99	PK
V	10460.149	43.09	8.47	37.88	44.51	44.93	54.00	-9.07	AV
V	15690.165	64.53	10.12	38.80	44.10	69.35	74.00	-4.65	PK
V	15690.165	43.47	10.12	38.80	42.70	49.69	54.00	-4.31	AV
H	4739.123	61.10	6.48	36.37	44.05	59.90	74.00	-14.10	PK
H	4739.123	43.61	6.48	36.37	44.05	42.41	54.00	-11.59	AV
H	10460.147	53.80	8.47	38.64	44.50	56.41	68.20	-11.79	PK
H	10460.147	42.24	8.47	38.64	44.50	44.85	54.00	-9.15	AV
H	15690.194	54.91	10.12	38.38	44.10	59.31	74.00	-14.69	PK
H	15690.194	42.26	10.12	38.38	44.10	46.66	54.00	-7.34	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
-------------	--------------------------

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	4434.178	64.78	5.94	35.40	44.00	62.12	68.20	-6.08	PK
V	4434.178	43.44	5.94	35.40	44.00	40.78	54.00	-13.22	AV
V	10360.123	61.54	8.46	39.75	44.50	65.25	74.00	-8.75	PK
V	10360.123	43.78	8.46	39.75	44.50	47.49	54.00	-6.51	AV
V	15540.026	61.55	10.12	38.80	44.10	66.37	74.00	-7.63	PK
V	15540.026	43.90	10.12	38.80	42.70	50.12	54.00	-3.88	AV
H	4434.103	62.19	5.94	35.18	44.00	59.31	68.20	-8.89	PK
H	4434.103	43.82	5.94	35.18	44.00	40.94	54.00	-13.06	AV
H	10360.062	50.90	8.46	38.71	44.50	53.57	74.00	-20.43	PK
H	10360.062	43.82	8.46	38.71	44.50	46.49	54.00	-7.51	AV
H	15540.018	54.05	10.12	38.38	44.10	58.45	74.00	-15.55	PK
H	15540.018	44.46	10.12	38.38	44.10	48.86	54.00	-5.14	AV
middle Channel (5200 MHz)-Above 1G									
V	4592.139	61.74	6.48	36.35	44.05	60.52	74.00	-13.48	PK
V	4592.139	43.60	6.48	36.35	44.05	42.38	54.00	-11.62	AV
V	10400.092	64.79	8.47	37.88	44.51	66.63	68.20	-1.57	PK
V	10400.092	43.07	8.47	37.88	44.51	44.91	54.00	-9.09	AV
V	15600.162	61.70	10.12	38.80	44.10	66.52	74.00	-7.48	PK
V	15600.162	43.01	10.12	38.80	42.70	49.23	54.00	-4.77	AV
H	4592.037	61.63	6.48	36.37	44.05	60.43	74.00	-13.57	PK
H	4592.037	43.10	6.48	36.37	44.05	41.90	54.00	-12.10	AV
H	10400.026	51.96	8.47	38.64	44.50	54.57	68.20	-13.63	PK
H	10400.026	40.69	8.47	38.64	44.50	43.30	54.00	-10.70	AV
H	15600.133	54.04	10.12	38.38	44.10	58.44	74.00	-15.56	PK
H	15600.133	42.88	10.12	38.38	44.10	47.28	54.00	-6.72	AV
High Channel (5240 MHz)-Above 1G									
V	4739.077	63.10	7.10	37.24	43.50	63.94	74.00	-10.06	PK
V	4739.077	43.15	7.10	37.24	43.50	43.99	54.00	-10.01	AV
V	10480.156	63.46	8.46	37.68	44.50	65.10	68.20	-3.10	PK
V	10480.156	43.92	8.46	37.68	44.50	45.56	54.00	-8.44	AV
V	15720.146	63.98	10.12	38.80	44.10	68.80	74.00	-5.20	PK
V	15720.146	43.54	10.12	38.80	42.70	49.76	54.00	-4.24	AV
H	4739.042	64.67	7.10	37.24	43.50	65.51	74.00	-8.49	PK
H	4739.042	43.89	7.10	37.24	43.50	44.73	54.00	-9.27	AV
H	10480.121	50.23	8.46	38.57	44.50	52.76	68.20	-15.44	PK
H	10480.121	40.09	8.46	38.57	44.50	42.62	54.00	-11.38	AV
H	15720.014	54.06	10.12	38.38	44.10	58.46	74.00	-15.54	PK
H	15720.014	40.65	10.12	38.38	44.10	45.05	54.00	-8.95	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
-------------	--------------------------

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	4434.141	60.14	5.94	35.40	44.00	57.48	74.00	-16.52	PK
V	4434.141	43.87	5.94	35.40	44.00	41.21	54.00	-12.79	AV
V	10380.161	61.29	8.46	39.75	44.50	65.00	68.20	-3.20	PK
V	10380.161	43.21	8.46	39.75	44.50	46.92	54.00	-7.08	AV
V	15570.020	64.97	10.12	38.80	44.10	69.79	74.00	-4.21	PK
V	15570.020	43.20	10.12	38.80	42.70	49.42	54.00	-4.58	AV
H	4434.017	62.55	5.94	35.18	44.00	59.67	74.00	-14.33	PK
H	4434.017	43.11	5.94	35.18	44.00	40.23	54.00	-13.77	AV
H	10380.088	50.95	8.46	38.71	44.50	53.62	68.20	-14.58	PK
H	10380.088	40.36	8.46	38.71	44.50	43.03	54.00	-10.97	AV
H	15570.047	50.07	10.12	38.38	44.10	54.47	74.00	-19.53	PK
H	15570.047	44.07	10.12	38.38	44.10	48.47	54.00	-5.53	AV
middle Channel (5230 MHz)-Above 1G									
V	4739.161	62.16	6.48	36.35	44.05	60.94	74.00	-13.06	PK
V	4739.161	43.90	6.48	36.35	44.05	42.68	54.00	-11.32	AV
V	10460.069	60.42	8.47	37.88	44.51	62.26	68.20	-5.94	PK
V	10460.069	43.20	8.47	37.88	44.51	45.04	54.00	-8.96	AV
V	15690.064	61.59	10.12	38.80	44.10	66.41	74.00	-7.59	PK
V	15690.064	43.23	10.12	38.80	42.70	49.45	54.00	-4.55	AV
H	4739.040	64.00	6.48	36.37	44.05	62.80	74.00	-11.20	PK
H	4739.040	43.88	6.48	36.37	44.05	42.68	54.00	-11.32	AV
H	10460.144	50.73	8.47	38.64	44.50	53.34	68.20	-14.86	PK
H	10460.144	43.77	8.47	38.64	44.50	46.38	54.00	-7.62	AV
H	15690.116	51.15	10.12	38.38	44.10	55.55	74.00	-18.45	PK
H	15690.116	42.39	10.12	38.38	44.10	46.79	54.00	-7.21	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)	Antenn a Factor (dB/m)	Preamp Factor (dB)	Emission Level (dBUV/m)	Limits (dBUV/m)	Margin (dB)	Detector Type
(5210 MHz)-Above 1G									
V	4434.179	62.63	5.94	35.40	44.00	59.97	74.00	-14.03	PK
V	4434.179	43.03	5.94	35.40	44.00	40.37	54.00	-13.63	AV
V	10420.036	60.31	8.46	39.75	44.50	64.02	68.20	-4.18	PK
V	10420.036	43.02	8.46	39.75	44.50	46.73	54.00	-7.27	AV
V	15630.197	62.97	10.12	38.80	44.10	67.79	74.00	-6.21	PK
V	15630.197	43.05	10.12	38.80	42.70	49.27	54.00	-4.73	AV
H	4434.092	61.12	5.94	35.18	44.00	58.24	74.00	-15.76	PK
H	4434.092	43.85	5.94	35.18	44.00	40.97	54.00	-13.03	AV
H	10420.011	50.56	8.46	38.71	44.50	53.23	68.20	-14.97	PK
H	10420.011	40.10	8.46	38.71	44.50	42.77	54.00	-11.23	AV
H	15630.141	50.90	10.12	38.38	44.10	55.30	74.00	-18.70	PK
H	15630.141	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
-------------	----------------------

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	4679.019	57.79	5.94	35.40	44.00	55.13	74.00	-18.87	PK
V	4679.019	43.64	5.94	35.40	44.00	40.98	54.00	-13.02	AV
V	11490.156	54.50	8.46	39.75	44.50	58.21	68.20	-9.99	PK
V	11490.156	43.58	8.46	39.75	44.50	47.29	54.00	-6.71	AV
V	17235.008	60.00	10.12	38.80	44.10	64.82	74.00	-9.18	PK
V	17235.008	43.06	10.12	38.80	42.70	49.28	54.00	-4.72	AV
H	4679.166	54.90	5.94	35.18	44.00	52.02	74.00	-21.98	PK
H	4679.166	43.83	5.94	35.18	44.00	40.95	54.00	-13.05	AV
H	11490.092	52.76	8.46	38.71	44.50	55.43	68.20	-12.77	PK
H	11490.092	42.45	8.46	38.71	44.50	45.12	54.00	-8.88	AV
H	17235.074	54.86	10.12	38.38	44.10	59.26	74.00	-14.74	PK
H	17235.074	42.51	10.12	38.38	44.10	46.91	54.00	-7.09	AV
middle Channel (5785 MHz)-Above 1G									
V	4592.165	56.38	6.48	36.35	44.05	55.16	74.00	-18.84	PK
V	4592.165	43.27	6.48	36.35	44.05	42.05	54.00	-11.95	AV
V	11570.180	55.07	8.47	37.88	44.51	56.91	68.20	-11.29	PK
V	11570.180	43.70	8.47	37.88	44.51	45.54	54.00	-8.46	AV
V	17355.100	56.30	10.12	38.80	44.10	61.12	74.00	-12.88	PK
V	17355.100	39.40	10.12	38.80	42.70	45.62	54.00	-8.38	AV
H	4592.028	57.54	6.48	36.37	44.05	56.34	74.00	-17.66	PK
H	4592.028	43.19	6.48	36.37	44.05	41.99	54.00	-12.01	AV
H	11570.198	50.04	8.47	38.64	44.50	52.65	68.20	-15.55	PK
H	11570.198	41.24	8.47	38.64	44.50	43.85	54.00	-10.15	AV
H	17355.107	50.03	10.12	38.38	44.10	54.43	74.00	-19.57	PK
H	17355.107	40.22	10.12	38.38	44.10	44.62	54.00	-9.38	AV
High Channel (5825 MHz)-Above 1G									
V	6039.111	56.59	7.10	37.24	43.50	57.43	68.20	-10.77	PK
V	6039.111	43.56	7.10	37.24	43.50	44.40	54.00	-9.60	AV
V	11650.077	62.60	8.46	37.68	44.50	64.24	74.00	-9.76	PK
V	11650.077	43.73	8.46	37.68	44.50	45.37	54.00	-8.63	AV
V	17475.077	57.24	10.12	38.80	44.10	62.06	68.20	-6.14	PK
V	17475.077	43.17	10.12	38.80	42.70	49.39	54.00	-4.61	AV
H	6039.061	56.15	7.10	37.24	43.50	56.99	68.20	-11.21	PK
H	6039.061	43.76	7.10	37.24	43.50	44.60	54.00	-9.40	AV
H	11650.091	52.96	8.46	38.57	44.50	55.49	74.00	-18.51	PK
H	11650.091	44.82	8.46	38.57	44.50	47.35	54.00	-6.65	AV
H	17475.064	52.64	10.12	38.38	44.10	57.04	68.20	-11.16	PK
H	17475.064	44.17	10.12	38.38	44.10	48.57	54.00	-5.43	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 mode is Antenna A.

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

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	4679.033	58.67	5.94	35.40	44.00	56.01	74.00	-17.99	PK
V	4679.033	43.47	5.94	35.40	44.00	40.81	54.00	-13.19	AV
V	11490.121	55.17	8.46	39.75	44.50	58.88	68.20	-9.32	PK
V	11490.121	43.03	8.46	39.75	44.50	46.74	54.00	-7.26	AV
V	17235.066	58.91	10.12	38.80	44.10	63.73	74.00	-10.27	PK
V	17235.066	43.24	10.12	38.80	42.70	49.46	54.00	-4.54	AV
H	4679.007	58.89	5.94	35.18	44.00	56.01	74.00	-17.99	PK
H	4679.007	43.98	5.94	35.18	44.00	41.10	54.00	-12.90	AV
H	11490.011	51.17	8.46	38.71	44.50	53.84	68.20	-14.36	PK
H	11490.011	41.70	8.46	38.71	44.50	44.37	54.00	-9.63	AV
H	17235.147	50.27	10.12	38.38	44.10	54.67	74.00	-19.33	PK
H	17235.147	40.30	10.12	38.38	44.10	44.70	54.00	-9.30	AV
middle Channel (5785 MHz)-Above 1G									
V	4592.019	62.54	6.48	36.35	44.05	61.32	74.00	-12.68	PK
V	4592.019	43.45	6.48	36.35	44.05	42.23	54.00	-11.77	AV
V	11570.124	58.60	8.47	37.88	44.51	60.44	68.20	-7.76	PK
V	11570.124	43.96	8.47	37.88	44.51	45.80	54.00	-8.20	AV
V	17355.030	58.53	10.12	38.80	44.10	63.35	74.00	-10.65	PK
V	17355.030	43.84	10.12	38.80	42.70	50.06	54.00	-3.94	AV
H	4592.155	57.70	6.48	36.37	44.05	56.50	74.00	-17.50	PK
H	4592.155	43.23	6.48	36.37	44.05	42.03	54.00	-11.97	AV
H	11570.126	52.08	8.47	38.64	44.50	54.69	68.20	-13.51	PK
H	11570.126	44.70	8.47	38.64	44.50	47.31	54.00	-6.69	AV
H	17355.180	50.16	10.12	38.38	44.10	54.56	74.00	-19.44	PK
H	17355.180	40.23	10.12	38.38	44.10	44.63	54.00	-9.37	AV
High Channel (5825 MHz)-Above 1G									
V	6039.054	56.06	7.10	37.24	43.50	56.90	68.20	-11.30	PK
V	6039.054	43.03	7.10	37.24	43.50	43.87	54.00	-10.13	AV
V	11650.014	56.72	8.46	37.68	44.50	58.36	74.00	-15.64	PK
V	11650.014	43.94	8.46	37.68	44.50	45.58	54.00	-8.42	AV
V	17475.159	59.27	10.12	38.80	44.10	64.09	68.20	-4.11	PK
V	17475.159	43.38	10.12	38.80	42.70	49.60	54.00	-4.40	AV
H	6039.016	59.92	7.10	37.24	43.50	60.76	68.20	-7.44	PK
H	6039.016	43.91	7.10	37.24	43.50	44.75	54.00	-9.25	AV
H	11650.035	50.42	8.46	38.57	44.50	52.95	74.00	-21.05	PK
H	11650.035	43.98	8.46	38.57	44.50	46.51	54.00	-7.49	AV
H	17475.021	51.03	10.12	38.38	44.10	55.43	68.20	-12.77	PK
H	17475.021	42.88	10.12	38.38	44.10	47.28	54.00	-6.72	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	4679.027	64.76	5.94	35.40	44.00	62.10	74.00	-11.90	PK
V	4679.027	43.43	5.94	35.40	44.00	40.77	54.00	-13.23	AV
V	11510.126	60.19	8.46	39.75	44.50	63.90	68.20	-4.30	PK
V	11510.126	43.81	8.46	39.75	44.50	47.52	54.00	-6.48	AV
V	17265.112	63.89	10.12	38.80	44.10	68.71	74.00	-5.29	PK
V	17265.112	43.54	10.12	38.80	42.70	49.76	54.00	-4.24	AV
H	4679.144	64.30	5.94	35.18	44.00	61.42	74.00	-12.58	PK
H	4679.144	43.89	5.94	35.18	44.00	41.01	54.00	-12.99	AV
H	11510.053	51.92	8.46	38.71	44.50	54.59	68.20	-13.61	PK
H	11510.053	42.23	8.46	38.71	44.50	44.90	54.00	-9.10	AV
H	17265.025	54.71	10.12	38.38	44.10	59.11	74.00	-14.89	PK
H	17265.025	44.38	10.12	38.38	44.10	48.78	54.00	-5.22	AV
middle Channel (5795 MHz)-Above 1G									
V	6039.131	63.26	6.48	36.35	44.05	62.04	68.20	-6.16	PK
V	6039.131	43.04	6.48	36.35	44.05	41.82	54.00	-12.18	AV
V	11590.037	60.87	8.47	37.88	44.51	62.71	74.00	-11.29	PK
V	11590.037	43.15	8.47	37.88	44.51	44.99	54.00	-9.01	AV
V	17385.103	60.34	10.12	38.80	44.10	65.16	68.20	-3.04	PK
V	17385.103	43.56	10.12	38.80	42.70	49.78	54.00	-4.22	AV
H	6039.041	64.75	6.48	36.37	44.05	63.55	68.20	-4.65	PK
H	6039.041	43.20	6.48	36.37	44.05	42.00	54.00	-12.00	AV
H	11590.072	53.37	8.47	38.64	44.50	55.98	74.00	-18.02	PK
H	11590.072	40.08	8.47	38.64	44.50	42.69	54.00	-11.31	AV
H	17385.034	52.06	10.12	38.38	44.10	56.46	68.20	-11.74	PK
H	17385.034	42.91	10.12	38.38	44.10	47.31	54.00	-6.69	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)	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	4679.047	57.70	5.94	35.40	44.00	55.04	74.00	-18.96	PK
V	4679.047	43.80	5.94	35.40	44.00	41.14	54.00	-12.86	AV
V	11490.143	54.15	8.46	39.75	44.50	57.86	68.20	-10.34	PK
V	11490.143	43.03	8.46	39.75	44.50	46.74	54.00	-7.26	AV
V	17235.160	60.03	10.12	38.80	44.10	64.85	74.00	-9.15	PK
V	17235.160	43.95	10.12	38.80	42.70	50.17	54.00	-3.83	AV
H	4679.036	54.05	5.94	35.18	44.00	51.17	74.00	-22.83	PK
H	4679.036	43.64	5.94	35.18	44.00	40.76	54.00	-13.24	AV
H	11490.082	54.87	8.46	38.71	44.50	57.54	68.20	-10.66	PK
H	11490.082	41.92	8.46	38.71	44.50	44.59	54.00	-9.41	AV
H	17235.142	54.78	10.12	38.38	44.10	59.18	74.00	-14.82	PK
H	17235.142	42.56	10.12	38.38	44.10	46.96	54.00	-7.04	AV
middle Channel (5785 MHz)-Above 1G									
V	4592.066	56.56	6.48	36.35	44.05	55.34	74.00	-18.66	PK
V	4592.066	43.65	6.48	36.35	44.05	42.43	54.00	-11.57	AV
V	11570.111	57.12	8.47	37.88	44.51	58.96	68.20	-9.24	PK
V	11570.111	43.89	8.47	37.88	44.51	45.73	54.00	-8.27	AV
V	17355.162	59.84	10.12	38.80	44.10	64.66	74.00	-9.34	PK
V	17355.162	39.89	10.12	38.80	42.70	46.11	54.00	-7.89	AV
H	4592.172	57.91	6.48	36.37	44.05	56.71	74.00	-17.29	PK
H	4592.172	43.50	6.48	36.37	44.05	42.30	54.00	-11.70	AV
H	11570.195	53.54	8.47	38.64	44.50	56.15	68.20	-12.05	PK
H	11570.195	43.00	8.47	38.64	44.50	45.61	54.00	-8.39	AV
H	17355.200	50.99	10.12	38.38	44.10	55.39	74.00	-18.61	PK
H	17355.200	40.38	10.12	38.38	44.10	44.78	54.00	-9.22	AV
High Channel (5825 MHz)-Above 1G									
V	6039.086	57.75	7.10	37.24	43.50	58.59	68.20	-9.61	PK
V	6039.086	43.78	7.10	37.24	43.50	44.62	54.00	-9.38	AV
V	11650.109	58.17	8.46	37.68	44.50	59.81	74.00	-14.19	PK
V	11650.109	43.08	8.46	37.68	44.50	44.72	54.00	-9.28	AV
V	17475.191	54.86	10.12	38.80	44.10	59.68	68.20	-8.52	PK
V	17475.191	43.95	10.12	38.80	42.70	50.17	54.00	-3.83	AV
H	6039.177	56.07	7.10	37.24	43.50	56.91	68.20	-11.29	PK
H	6039.177	43.80	7.10	37.24	43.50	44.64	54.00	-9.36	AV
H	11650.026	53.93	8.46	38.57	44.50	56.46	74.00	-17.54	PK
H	11650.026	40.71	8.46	38.57	44.50	43.24	54.00	-10.76	AV
H	17475.010	52.74	10.12	38.38	44.10	57.14	68.20	-11.06	PK
H	17475.010	41.60	10.12	38.38	44.10	46.00	54.00	-8.00	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.

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	4679.115	60.28	5.94	35.40	44.00	57.62	74.00	-16.38	PK
V	4679.115	43.43	5.94	35.40	44.00	40.77	54.00	-13.23	AV
V	11510.073	61.19	8.46	39.75	44.50	64.90	68.20	-3.30	PK
V	11510.073	43.99	8.46	39.75	44.50	47.70	54.00	-6.30	AV
V	17265.191	63.26	10.12	38.80	44.10	68.08	74.00	-5.92	PK
V	17265.191	43.75	10.12	38.80	42.70	49.97	54.00	-4.03	AV
H	4679.081	63.24	5.94	35.18	44.00	60.36	74.00	-13.64	PK
H	4679.081	43.09	5.94	35.18	44.00	40.21	54.00	-13.79	AV
H	11510.060	50.86	8.46	38.71	44.50	53.53	68.20	-14.67	PK
H	11510.060	42.01	8.46	38.71	44.50	44.68	54.00	-9.32	AV
H	17265.022	54.81	10.12	38.38	44.10	59.21	74.00	-14.79	PK
H	17265.022	43.41	10.12	38.38	44.10	47.81	54.00	-6.19	AV
middle Channel (5795 MHz)-Above 1G									
V	6039.109	63.26	6.48	36.35	44.05	62.04	68.20	-6.16	PK
V	6039.109	43.35	6.48	36.35	44.05	42.13	54.00	-11.87	AV
V	11590.091	60.81	8.47	37.88	44.51	62.65	74.00	-11.35	PK
V	11590.091	43.67	8.47	37.88	44.51	45.51	54.00	-8.49	AV
V	17385.016	60.24	10.12	38.80	44.10	65.06	68.20	-3.14	PK
V	17385.016	43.69	10.12	38.80	42.70	49.91	54.00	-4.09	AV
H	6039.159	63.87	6.48	36.37	44.05	62.67	68.20	-5.53	PK
H	6039.159	43.50	6.48	36.37	44.05	42.30	54.00	-11.70	AV
H	11590.099	54.66	8.47	38.64	44.50	57.27	74.00	-16.73	PK
H	11590.099	44.12	8.47	38.64	44.50	46.73	54.00	-7.27	AV
H	17385.124	52.47	10.12	38.38	44.10	56.87	68.20	-11.33	PK
H	17385.124	40.53	10.12	38.38	44.10	44.93	54.00	-9.07	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)	Antenn a Factor dB/m	Preamp Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
(5775 MHz)-Above 1G									
V	4679.044	61.23	5.94	35.40	44.00	58.57	74.00	-15.43	PK
V	4679.044	43.18	5.94	35.40	44.00	40.52	54.00	-13.48	AV
V	11550.161	61.65	8.46	39.75	44.50	65.36	68.20	-2.84	PK
V	11550.161	43.43	8.46	39.75	44.50	47.14	54.00	-6.86	AV
V	17325.118	61.42	10.12	38.80	44.10	66.24	74.00	-7.76	PK
V	17325.118	43.02	10.12	38.80	42.70	49.24	54.00	-4.76	AV
H	4679.072	62.70	5.94	35.18	44.00	59.82	74.00	-14.18	PK
H	4679.072	43.74	5.94	35.18	44.00	40.86	54.00	-13.14	AV
H	11550.017	53.62	8.46	38.71	44.50	56.29	68.20	-11.91	PK
H	11550.017	41.91	8.46	38.71	44.50	44.58	54.00	-9.42	AV
H	17325.126	54.89	10.12	38.38	44.10	59.29	74.00	-14.71	PK
H	17325.126	44.63	10.12	38.38	44.10	49.03	54.00	-4.97	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.

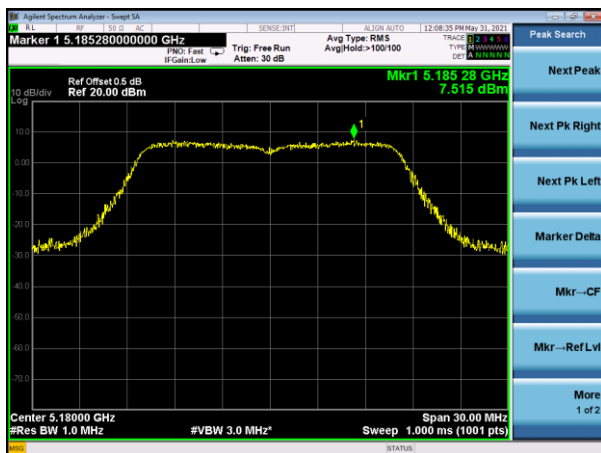
8.5 Test Result

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

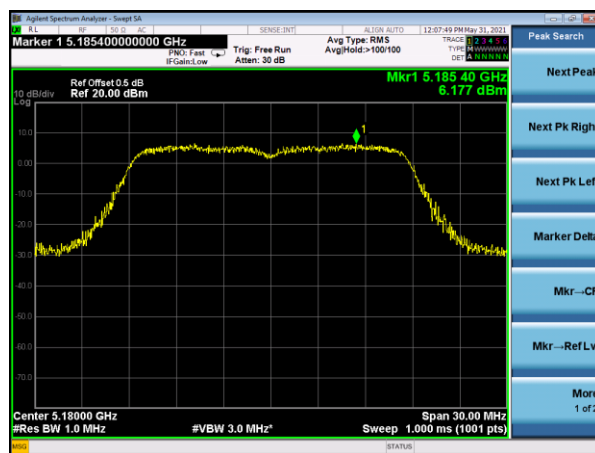
Note: A(B) Represent the value of antenna A and B, The worst data is Antenna A, only shown Antenna B Plot.

Mode	Frequency	Measured Power Density (dBm/MHz)			Limit (dBm/MHz)	Result
		ANT A	ANT B	Total		
802.11 a	5180 MHz	7.206	7.515	/	11	PASS
	5200 MHz	6.836	6.897	/	11	PASS
	5240 MHz	7.121	6.914	/	11	PASS
802.11 n20	5180 MHz	5.437	6.177	8.833	11	PASS
	5200 MHz	4.670	6.623	8.766	11	PASS
	5240 MHz	4.425	6.585	8.648	11	PASS
802.11 n40	5190 MHz	4.877	3.718	7.346	11	PASS
	5230 MHz	3.463	2.947	6.223	11	PASS
802.11 ac20	5180 MHz	5.520	6.879	9.263	11	PASS
	5200 MHz	5.416	6.407	8.950	11	PASS
	5240 MHz	5.707	6.526	9.146	11	PASS
802.11 ac40	5190 MHz	4.773	4.448	7.624	11	PASS
	5230 MHz	4.167	3.580	6.894	11	PASS
802.11 AC80	5210 MHz	1.906	2.527	5.238	11	PASS

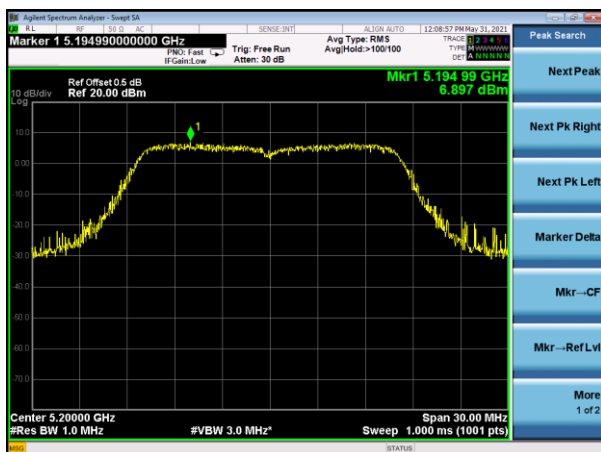
(802.11a) PSD plot on channel 36



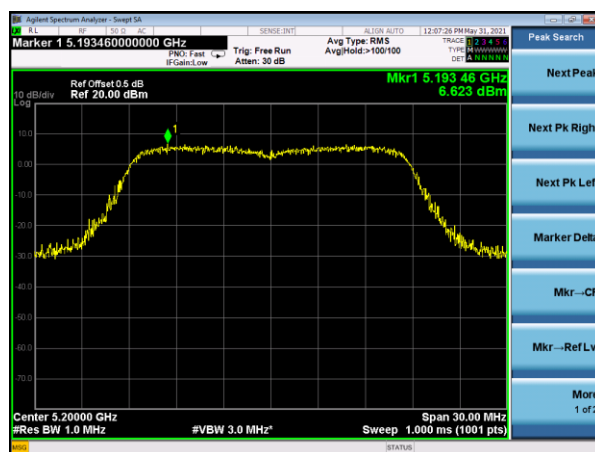
(802.11n20) PSD plot on channel 36



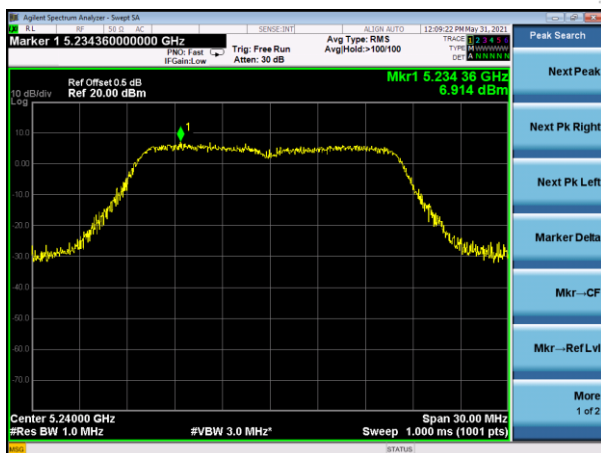
(802.11a) PSD plot on channel 40



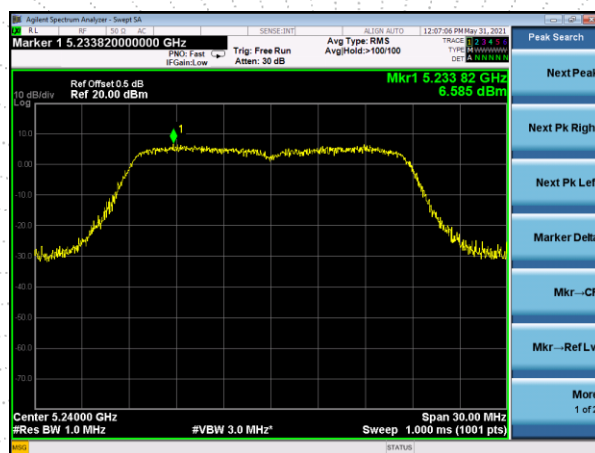
(802.11n20) PSD plot on channel 40



(802.11a) PSD plot on channel 48



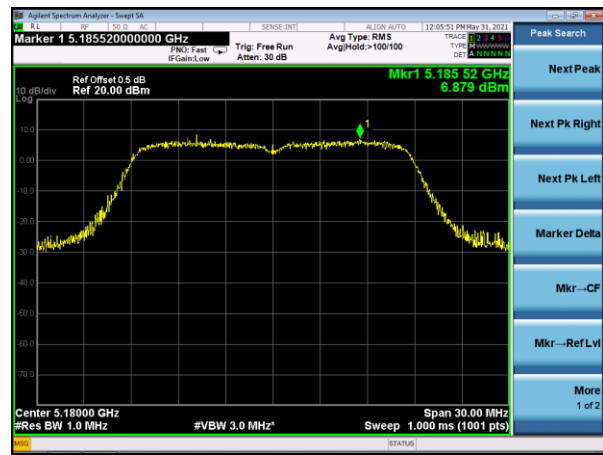
(802.11n20) PSD plot on channel 48



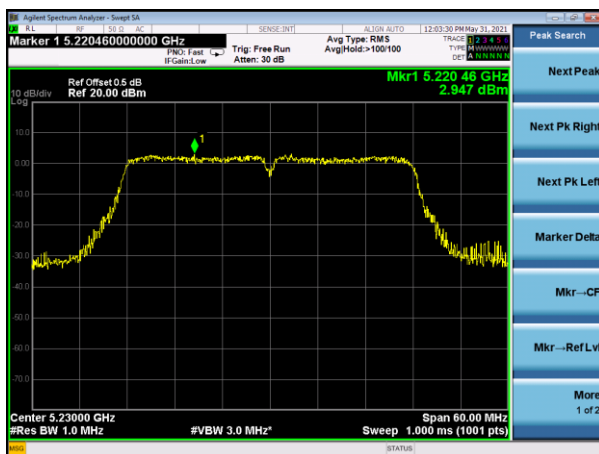
(802.11n40) PSD plot on channel 38



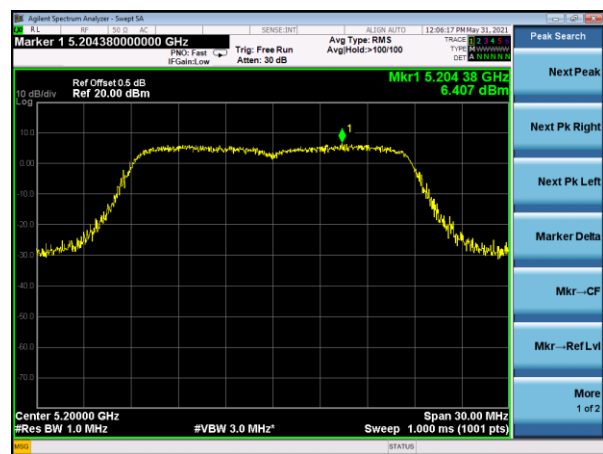
(802.11ac20) PSD plot on channel 36



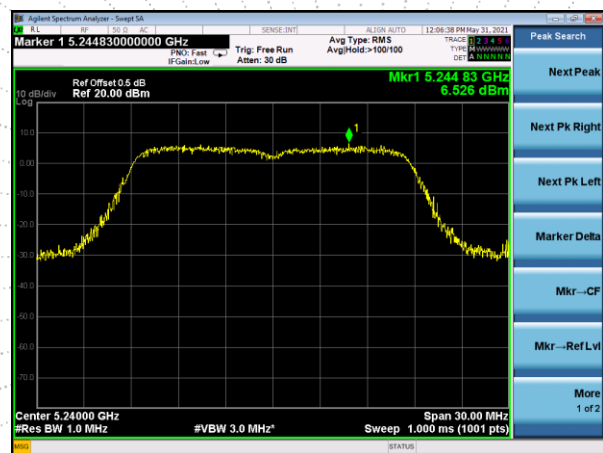
(802.11n40) PSD plot on channel 46



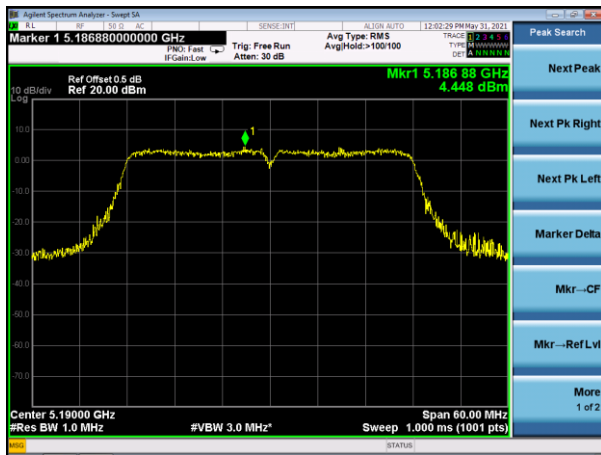
(802.11ac20) PSD plot on channel 40



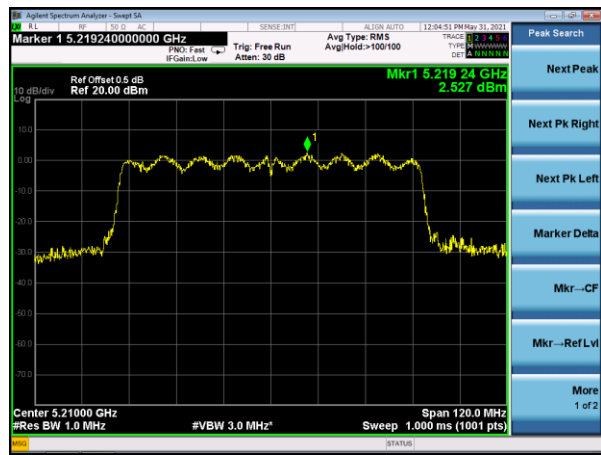
(802.11ac20) PSD plot on channel 48



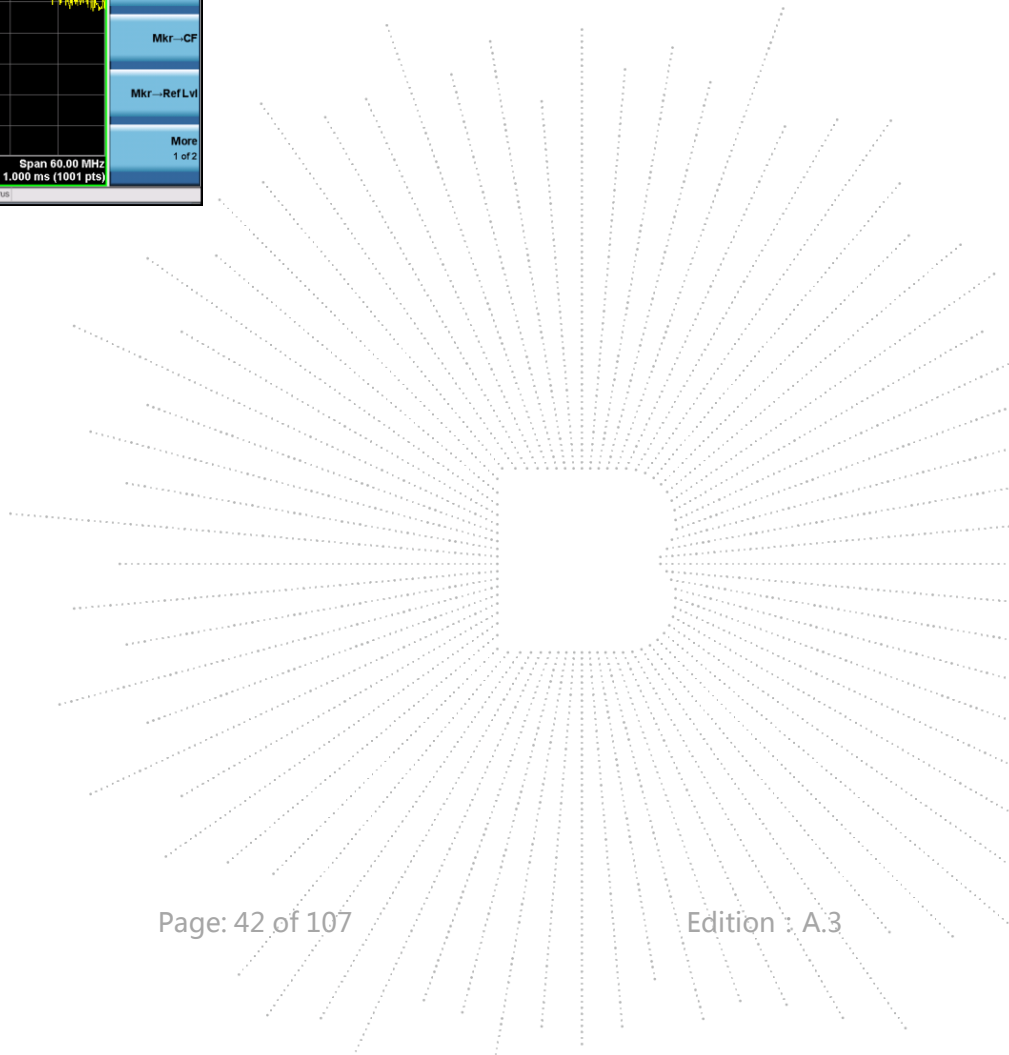
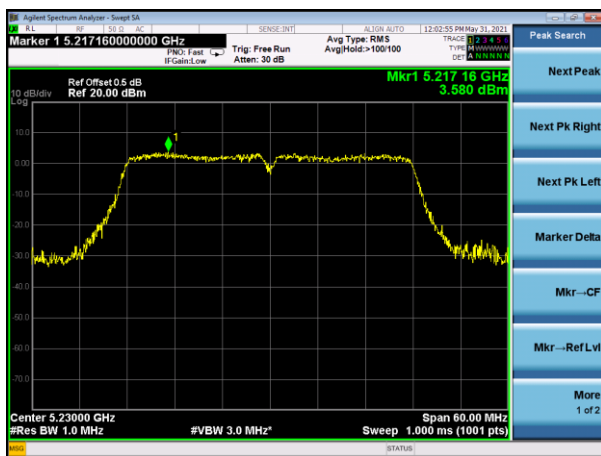
(802.11ac40) PSD plot on channel 38



(802.11ac80) PSD plot on channel 42



(802.11ac40) PSD plot on channel 46

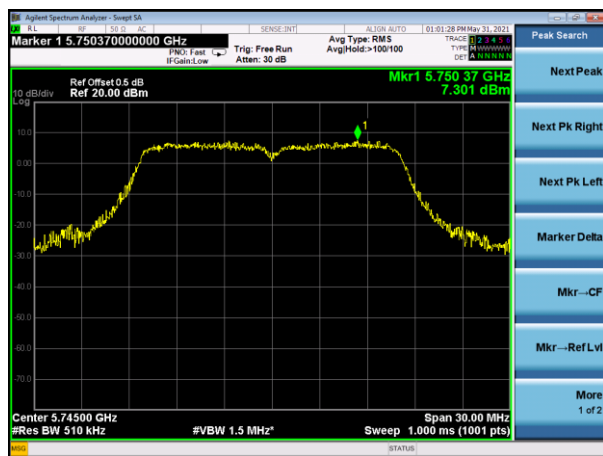


Temperature :	26 °C	Relative Humidity :	54%
Pressure :	101kPa	Test Voltage :	AC120V/60Hz
Test Mode :	TX Frequency U-NII-3 (5745-5825MHz)		

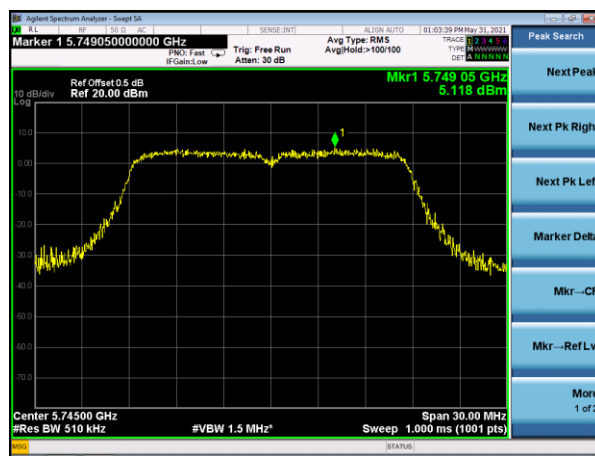
Note: A(B) Represent the value of antenna A and B, The worst data is Antenna B, only shown Antenna B Plot.

Mode	Frequency	Measured Power Density (dBm/500KHz)			Limit (dBm/500kHz)	Result
		ANT A	ANT B	Total		
802.11 a	5745 MHz	6.405	7.301	/	30	PASS
	5785 MHz	5.356	6.542	/	30	PASS
	5825 MHz	4.697	4.887	/	30	PASS
802.11 n20	5745 MHz	4.467	5.118	7.815	30	PASS
	5785 MHz	4.241	4.396	7.329	30	PASS
	5825 MHz	3.562	3.755	6.670	30	PASS
802.11 n40	5755 MHz	3.259	3.868	6.584	30	PASS
	5795 MHz	2.455	3.410	5.969	30	PASS
802.11 ac20	5745 MHz	4.617	4.648	7.643	30	PASS
	5785 MHz	3.711	5.117	7.481	30	PASS
	5825 MHz	2.444	4.280	6.469	30	PASS
802.11 ac40	5755 MHz	3.638	4.082	6.876	30	PASS
	5795 MHz	2.626	3.832	6.281	30	PASS
802.11 AC80	5775 MHz	2.320	3.258	5.825	30	PASS

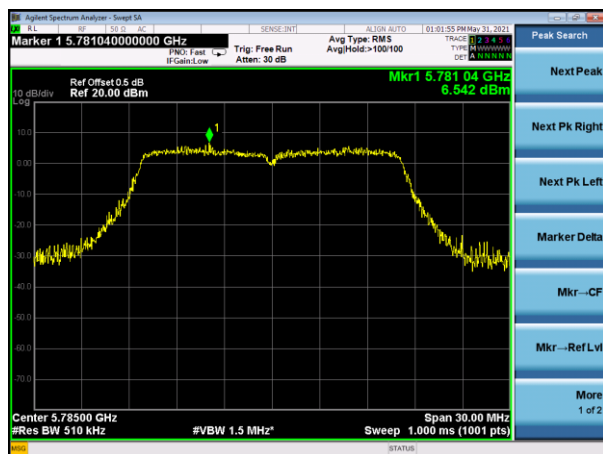
(802.11a) PSD plot on channel 149



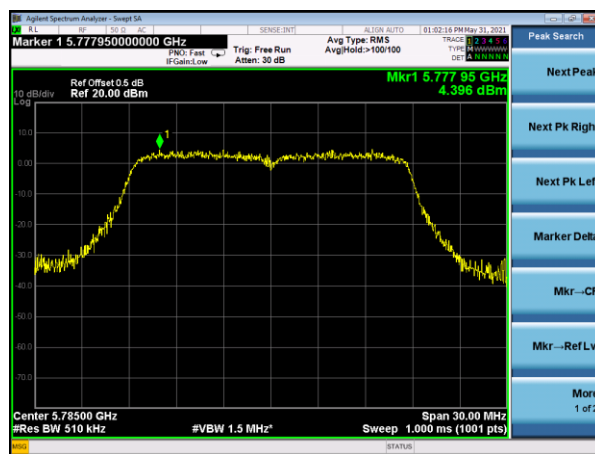
(802.11n20) PSD plot on channel 149



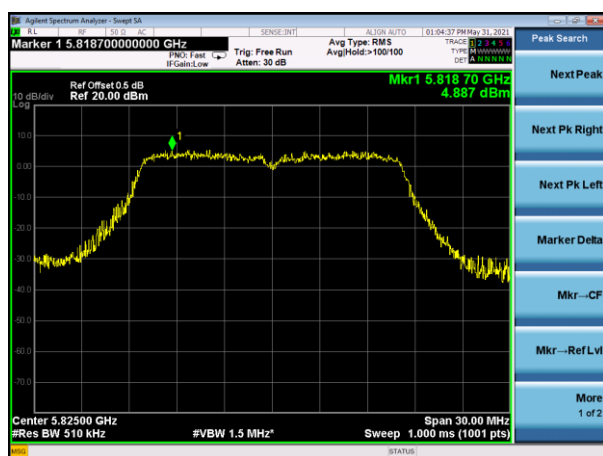
(802.11a) PSD plot on channel 157



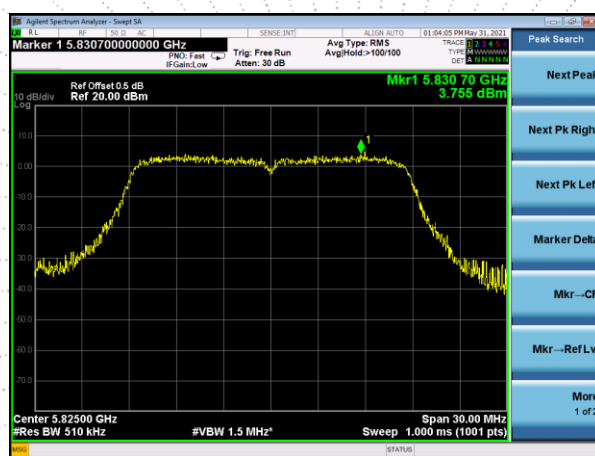
(802.11n20) PSD plot on channel 157



(802.11a) PSD plot on channel 165



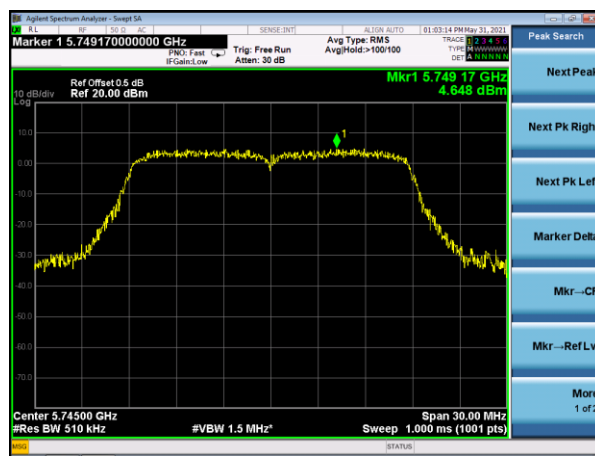
(802.11n20) PSD plot on channel 165



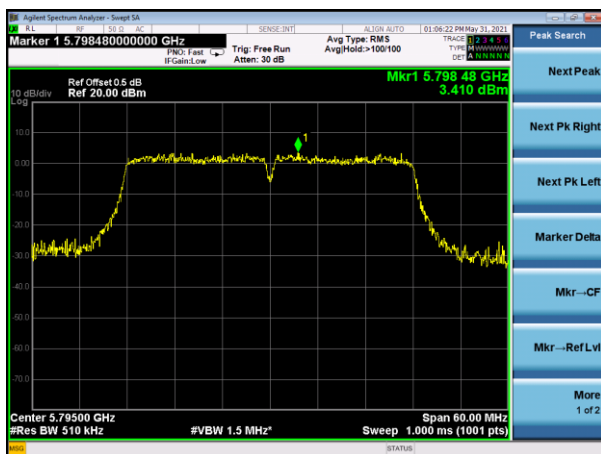
(802.11n40) PSD plot on channel 151



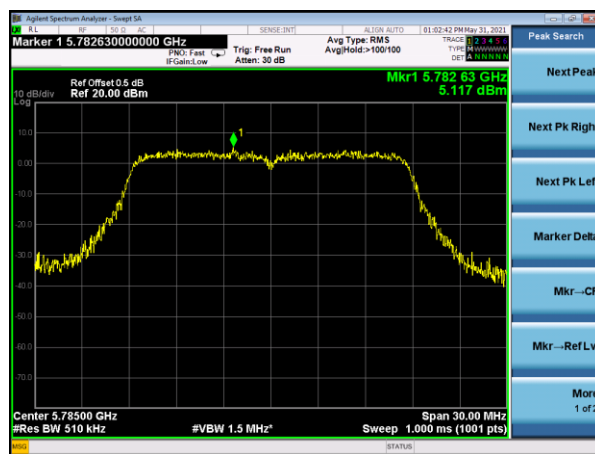
(802.11ac20) PSD plot on channel 149



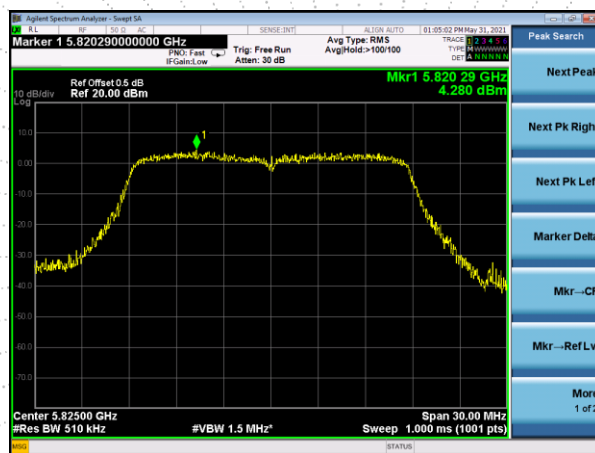
(802.11n40) PSD plot on channel 159



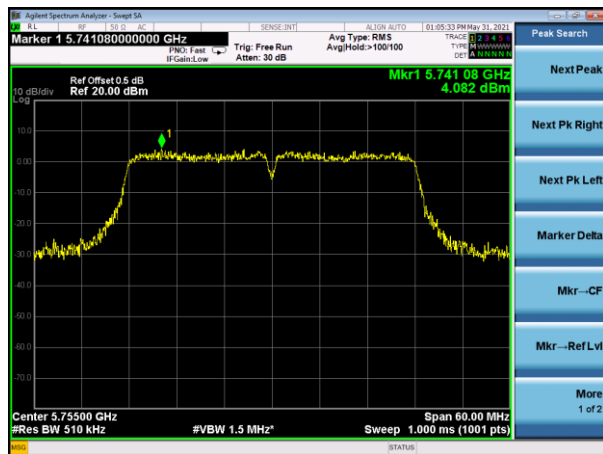
(802.11ac20) PSD plot on channel 157



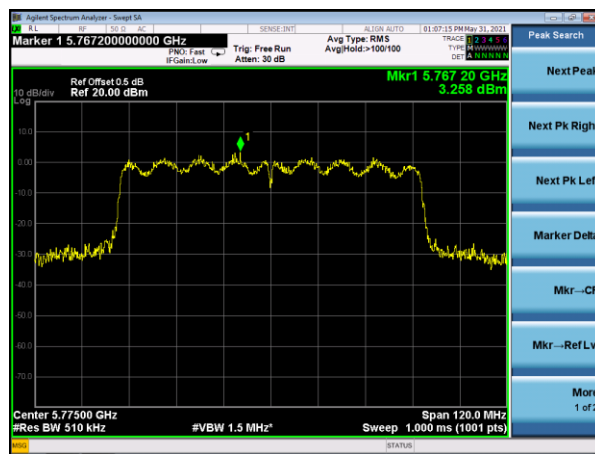
(802.11ac20) PSD plot on channel 165



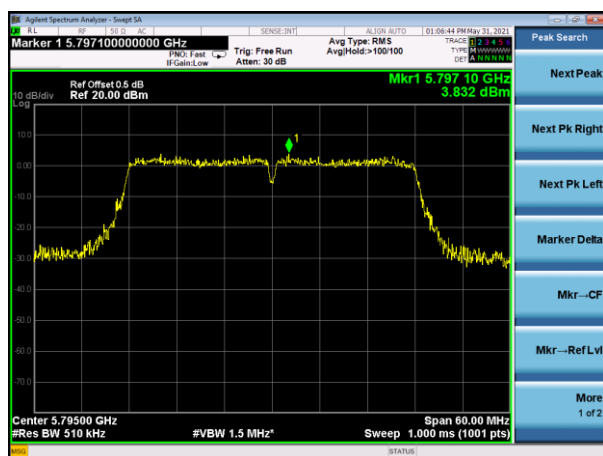
(802.11ac40) PSD plot on channel 151



(802.11ac80) PSD plot on channel 155

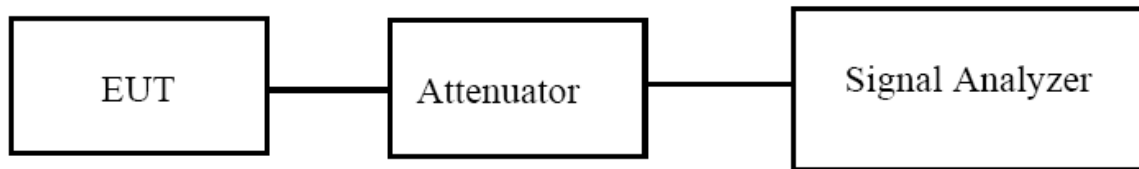


(802.11ac40) PSD plot on channel 159



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.