

TEST REPORT

Report No.: BCTC2309050581-6E

Applicant: Shenzhen FreeYond Technology Co Ltd

Product Name: Tablet

Model/Type
reference: A5

Tested Date: 2023-09-23 to 2023-10-19

Issued Date: 2023-10-28

Shenzhen BCTC Testing Co., Ltd.



FCC ID: 2A8FE-A5

Product Name: Tablet

Trademark: N/A

Model/Type Ref.: A5

Prepared For: Shenzhen FreeYond Technology Co Ltd

Address: Unit 203,Block A,Tengfei Industrial Building , No.6 Taohua Road ,Futian Bonded Area ,Shenzhen ,Guangdong, China

Manufacturer: Shenzhen FreeYond Technology Co Ltd

Address: Unit 203,Block A,Tengfei Industrial Building , No.6 Taohua Road ,Futian Bonded Area ,Shenzhen ,Guangdong, China

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: 2023-09-23

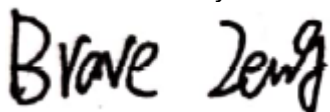
Sample tested Date: 2023-09-23 to 2023-10-19

Report No.: BCTC2309050581-6E

Test Standards: FCC Part15 15.407
ANSI C63.10-2013
KDB 662911 D01 v02r01
KDB 789033 D02 v02r01

Test Results: PASS

Tested by:



Brave Zeng/ Project Handler

Approved by:



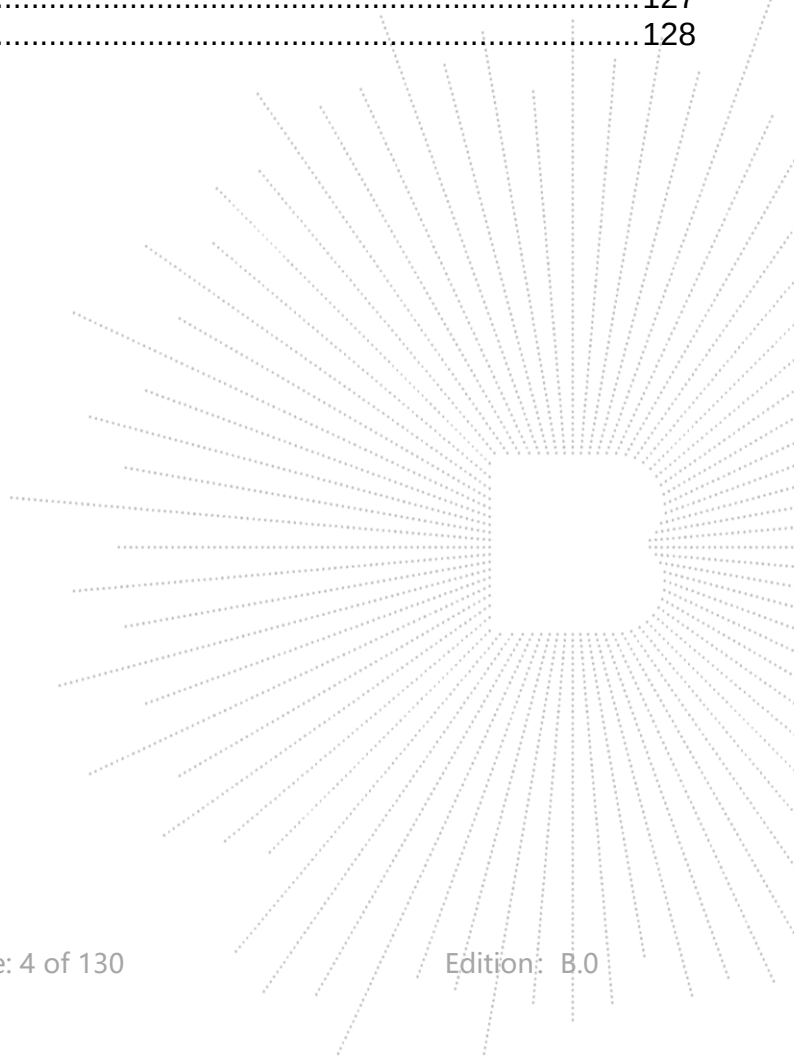
Zero Zhou/Reviewer

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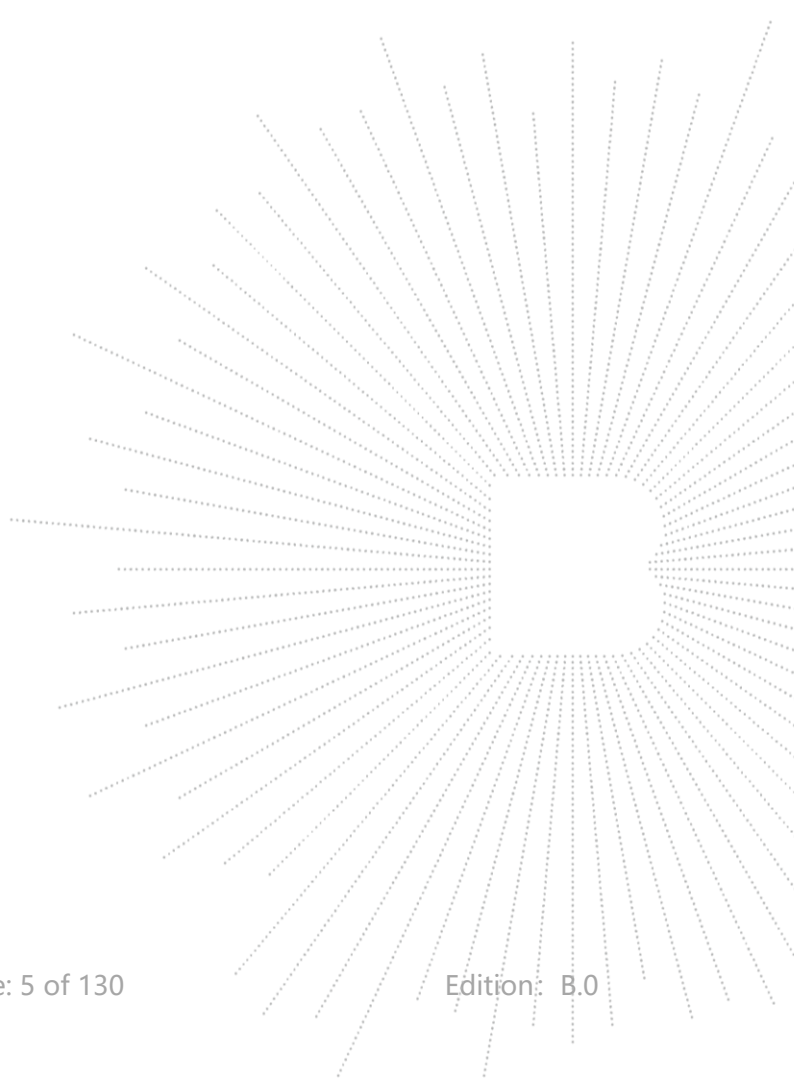
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1. Version

Report No.	Issue Date	Description	Approved
BCTC2309050581-6E	2023-10-28	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)	PASS
2	Conducted Emission	15.207	PASS
3	26 dB and 99% Emission Bandwidth	15.407 (a)	PASS
4	Minimum 6 dB bandwidth	15.407(e)	PASS
5	Maximum Conducted Output Power	15.407 (a)	PASS
6	Band Edge	15.407(b)	PASS
7	Power Spectral Density	15.407 (a)	PASS
8	Spurious Emissions at Antenna Terminals	15.407(b)	PASS
9	Antenna Requirement	15.203	PASS

3. Measurement Uncertainty

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

No.	Item	Uncertainty
1	3m chamber Radiated spurious emission(9kHz-30MHz)	U=3.7dB
2	3m chamber Radiated spurious emission(30MHz-1GHz)	U=4.3dB
3	3m chamber Radiated spurious emission(1GHz-18GHz)	U=4.5dB
4	3m chamber Radiated spurious emission(18GHz-40GHz)	U=3.34dB
5	Conducted Emission(150kHz-30MHz)	U=3.20dB
6	Conducted Adjacent channel power	U=1.38dB
7	Conducted output power uncertainty Above 1G	U=1.576dB
8	Conducted output power uncertainty below 1G	U=1.28dB
9	humidity uncertainty	U=5.3%
10	Temperature uncertainty	U=0.59°C

4. Product Information and Test Setup

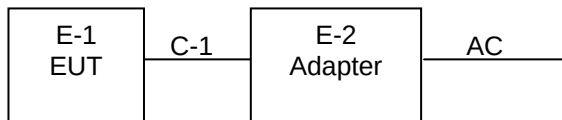
4.1 Product Information

Model/Type Ref.:	A5
Model differences:	N/A
Hardware Version:	N/A
Software Version:	N/A
IEEE 802.11 WLAN Mode Supported	☒ 802.11a ☒ 802.11n(20MHz channel bandwidth) ☒ 802.11n(40MHz channel bandwidth) ☒ 802.11ac(20MHz channel bandwidth) ☒ 802.11ac(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)0; 5210MHz for 802.11 ac80; 5745-5825 MHz for 802.11a/n/ac(HT20); 5755-5795 MHz for 802.11n/ac(HT40); 5775MHz for 802.11 ac80
Data Rate	☒ 802.11a:54/48/36/24/18/12/9/6Mbps ☒ 802.11n:up to 300 Mbps ☒ 802.11ac:up to 867 Mbps
Type of Modulation:	☒ OFDM with BPSK/QPSK/16QAM/64QAM for 802.11a/n ☒ OFDM with BPSK/QPSK/16QAM/64QAM/256QAM for 802.11ac
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
Transmit Power:	WIFI5.1G:12.24dBm WIFI5.8G:10.58dBm
Antenna installation:	Internal antenna
Antenna Gain:	WIFI5.1G:-0.70 dBi WIFI5.8G:-0.70dBi
Ratings:	AC 100-240,50/60Hz
Battery:	DC3.8V,8000mAh/30.4Wh
Adapter:	Model: YQ002-Z Input:AC100-240V,50/60Hz,0.5A Output:DC5V,3.0A ;9V,2.22A;12V,1.67A

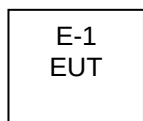
4.2 Test Setup Configuration

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	Tablet	N/A	A5	N/A	EUT
E-2	Adapter	N/A	N/A	N/A	EUT

Item	Shielded Type	Ferrite Core	Length	Note
C-1	N/A	N/A	N/A	N/A

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):

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):

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

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

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

4.5 Test Mode

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

Pretest Mode	Description
Mode 1	802.11a / n/ ac 20 CH36/ CH40/ CH 48 802.11a /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 ac/80 CH 42/CH 155
Mode 4	Link Mode

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

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, Zhancheng, 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

A2LA certificate registration number is: CN1212

ISED Registered No.: 23583

ISED CAB identifier: CN0017

5.2 Test Instrument Used

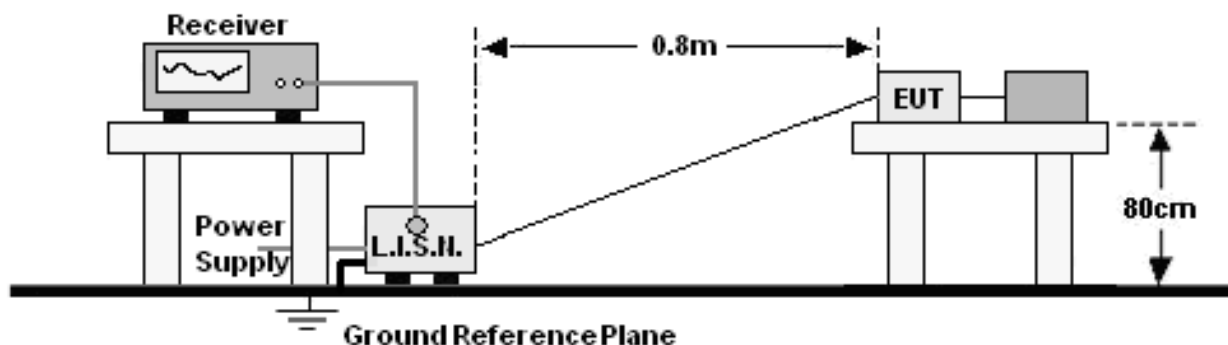
Conducted Emissions Test					
Equipment	Manufacturer	Model#	Serial#	Last Cal.	Next Cal.
Receiver	R&S	ESR3	102075	May 15, 2023	May 14, 2024
LISN	R&S	ENV216	101375	May 15, 2023	May 14, 2024
Software	Frad	EZ-EMC	EMC-CON 3A1	\	\
Attenuator	\	10dB DC-6GHz	1650	May 15, 2023	May 14, 2024

RF Conducted Test					
Equipment	Manufacturer	Model#	Serial#	Last Cal.	Next Cal.
Power Metter	Keysight	E4419	\	May 15, 2023	May 14, 2024
Power Sensor (AV)	Keysight	E9300A	\	May 15, 2023	May 14, 2024
Signal Analyzer 20kHz-26.5GHz	Keysight	N9020A	MY49100060	May 15, 2023	May 14, 2024
Spectrum Analyzer 9kHz-40GHz	R&S	FSP40	\	May 15, 2023	May 14, 2024

Radiated Emissions Test (966 Chamber)					
Equipment	Manufacturer	Model#	Serial#	Last Cal.	Next Cal.
966 chamber	ChengYu	966 Room	966	May 15, 2023	May 14, 2026
Receiver	R&S	ESR3	102075	May 15, 2023	May 14, 2024
Receiver	R&S	ESRP	101154	May 15, 2023	May 14, 2024
Amplifier	SKET	LAPA_01G18 G-45dB	\	May 15, 2023	May 14, 2024
Amplifier	Schwarzbeck	BBV9744	9744-0037	May 15, 2023	May 14, 2024
TRILOG Broadband Antenna	Schwarzbeck	VULB9163	942	May 15, 2023	May 14, 2024
Horn Antenna	Schwarzbeck	BBHA9120D	1541	May 15, 2023	May 14, 2024
Horn Antenn(18GH z-40GHz)	Schwarzbeck	BBHA9170	00822	May 15, 2023	May 14, 2024
Amplifier(18G Hz-40GHz)	MITEQ	TTA1840-35- HG	2034381	May 15, 2023	May 14, 2024
Loop Antenna(9KHz -30MHz)	Schwarzbeck	FMZB1519B	00014	May 15, 2023	May 14, 2024
RF cables1(9kHz- 30MHz)	Huber+Suhnar	9kHz-30MHz	B1702988-000 8	May 15, 2023	May 14, 2024
RF cables2(30MH z-1GHz)	Huber+Suhnar	30MHz-1GHz	1486150	May 15, 2023	May 14, 2024
RF cables3(1GHz -40GHz)	Huber+Suhnar	1GHz-40GHz	1607106	May 15, 2023	May 14, 2024
Power Metter	Keysight	E4419	\	May 15, 2023	May 14, 2024
Power Sensor (AV)	Keysight	E9300A	\	May 15, 2023	May 14, 2024
Signal Analyzer20kH z-26.5GHz	Keysight	N9020A	MY49100060	May 15, 2023	May 14, 2024
Spectrum Analyzer9kHz- 40GHz	R&S	FSP40	\	May 15, 2023	May 14, 2024
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.

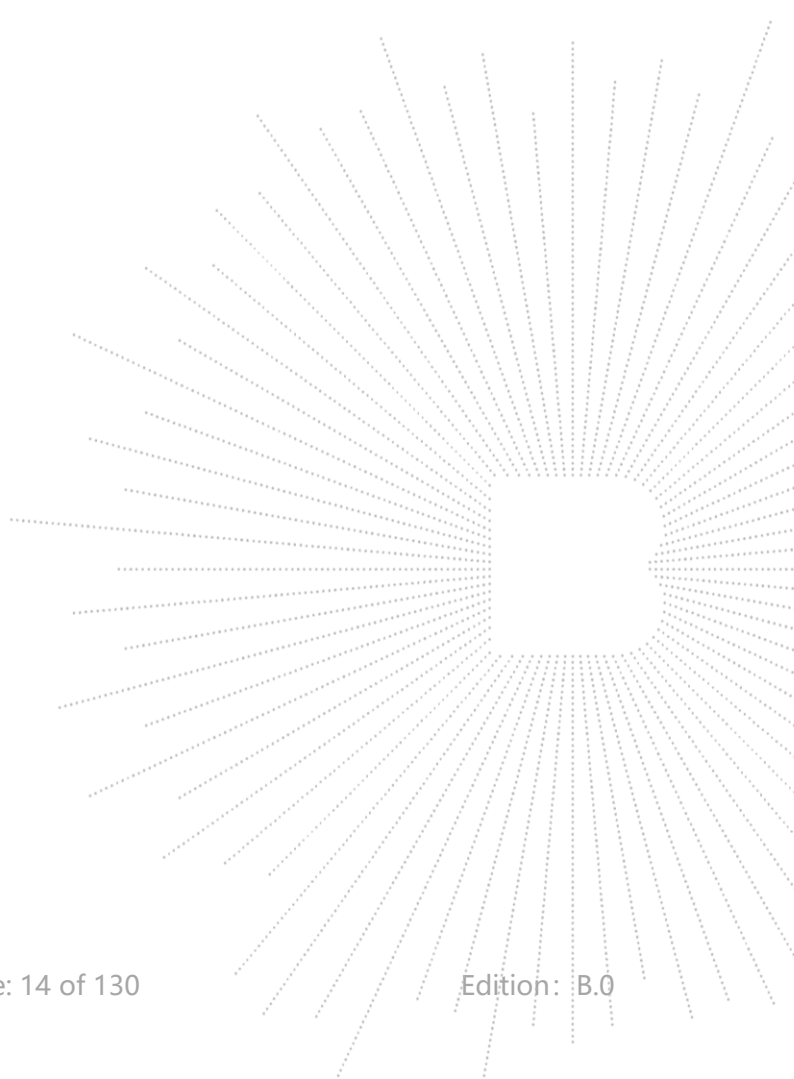
6.3 Test Procedure

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.

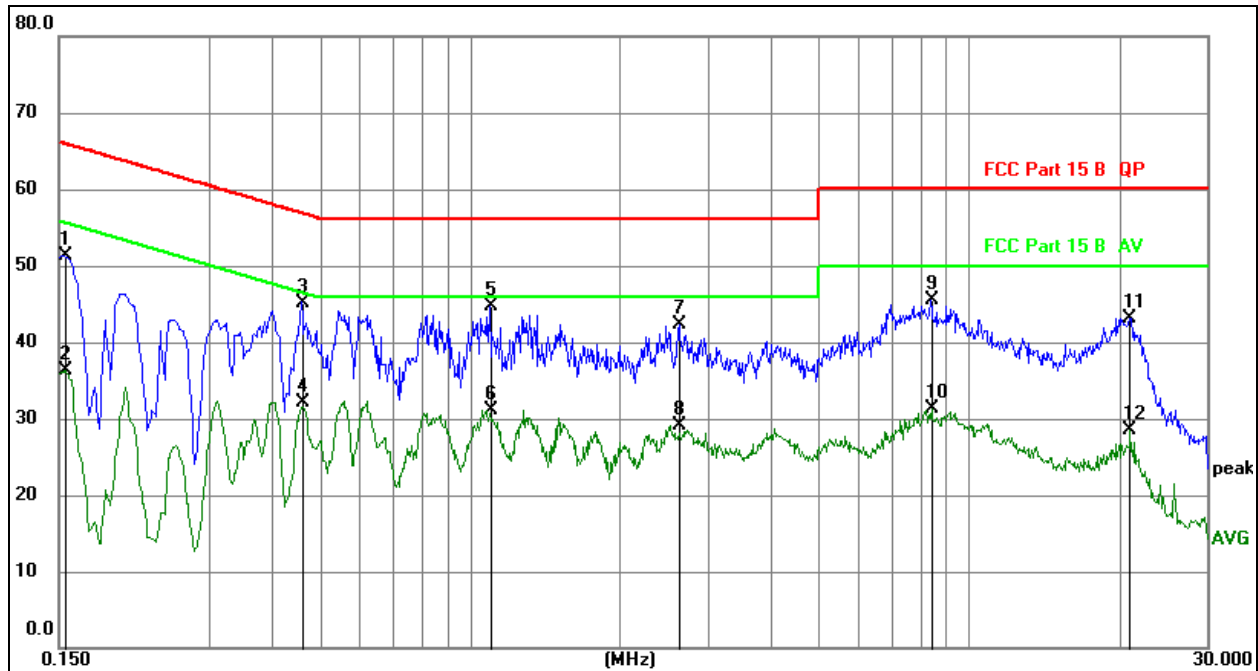
6.4 EUT Operating Conditions

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.



6.5 Test Result

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

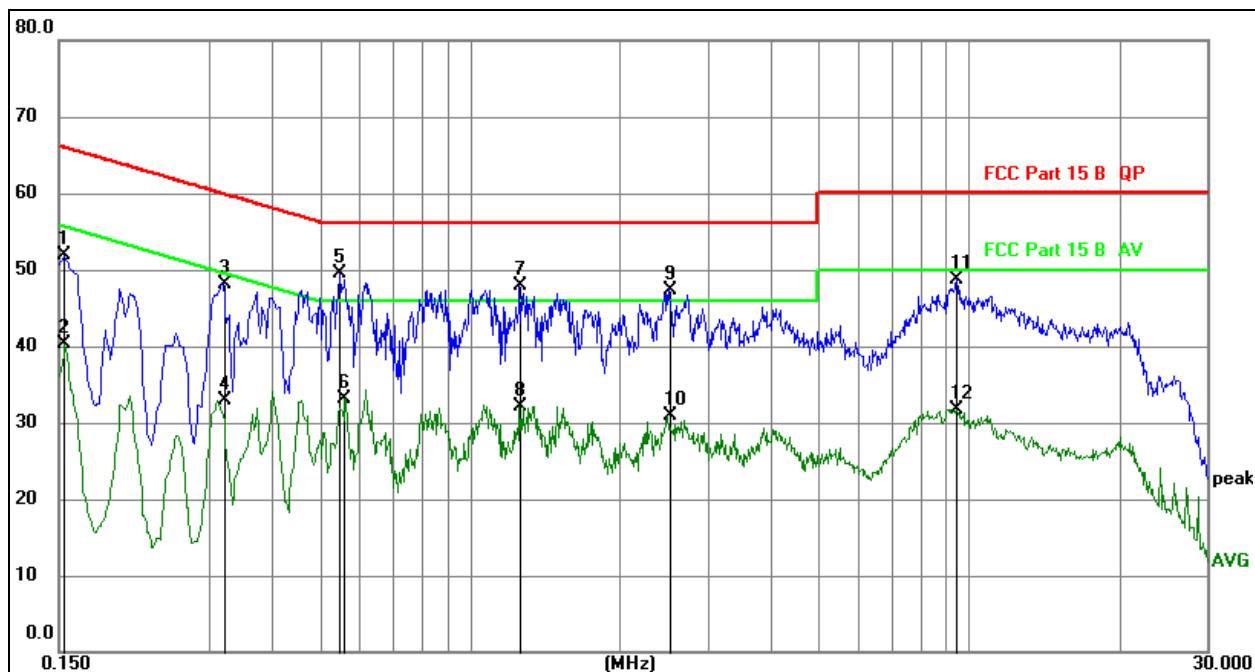


Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.
3. Measurement=Reading Level+ Correct Factor
4. Over= Measurement-Limit

No. Mk.	Freq. MHz	Reading Level	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1	0.1545	41.12	10.18	51.30	65.75	-14.45	QP	
2	0.1545	26.14	10.18	36.32	55.75	-19.43	AVG	
3	0.4605	35.01	10.19	45.20	56.68	-11.48	QP	
4	0.4605	22.00	10.19	32.19	46.68	-14.49	AVG	
5 *	1.0950	34.49	10.20	44.69	56.00	-11.31	QP	
6	1.0950	20.95	10.20	31.15	46.00	-14.85	AVG	
7	2.6250	32.24	10.14	42.38	56.00	-13.62	QP	
8	2.6250	18.90	10.14	29.04	46.00	-16.96	AVG	
9	8.3895	34.95	10.52	45.47	60.00	-14.53	QP	
10	8.3895	20.74	10.52	31.26	50.00	-18.74	AVG	
11	21.0165	32.48	10.72	43.20	60.00	-16.80	QP	
12	21.0165	17.74	10.72	28.46	50.00	-21.54	AVG	

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



Remark:

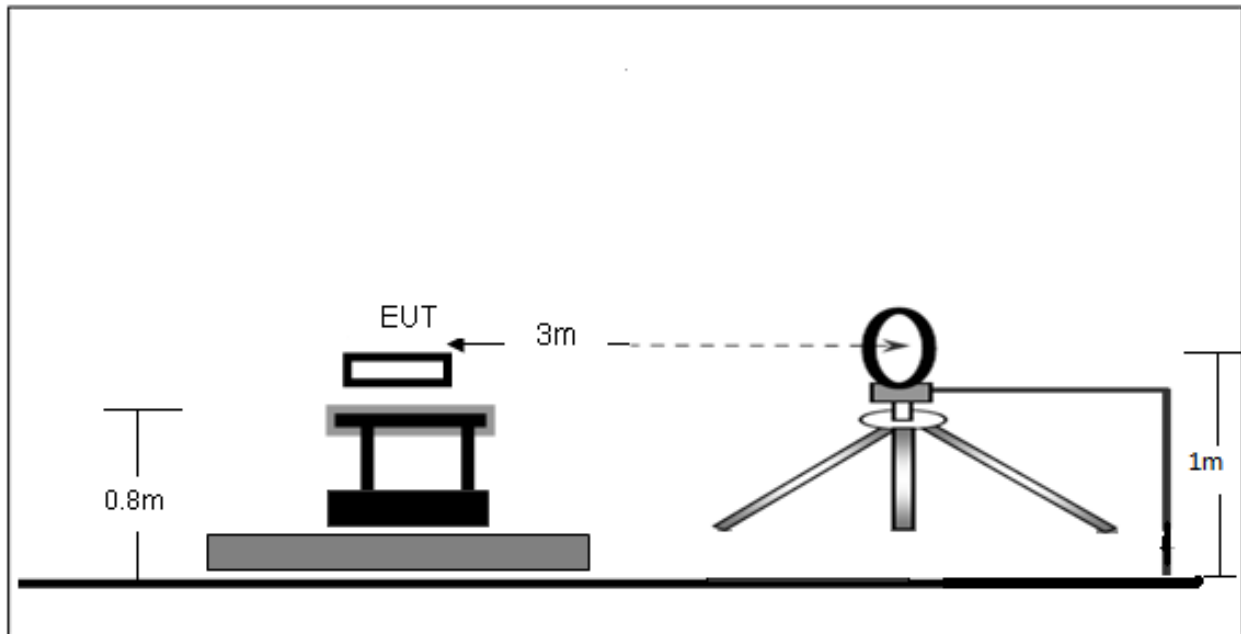
1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.
3. Measurement=Reading Level+ Correct Factor
4. Over= Measurement-Limit

No. Mk.	Freq. MHz	Reading Level	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1	0.1539	41.72	10.18	51.90	65.79	-13.89	QP	
2	0.1539	30.11	10.18	40.29	55.79	-15.50	AVG	
3	0.3200	37.98	10.19	48.17	59.71	-11.54	QP	
4	0.3200	22.64	10.19	32.83	49.71	-16.88	AVG	
5 *	0.5493	39.31	10.19	49.50	56.00	-6.50	QP	
6	0.5611	22.98	10.19	33.17	46.00	-12.83	AVG	
7	1.2555	37.64	10.18	47.82	56.00	-8.18	QP	
8	1.2555	22.01	10.18	32.19	46.00	-13.81	AVG	
9	2.5000	37.27	10.13	47.40	56.00	-8.60	QP	
10	2.5000	20.70	10.13	30.83	46.00	-15.17	AVG	
11	9.4514	38.07	10.59	48.66	60.00	-11.34	QP	
12	9.4514	21.18	10.59	31.77	50.00	-18.23	AVG	

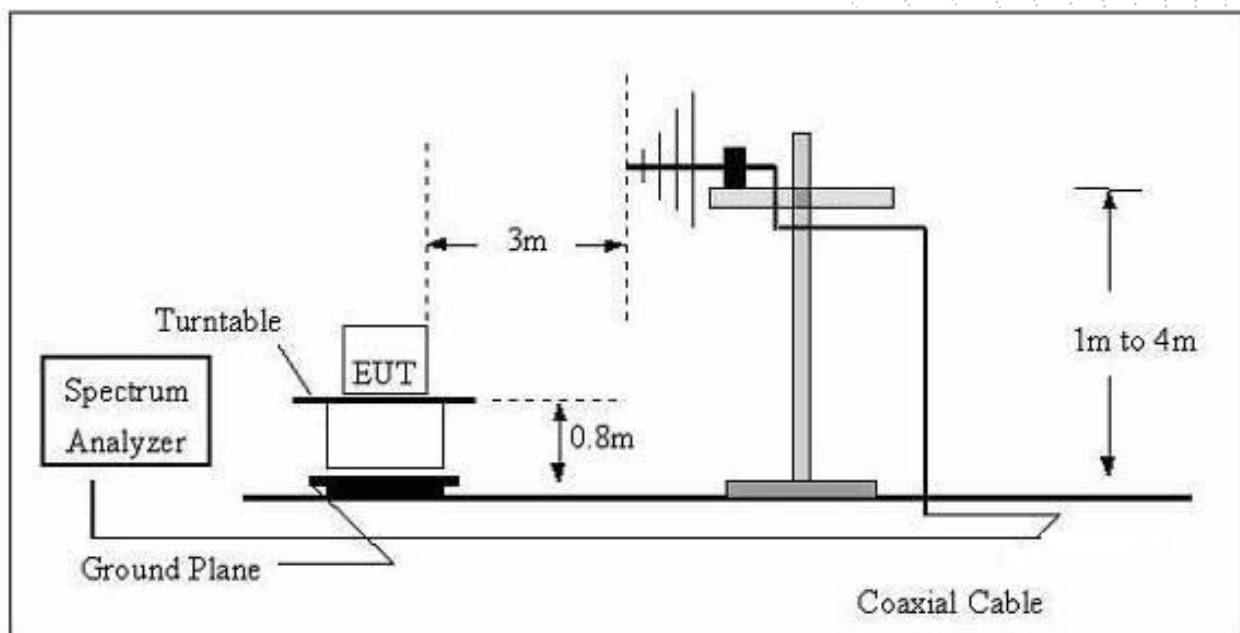
7. Radiated Emissions

7.1 Block Diagram Of Test Setup

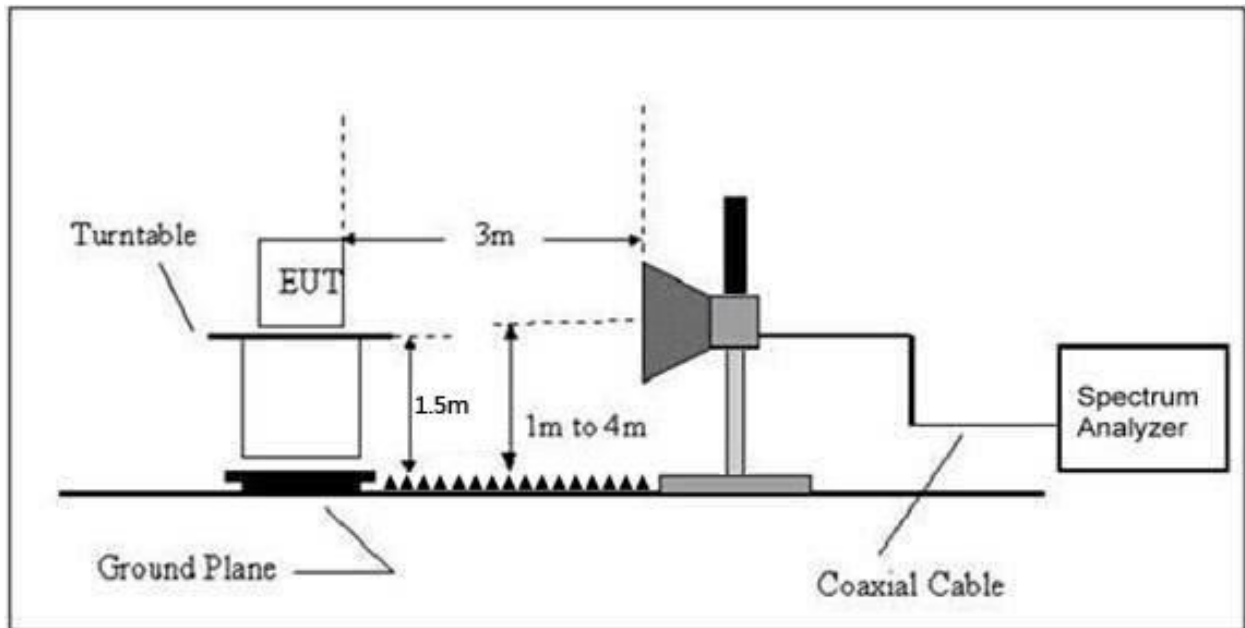
(A) Radiated Emission Test-Up Frequency Below 30MHz



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

Limits Of Radiated Emission Measurement (Above 1000MHz)

Frequency (MHz)	Limit (dBuV/m) (at 3M)	
	Peak	Average
Above 1000	74	54

Notes:

- (1)The limit for radiated test was performed according to FCC PART 15C.
- (2)The tighter limit applies at the band edges.
- (3) Emission level (dBuV/m)=20log Emission level (uV/m).

7.3 Test Procedure

The test site semi-anechoic chamber has met the requirement of NSA tolerance 4 dB according to the standards: ANSI C63.10-2013. The test distance is 3m. The setup is according to the requirements in Section 13.1.4.1 of ANSI C63.10-2013 and CAN/CSA-CEI/IEC CISPR 22.

This test is required for any spurious emission that falls in a Restricted Band, as defined in Section 15.205.

It must be performed with the highest gain of each type of antenna proposed for use with the EUT. Use the following spectrum analyzer settings:

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

Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~150kHz / RB 200Hz for QP
Start ~ Stop Frequency	150kHz~30MHz / RB 9kHz for QP
Start ~ Stop Frequency	30MHz~1000MHz / RB 120kHz for QP

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

Note:

Both horizontal and vertical antenna polarities were tested and performed pretest to three orthogonal axis. The worst case emissions were reported

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

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

Note: for the frequency ranges below 30 MHz, a narrower RBW is used for these ranges but the measured value should add a RBW correction factor (RBWCF) where $RBWCF [dB] = 10 \cdot \lg(100 [kHz] / \text{narrower RBW} [kHz])$. , 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:	DC 3.8V
Test Mode:	Mode 4	Polarization:	--

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

Note:

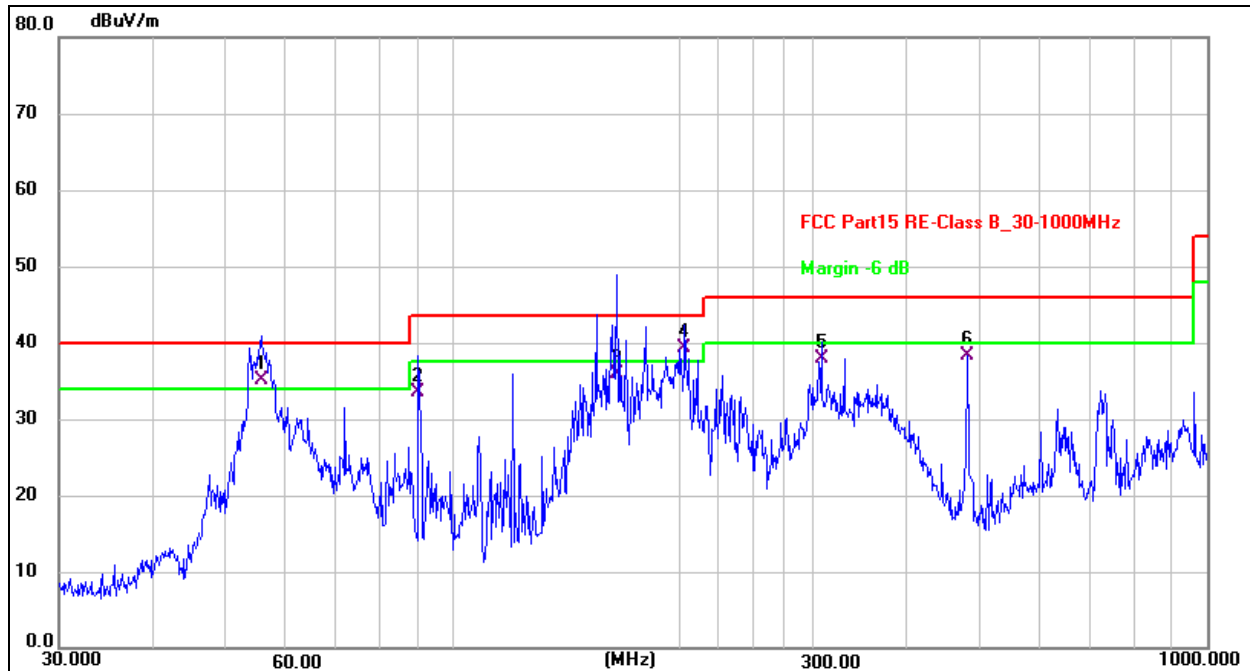
The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

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℃	Relative Humidity:	54%
Pressure:	101 kPa	Test Voltage :	DC 3.8V
Test Mode :	Mode 4	Polarization :	Horizontal

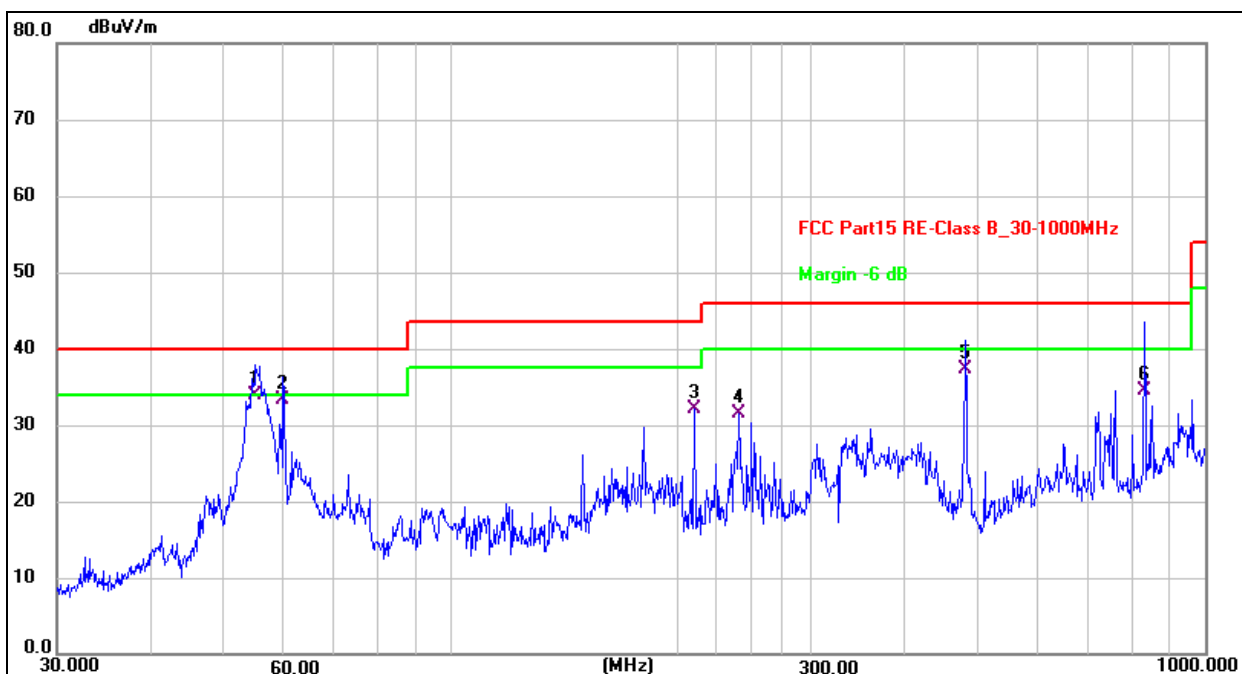


Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.
2. Measurement=Reading Level+ Correct Factor
3. Over= Measurement-Limit

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1 !	55.6094	52.24	-17.14	35.10	40.00	-4.90	QP
2	89.9047	54.27	-20.84	33.43	43.50	-10.07	QP
3	164.9075	53.25	-17.25	36.00	43.50	-7.50	QP
4 *	202.8104	59.50	-20.25	39.25	43.50	-4.25	QP
5	307.8313	54.91	-17.01	37.90	46.00	-8.10	QP
6	480.5276	51.22	-12.95	38.27	46.00	-7.73	QP

Temperature:	26℃	Relative Humidity:	54%
Pressure:	101 kPa	Test Voltage :	DC 3.8V
Test Mode :	Mode 4	Polarization :	Vertical



Remark:

1. Factor = Antenna Factor + Cable Loss – Pre-amplifier.
2. Measurement=Reading Level+ Correct Factor
3. Over= Measurement-Limit

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1 *	55.0274	51.00	-17.10	33.90	40.00	-6.10	QP
2	59.8588	50.93	-17.53	33.40	40.00	-6.60	QP
3	210.0482	52.33	-20.30	32.03	43.50	-11.47	QP
4	240.8304	51.22	-19.72	31.50	46.00	-14.50	QP
5	480.5278	50.24	-12.95	37.29	46.00	-8.71	QP
6	830.4002	41.07	-6.57	34.50	46.00	-11.50	QP

Test Mode :	TX(5.1G) - 802.11a
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Polar	Frequency	Reading Level	Correct Factor	Measurement	Limits	Over	Detector Type
(H/V)	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
Low Channel (5180 MHz)-Above 1G							
Vertical	4434.062	72.37	-20.73	51.64	68.2	-16.56	Pk
Vertical	4434.062	59.87	-20.73	39.14	54	-14.86	AV
Vertical	10360.112	60.89	-9.36	51.53	68.2	-16.67	Pk
Vertical	10360.112	49.20	-9.36	39.84	54	-14.16	AV
Vertical	15540.016	63.20	-7.84	55.36	74	-18.64	Pk
Vertical	15540.016	49.46	-7.84	41.62	54	-12.38	AV
Horizontal	4434.066	71.71	-20.73	50.98	68.2	-17.22	Pk
Horizontal	4434.066	59.26	-20.73	38.53	54	-15.47	AV
Horizontal	10360.090	60.62	-9.36	51.26	68.2	-16.94	Pk
Horizontal	10360.090	49.35	-9.36	39.99	54	-14.01	AV
Horizontal	15540.054	60.79	-7.84	52.95	74	-21.05	Pk
Horizontal	15540.054	49.78	-7.84	41.94	54	-12.06	AV
middle Channel (5200 MHz)-Above 1G							
Vertical	4592.107	70.02	-20.42	49.61	74	-24.39	Pk
Vertical	4592.107	59.07	-20.42	38.65	54	-15.35	AV
Vertical	10400.076	64.05	-9.30	54.75	68.2	-13.45	Pk
Vertical	10400.076	49.13	-9.30	39.83	54	-14.17	AV
Vertical	15600.042	62.12	-7.82	54.30	74	-19.70	Pk
Vertical	15600.042	49.55	-7.82	41.73	54	-12.27	AV
Horizontal	4592.166	74.54	-20.42	54.12	74	-19.88	Pk
Horizontal	4592.166	59.50	-20.42	39.08	54	-14.92	AV
Horizontal	10400.103	62.88	-9.30	53.58	68.2	-14.62	Pk
Horizontal	10400.103	49.77	-9.30	40.47	54	-13.53	AV
Horizontal	15600.095	62.07	-7.82	54.25	74	-19.75	Pk
Horizontal	15600.095	49.48	-7.82	41.66	54	-12.34	AV
High Channel (5240 MHz)-Above 1G							
Vertical	4739.052	73.35	-20.12	53.23	74	-20.77	Pk
Vertical	4739.052	59.21	-20.12	39.09	54	-14.91	AV
Vertical	10480.178	63.45	-9.18	54.27	68.2	-13.93	Pk
Vertical	10480.178	49.45	-9.18	40.27	54	-13.73	AV
Vertical	15720.090	64.20	-7.78	56.42	74	-17.58	Pk
Vertical	15720.090	49.94	-7.78	42.16	54	-11.84	AV
Horizontal	4739.136	73.98	-20.12	53.86	74	-20.14	Pk
Horizontal	4739.136	59.75	-20.12	39.63	54	-14.37	AV
Horizontal	10480.124	61.52	-9.18	52.34	68.2	-15.86	Pk
Horizontal	10480.124	49.73	-9.18	40.55	54	-13.45	AV
Horizontal	15720.099	64.70	-7.78	56.92	74	-17.08	Pk
Horizontal	15720.099	49.27	-7.78	41.49	54	-12.51	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(5.1G) - 802.11n-HT20
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Polar (H/V)	Frequency (MHz)	Reading Level (dBuV/m)	Correct Factor (dB)	Measure- ment (dBuV/m)	Limits (dBuV/m)	Over (dB)	Detector Type
Low Channel (5180 MHz)-Above 1G							
Vertical	4434.159	73.66	-20.73	52.93	68.2	-15.27	Pk
Vertical	4434.159	59.74	-20.73	39.00	54	-15.00	AV
Vertical	10360.070	61.76	-9.36	52.40	68.2	-15.80	Pk
Vertical	10360.070	49.86	-9.36	40.50	54	-13.50	AV
Vertical	15540.128	60.23	-7.84	52.39	74	-21.61	Pk
Vertical	15540.128	49.63	-7.84	41.79	54	-12.21	AV
Horizontal	4434.115	70.90	-20.73	50.17	68.2	-18.03	Pk
Horizontal	4434.115	59.16	-20.73	38.42	54	-15.58	AV
Horizontal	10360.108	62.09	-9.36	52.73	68.2	-15.47	Pk
Horizontal	10360.108	49.00	-9.36	39.64	54	-14.36	AV
Horizontal	15540.012	60.06	-7.84	52.22	74	-21.78	Pk
Horizontal	15540.012	49.00	-7.84	41.16	54	-12.84	AV
middle Channel (5200 MHz)-Above 1G							
Vertical	4592.152	71.01	-20.42	50.59	74	-23.41	Pk
Vertical	4592.152	59.44	-20.42	39.03	54	-14.97	AV
Vertical	10400.185	61.06	-9.30	51.76	68.2	-16.44	Pk
Vertical	10400.185	49.16	-9.30	39.86	54	-14.14	AV
Vertical	15600.097	62.03	-7.82	54.21	74	-19.79	Pk
Vertical	15600.097	49.06	-7.82	41.24	54	-12.76	AV
Horizontal	4592.080	74.22	-20.42	53.80	74	-20.20	Pk
Horizontal	4592.080	59.53	-20.42	39.12	54	-14.88	AV
Horizontal	10400.168	60.99	-9.30	51.69	68.2	-16.51	Pk
Horizontal	10400.168	49.36	-9.30	40.06	54	-13.94	AV
Horizontal	15600.197	64.18	-7.82	56.36	74	-17.64	Pk
Horizontal	15600.197	49.70	-7.82	41.88	54	-12.12	AV
High Channel (5240 MHz)-Above 1G							
Vertical	4739.026	74.33	-20.12	54.20	74	-19.80	Pk
Vertical	4739.026	59.80	-20.12	39.67	54	-14.33	AV
Vertical	10480.007	62.15	-9.18	52.97	68.2	-15.23	Pk
Vertical	10480.007	49.57	-9.18	40.39	54	-13.61	AV
Vertical	15720.132	63.05	-7.78	55.27	74	-18.73	Pk
Vertical	15720.132	49.00	-7.78	41.22	54	-12.78	AV
Horizontal	4739.065	71.92	-20.12	51.80	74	-22.20	Pk
Horizontal	4739.065	59.34	-20.12	39.22	54	-14.78	AV
Horizontal	10480.173	60.73	-9.18	51.55	68.2	-16.65	Pk
Horizontal	10480.173	49.02	-9.18	39.84	54	-14.16	AV
Horizontal	15720.194	63.25	-7.78	55.47	74	-18.53	Pk
Horizontal	15720.194	49.49	-7.78	41.71	54	-12.29	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(5.1G) - 802.11n-HT40
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Polar	Frequency	Reading Level	Correct Factor	Measurement	Limits	Over	Detector Type
(H/V)	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
Low Channel (5190 MHz)-Above 1G							
Vertical	4434.064	72.70	-20.73	51.97	68.2	-16.23	Pk
Vertical	4434.064	59.28	-20.73	38.55	54	-15.45	AV
Vertical	10380.193	61.42	-9.33	52.09	68.2	-16.11	Pk
Vertical	10380.193	49.97	-9.33	40.64	54	-13.36	AV
Vertical	15570.143	60.89	-7.83	53.06	74	-20.94	Pk
Vertical	15570.143	49.72	-7.83	41.89	54	-12.11	AV
Horizontal	4434.021	70.42	-20.73	49.69	74	-24.31	Pk
Horizontal	4434.021	59.29	-20.73	38.56	54	-15.44	AV
Horizontal	10380.135	63.71	-9.33	54.38	68.2	-13.82	Pk
Horizontal	10380.135	49.52	-9.33	40.19	54	-13.81	AV
Horizontal	15570.011	63.44	-7.83	55.61	74	-18.39	Pk
Horizontal	15570.011	49.45	-7.83	41.62	54	-12.38	AV
High Channel (5230 MHz)-Above 1G							
Vertical	4739.005	71.99	-20.12	51.86	68.2	-16.34	Pk
Vertical	4739.005	59.59	-20.12	39.47	54	-14.53	AV
Vertical	10460.049	60.44	-9.21	51.23	68.2	-16.97	Pk
Vertical	10460.049	49.97	-9.21	40.76	54	-13.24	AV
Vertical	15690.134	60.63	-7.79	52.84	74	-21.16	Pk
Vertical	15690.134	49.55	-7.79	41.76	54	-12.24	AV
Horizontal	4739.049	72.27	-20.12	52.15	68.2	-16.05	Pk
Horizontal	4739.049	59.72	-20.12	39.60	54	-14.40	AV
Horizontal	10460.169	61.47	-9.21	52.26	68.2	-15.94	Pk
Horizontal	10460.169	49.53	-9.21	40.32	54	-13.68	AV
Horizontal	15690.114	64.20	-7.79	56.41	74	-17.59	Pk
Horizontal	15690.114	49.48	-7.79	41.69	54	-12.31	AV

Note: PK value is lower than the Average value limit, So average didn't record.

The 26.5-40G amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value has no need to be reported.

Emission level (dBuV/m) = 20 log Emission level (uV/m).

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

Test Mode:	TX(5.1G) - 802.11ac-HT20
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Polar	Frequency	Reading Level	Correct Factor	Measurement	Limits	Over	Detector Type
(H/V)	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
Low Channel (5180 MHz)-Above 1G							
Vertical	4434.068	72.49	-20.73	51.76	68.2	-16.44	Pk
Vertical	4434.068	59.22	-20.73	38.48	54	-15.52	AV
Vertical	10360.155	63.99	-9.36	54.63	68.2	-13.57	Pk
Vertical	10360.155	49.71	-9.36	40.35	54	-13.65	AV
Vertical	15540.033	64.63	-7.84	56.79	74	-17.21	Pk
Vertical	15540.033	49.64	-7.84	41.80	54	-12.20	AV
Horizontal	4434.018	72.76	-20.73	52.02	68.2	-16.18	Pk
Horizontal	4434.018	59.12	-20.73	38.38	54	-15.62	AV
Horizontal	10360.048	64.99	-9.36	55.63	68.2	-12.57	Pk
Horizontal	10360.048	49.87	-9.36	40.51	54	-13.49	AV
Horizontal	15540.064	61.57	-7.84	53.73	74	-20.27	Pk
Horizontal	15540.064	49.82	-7.84	41.98	54	-12.02	AV
middle Channel (5200 MHz)-Above 1G							
Vertical	4592.003	70.94	-20.42	50.52	74	-23.48	Pk
Vertical	4592.003	59.78	-20.42	39.37	54	-14.63	AV
Vertical	10400.028	61.54	-9.30	52.24	68.2	-15.96	Pk
Vertical	10400.028	49.09	-9.30	39.79	54	-14.21	AV
Vertical	15600.097	62.77	-7.82	54.95	74	-19.05	Pk
Vertical	15600.097	49.90	-7.82	42.08	54	-11.92	AV
Horizontal	4592.199	71.93	-20.42	51.51	74	-22.49	Pk
Horizontal	4592.199	59.01	-20.42	38.60	54	-15.40	AV
Horizontal	10400.144	62.09	-9.30	52.79	68.2	-15.41	Pk
Horizontal	10400.144	49.64	-9.30	40.34	54	-13.66	AV
Horizontal	15600.071	60.90	-7.82	53.08	74	-20.92	Pk
Horizontal	15600.071	49.27	-7.82	41.45	54	-12.55	AV
High Channel (5240 MHz)-Above 1G							
Vertical	4739.123	73.26	-20.12	53.14	74	-20.86	Pk
Vertical	4739.123	59.81	-20.12	39.69	54	-14.31	AV
Vertical	10480.071	64.09	-9.18	54.91	68.2	-13.29	Pk
Vertical	10480.071	49.41	-9.18	40.23	54	-13.77	AV
Vertical	15720.121	63.08	-7.78	55.30	74	-18.70	Pk
Vertical	15720.121	49.64	-7.78	41.86	54	-12.14	AV
Horizontal	4739.002	74.10	-20.12	53.97	74	-20.03	Pk
Horizontal	4739.002	59.64	-20.12	39.52	54	-14.48	AV
Horizontal	10480.013	60.05	-9.18	50.87	68.2	-17.33	Pk
Horizontal	10480.013	49.10	-9.18	39.92	54	-14.08	AV
Horizontal	15720.155	64.81	-7.78	57.03	74	-16.97	Pk
Horizontal	15720.155	49.07	-7.78	41.29	54	-12.71	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(5.1G) - 802.11ac-HT40
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Polar	Frequency	Reading Level	Correct Factor	Measurement	Limits	Over	Detector Type
(H/V)	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
Low Channel (5190 MHz)-Above 1G							
Vertical	4434.112	71.63	-20.73	50.89	68.2	-17.31	Pk
Vertical	4434.112	59.40	-20.73	38.67	54	-15.33	AV
Vertical	10380.077	63.26	-9.33	53.93	68.2	-14.27	Pk
Vertical	10380.077	49.56	-9.33	40.23	54	-13.77	AV
Vertical	15570.054	64.70	-7.83	56.87	74	-17.13	Pk
Vertical	15570.054	49.68	-7.83	41.85	54	-12.15	AV
Horizontal	4434.191	73.70	-20.73	52.97	74	-21.03	Pk
Horizontal	4434.191	59.52	-20.73	38.79	54	-15.21	AV
Horizontal	10380.097	61.47	-9.33	52.14	68.2	-16.06	Pk
Horizontal	10380.097	49.57	-9.33	40.24	54	-13.76	AV
Horizontal	15570.078	62.72	-7.83	54.89	74	-19.11	Pk
Horizontal	15570.078	49.11	-7.83	41.28	54	-12.72	AV
middle Channel (5230 MHz)-Above 1G							
Vertical	4739.086	70.38	-20.12	50.25	68.2	-17.95	Pk
Vertical	4739.086	59.07	-20.12	38.94	54	-15.06	AV
Vertical	10460.145	64.47	-9.21	55.26	68.2	-12.94	Pk
Vertical	10460.145	49.62	-9.21	40.41	54	-13.59	AV
Vertical	15690.057	62.87	-7.79	55.08	74	-18.92	Pk
Vertical	15690.057	49.90	-7.79	42.11	54	-11.89	AV
Horizontal	4739.018	71.54	-20.12	51.41	68.2	-16.79	Pk
Horizontal	4739.018	59.94	-20.12	39.81	54	-14.19	AV
Horizontal	10460.161	61.24	-9.21	52.03	68.2	-16.17	Pk
Horizontal	10460.161	49.10	-9.21	39.89	54	-14.11	AV
Horizontal	15690.140	64.52	-7.79	56.73	74	-17.27	Pk
Horizontal	15690.140	49.81	-7.79	42.02	54	-11.98	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(5.1G) - 802.11ac-HT80
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Polar	Frequency	Reading Level	Correct Factor	Measurement	Limits	Over	Detector Type
(H/V)	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
(5210 MHz)-Above 1G							
Vertical	4434.075	72.80	-20.73	52.07	68.2	-16.13	Pk
Vertical	4434.075	59.56	-20.73	38.83	54	-15.17	AV
Vertical	10420.095	64.93	-9.27	55.66	68.2	-12.54	Pk
Vertical	10420.095	49.51	-9.27	40.24	54	-13.76	AV
Vertical	15630.063	62.37	-7.81	54.56	74	-19.44	Pk
Vertical	15630.063	49.76	-7.81	41.95	54	-12.05	AV
Horizontal	4434.008	72.70	-20.73	51.97	68.2	-16.23	Pk
Horizontal	4434.008	59.49	-20.73	38.76	54	-15.24	AV
Horizontal	10420.160	61.38	-9.27	52.11	68.2	-16.09	Pk
Horizontal	10420.160	49.58	-9.27	40.31	54	-13.69	AV
Horizontal	15630.085	61.33	-7.81	53.52	74	-20.48	Pk
Horizontal	15630.085	49.67	-7.81	41.86	54	-12.14	AV

Note: PK value is lower than the Average value limit, So average didn't record.

The 26.5-40G amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value has no need to be reported.

Emission level (dBuV/m) = 20 log Emission level (uV/m).

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

- ☒ Undesirable radiated Undesirable radiated Spurious Emission in Band Edge
- All the modes 802.11a/n/ac has been tested and the worst result 802.11ac recorded as below:

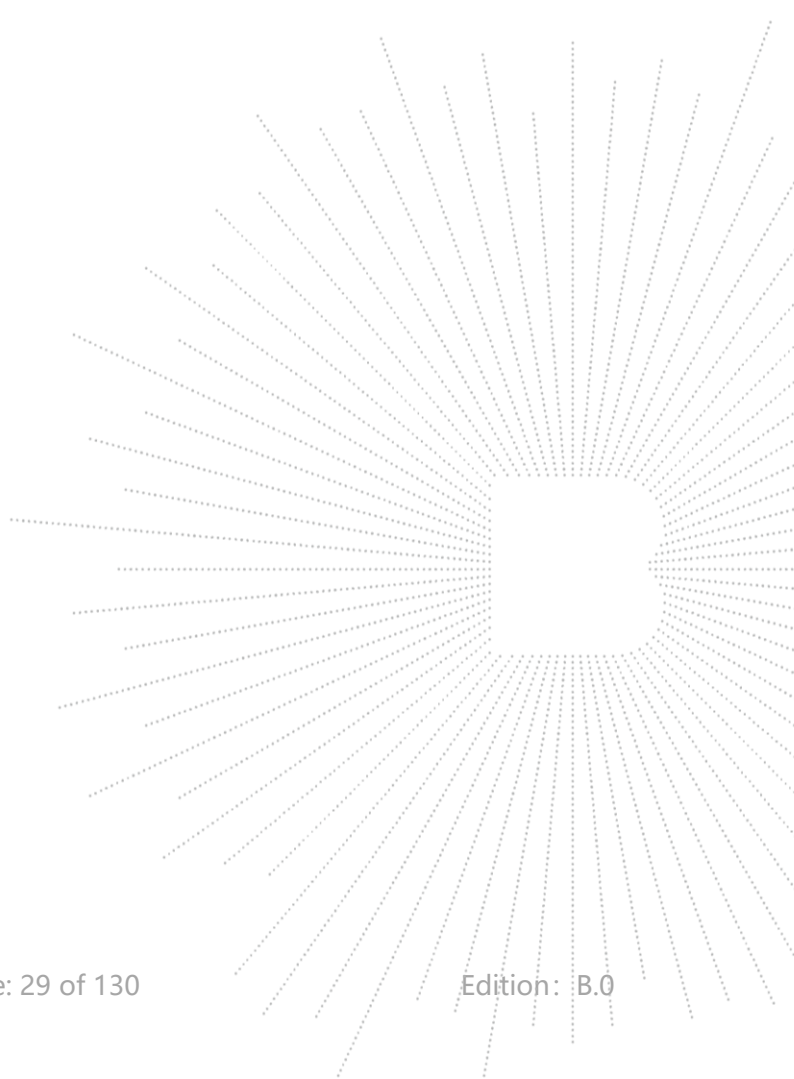
Test mode: 802.11ac Frequency(MHz): 5180

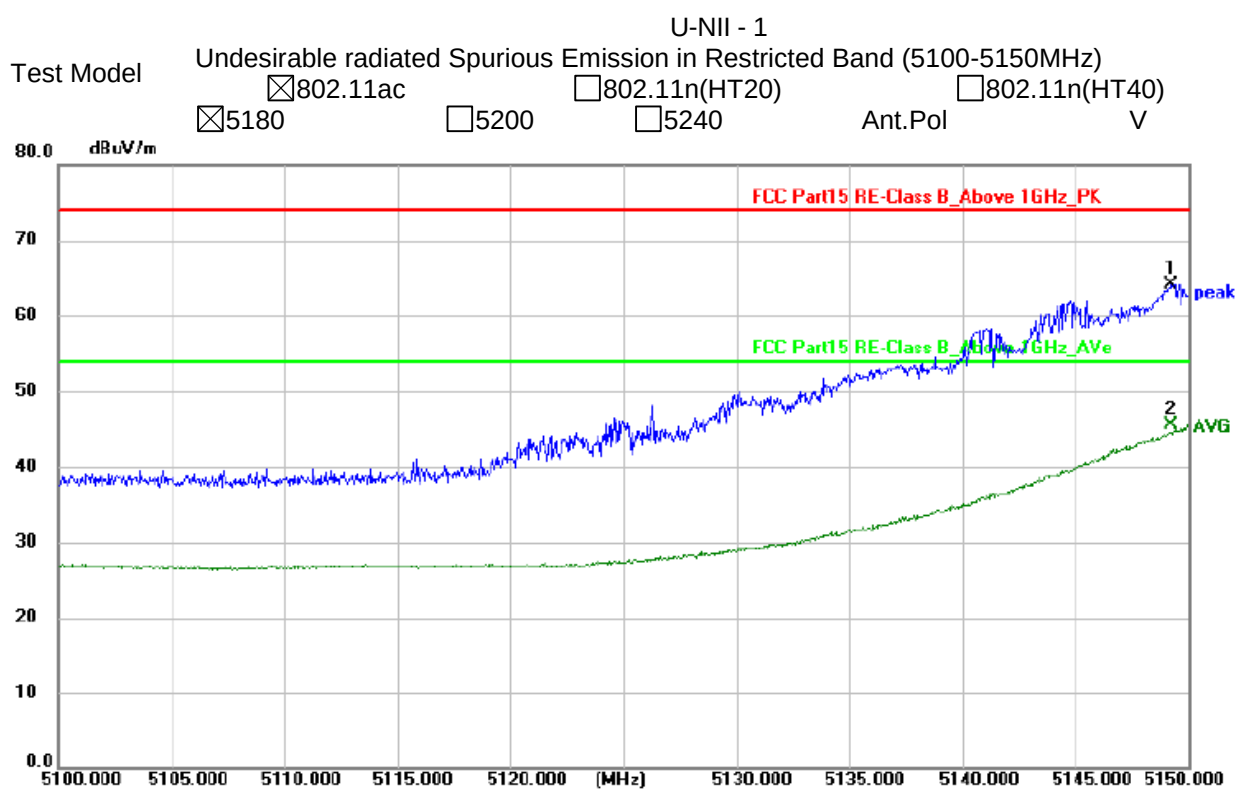
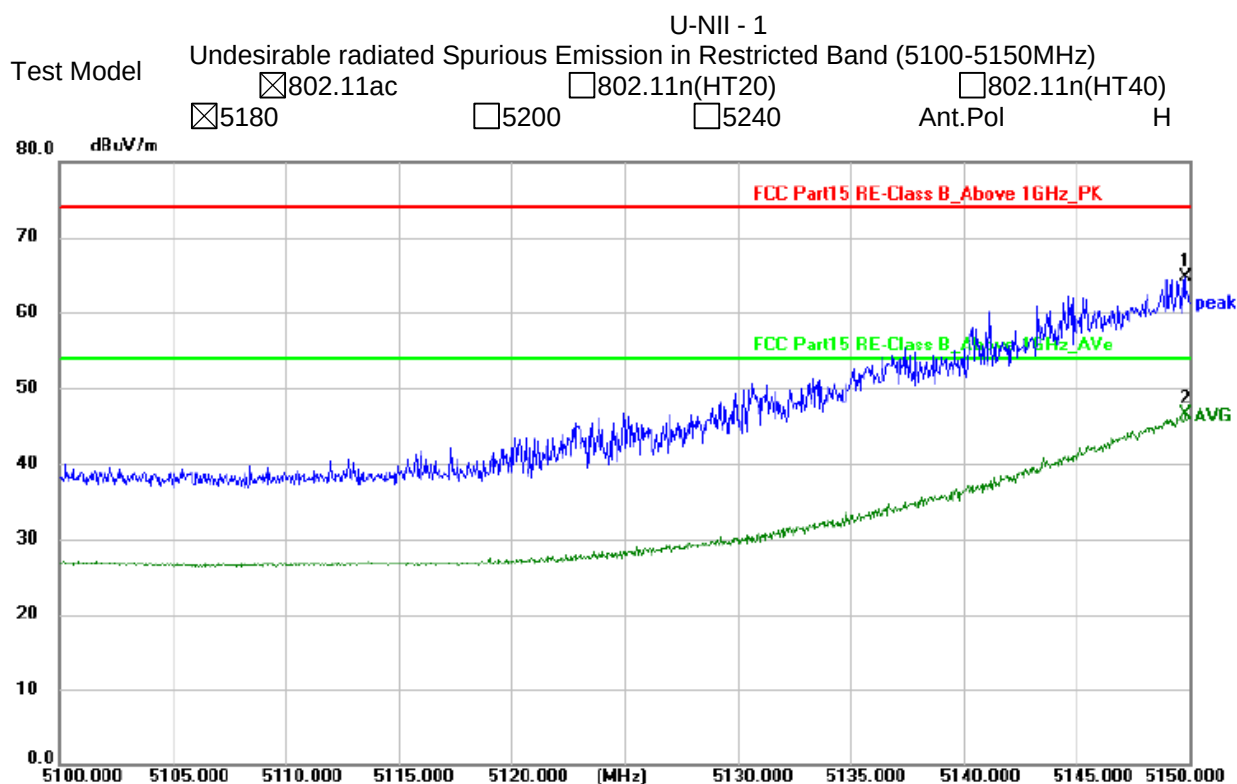
Frequency (MHz)	Polarity	PK(dBuV/m) (VBW=3MHz)	Limit 3m (dBuV/m)	AV(dBuV/m) (VBW=10Hz)	Limit 3m (dBuV/m)
5149.80	H	64.74	74	46.46	54
5149.25	V	64.12	74	45.42	54

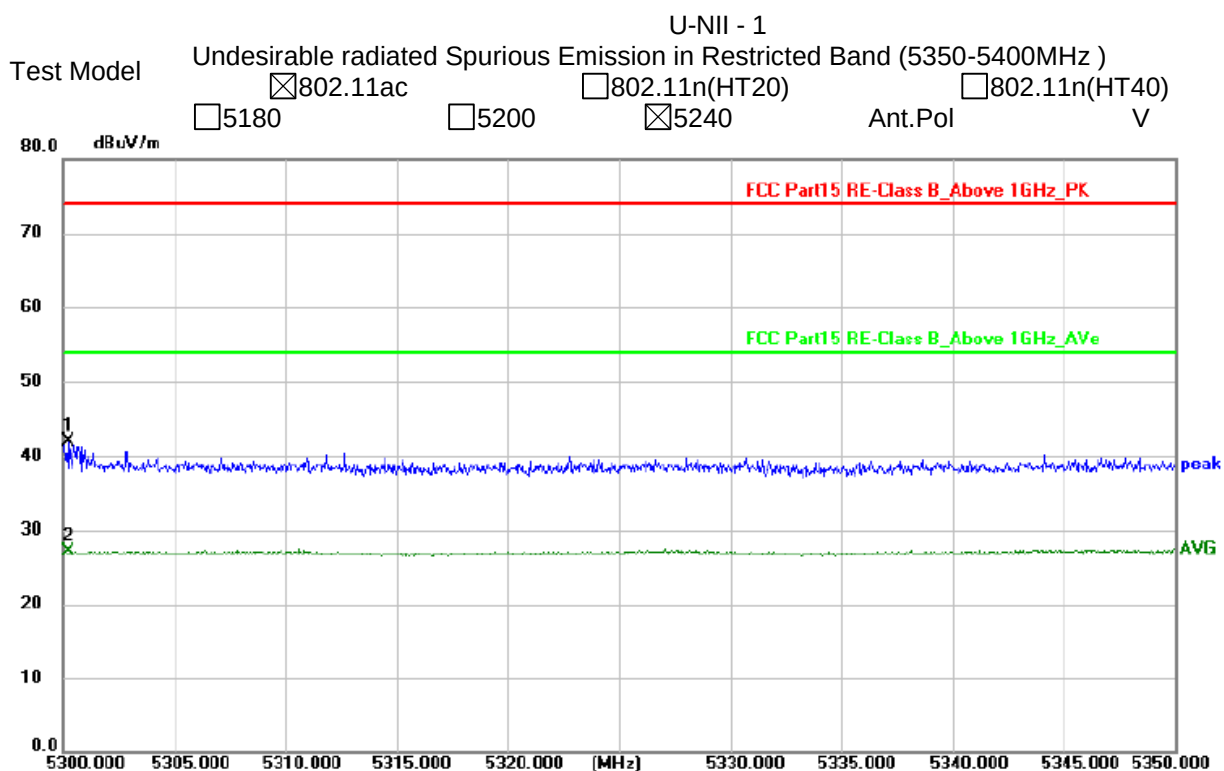
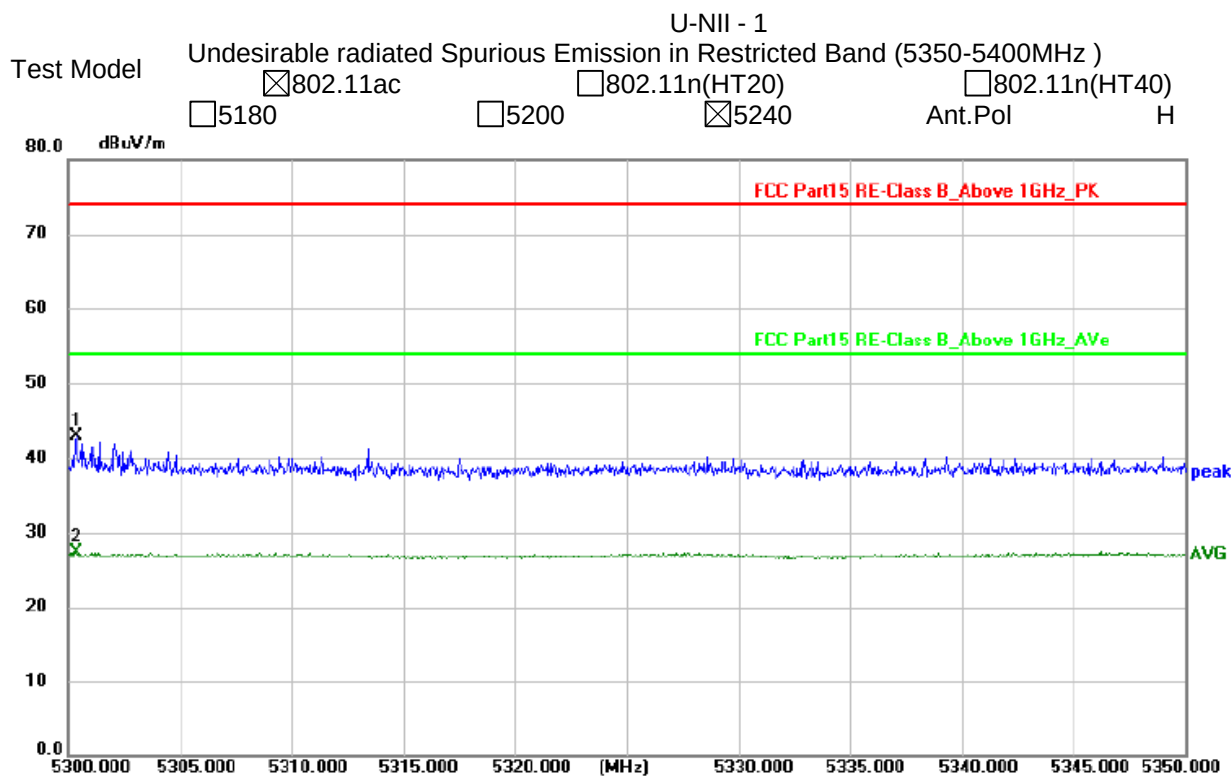
Test mode: 802.11ac Frequency(MHz): 5240

Frequency (MHz)	Polarity	PK(dBuV/m) (VBW=3MHz)	Limit 3m (dBuV/m)	AV(dBuV/m) (VBW=10Hz)	Limit 3m (dBuV/m)
5300.35	H	42.88	74	27.35	54
5300.25	V	41.86	74	27.20	54

Note: (1) All Readings are Peak Value (VBW=3MHz) and Average Value (VBW=10Hz).
(2) Emission Level= Reading Level+Correct Factor.
(3) Correct Factor= Ant_F + Cab_L - Preamp







Test Mode:	TX(5.8G) - 802.11a
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Polar	Frequency	Reading Level	Correct Factor	Measurement	Limits	Over	Detector Type
(H/V)	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
Low Channel (5745 MHz)-Above 1G							
Vertical	4679.102	74.21	-20.24	53.97	74	-20.03	Pk
Vertical	4679.102	59.83	-20.24	39.59	54	-14.41	AV
Vertical	11490.044	61.26	-8.79	52.47	68.2	-15.73	Pk
Vertical	11490.044	49.15	-8.79	40.36	54	-13.64	AV
Vertical	17235.044	55.50	-3.18	52.32	68.2	-15.88	Pk
Vertical	17235.044	44.47	-3.18	41.29	54	-12.71	AV
Horizontal	4679.096	72.36	-20.73	51.63	74	-22.37	Pk
Horizontal	4679.096	59.86	-20.73	39.13	54	-14.87	AV
Horizontal	11490.008	61.63	-8.79	52.84	68.2	-15.36	Pk
Horizontal	11490.008	49.42	-8.79	40.63	54	-13.37	AV
Horizontal	17235.125	59.92	-3.18	56.74	68.2	-11.46	Pk
Horizontal	17235.125	44.14	-3.18	40.96	54	-13.04	AV
middle Channel (5785 MHz)-Above 1G							
Vertical	4592.091	73.95	-20.42	53.53	74	-20.47	Pk
Vertical	4592.091	59.14	-20.42	38.73	54	-15.27	AV
Vertical	11570.002	60.30	-8.86	51.44	68.2	-16.76	Pk
Vertical	11570.002	49.79	-8.86	40.93	54	-13.07	AV
Vertical	17355.022	58.60	-2.52	56.08	68.2	-12.12	Pk
Vertical	17355.022	44.75	-2.52	42.23	54	-11.77	AV
Horizontal	4592.190	73.18	-20.42	52.76	74	-21.24	Pk
Horizontal	4592.190	59.28	-20.42	38.87	54	-15.13	AV
Horizontal	11570.199	63.88	-8.86	55.02	68.2	-13.18	Pk
Horizontal	11570.199	49.49	-8.86	40.63	54	-13.37	AV
Horizontal	17355.177	58.20	-2.52	55.68	68.2	-12.52	Pk
Horizontal	17355.177	44.35	-2.52	41.83	54	-12.17	AV
High Channel (5825 MHz)-Above 1G							
Vertical	6039.042	73.15	-18.93	54.22	68.2	-13.98	Pk
Vertical	6039.042	59.22	-18.93	40.29	54	-13.71	AV
Vertical	11650.089	64.69	-8.92	55.77	74	-18.23	Pk
Vertical	11650.089	49.50	-8.92	40.58	54	-13.42	AV
Vertical	17475.077	55.19	-1.86	53.33	68.2	-14.87	Pk
Vertical	17475.077	44.55	-1.86	42.69	54	-11.31	AV
Horizontal	6039.117	70.63	-18.93	51.70	68.2	-16.50	Pk
Horizontal	6039.117	59.20	-18.93	40.27	54	-13.73	AV
Horizontal	11650.108	60.00	-8.92	51.08	74	-22.92	Pk
Horizontal	11650.108	49.54	-8.92	40.62	54	-13.38	AV
Horizontal	17475.057	57.87	-1.86	56.01	68.2	-12.19	Pk
Horizontal	17475.057	44.24	-1.86	42.38	54	-11.62	AV

Note: PK value is lower than the Average value limit, So average didn't record.

The 26.5-40G amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value has no need to be reported.

Emission level (dBuV/m) = 20 log Emission level (uV/m).

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

Test Mode:	TX(5.8G) - 802.11n-HT20
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Polar	Frequency	Reading Level	Correct Factor	Measurement	Limits	Over	Detector Type
(H/V)	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
Low Channel (5745 MHz)-Above 1G							
Vertical	4679.161	72.97	-20.24	52.72	74	-21.28	Pk
Vertical	4679.161	59.81	-20.24	39.57	54	-14.43	AV
Vertical	11490.123	63.06	-8.79	54.27	68.2	-13.93	Pk
Vertical	11490.123	49.42	-8.79	40.63	54	-13.37	AV
Vertical	17235.111	57.10	-3.18	53.92	68.2	-14.28	Pk
Vertical	17235.111	44.42	-3.18	41.24	54	-12.76	AV
Horizontal	4679.026	72.76	-20.24	52.52	74	-21.48	Pk
Horizontal	4679.026	59.19	-20.24	38.95	54	-15.05	AV
Horizontal	11490.157	64.72	-8.79	55.93	68.2	-12.27	Pk
Horizontal	11490.157	49.59	-8.79	40.80	54	-13.20	AV
Horizontal	17235.093	56.53	-3.18	53.35	68.2	-14.85	Pk
Horizontal	17235.093	44.25	-3.18	41.07	54	-12.93	AV
middle Channel (5785 MHz)-Above 1G							
Vertical	4592.190	73.00	-20.42	52.58	74	-21.42	Pk
Vertical	4592.190	59.59	-20.42	39.17	54	-14.83	AV
Vertical	11570.085	64.84	-8.86	55.98	68.2	-12.22	Pk
Vertical	11570.085	49.18	-8.86	40.32	54	-13.68	AV
Vertical	17355.117	59.42	-2.52	56.90	68.2	-11.30	Pk
Vertical	17355.117	44.55	-2.52	42.03	54	-11.97	AV
Horizontal	4592.073	70.77	-20.42	50.36	74	-23.64	Pk
Horizontal	4592.073	59.37	-20.42	38.96	54	-15.04	AV
Horizontal	11570.175	62.85	-8.86	53.99	68.2	-14.21	Pk
Horizontal	11570.175	49.09	-8.86	40.23	54	-13.77	AV
Horizontal	17355.088	57.39	-2.52	54.87	68.2	-13.33	Pk
Horizontal	17355.088	44.77	-2.52	42.25	54	-11.75	AV
High Channel (5825 MHz)-Above 1G							
Vertical	6039.025	72.52	-18.93	53.59	68.2	-14.61	Pk
Vertical	6039.025	59.88	-18.93	40.95	54	-13.05	AV
Vertical	11650.161	64.46	-8.92	55.54	74	-18.46	Pk
Vertical	11650.161	49.28	-8.92	40.36	54	-13.64	AV
Vertical	17475.024	58.70	-1.86	56.84	68.2	-11.36	Pk
Vertical	17475.024	44.89	-1.86	43.03	54	-10.97	AV
Horizontal	6039.176	73.72	-18.93	54.79	68.2	-13.41	Pk
Horizontal	6039.176	59.99	-18.93	41.06	54	-12.94	AV
Horizontal	11650.171	62.04	-8.92	53.12	74	-20.88	Pk
Horizontal	11650.171	49.59	-8.92	40.67	54	-13.33	AV
Horizontal	17475.036	59.11	-1.86	57.25	68.2	-10.95	Pk
Horizontal	17475.036	44.08	-1.86	42.22	54	-11.78	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

Polar	Frequency	Reading Level	Correct Factor	Measurement	Limits	Over	Detector Type
(H/V)	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
Low Channel (5755 MHz)-Above 1G							
Vertical	4679.088	73.86	-20.24	53.62	74	-20.38	AV
Vertical	4679.088	59.34	-20.24	39.10	54	-14.90	Pk
Vertical	11510.163	61.32	-8.81	52.51	74	-21.49	AV
Vertical	11510.163	49.99	-8.81	41.18	54	-12.82	Pk
Vertical	17265.168	56.61	-3.01	53.60	68.2	-14.60	AV
Vertical	17265.168	44.74	-3.01	41.73	54	-12.27	Pk
Horizontal	4679.111	73.77	-20.24	53.53	74	-20.47	AV
Horizontal	4679.111	59.06	-20.24	38.82	54	-15.18	Pk
Horizontal	11510.040	63.65	-8.81	54.84	74	-19.16	AV
Horizontal	11510.040	49.98	-8.81	41.17	54	-12.83	Pk
Horizontal	17265.144	57.83	-3.01	54.82	68.2	-13.38	AV
Horizontal	17265.144	44.16	-3.01	41.15	54	-12.85	AV
middle Channel (5795 MHz)-Above 1G							
Vertical	6039.023	71.44	-18.93	52.50	68.2	-15.70	Pk
Vertical	6039.023	59.34	-18.93	40.41	54	-13.59	AV
Vertical	11590.056	61.06	-8.87	52.19	74	-21.81	Pk
Vertical	11590.056	49.12	-8.87	40.25	54	-13.75	AV
Vertical	17385.035	58.88	-2.35	56.53	68.2	-11.67	Pk
Vertical	17385.035	44.47	-2.35	42.12	54	-11.88	AV
Horizontal	6039.022	73.70	-18.93	54.77	68.2	-13.43	Pk
Horizontal	6039.022	59.52	-18.93	40.59	54	-13.41	AV
Horizontal	11590.120	61.28	-8.87	52.41	74	-21.59	Pk
Horizontal	11590.120	49.01	-8.87	40.14	54	-13.86	AV
Horizontal	17385.120	55.73	-2.35	53.38	68.2	-14.82	Pk
Horizontal	17385.120	44.65	-2.35	42.30	54	-11.70	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:	TX(5.8G) - 802.11ac-HT20
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Polar	Frequency	Reading Level	Correct Factor	Measurement	Limits	Over	Detector Type
(H/V)	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
Low Channel (5745 MHz)-Above 1G							
Vertical	4679.178	71.24	-20.24	51.00	74	-23.00	Pk
Vertical	4679.178	59.20	-20.24	38.96	54	-15.04	AV
Vertical	11490.142	62.26	-8.79	53.47	68.2	-14.73	Pk
Vertical	11490.142	49.50	-8.79	40.71	54	-13.29	AV
Vertical	17235.174	56.43	-3.18	53.25	68.2	-14.95	Pk
Vertical	17235.174	44.79	-3.18	41.61	54	-12.39	AV
Horizontal	4679.109	73.16	-20.24	52.92	74	-21.08	Pk
Horizontal	4679.109	59.85	-20.24	39.61	54	-14.39	AV
Horizontal	11490.163	62.27	-8.79	53.48	68.2	-14.72	Pk
Horizontal	11490.163	49.31	-8.79	40.52	54	-13.48	AV
Horizontal	17235.108	56.12	-3.18	52.94	68.2	-15.26	Pk
Horizontal	17235.108	44.87	-3.18	41.69	54	-12.31	AV
middle Channel (5785 MHz)-Above 1G							
Vertical	4592.104	70.80	-20.42	50.38	74	-23.62	Pk
Vertical	4592.104	59.48	-20.42	39.06	54	-14.94	AV
Vertical	11570.174	62.04	-8.86	53.18	68.2	-15.02	Pk
Vertical	11570.174	49.63	-8.86	40.77	54	-13.23	AV
Vertical	17355.052	55.16	-2.52	52.64	68.2	-15.56	Pk
Vertical	17355.052	44.38	-2.52	41.86	54	-12.14	AV
Horizontal	4592.092	70.85	-20.42	50.43	74	-23.57	Pk
Horizontal	4592.092	59.33	-20.42	38.91	54	-15.09	AV
Horizontal	11570.194	64.49	-8.86	55.63	68.2	-12.57	Pk
Horizontal	11570.194	49.38	-8.86	40.52	54	-13.48	AV
Horizontal	17355.151	59.60	-2.52	57.08	68.2	-11.12	Pk
Horizontal	17355.151	44.64	-2.52	42.12	54	-11.88	AV
High Channel (5825 MHz)-Above 1G							
Vertical	6039.036	74.30	-18.93	55.37	68.2	-12.83	Pk
Vertical	6039.036	59.09	-18.93	40.16	54	-13.84	AV
Vertical	11650.071	62.97	-8.92	54.05	74	-19.95	Pk
Vertical	11650.071	49.79	-8.92	40.87	54	-13.13	AV
Vertical	17475.001	59.52	-1.86	57.66	68.2	-10.54	Pk
Vertical	17475.001	44.18	-1.86	42.32	54	-11.68	AV
Horizontal	6039.165	70.22	-18.93	51.29	68.2	-16.91	Pk
Horizontal	6039.165	59.38	-18.93	40.45	54	-13.55	AV
Horizontal	11650.177	63.71	-8.92	54.79	74	-19.21	Pk
Horizontal	11650.177	49.02	-8.92	40.10	54	-13.90	AV
Horizontal	17475.036	57.02	-1.86	55.16	68.2	-13.04	Pk
Horizontal	17475.036	44.50	-1.86	42.64	54	-11.36	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) - 802.11ac-HT40

Polar	Frequency	Reading Level	Correct Factor	Measurement	Limits	Over	Detector Type
(H/V)	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
Low Channel (5755 MHz)-Above 1G							
Vertical	4679.101	70.57	-20.24	50.32	74	-23.68	Pk
Vertical	4679.101	59.18	-20.24	38.94	54	-15.06	AV
Vertical	11510.187	60.77	-8.81	51.96	74	-22.04	Pk
Vertical	11510.187	49.75	-8.81	40.94	54	-13.06	AV
Vertical	17265.085	55.25	-3.01	52.24	68.2	-15.96	Pk
Vertical	17265.085	44.68	-3.01	41.67	54	-12.33	AV
Horizontal	4679.141	70.30	-20.24	50.06	74	-23.94	Pk
Horizontal	4679.141	59.93	-20.24	39.69	54	-14.31	AV
Horizontal	11510.107	61.01	-8.81	52.20	74	-21.80	Pk
Horizontal	11510.107	49.82	-8.81	41.01	54	-12.99	AV
Horizontal	17265.077	59.38	-3.01	56.37	68.2	-11.83	Pk
Horizontal	17265.077	44.32	-3.01	41.31	54	-12.69	AV
middle Channel (5795 MHz)-Above 1G							
Vertical	6039.123	72.28	-18.93	53.34	68.2	-14.86	Pk
Vertical	6039.123	59.59	-18.93	40.66	54	-13.34	AV
Vertical	11590.117	60.27	-8.87	51.40	74	-22.60	Pk
Vertical	11590.117	49.30	-8.87	40.43	54	-13.57	AV
Vertical	17385.173	59.25	-2.35	56.90	68.2	-11.30	Pk
Vertical	17385.173	44.25	-2.35	41.90	54	-12.10	AV
Horizontal	6039.101	74.72	-18.93	55.79	68.2	-12.41	Pk
Horizontal	6039.101	59.17	-18.93	40.24	54	-13.76	AV
Horizontal	11590.041	62.91	-8.87	54.04	74	-19.96	Pk
Horizontal	11590.041	49.77	-8.87	40.90	54	-13.10	AV
Horizontal	17385.012	59.72	-2.35	57.37	68.2	-10.83	Pk
Horizontal	17385.012	44.43	-2.35	42.08	54	-11.92	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) - 802.11ac-HT80
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Polar	Frequency	Reading Level	Correct Factor	Measurement	Limits	Over	Detector Type
(H/V)	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
(5775 MHz)-Above 1G							
Vertical	4679.012	74.69	-20.24	54.45	74	-19.55	Pk
Vertical	4679.012	59.59	-20.24	39.35	54	-14.65	AV
Vertical	11550.198	60.70	-8.84	51.86	74	-22.14	Pk
Vertical	11550.198	49.47	-8.84	40.63	54	-13.37	AV
Vertical	17325.132	58.62	-2.68	55.94	68.2	-12.26	Pk
Vertical	17325.132	44.96	-2.68	42.28	54	-11.72	AV
Horizontal	4679.022	71.81	-20.24	51.57	74	-22.43	Pk
Horizontal	4679.022	59.60	-20.24	39.36	54	-14.64	AV
Horizontal	11550.114	61.91	-8.84	53.07	74	-20.93	Pk
Horizontal	11550.114	49.17	-8.84	40.33	54	-13.67	AV
Horizontal	17325.171	57.55	-2.68	54.87	68.2	-13.33	Pk
Horizontal	17325.171	44.91	-2.68	42.23	54	-11.77	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

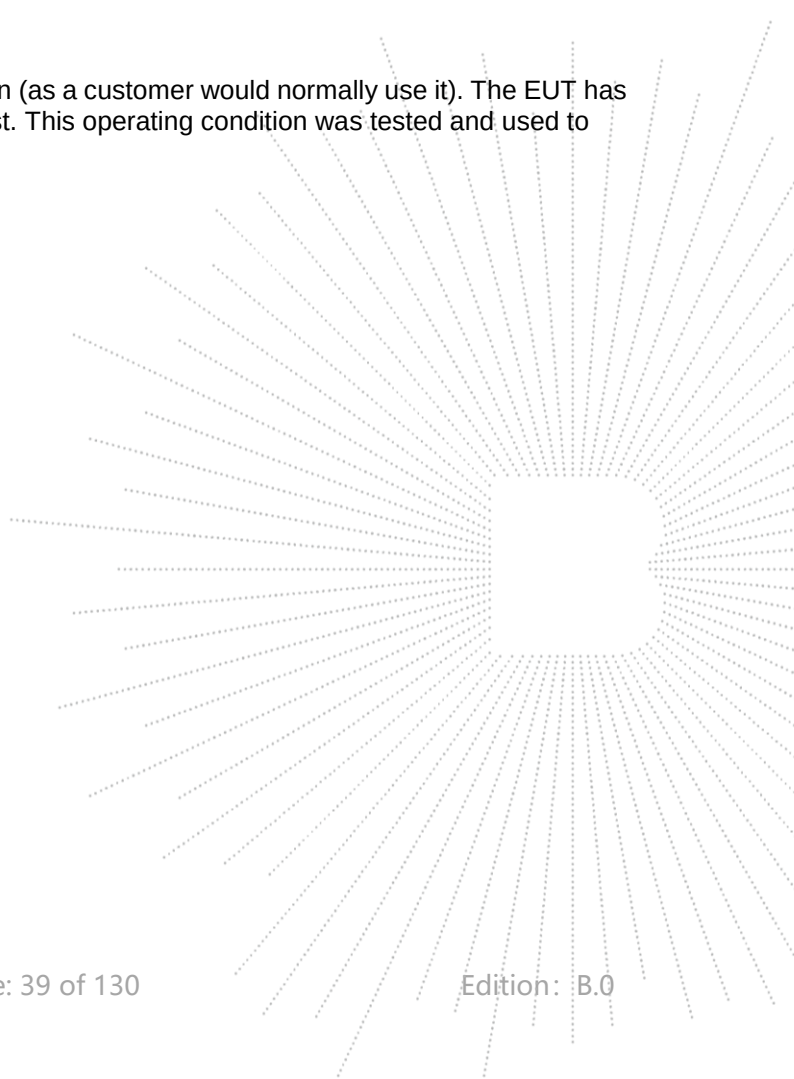
For devices operating in the bands 5.15-5.25 GHz, 5.25-5.35 GHz, and 5.47-5.725 GHz, the above procedures make use of 1 MHz RBW to satisfy directly the 1 MHz reference bandwidth specified in § 15.407(a)(5). For devices operating in the band 5.725-5.85 GHz, the rules specify a measurement bandwidth of 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 $RBW (< 500 \text{ KHz})$ 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.

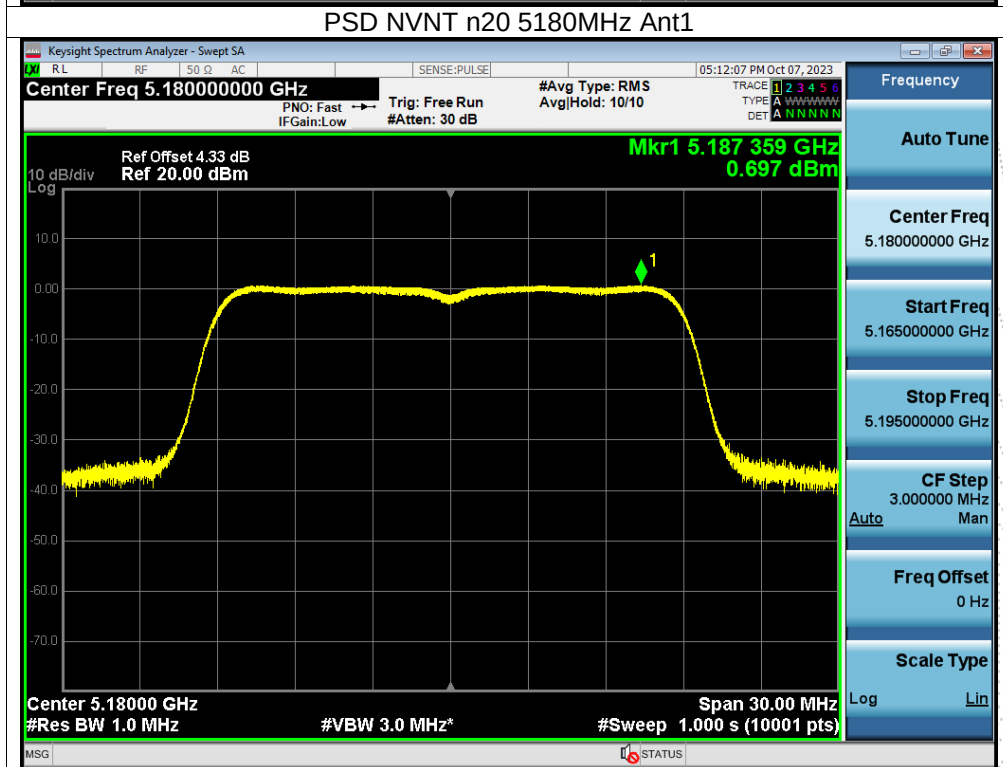
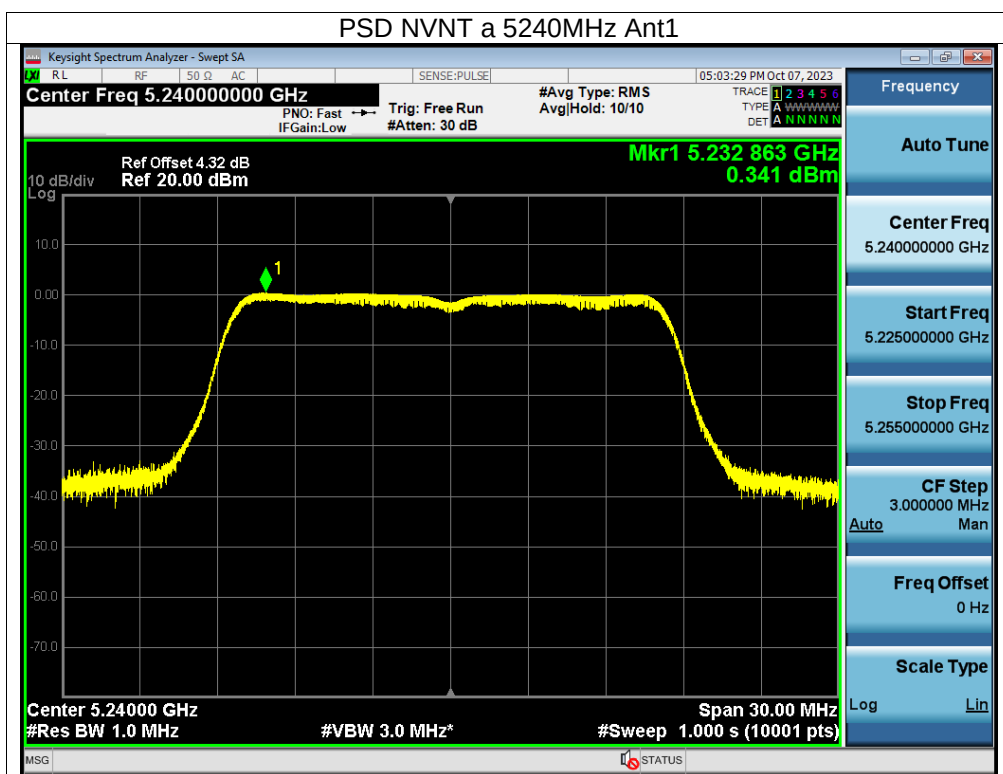


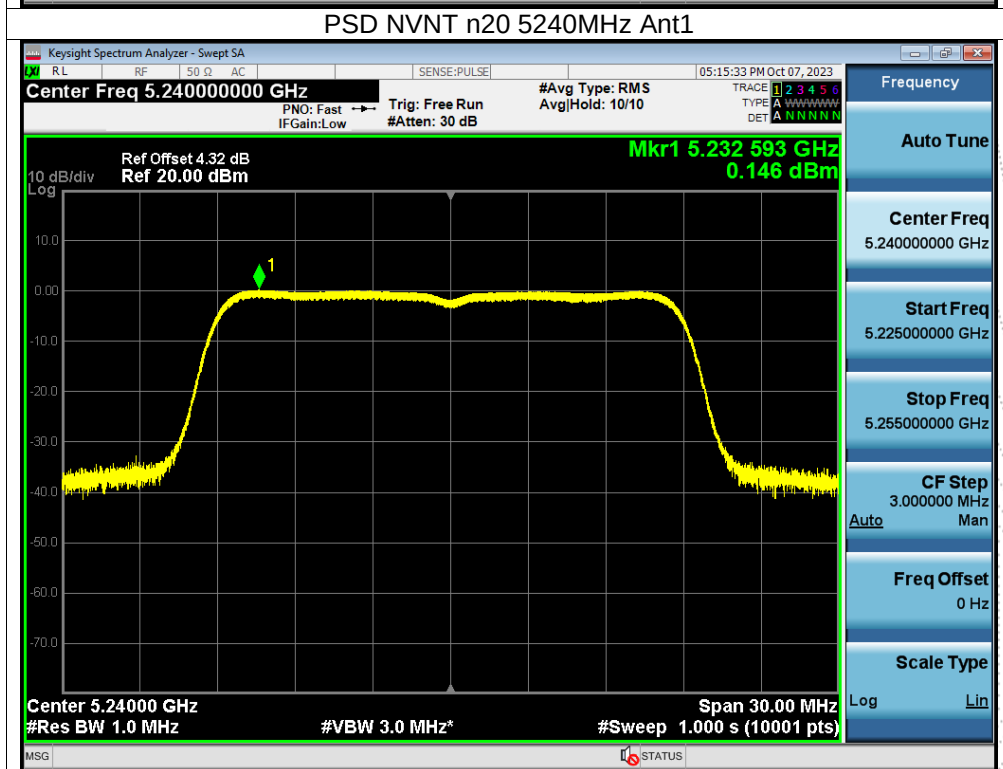
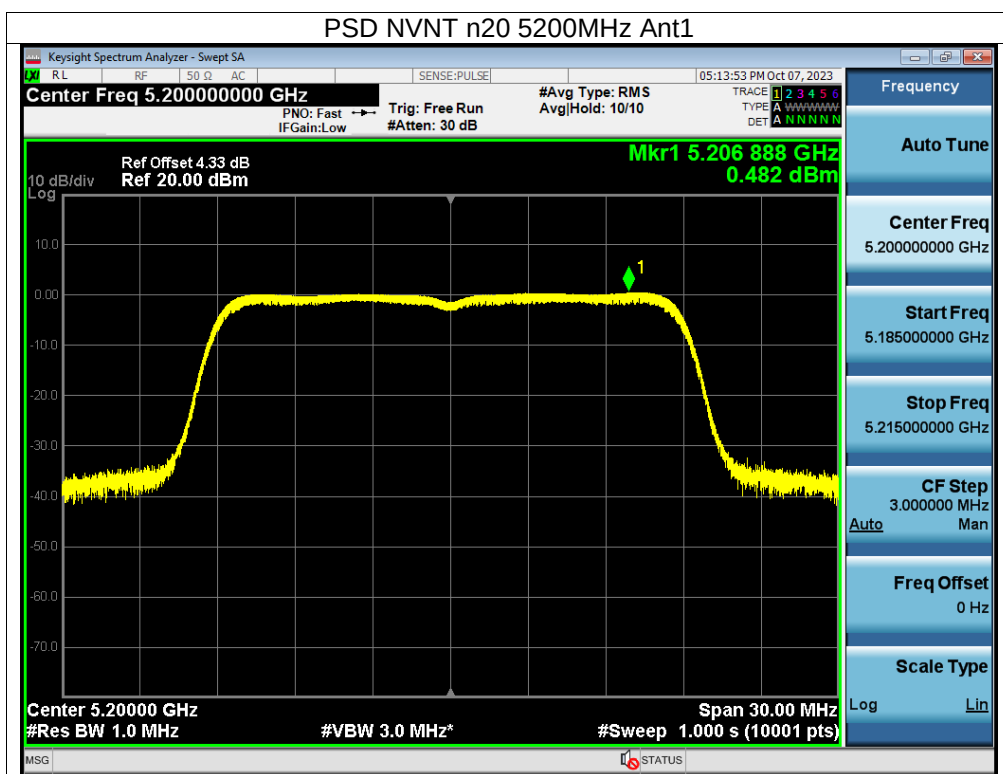
8.5 Test Result

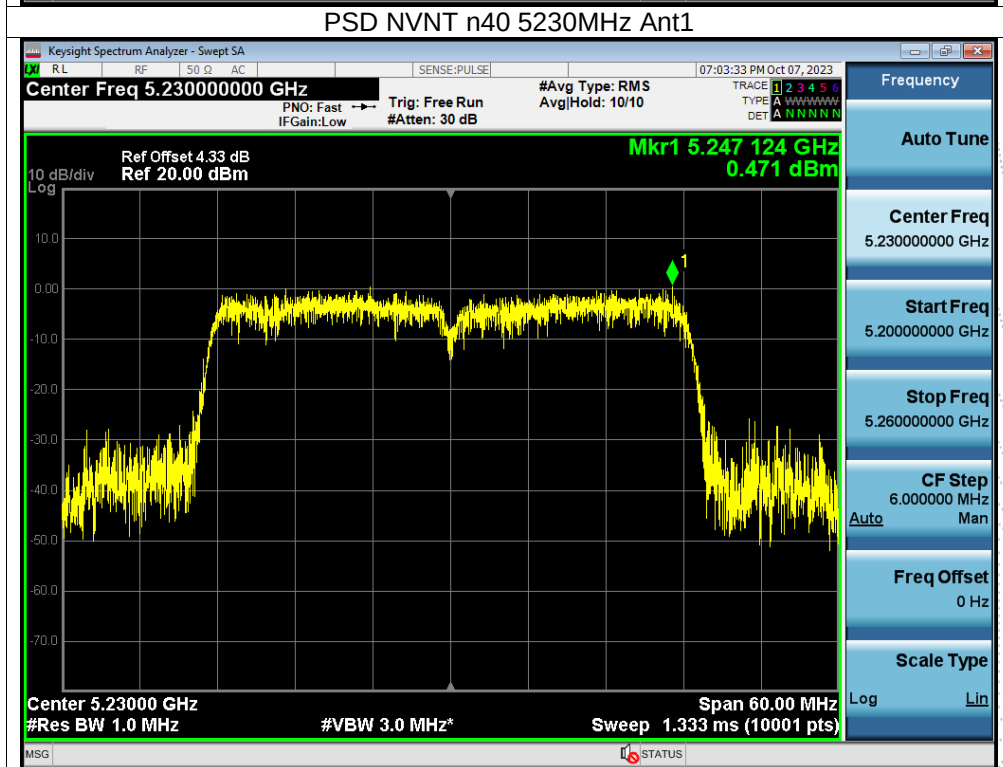
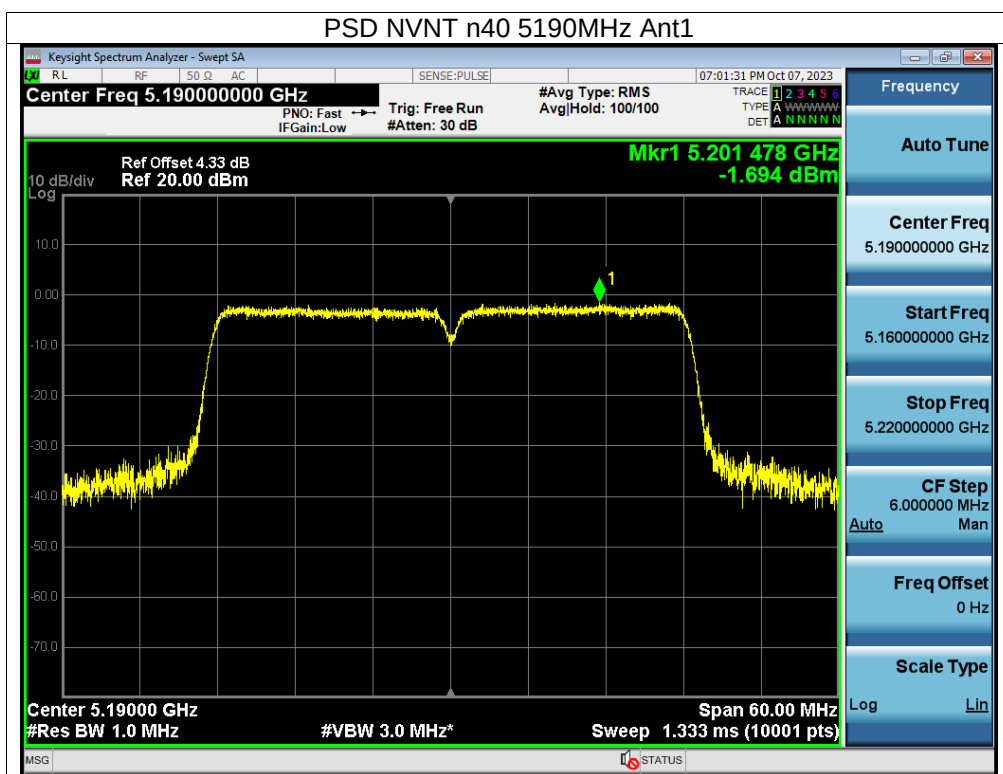
Temperature:	26 °C	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage:	DC 3.8V
Test Mode:	(5180-5240MHz)		

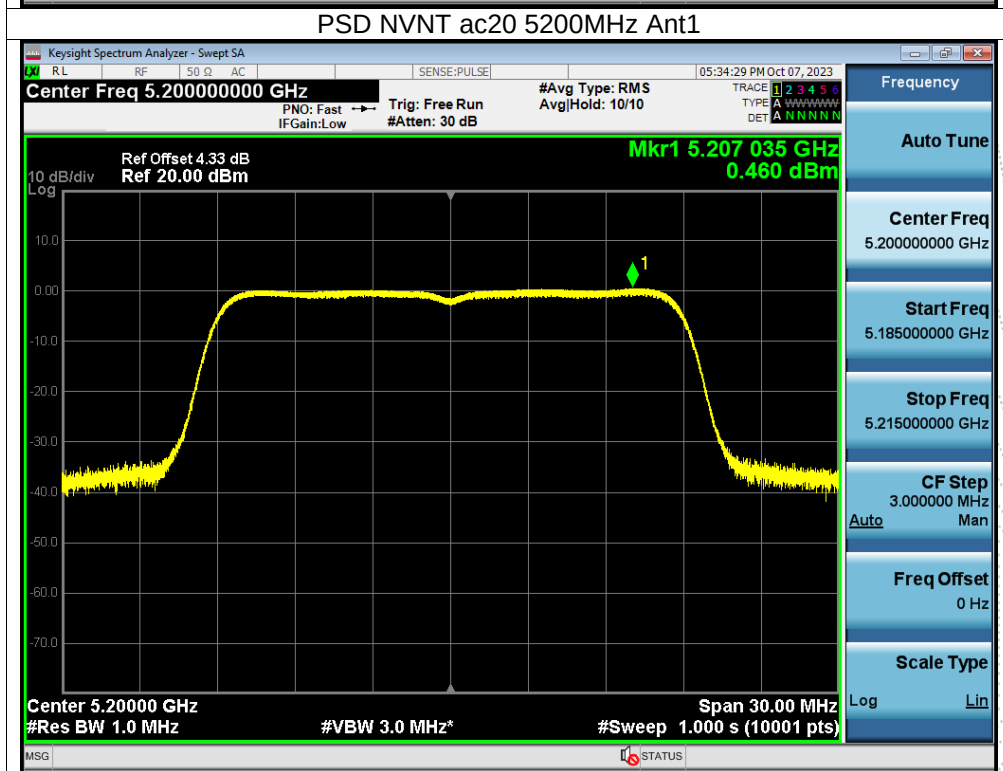
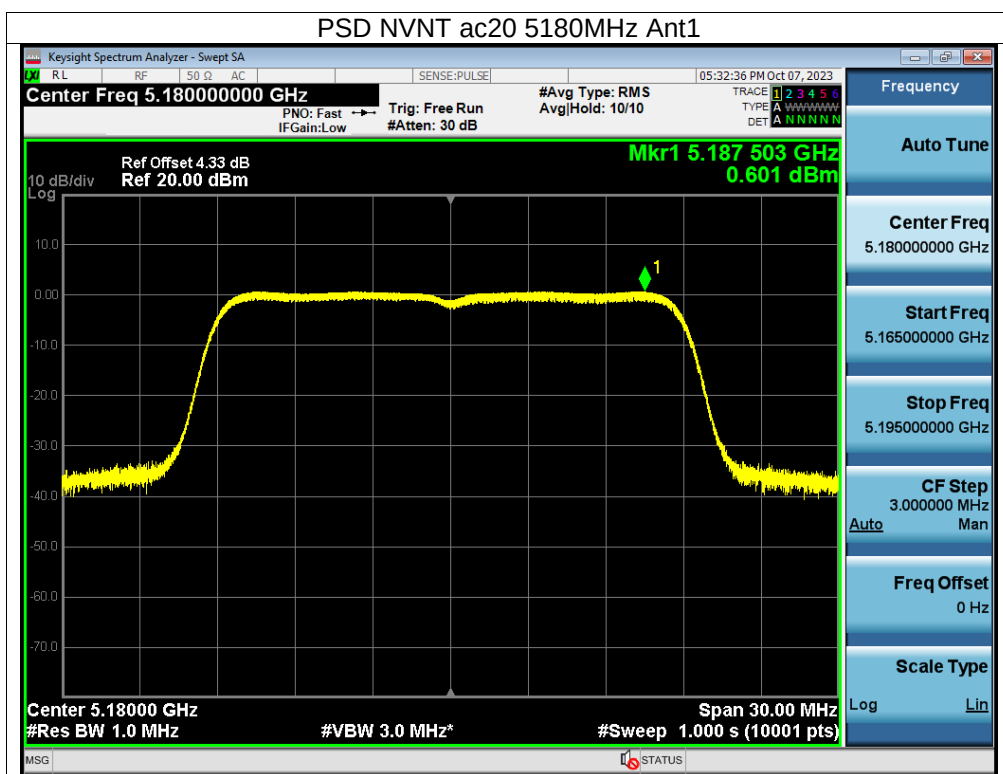
Condition	Mode	Frequency (MHz)	Conducted PSD (dBm/MHz)	Limit (dBm/MHz)	Verdict
NVNT	a	5180	0.65	11	Pass
NVNT	a	5200	0.66	11	Pass
NVNT	a	5240	0.34	11	Pass
NVNT	n20	5180	0.7	11	Pass
NVNT	n20	5200	0.48	11	Pass
NVNT	n20	5240	0.15	11	Pass
NVNT	n40	5190	-1.69	11	Pass
NVNT	n40	5230	0.47	11	Pass
NVNT	ac20	5180	0.6	11	Pass
NVNT	ac20	5200	0.46	11	Pass
NVNT	ac20	5240	0.19	11	Pass
NVNT	ac40	5190	-1.48	11	Pass
NVNT	ac40	5230	-2.2	11	Pass
NVNT	ac80	5210	-5.08	11	Pass

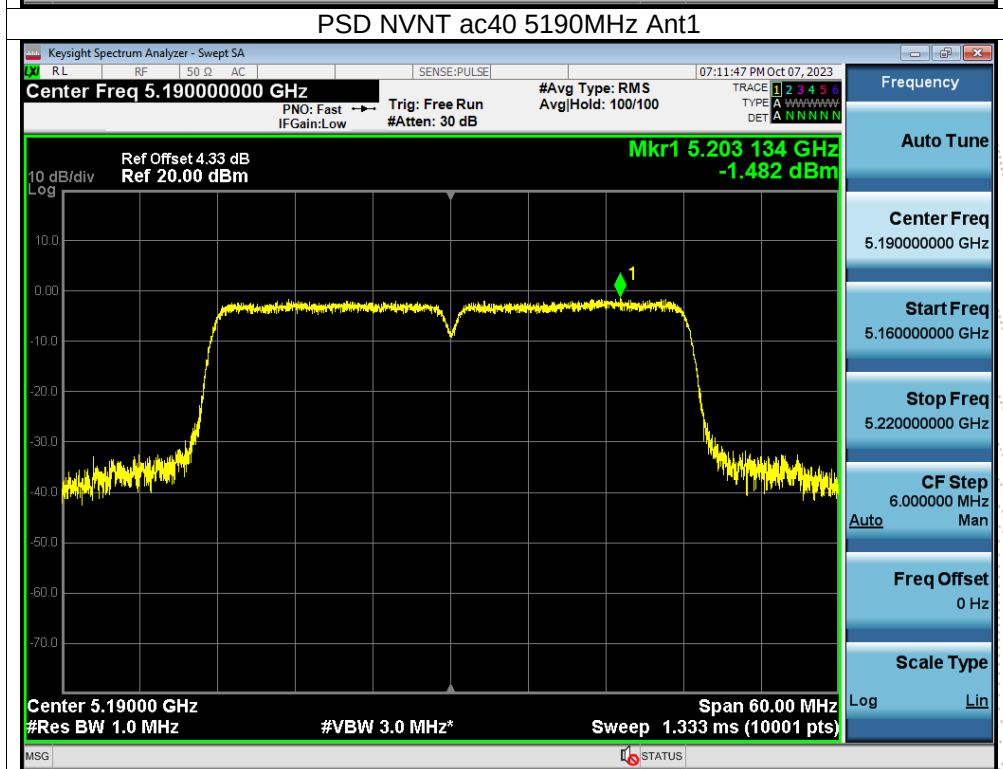
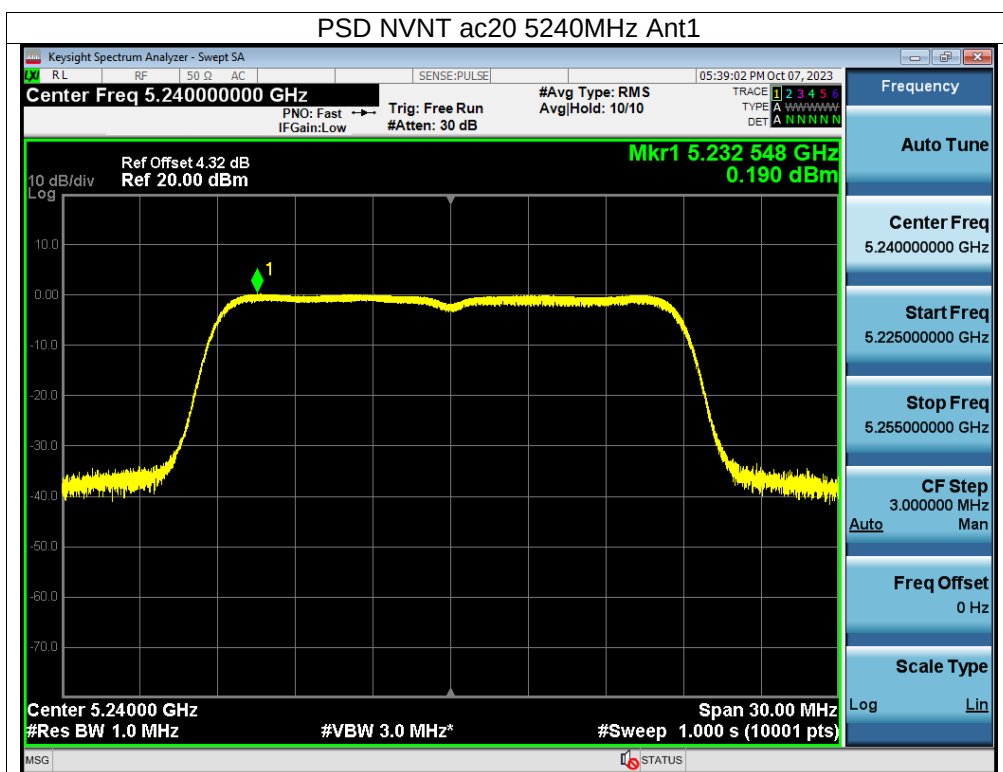


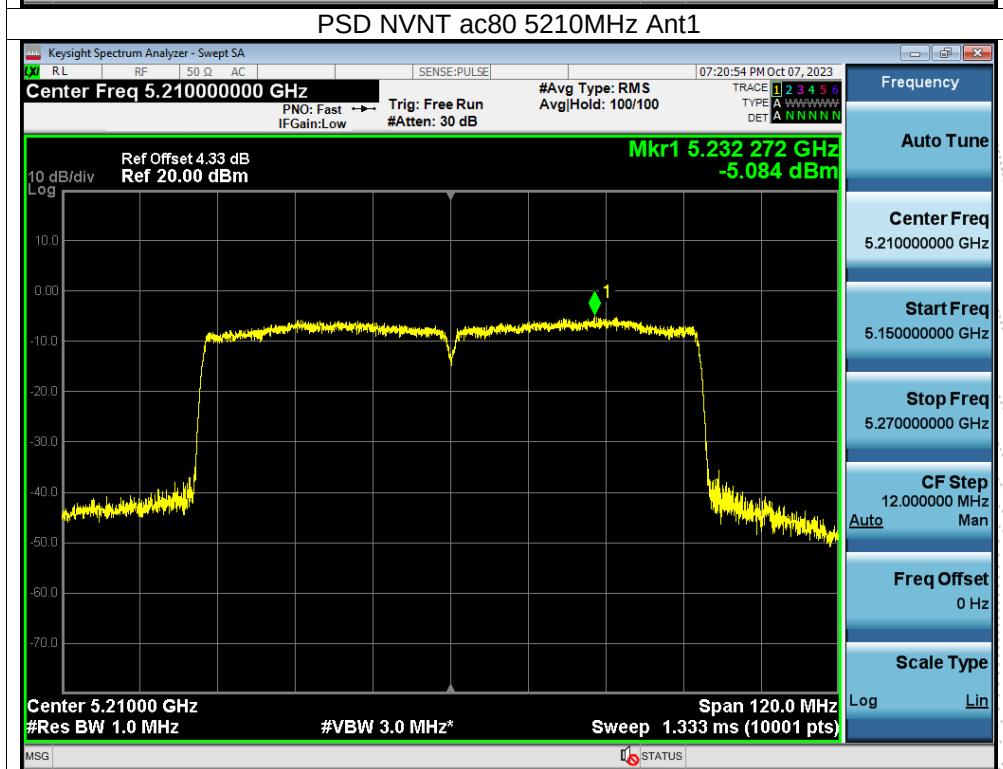
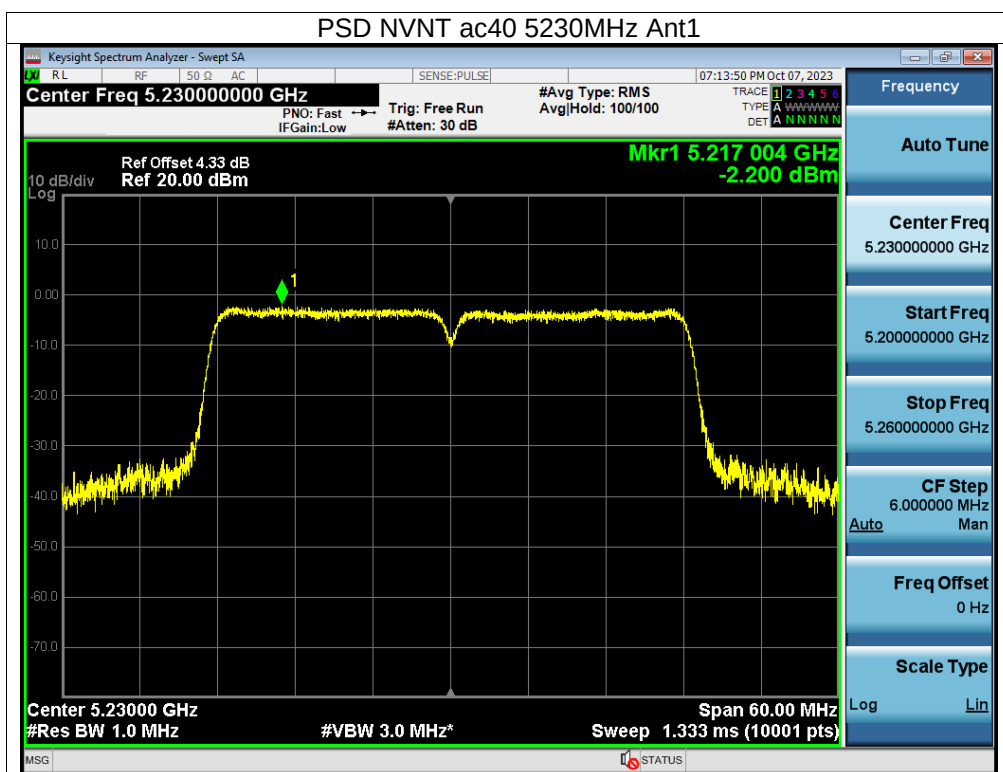












Temperature:	26 °C	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage:	DC 3.8V
Test Mode:	(5745-5825MHz)		

Condition	Mode	Frequency (MHz)	Conducted PSD (dBm/MHz)	Limit (dBm/MHz)	Verdict
NVNT	a	5745	-3.27	30	Pass
NVNT	a	5785	-3.96	30	Pass
NVNT	a	5825	-4.55	30	Pass
NVNT	n20	5745	-3.68	30	Pass
NVNT	n20	5785	-4.01	30	Pass
NVNT	n20	5825	-4.74	30	Pass
NVNT	n40	5755	-5.82	30	Pass
NVNT	n40	5795	-6.46	30	Pass
NVNT	ac20	5745	-3.04	30	Pass
NVNT	ac20	5785	-4.11	30	Pass
NVNT	ac20	5825	-3.83	30	Pass
NVNT	ac40	5755	-3.47	30	Pass
NVNT	ac40	5795	-6.25	30	Pass
NVNT	ac80	5775	-7.73	30	Pass

