

TEST REPORT

Report No.: BCTC2103325992E

Applicant: Shanghai Xinxie Industrial Co., Ltd.

Product Name: Wireless Display Dongle

Model/Type Ref.: G6W

Tested Date: 2021-06-01 to 2021-07-22

Issued Date: 2021-07-23

Shenzhen BCTC Testing Co., Ltd.



FCC ID:2AS3L-G6W

Product Name: Wireless Display Dongle
Trademark: N/A
Model/Type Ref.: G6W
G6W-TX, G7W, G7W-TX, G7W-RH, G7W-TH, G7W-TU, G8W, G8W-TX, G8W-RH, G8W-TH, G8W-TU, G9W, G9W-TX, G9W-RH, G9W-TH, G9W-TU, WLD15G, WFY0225G, WFY0235G, WFY0315G, WFY0325G, WFY0335G, WFY0415G, WFY0425G, WFY0435G, WFY0515G, WFY0525G, WFY0535G
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Sample Received Date: 2021-03-10
Sample tested Date: 2021-06-01 to 2021-07-22
Issue Date: 2021-07-23
Report No.: BCTC2103325992E
Test Standards: FCC Part15 15.407
ANSI C63.10-2013
KDB 789033 D02 v02r01
Test Results: PASS

Tested by:



Kelsey Tan/ Project Handler

Approved by:



Zero Zhou/Reviewer

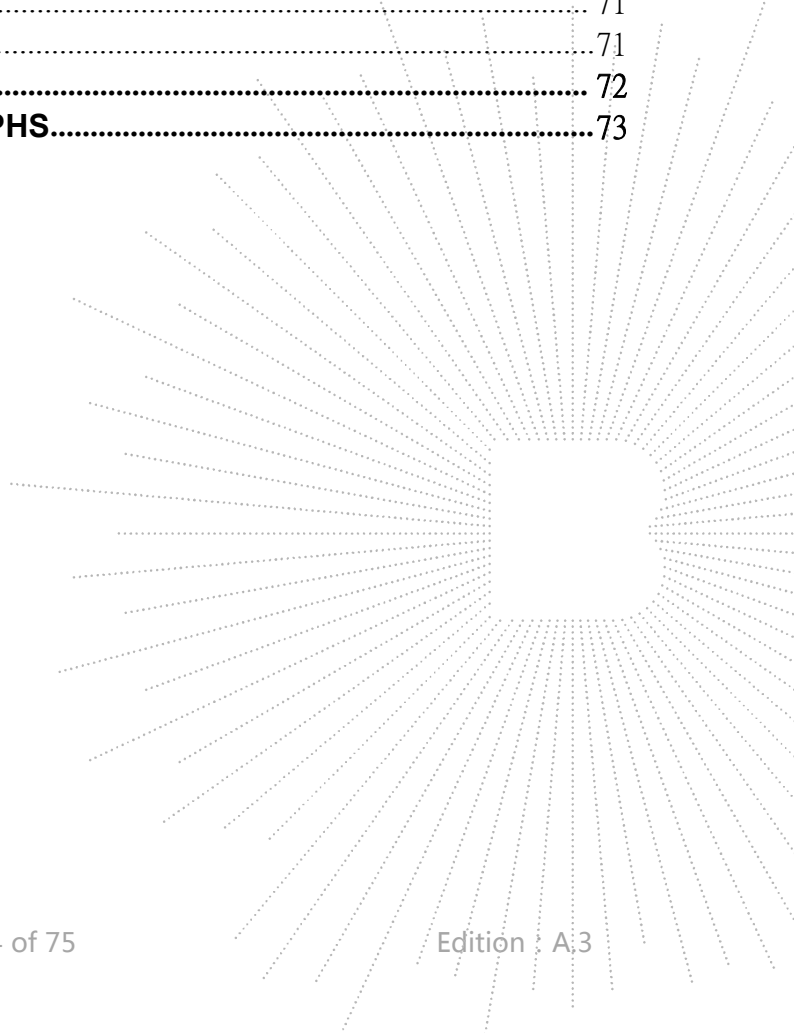
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(Note: N/A means not applicable)



1. VERSION

Report No.	Issue Date	Description	Approved
BCTC2103325992E	2021-07-23	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
10	Antenna Requirement	15.203	PASS

3. MEASUREMENT UNCERTAINTY

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

No.	Item	Uncertainty
1	3m 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 Ref.:	G6W G6W-TX, G7W, G7W-TX, G7W-RH, G7W-TH, G7W-TU, G8W, G8W-TX, G8W-RH, G8W-TH, G8W-TU, G9W, G9W-TX, G9W-RH, G9W-TH, G9W-TU, WLD15G, WFY0225G, WFY0235G, WFY0315G, WFY0325G, WFY0335G, WFY0415G, WFY0425G, WFY0435G, WFY0515G, WFY0525G, WFY0535G
Model differences:	All the model are the same circuit and RF module, except model names.
IEEE 802.11 WLAN Mode Supported	802.11a/n/ac(20MHz channel bandwidth) 802.11n/ac(40MHz channel bandwidth) 802.11ac(80MHz channel bandwidth)
Operation Frequency:	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(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	5 channels for 802.11a/n20 in the 5745-5825MHz band ; 2 channels for 802.11 n40 in the 5755-5795MHz band ; 1 channels for 802.11 ac80 in the 5775MHz band ;
Antenna installation:	External antenna
Antenna Gain:	2.85dBi
Type of device:	client devices
Ratings:	DC 5V

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	Wireless Display Dongle	N/A	G6W	G6W-TX, G7W, G7W-TX, G7W-RH, G7W-TH, G7W-TU, G8W, G8W-TX, G8W-RH, G8W-TH, G8W-TU, G9W, G9W-TX, G9W-RH, G9W-TH, G9W-TU, WLD15G, WFY0225G, WFY0235G, WFY0315G, WFY0325G, WFY0335G, WFY0415G, WFY0425G, WFY0435G, WFY0515G, WFY0525G, WFY0535G	EUT
E-2	Adapter	N/A	BCTC005	N/A	Auxiliary

Item	Shielded Type	Ferrite Core	Length	Note
C1	NO	NO	0.3M	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 (5745-5825MHz):

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

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

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

4.5 Test Mode

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

Pretest Mode	Description
Mode 1	802.11a /n/ ac 20 CH149/ CH157/ CH 165
Mode 2	802.11n/ ac40 CH 151 / CH 159
Mode 3	802.11 ac80 CH 155
Mode 4	Link Mode

For Radiated Emission	
Final Test Mode	Description
Mode 1	802.11a /n/ ac 20 CH149/ CH157/ CH 165
Mode 2	802.11n/ ac40 CH 151 / CH 159
Mode 3	802.11 ac80 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	SecureCRT		
Parameters	DEF	DEF	DEF

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

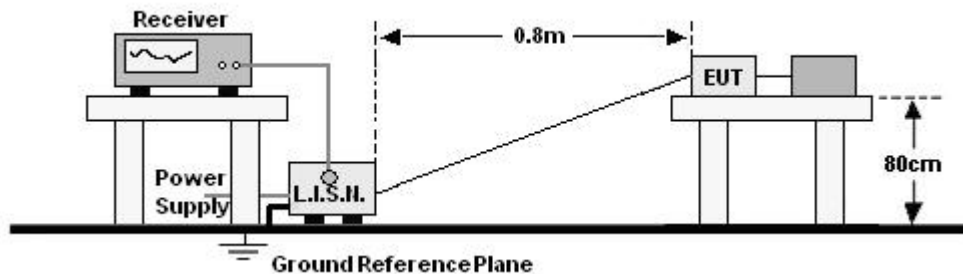
Conducted emissions Test					
Equipment	Manufacturer	Model#	Serial#	Last Cal.	Next Cal.
Receiver	R&S	ESR3	102075	May 28, 2021	May 27, 2022
LISN	R&S	ENV216	101375	May 28, 2021	May 27, 2022
ISN	HPX	ISN T800	S1509001	May 28, 2021	May 27, 2022
Software	Frad	EZ-EMC	EMC-CON 3A1	\	\

RF conducted test					
Equipment	Manufacturer	Model#	Serial#	Last Cal.	Next Cal.
Power Meter	Keysight	E4419B	\	May 28, 2021	May 27, 2022
Power Sensor (AV)	Keysight	E9 300A	\	May 28, 2021	May 27, 2022
Signal Analyzer 20kHz-26.5GHz	KEYSIGHT	N9020A	MY4910006 0	May 28, 2021	May 27, 2022
Spectrum Analyzer 9kHz-40GHz	R&S	FSP40	100363	May 28, 2021	May 27, 2022

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	May 28, 2021	May 27, 2022
Receiver	R&S	ESRP	101154	May 28, 2021	May 27, 2022
Amplifier	SKET	LAPA_01G 18G-45dB	\	May 28, 2021	May 27, 2022
Amplifier	Schwarzbeck	BBV9744	9744-0037	May 28, 2021	May 27, 2022
TRILOG Broadband Antenna	schwarzbeck	VULB 9163	VULB9163- 942	Jun. 01, 2021	May 31, 2022
Horn Antenna	SCHWARZBE CK	BBHA9120 D	1541	Jun. 02, 2021	Jun. 01, 2022
Horn Antenna (18GHz-40GHz)	SCHWARZBE CK	BBHA9170	822	May 28, 2021	May 27, 2022
Amplifier (18GHz-40GHz)	MITEQ	TTA1840-3 5-HG	2034381	May 28, 2021	May 27, 2022
Loop Antenna (9kHz-30MHz)	SCHWARZBE CK	FMZB1519 B	014	Jun. 02, 2021	Jun. 01, 2022
RF cables1 (9kHz-30MHz)	Huber+Suhnar	9kHz-30M Hz	B1702988- 0008	May 28, 2021	May 27, 2022
RF cables2 (30MHz-1GHz)	Huber+Suhnar	30MHz-1G Hz	1486150	May 28, 2021	May 27, 2022
RF cables3 (1GHz-40GHz)	Huber+Suhnar	1GHz-40G Hz	1607106	May 28, 2021	May 27, 2022
Power Metter	Keysight	E4419B	\	May 28, 2021	May 27, 2022
Power Sensor (AV)	Keysight	E9 300A	\	May 28, 2021	May 27, 2022
Signal Analyzer 20kHz-26.5GHz	KEYSIGHT	N9020A	MY491000 60	May 28, 2021	May 27, 2022
Spectrum Analyzer 9kHz-40GHz	R&S	FSP40	100363	May 28, 2021	May 27, 2022
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:		
1. *Decreasing linearly with logarithm of frequency.		
2. The lower limit shall apply at the transition frequencies.		

6.3 Test procedure

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

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

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

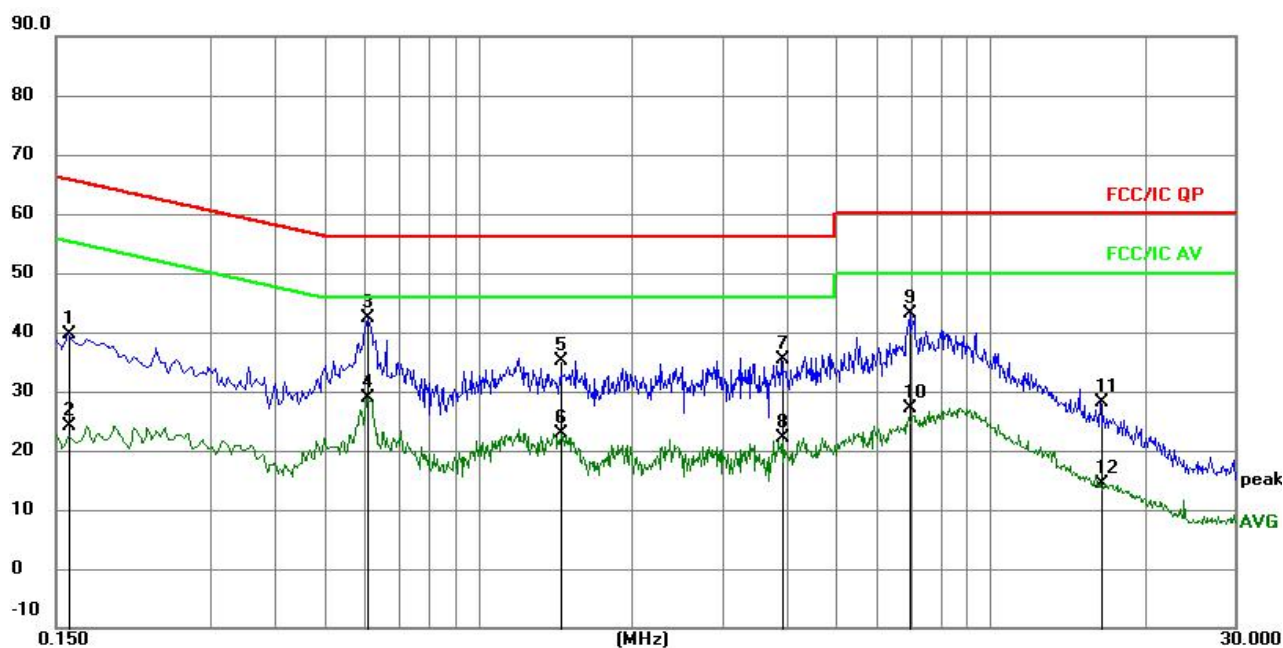
c. For each frequency whose maximum record was higher or close to limit, measure its QP and AVG values and record.

6.4 EUT operating Conditions

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

6.5 Test Result

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

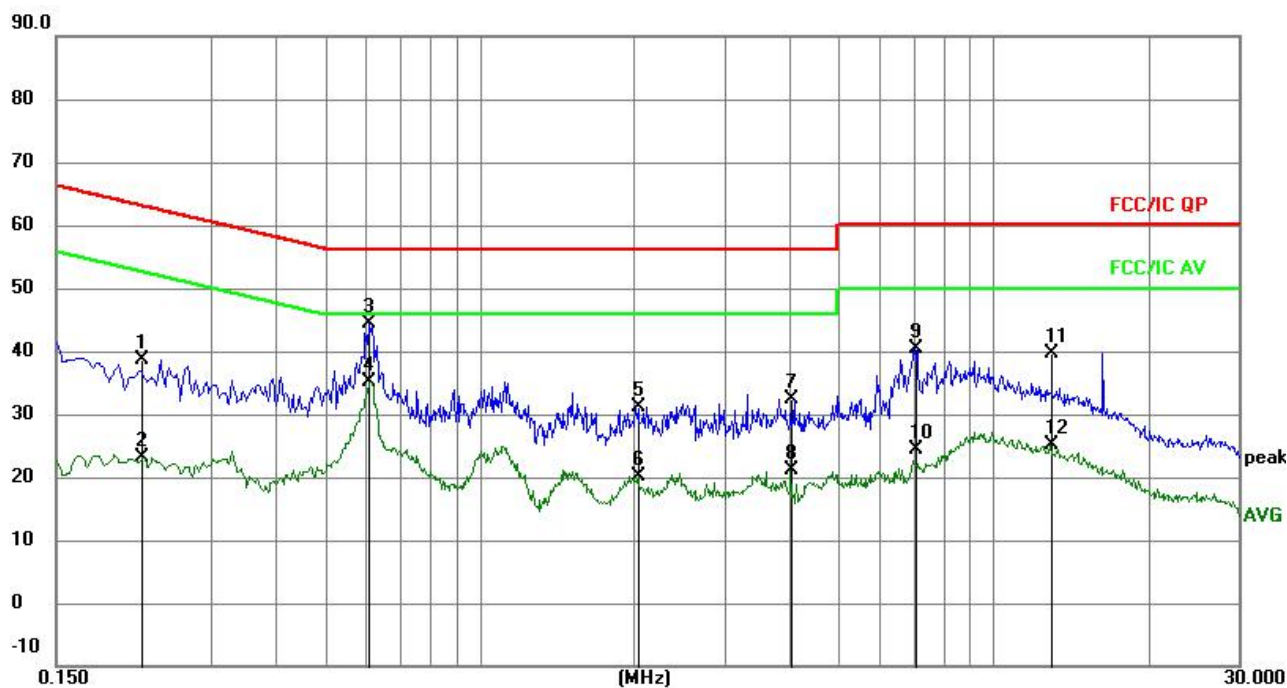


Remark:

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

No.	Mk.	Freq. MHz	Reading Level	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector
1		0.1590	30.09	9.51	39.60	65.52	-25.92	QP
2		0.1590	14.65	9.51	24.16	55.52	-31.36	AVG
3	*	0.6045	32.28	9.98	42.26	56.00	-13.74	QP
4		0.6045	18.92	9.98	28.90	46.00	-17.10	AVG
5		1.4505	25.44	9.58	35.02	56.00	-20.98	QP
6		1.4505	13.37	9.58	22.95	46.00	-23.05	AVG
7		3.9120	25.60	9.72	35.32	56.00	-20.68	QP
8		3.9120	12.30	9.72	22.02	46.00	-23.98	AVG
9		6.9855	33.36	9.72	43.08	60.00	-16.92	QP
10		6.9855	17.39	9.72	27.11	50.00	-22.89	AVG
11		16.4850	18.43	9.73	28.16	60.00	-31.84	QP
12		16.4850	4.69	9.73	14.42	50.00	-35.58	AVG

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



Remark:

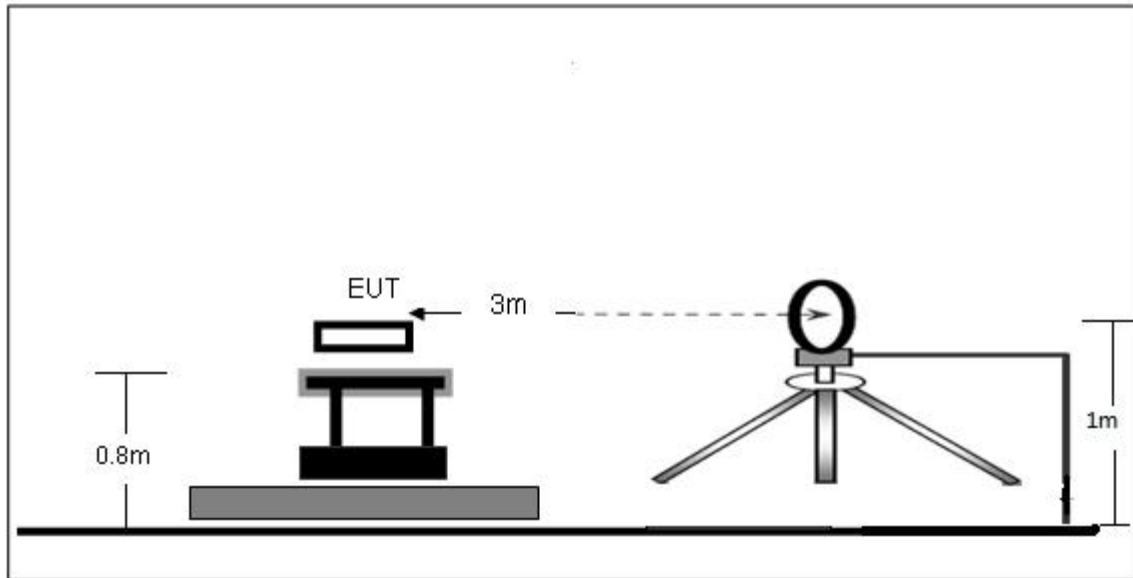
1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.

No.	Mk.	Freq. MHz	Reading Level	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector
1		0.2208	29.06	9.48	38.54	62.79	-24.25	QP
2		0.2208	13.72	9.48	23.20	52.79	-29.59	AVG
3		0.6075	34.33	9.97	44.30	56.00	-11.70	QP
4	*	0.6075	25.24	9.97	35.21	46.00	-10.79	AVG
5		2.0333	21.60	9.59	31.19	56.00	-24.81	QP
6		2.0333	10.60	9.59	20.19	46.00	-25.81	AVG
7		4.0275	22.63	9.73	32.36	56.00	-23.64	QP
8		4.0275	11.36	9.73	21.09	46.00	-24.91	AVG
9		7.0249	30.67	9.72	40.39	60.00	-19.61	QP
10		7.0249	14.62	9.72	24.34	50.00	-25.66	AVG
11		12.9199	30.02	9.70	39.72	60.00	-20.28	QP
12		12.9199	15.53	9.70	25.23	50.00	-24.77	AVG

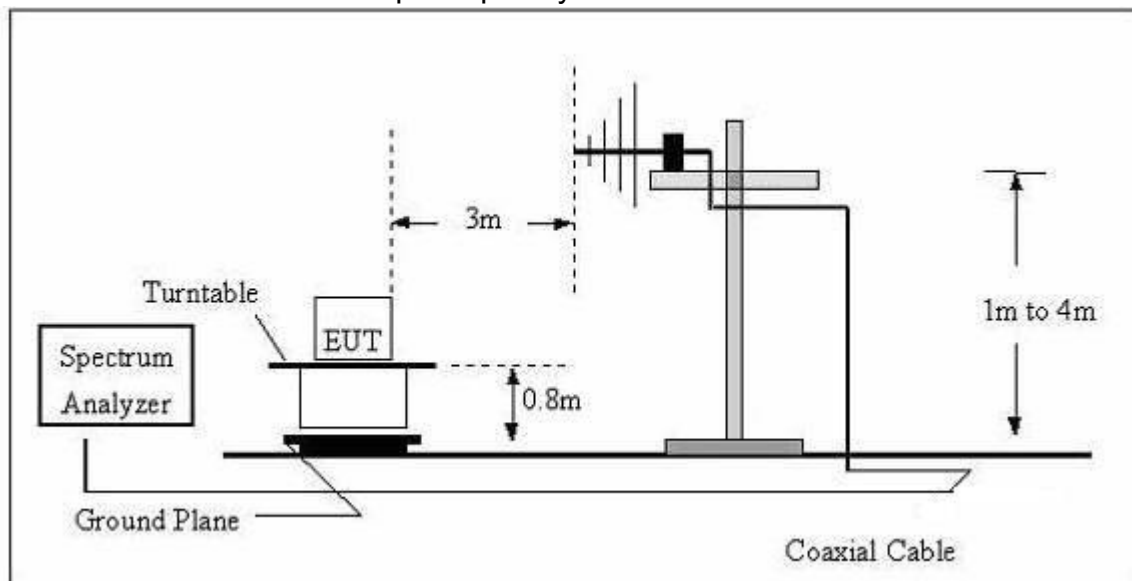
7. RADIATED EMISSIONS

7.1 Block Diagram Of Test Setup

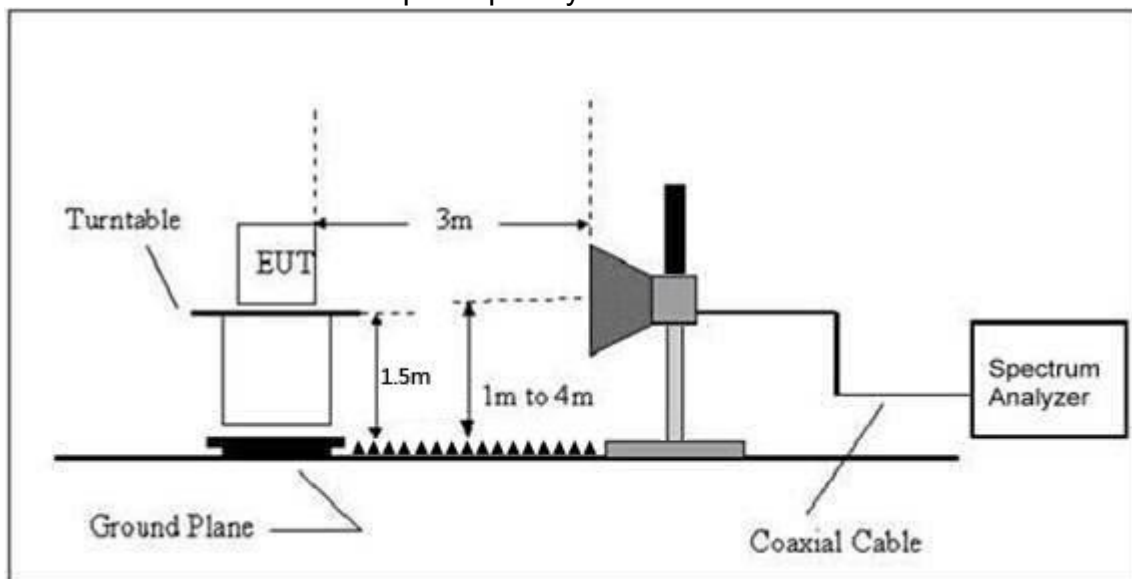
(A) Radiated Emission Test-Up Frequency Below 30MHz



(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

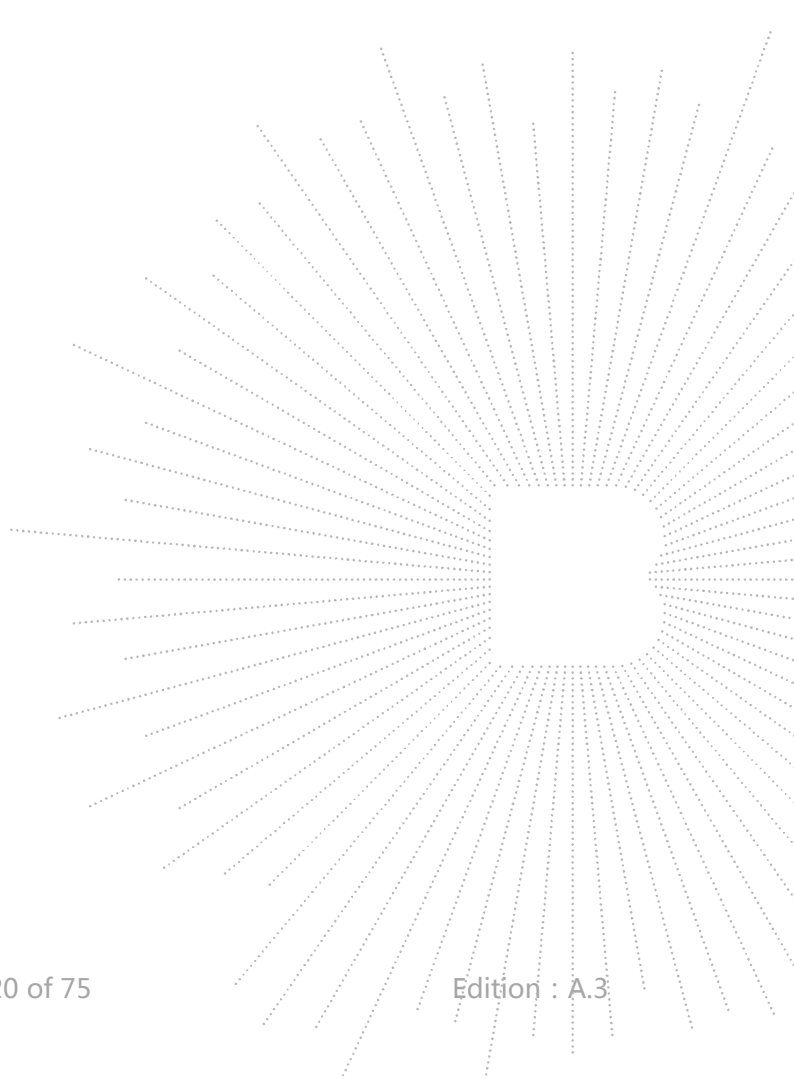
During the radiated emission test, the Spectrum Analyzer was set with the following configurations:

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

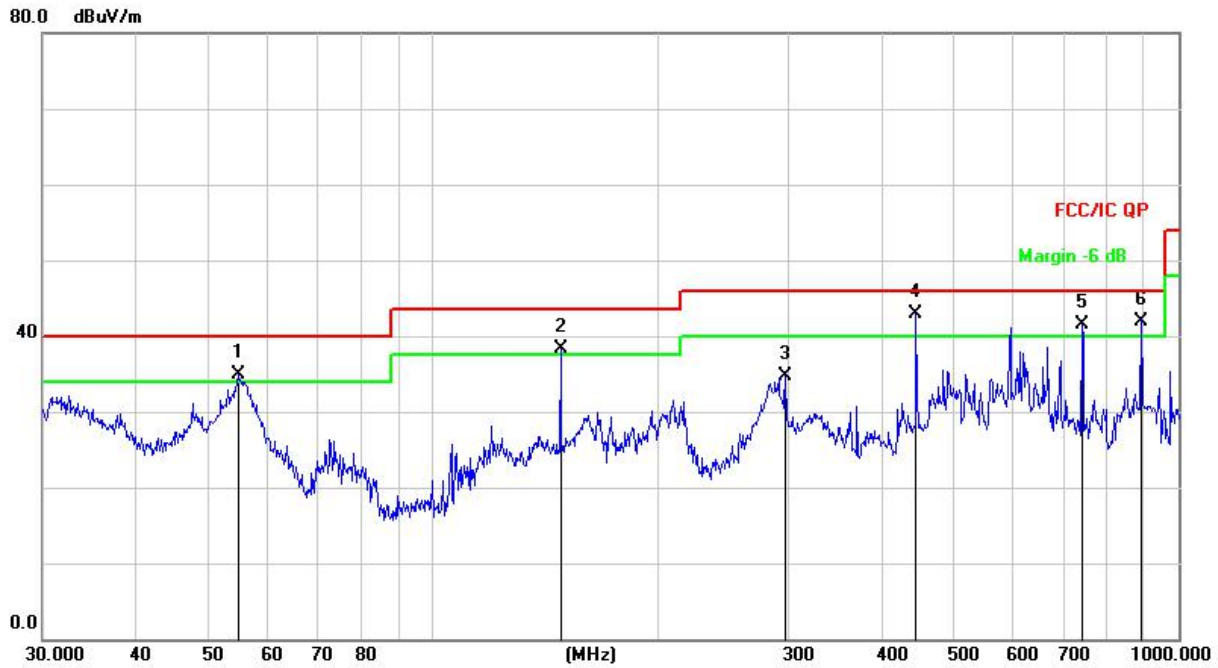


Remark:

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	!	148.4410	57.77	-18.61	39.16	43.50	-4.34	QP
2	!	297.2241	53.48	-12.50	40.98	46.00	-5.02	QP
3	!	444.8514	50.43	-8.73	41.70	46.00	-4.30	QP
4	*	595.1327	46.92	-5.16	41.76	46.00	-4.24	QP
5	!	668.1422	45.41	-4.07	41.34	46.00	-4.66	QP
6		890.7278	40.14	-0.20	39.94	46.00	-6.06	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	!	54.8348	49.31	-14.36	34.95	40.00	-5.05	QP
2	!	148.4410	56.82	-18.61	38.21	43.50	-5.29	QP
3		297.2241	47.16	-12.50	34.66	46.00	-11.34	QP
4	*	444.8514	51.66	-8.73	42.93	46.00	-3.07	QP
5	!	742.2586	44.42	-2.93	41.49	46.00	-4.51	QP
6	!	890.7278	42.20	-0.20	42.00	46.00	-4.00	QP

Between 1GHz – 40GHz

Test Mode :	TX (5.8G) -- 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 (5745 MHz)-Above 1G									
V	4679.053	59.90	5.94	35.40	44.00	57.24	74.00	-16.76	PK
V	4679.053	43.52	5.94	35.40	44.00	40.86	54.00	-13.14	AV
V	11490.061	55.21	8.46	39.75	44.50	58.92	74.00	-15.08	PK
V	11490.061	43.18	8.46	39.75	44.50	46.89	54.00	-7.11	AV
V	17235.052	59.74	10.12	38.80	44.10	64.56	68.20	-3.64	PK
V	17235.052	43.42	10.12	38.80	42.70	49.64	54.00	-4.36	AV
H	4679.186	56.85	5.94	35.18	44.00	53.97	74.00	-20.03	PK
H	4679.186	43.56	5.94	35.18	44.00	40.68	54.00	-13.32	AV
H	11490.048	53.41	8.46	38.71	44.50	56.08	74.00	-17.92	PK
H	11490.048	42.88	8.46	38.71	44.50	45.55	54.00	-8.45	AV
H	17235.055	54.17	10.12	38.38	44.10	58.57	68.20	-9.63	PK
H	17235.055	44.93	10.12	38.38	44.10	49.33	54.00	-4.67	AV
middle Channel (5785 MHz)-Above 1G									
V	4592.011	56.60	6.48	36.35	44.05	55.38	74.00	-18.62	PK
V	4592.011	43.54	6.48	36.35	44.05	42.32	54.00	-11.68	AV
V	11570.067	59.68	8.47	37.88	44.51	61.52	74.00	-12.48	PK
V	11570.067	43.94	8.47	37.88	44.51	45.78	54.00	-8.22	AV
V	17355.161	60.76	10.12	38.80	44.10	65.58	68.20	-2.62	PK
V	17355.161	39.75	10.12	38.80	42.70	45.97	54.00	-8.03	AV
H	4592.029	58.62	6.48	36.37	44.05	57.42	74.00	-16.58	PK
H	4592.029	43.78	6.48	36.37	44.05	42.58	54.00	-11.42	AV
H	11570.063	52.30	8.47	38.64	44.50	54.91	74.00	-19.09	PK
H	11570.063	41.33	8.47	38.64	44.50	43.94	54.00	-10.06	AV
H	17355.171	50.27	10.12	38.38	44.10	54.67	68.20	-13.53	PK
H	17355.171	43.57	10.12	38.38	44.10	47.97	54.00	-6.03	AV
High Channel (5825 MHz)-Above 1G									
V	6039.004	58.06	7.10	37.24	43.50	58.90	68.20	-9.30	PK
V	6039.004	43.42	7.10	37.24	43.50	44.26	54.00	-9.74	AV
V	11650.195	62.14	8.46	37.68	44.50	63.78	74.00	-10.22	PK
V	11650.195	43.07	8.46	37.68	44.50	44.71	54.00	-9.29	AV
V	17475.094	57.61	10.12	38.80	44.10	62.43	68.20	-5.77	PK
V	17475.094	43.43	10.12	38.80	42.70	49.65	54.00	-4.35	AV
H	6039.052	56.80	7.10	37.24	43.50	57.64	68.20	-10.56	PK
H	6039.052	43.07	7.10	37.24	43.50	43.91	54.00	-10.09	AV
H	11650.123	54.69	8.46	38.57	44.50	57.22	74.00	-16.78	PK
H	11650.123	43.28	8.46	38.57	44.50	45.81	54.00	-8.19	AV
H	17475.021	52.22	10.12	38.38	44.10	56.62	68.20	-11.58	PK
H	17475.021	44.88	10.12	38.38	44.10	49.28	54.00	-4.72	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 :	TX (5.8G) --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 (5745 MHz)-Above 1G									
V	4679.111	56.42	5.94	35.40	44.00	53.76	74.00	-20.24	PK
V	4679.111	43.61	5.94	35.40	44.00	40.95	54.00	-13.05	AV
V	11490.146	54.70	8.46	39.75	44.50	58.41	74.00	-15.59	PK
V	11490.146	43.13	8.46	39.75	44.50	46.84	54.00	-7.16	AV
V	17235.009	57.24	10.12	38.80	44.10	62.06	68.20	-6.14	PK
V	17235.009	43.04	10.12	38.80	42.70	49.26	54.00	-4.74	AV
H	4679.019	58.64	5.94	35.18	44.00	55.76	74.00	-18.24	PK
H	4679.019	43.60	5.94	35.18	44.00	40.72	54.00	-13.28	AV
H	11490.180	51.99	8.46	38.71	44.50	54.66	74.00	-19.34	PK
H	11490.180	43.08	8.46	38.71	44.50	45.75	54.00	-8.25	AV
H	17235.101	51.19	10.12	38.38	44.10	55.59	68.20	-12.61	PK
H	17235.101	42.98	10.12	38.38	44.10	47.38	54.00	-6.62	AV
middle Channel (5785 MHz)-Above 1G									
V	4592.187	59.64	6.48	36.35	44.05	58.42	74.00	-15.58	PK
V	4592.187	43.91	6.48	36.35	44.05	42.69	54.00	-11.31	AV
V	11570.065	58.52	8.47	37.88	44.51	60.36	74.00	-7.84	PK
V	11570.065	43.21	8.47	37.88	44.51	45.05	54.00	-8.95	AV
V	17355.184	60.88	10.12	38.80	44.10	65.70	68.20	-8.30	PK
V	17355.184	43.38	10.12	38.80	42.70	49.60	54.00	-4.40	AV
H	4592.083	58.06	6.48	36.37	44.05	56.86	74.00	-17.14	PK
H	4592.083	43.12	6.48	36.37	44.05	41.92	54.00	-12.08	AV
H	11570.006	51.59	8.47	38.64	44.50	54.20	74.00	-14.00	PK
H	11570.006	40.39	8.47	38.64	44.50	43.00	54.00	-11.00	AV
H	17355.098	52.47	10.12	38.38	44.10	56.87	68.20	-17.13	PK
H	17355.098	40.60	10.12	38.38	44.10	45.00	54.00	-9.00	AV
High Channel (5825 MHz)-Above 1G									
V	6039.025	58.91	7.10	37.24	43.50	59.75	68.20	-8.45	PK
V	6039.025	43.19	7.10	37.24	43.50	44.03	54.00	-9.97	AV
V	11650.187	60.57	8.46	37.68	44.50	62.21	74.00	-11.79	PK
V	11650.187	43.84	8.46	37.68	44.50	45.48	54.00	-8.52	AV
V	17475.054	55.73	10.12	38.80	44.10	60.55	68.20	-7.65	PK
V	17475.054	43.21	10.12	38.80	42.70	49.43	54.00	-4.57	AV
H	6039.183	56.09	7.10	37.24	43.50	56.93	68.20	-11.27	PK
H	6039.183	43.05	7.10	37.24	43.50	43.89	54.00	-10.11	AV
H	11650.071	51.37	8.46	38.57	44.50	53.90	74.00	-20.10	PK
H	11650.071	40.68	8.46	38.57	44.50	43.21	54.00	-10.79	AV
H	17475.086	53.60	10.12	38.38	44.10	58.00	68.20	-10.20	PK
H	17475.086	40.06	10.12	38.38	44.10	44.46	54.00	-9.54	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 :	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	4679.053	59.94	5.94	35.40	44.00	57.28	74.00	-16.72	PK
V	4679.053	43.43	5.94	35.40	44.00	40.77	54.00	-13.23	AV
V	11510.197	56.79	8.46	39.75	44.50	60.50	74.00	-13.50	PK
V	11510.197	43.27	8.46	39.75	44.50	46.98	54.00	-7.02	AV
V	17265.074	60.33	10.12	38.80	44.10	65.15	68.20	-3.05	PK
V	17265.074	43.95	10.12	38.80	42.70	50.17	54.00	-3.83	AV
H	4679.151	60.79	5.94	35.18	44.00	57.91	74.00	-16.09	PK
H	4679.151	43.90	5.94	35.18	44.00	41.02	54.00	-12.98	AV
H	11510.013	50.61	8.46	38.71	44.50	53.28	74.00	-20.72	PK
H	11510.013	42.73	8.46	38.71	44.50	45.40	54.00	-8.60	AV
H	17265.057	50.88	10.12	38.38	44.10	55.28	68.20	-12.92	PK
H	17265.057	44.99	10.12	38.38	44.10	49.39	54.00	-4.61	AV
middle Channel (5795 MHz)-Above 1G									
V	6039.155	60.33	6.48	36.35	44.05	59.11	68.20	-9.09	PK
V	6039.155	43.75	6.48	36.35	44.05	42.53	54.00	-11.47	AV
V	11590.123	58.54	8.47	37.88	44.51	60.38	74.00	-13.62	PK
V	11590.123	43.44	8.47	37.88	44.51	45.28	54.00	-8.72	AV
V	17385.018	55.72	10.12	38.80	44.10	60.54	68.20	-7.66	PK
V	17385.018	41.70	10.12	38.80	42.70	47.92	54.00	-6.08	AV
H	6039.089	58.33	6.48	36.37	44.05	57.13	68.20	-11.07	PK
H	6039.089	43.73	6.48	36.37	44.05	42.53	54.00	-11.47	AV
H	11590.003	53.43	8.47	38.64	44.50	56.04	74.00	-17.96	PK
H	11590.003	42.93	8.47	38.64	44.50	45.54	54.00	-8.46	AV
H	17385.126	51.10	10.12	38.38	44.10	55.50	68.20	-12.70	PK
H	17385.126	44.67	10.12	38.38	44.10	49.07	54.00	-4.93	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 :	TX (5.8G) --802.11AC20
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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 (5745 MHz)-Above 1G									
V	4679.026	55.88	5.94	35.40	44.00	53.22	74.00	-20.78	PK
V	4679.026	43.64	5.94	35.40	44.00	40.98	54.00	-13.02	AV
V	11490.109	57.16	8.46	39.75	44.50	60.87	74.00	-13.13	PK
V	11490.109	43.84	8.46	39.75	44.50	47.55	54.00	-6.45	AV
V	17235.127	56.31	10.12	38.80	44.10	61.13	68.20	-7.07	PK
V	17235.127	43.88	10.12	38.80	42.70	50.10	54.00	-3.90	AV
H	4679.029	55.58	5.94	35.18	44.00	52.70	74.00	-21.30	PK
H	4679.029	43.46	5.94	35.18	44.00	40.58	54.00	-13.42	AV
H	11490.075	50.07	8.46	38.71	44.50	52.74	74.00	-21.26	PK
H	11490.075	42.69	8.46	38.71	44.50	45.36	54.00	-8.64	AV
H	17235.125	54.84	10.12	38.38	44.10	59.24	68.20	-8.96	PK
H	17235.125	42.22	10.12	38.38	44.10	46.62	54.00	-7.38	AV
middle Channel (5785 MHz)-Above 1G									
V	4592.035	55.86	6.48	36.35	44.05	54.64	74.00	-19.36	PK
V	4592.035	43.77	6.48	36.35	44.05	42.55	54.00	-11.45	AV
V	11570.061	58.50	8.47	37.88	44.51	60.34	74.00	-13.66	PK
V	11570.061	43.22	8.47	37.88	44.51	45.06	54.00	-8.94	AV
V	17355.085	58.51	10.12	38.80	44.10	63.33	68.20	-4.87	PK
V	17355.085	39.09	10.12	38.80	42.70	45.31	54.00	-8.69	AV
H	4592.107	59.15	6.48	36.37	44.05	57.95	74.00	-16.05	PK
H	4592.107	43.40	6.48	36.37	44.05	42.20	54.00	-11.80	AV
H	11570.081	51.48	8.47	38.64	44.50	54.09	74.00	-19.91	PK
H	11570.081	43.50	8.47	38.64	44.50	46.11	54.00	-7.89	AV
H	17355.141	53.39	10.12	38.38	44.10	57.79	68.20	-10.41	PK
H	17355.141	44.83	10.12	38.38	44.10	49.23	54.00	-4.77	AV
High Channel (5825 MHz)-Above 1G									
V	6039.042	59.63	7.10	37.24	43.50	60.47	68.20	-7.73	PK
V	6039.042	43.50	7.10	37.24	43.50	44.34	54.00	-9.66	AV
V	11650.125	58.07	8.46	37.68	44.50	59.71	74.00	-14.29	PK
V	11650.125	43.60	8.46	37.68	44.50	45.24	54.00	-8.76	AV
V	17475.032	56.64	10.12	38.80	44.10	61.46	68.20	-6.74	PK
V	17475.032	43.80	10.12	38.80	42.70	50.02	54.00	-3.98	AV
H	6039.161	54.51	7.10	37.24	43.50	55.35	68.20	-12.85	PK
H	6039.161	43.20	7.10	37.24	43.50	44.04	54.00	-9.96	AV
H	11650.031	54.75	8.46	38.57	44.50	57.28	74.00	-16.72	PK
H	11650.031	44.72	8.46	38.57	44.50	47.25	54.00	-6.75	AV
H	17475.108	52.71	10.12	38.38	44.10	57.11	68.20	-11.09	PK
H	17475.108	42.53	10.12	38.38	44.10	46.93	54.00	-7.07	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.

Test Mode :	TX (5.8G) -- 802.11AC40
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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	4679.181	59.17	5.94	35.40	44.00	56.51	74.00	-17.49	PK
V	4679.181	43.19	5.94	35.40	44.00	40.53	54.00	-13.47	AV
V	11510.162	56.69	8.46	39.75	44.50	60.40	74.00	-13.60	PK
V	11510.162	43.48	8.46	39.75	44.50	47.19	54.00	-6.81	AV
V	17265.009	58.39	10.12	38.80	44.10	63.21	68.20	-4.99	PK
V	17265.009	43.40	10.12	38.80	42.70	49.62	54.00	-4.38	AV
H	4679.065	59.73	5.94	35.18	44.00	56.85	74.00	-17.15	PK
H	4679.065	43.00	5.94	35.18	44.00	40.12	54.00	-13.88	AV
H	11510.177	53.69	8.46	38.71	44.50	56.36	74.00	-17.64	PK
H	11510.177	41.69	8.46	38.71	44.50	44.36	54.00	-9.64	AV
H	17265.117	51.98	10.12	38.38	44.10	56.38	68.20	-11.82	PK
H	17265.117	40.70	10.12	38.38	44.10	45.10	54.00	-8.90	AV
middle Channel (5795 MHz)-Above 1G									
V	6039.126	56.26	6.48	36.35	44.05	55.04	68.20	-13.16	PK
V	6039.126	43.76	6.48	36.35	44.05	42.54	54.00	-11.46	AV
V	11590.178	56.02	8.47	37.88	44.51	57.86	74.00	-16.14	PK
V	11590.178	43.02	8.47	37.88	44.51	44.86	54.00	-9.14	AV
V	17385.085	55.60	10.12	38.80	44.10	60.42	68.20	-7.78	PK
V	17385.085	41.16	10.12	38.80	42.70	47.38	54.00	-6.62	AV
H	6039.022	60.10	6.48	36.37	44.05	58.90	68.20	-9.30	PK
H	6039.022	43.21	6.48	36.37	44.05	42.01	54.00	-11.99	AV
H	11590.163	53.15	8.47	38.64	44.50	55.76	74.00	-18.24	PK
H	11590.163	43.97	8.47	38.64	44.50	46.58	54.00	-7.42	AV
H	17385.088	53.18	10.12	38.38	44.10	57.58	68.20	-10.62	PK
H	17385.088	40.72	10.12	38.38	44.10	45.12	54.00	-8.88	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 :	TX (5.8G) -- 802.11AC80
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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 (5775 MHz)-Above 1G									
V	4679.032	59.57	5.94	35.40	44.00	56.91	74.00	-17.09	PK
V	4679.032	43.02	5.94	35.40	44.00	40.36	54.00	-13.64	AV
V	11550.056	59.38	8.46	39.75	44.50	63.09	68.20	-5.11	PK
V	11550.056	42.04	8.46	39.75	44.50	45.75	54.00	-8.25	AV
V	17325.178	58.53	10.12	38.80	44.10	63.35	74.00	-10.65	PK
V	17325.178	41.66	10.12	38.80	42.70	47.88	54.00	-6.12	AV
H	4679.090	56.14	5.94	35.18	44.00	53.26	74.00	-20.74	PK
H	4679.090	43.63	5.94	35.18	44.00	40.75	54.00	-13.25	AV
H	11550.120	51.38	8.46	38.71	44.50	54.05	68.20	-14.15	PK
H	11550.120	40.47	8.46	38.71	44.50	43.14	54.00	-10.86	AV
H	17325.052	51.77	10.12	38.38	44.10	56.17	74.00	-17.83	PK
H	17325.052	41.16	10.12	38.38	44.10	45.56	54.00	-8.44	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.

8. POWER SPECTRAL DENSITY TEST

8.1 Block Diagram Of Test Setup



8.2 Limit

For the band 5.15-5.25 GHz,

(i) For an outdoor access point operating in the band 5.15-5.25 GHz, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional

gain greater than 6 dBi are used, both the maximum conducted output power and the maximum

power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. The maximum e.i.r.p. at any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm).

(ii) For an indoor access point operating in the band 5.15-5.25 GHz, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional

gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(iii) For fixed point-to-point access points operating in the band 5.15-5.25 GHz, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. Fixed point-to-point U-NII devices may employ antennas with directional gain up to 23 dBi without any corresponding reduction in the maximum conducted output power or maximum power spectral density. For fixed point-to-point transmitters that employ a directional antenna gain greater than 23 dBi, a 1 dB reduction in maximum conducted output power and maximum power spectral density is required for each

1 dB of antenna gain in excess of 23 dBi. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

(iv) For client devices in the 5.15-5.25 GHz band, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional

gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

For the band 5.725-5.85 GHz

(3) For the band 5.725-5.85 GHz, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

8.3 Test procedure

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

- a) Set $RBW \geq 1/T$, 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 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 MHz) is the reduced resolution bandwidth of spectrum analyzer set during measurement.
- e) Care must be taken to ensure that the measurements are performed during a period of continuous transmission or are corrected upward for duty cycle.

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

8.4 EUT operating Conditions

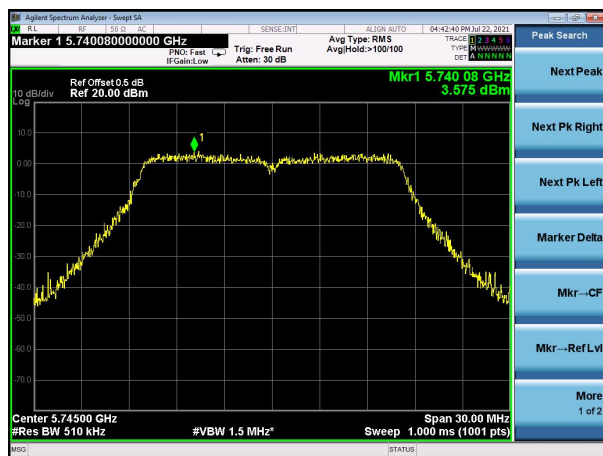
The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.

8.5 Test Result

Temperature :	26 °C	Relative Humidity :	54%
Pressure :	101kPa	Test Voltage :	DC 5V
Test Mode :	TX Frequency U-NII-3 (5745-5825MHz)		

Mode	Frequency	Measured Power Density (dBm/500kHz)	Limit (dBm/500kHz)	Result
802.11 a	5745 MHz	3.575	30	PASS
	5785 MHz	2.247	30	PASS
	5825 MHz	2.185	30	PASS
802.11 n20	5745 MHz	2.851	30	PASS
	5785 MHz	1.651	30	PASS
	5825 MHz	1.950	30	PASS
802.11 n40	5755 MHz	1.091	30	PASS
	5795 MHz	0.270	30	PASS
802.11 AC20	5745 MHz	2.887	30	PASS
	5785 MHz	1.492	30	PASS
	5825 MHz	1.199	30	PASS
802.11 AC40	5755 MHz	0.848	30	PASS
	5795 MHz	-0.657	30	PASS
802.11 AC80	5775 MHz	0.239	30	PASS

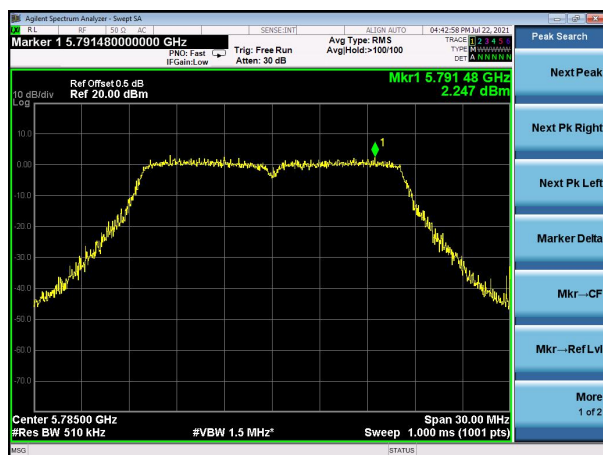
(802.11a) PSD plot on channel 149



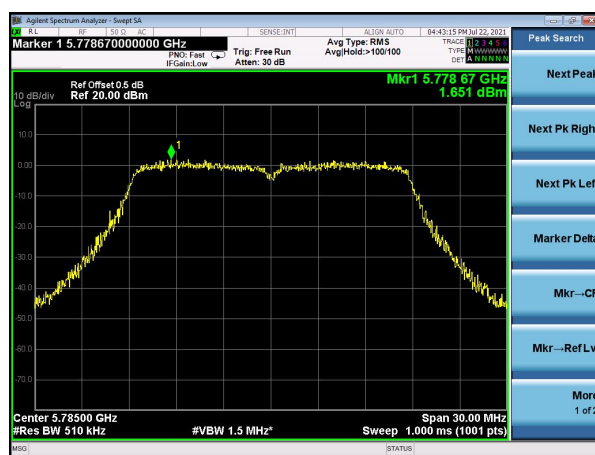
(802.11n20) PSD plot on channel 149



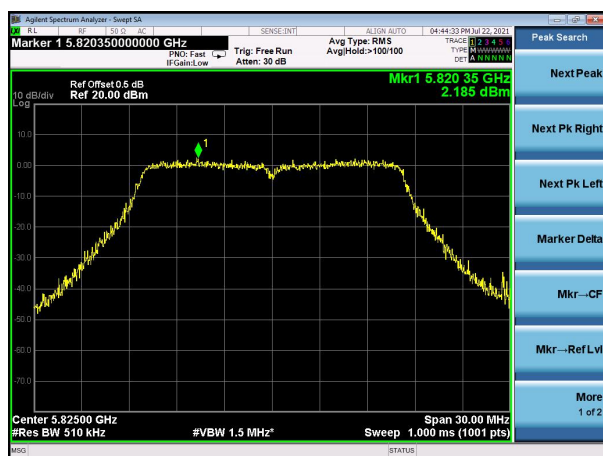
(802.11a) PSD plot on channel 157



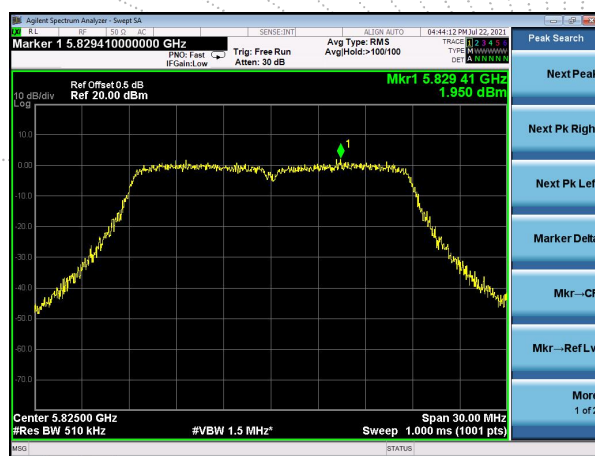
(802.11n20) PSD plot on channel 157



(802.11a) PSD plot on channel 165



(802.11n20) PSD plot on channel 165



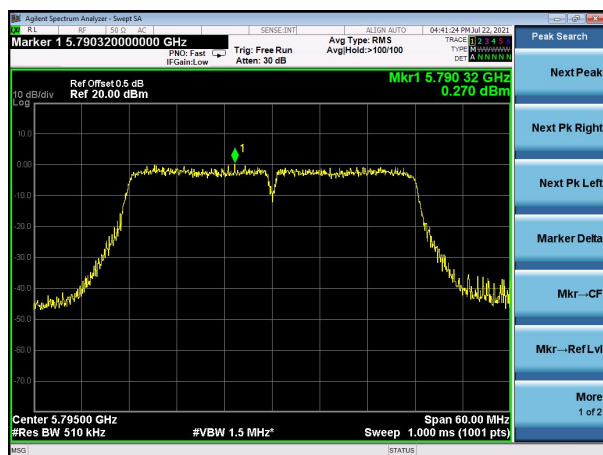
(802.11n40) PSD plot on channel 151



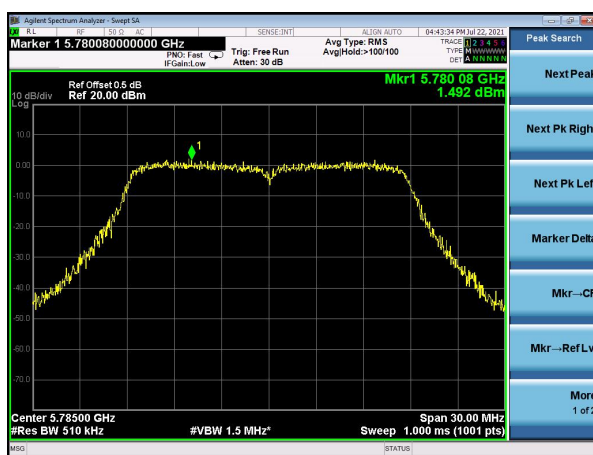
(802.11ac20) PSD plot on channel 149



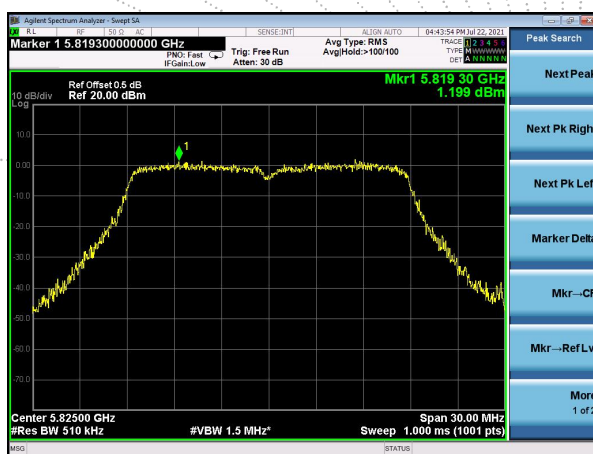
(802.11n40) PSD plot on channel 159



(802.11ac20) PSD plot on channel 157



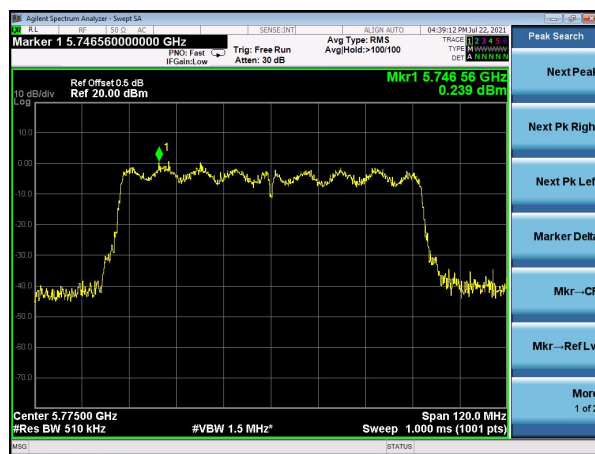
(802.11ac20) PSD plot on channel 165



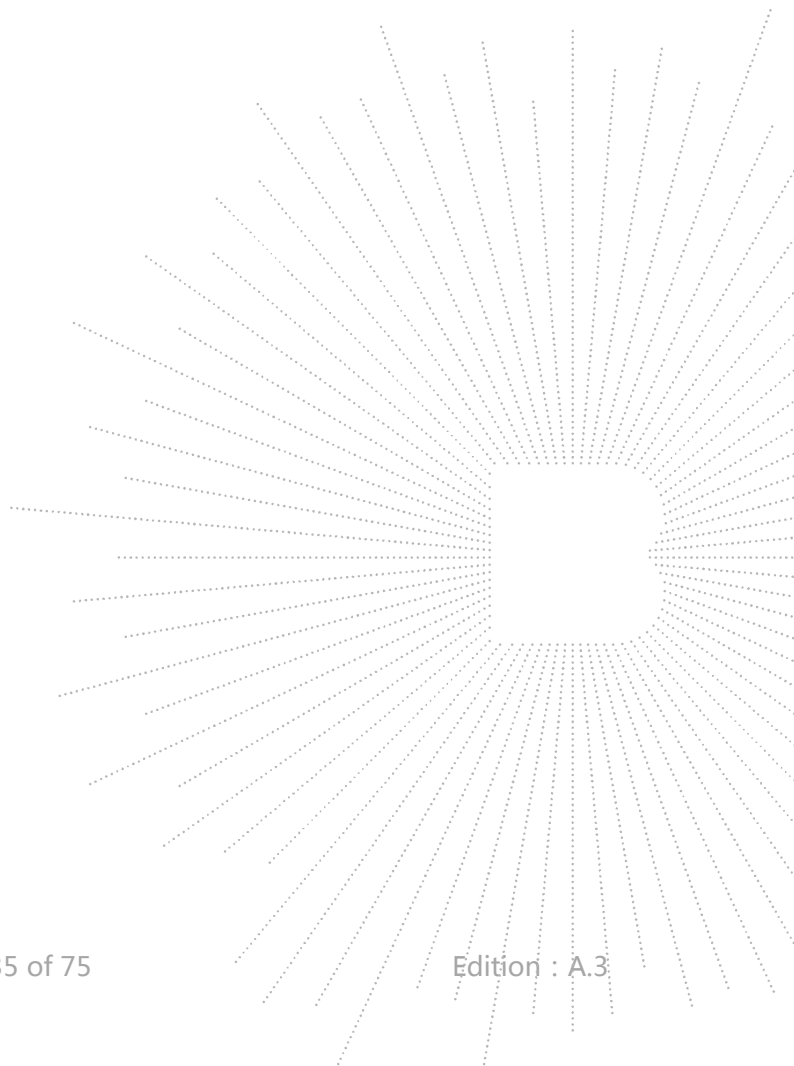
(802.11ac40) PSD plot on channel 151



(802.11ac80) PSD plot on channel 151

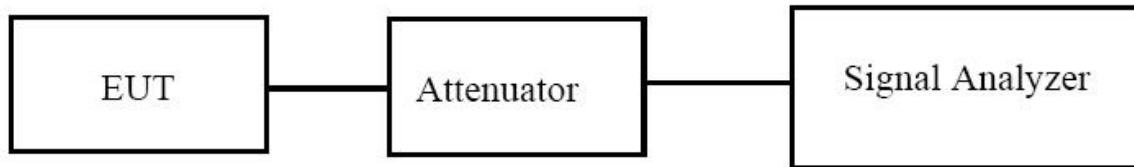


(802.11ac40) PSD plot on channel 159



9. 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.

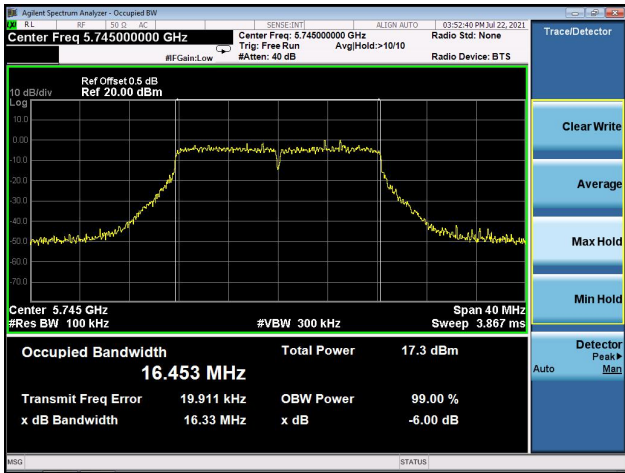
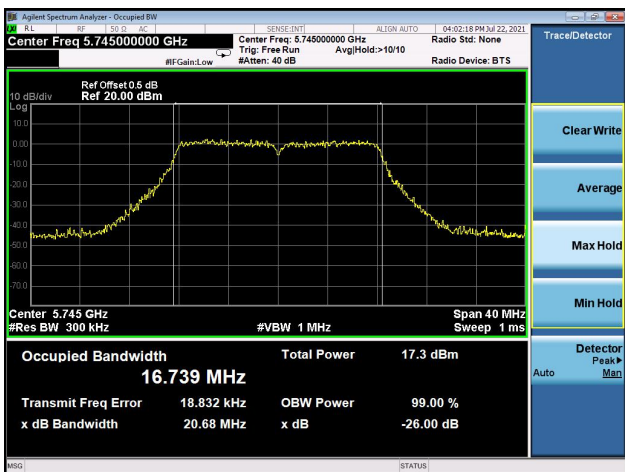
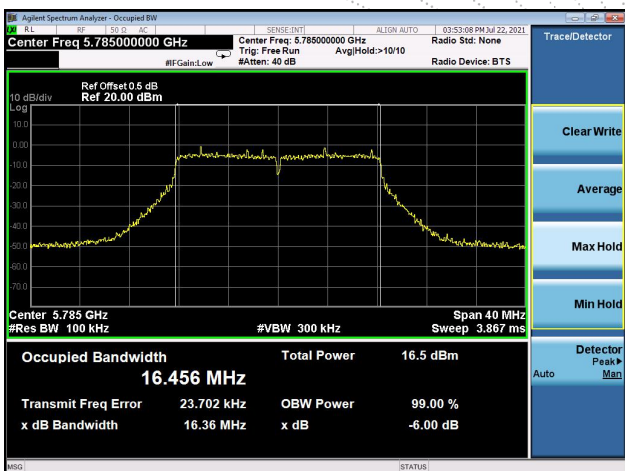
9.4 EUT operating Conditions

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.

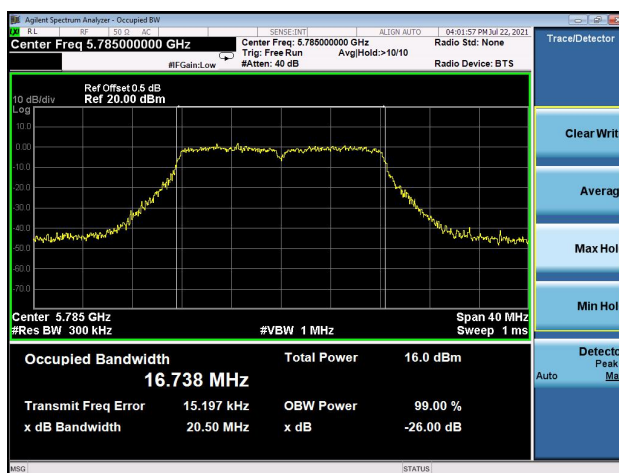
9.5 Test Result

Temperature :	26 °C	Relative Humidity :	54%
Pressure :	101kPa	Test Voltage :	DC 5V
Test Mode :	TX Frequency U-NII-3(5745-5825MHz)		

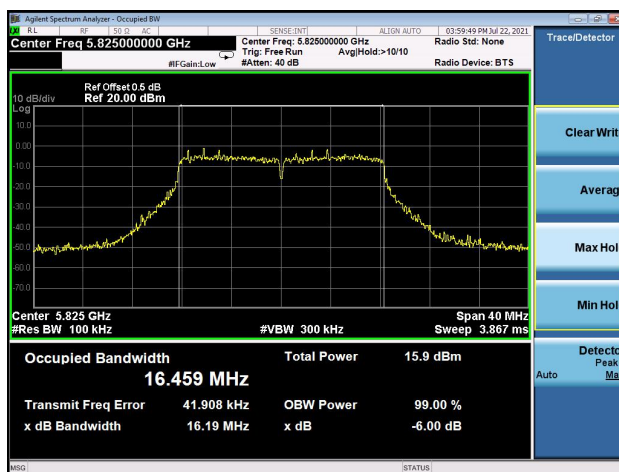
Mode	Channel	Frequency (MHz)	99% bandwidth (MHz)	6dB bandwidth (MHz)	Limit kHz	Result
802.11a	CH149	5745	16.739	16.33	≥500	Pass
	CH157	5785	16.738	16.36	≥500	Pass
	CH165	5825	16.713	16.19	≥500	Pass
802.11 n20	CH149	5745	17.769	16.86	≥500	Pass
	CH157	5785	17.675	17.54	≥500	Pass
	CH165	5825	17.729	16.56	≥500	Pass
802.11 n40	CH151	5755	36.359	35.46	≥500	Pass
	CH159	5795	36.349	35.49	≥500	Pass
802.11 AC20	CH149	5745	17.786	17.21	≥500	Pass
	CH157	5785	17.713	17.46	≥500	Pass
	CH165	5825	17.768	17.30	≥500	Pass
802.11 AC40	CH151	5755	36.316	35.50	≥500	Pass
	CH159	5795	36.367	35.47	≥500	Pass
802.11 AC80	CH151	5755	75.423	73.98	≥500	Pass

Mode:		802.11a	
5745MHz 6dB bandwidth			
5745MHz 99% bandwidth			
5785MHz 6dB bandwidth			

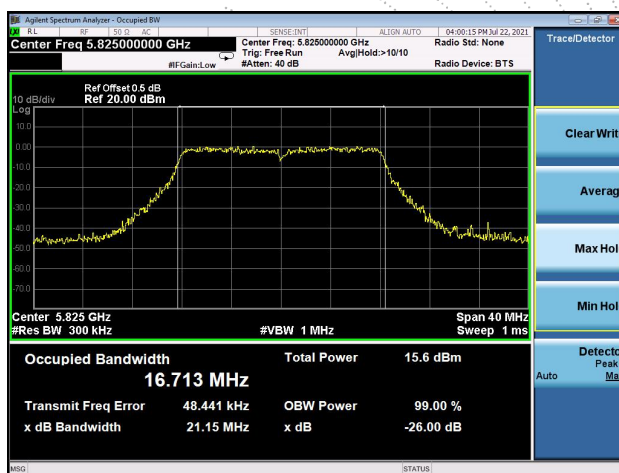
5785MHz
99% bandwidth

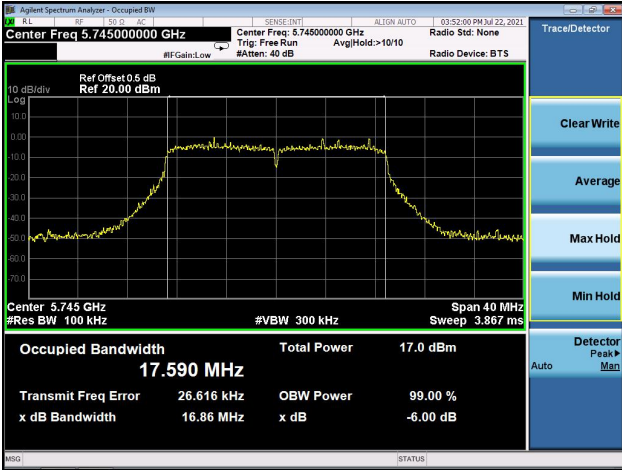
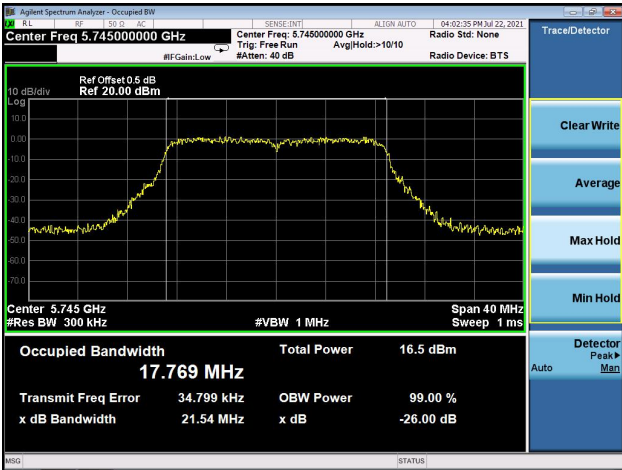


5825MHz
6dB bandwidth



5825MHz
99% bandwidth



Mode:	802.11n-HT20
5745MHz 6dB bandwidth	 Agilent Spectrum Analyzer - Occupied BW Center Freq 5.745000000 GHz Ref Offset 0.5 dB Ref 20.00 dBm Occupied Bandwidth: 17.590 MHz Total Power: 17.0 dBm Transmit Freq Error: 26.616 kHz OBW Power: 99.00 % x dB Bandwidth: 16.86 MHz x dB: -6.00 dB
5745MHz 99% bandwidth	 Agilent Spectrum Analyzer - Occupied BW Center Freq 5.745000000 GHz Ref Offset 0.5 dB Ref 20.00 dBm Occupied Bandwidth: 17.769 MHz Total Power: 16.5 dBm Transmit Freq Error: 34.799 kHz OBW Power: 99.00 % x dB Bandwidth: 21.54 MHz x dB: -26.00 dB