

TEST REPORT

Report No.: BCTC2309208793-6E

Applicant: Shenzhen FreeYond Technology Co Ltd

Product Name: Tablet

Model/Type
reference: P6

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

Issued Date: 2023-11-10

Shenzhen BCTC Testing Co., Ltd.



FCC ID: 2A8FE-P6

Product Name: Tablet

Trademark: N/A

Model/Type Ref.: P6

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.

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Sample Received Date: 2023-09-22

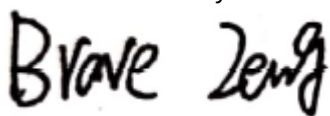
Sample tested Date: 2023-09-23 to 2023-10-19

Report No.: BCTC2309208793-6E

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:



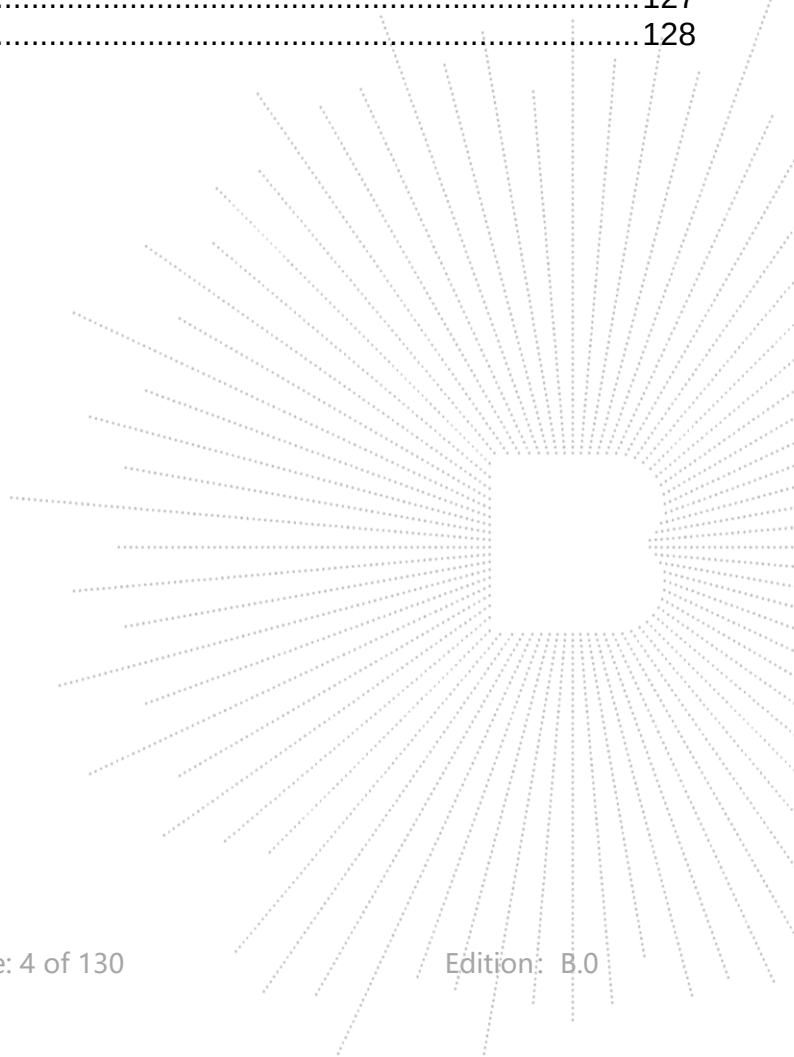
Zero Zhou/Reviewer

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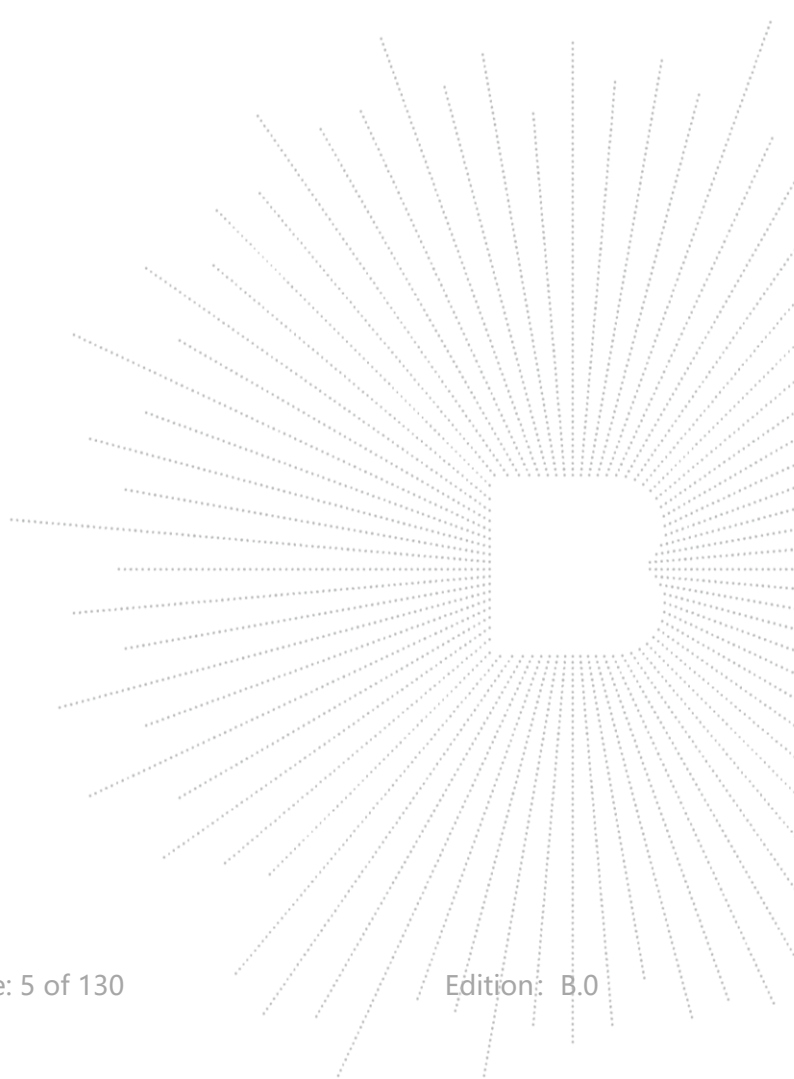
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1. Version

Report No.	Issue Date	Description	Approved
BCTC2309208793-6E	2023-11-10	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

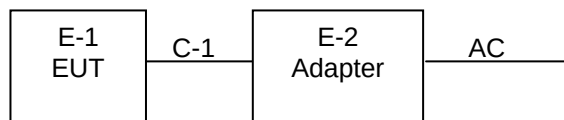
4.1 Product Information

Model/Type Ref.:	P6
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); 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:10.29dBm WIFI5.8G:10.02dBm
Antenna installation:	Internal antenna
Antenna Gain:	WIFI5.1G:0.71dBi WIFI5.8G:1.17dBi
power supply:	AC 100-240,50/60Hz
Battery:	DC3.8V,6000mAh/22.8Wh
Adapter:	Model: EE05020-P25 Input:AC100-240V,50/60Hz,0.5A Output:DC5V,2.0A

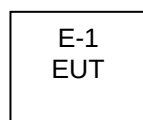
4.2 Test Setup Configuration

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	P6	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(20MHz):

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(20MHz):

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

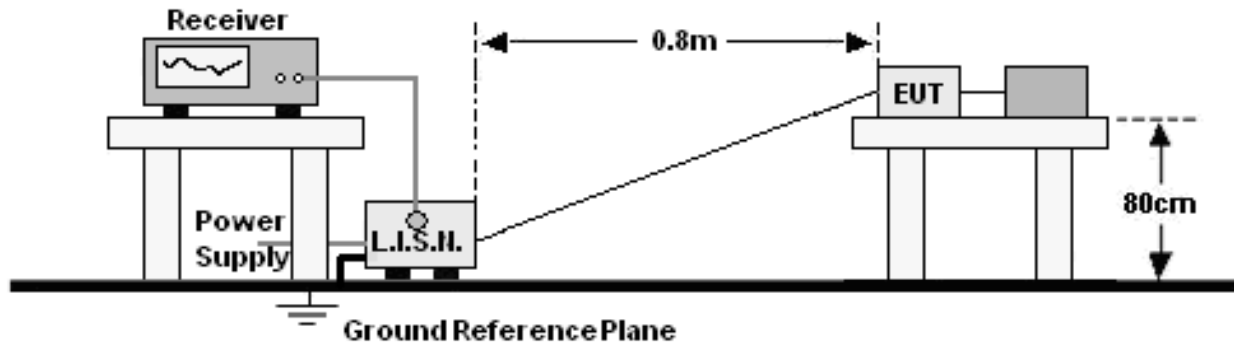
Conducted Emissions Test					
Equipment	Manufacturer	Model#	Serial#	Last Cal.	Next Cal.
Receiver	R&S	ESR3	102075	May 15, 2023	May 14, 2024
LISN	R&S	ENV216	101375	May 15, 2023	May 14, 2024
Software	Frad	EZ-EMC	EMC-CON 3A1	\	\
Attenuator	\	10dB DC-6GHz	1650	May 15, 2023	May 14, 2024

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 Analyzer20kHz-26.5GHz	Keysight	N9020A	MY49100060	May 15, 2023	May 14, 2024
Spectrum Analyzer9kHz-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.

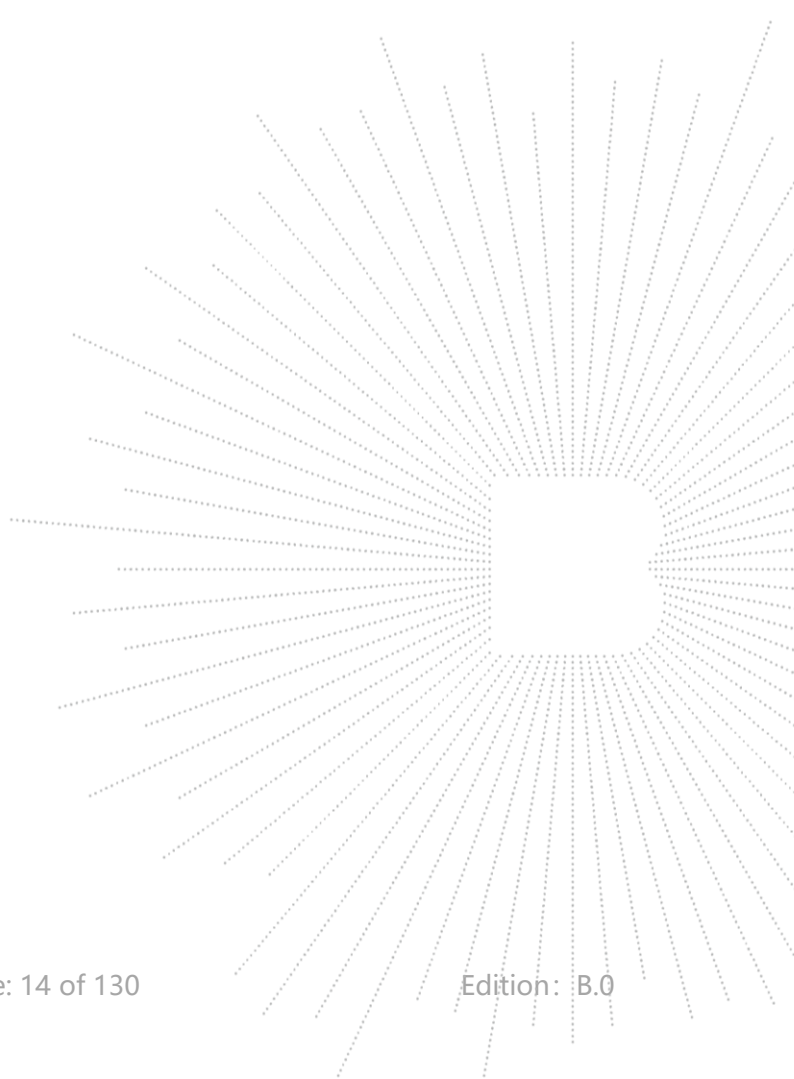
6.3 Test Procedure

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.

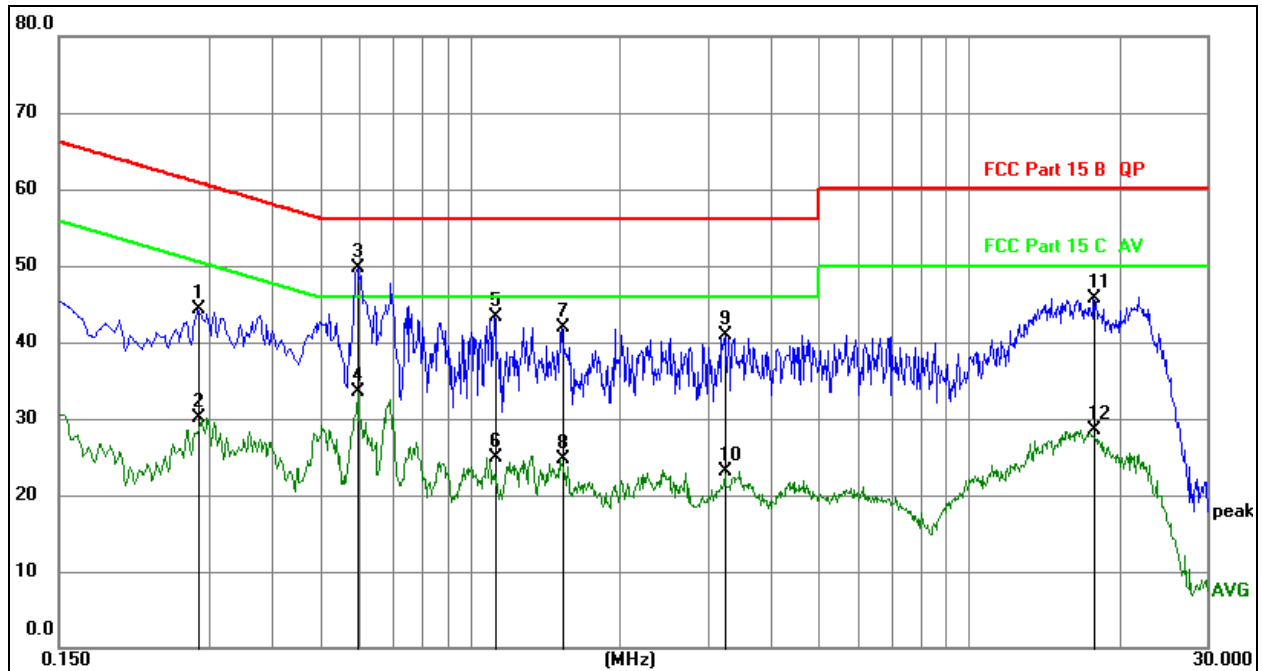
6.4 EUT Operating Conditions

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

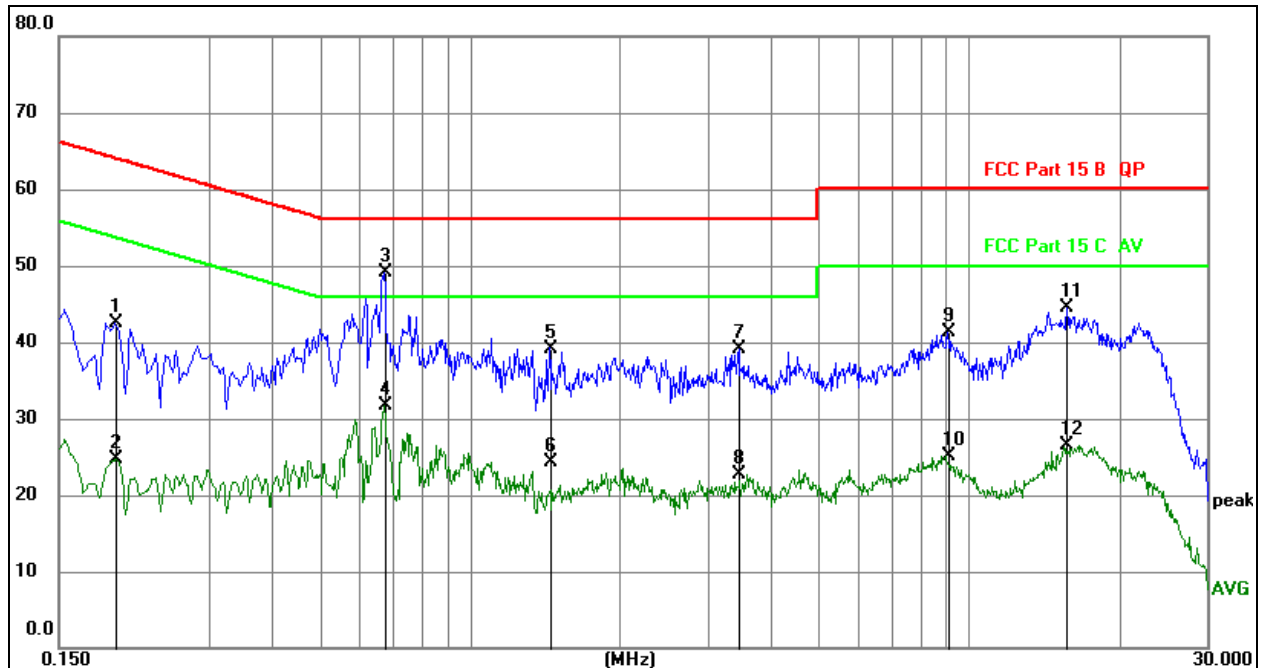


Remark:

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	0.2850	34.13	10.19	44.32	60.67	-16.35	QP	
2	0.2850	19.87	10.19	30.06	50.67	-20.61	AVG	
3 *	0.5955	39.55	10.19	49.74	56.00	-6.26	QP	
4	0.5955	23.22	10.19	33.41	46.00	-12.59	AVG	
5	1.1174	33.16	10.20	43.36	56.00	-12.64	QP	
6	1.1174	14.78	10.20	24.98	46.00	-21.02	AVG	
7	1.5315	31.82	10.15	41.97	56.00	-14.03	QP	
8	1.5315	14.63	10.15	24.78	46.00	-21.22	AVG	
9	3.2460	30.79	10.19	40.98	56.00	-15.02	QP	
10	3.2460	12.91	10.19	23.10	46.00	-22.90	AVG	
11	17.7810	35.04	10.67	45.71	60.00	-14.29	QP	
12	17.7810	17.81	10.67	28.48	50.00	-21.52	AVG	

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



Remark:

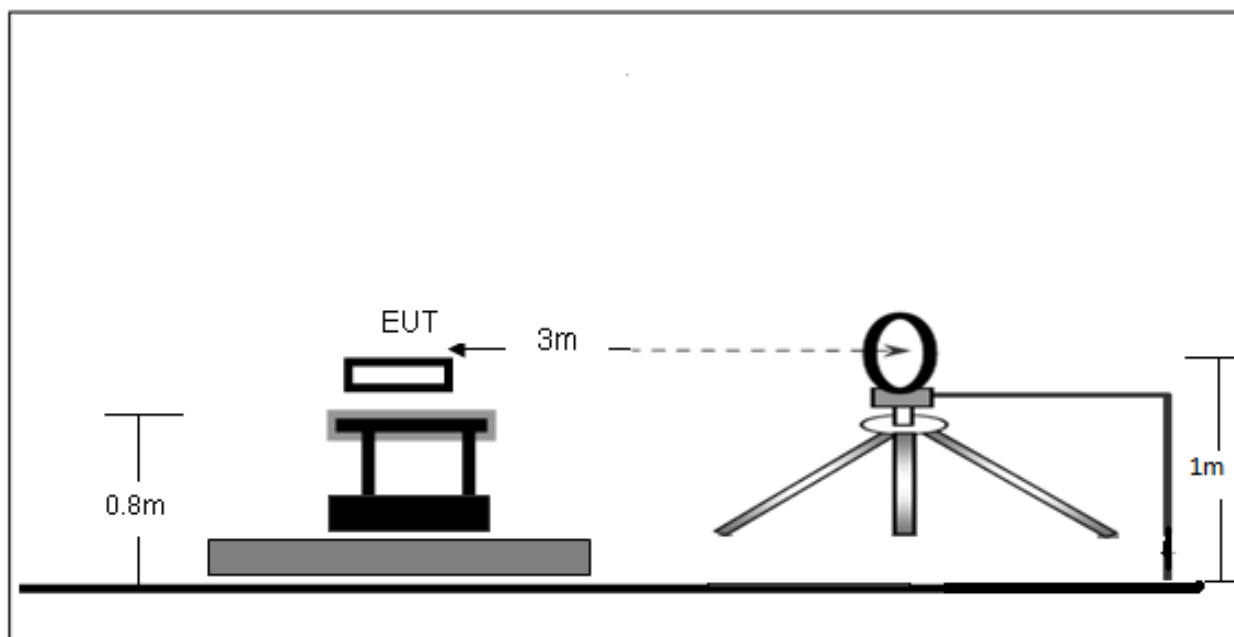
1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.
3. Measurement=Reading Level+ Correct Factor
4. Over= Measurement-Limit

No. Mk.	Freq. MHz	Reading Level	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1	0.1945	32.29	10.19	42.48	63.84	-21.36	QP	
2	0.1945	14.50	10.19	24.69	53.84	-29.15	AVG	
3 *	0.6719	38.83	10.19	49.02	56.00	-6.98	QP	
4	0.6719	21.43	10.19	31.62	46.00	-14.38	AVG	
5	1.4409	29.04	10.16	39.20	56.00	-16.80	QP	
6	1.4409	14.23	10.16	24.39	46.00	-21.61	AVG	
7	3.4538	28.85	10.20	39.05	56.00	-16.95	QP	
8	3.4538	12.53	10.20	22.73	46.00	-23.27	AVG	
9	9.0592	30.78	10.53	41.31	60.00	-18.69	QP	
10	9.0592	14.56	10.53	25.09	50.00	-24.91	AVG	
11	15.7179	33.84	10.61	44.45	60.00	-15.55	QP	
12	15.7179	15.90	10.61	26.51	50.00	-23.49	AVG	

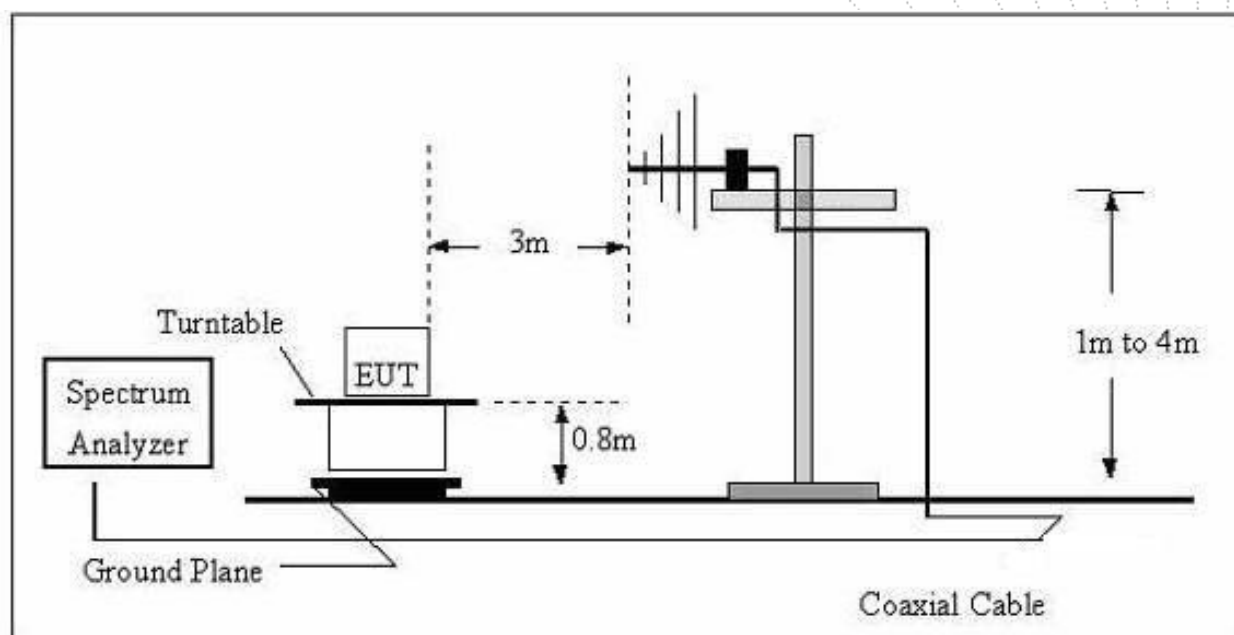
7. Radiated Emissions

7.1 Block Diagram Of Test Setup

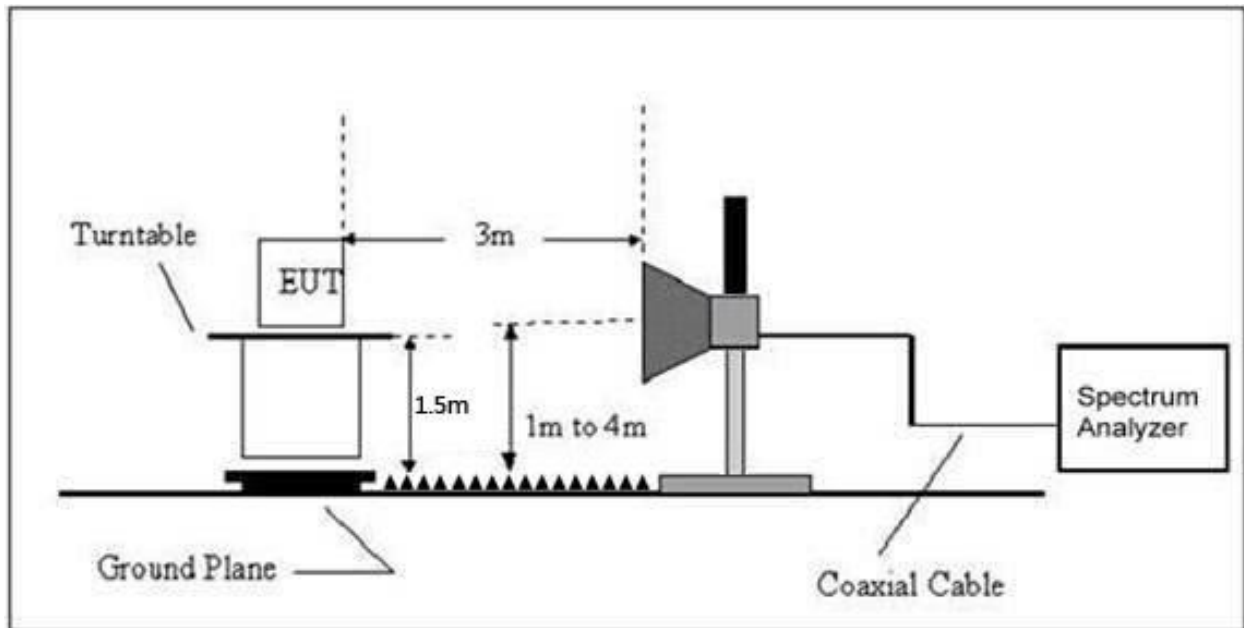
(A) Radiated Emission Test-Up Frequency Below 30MHz



(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:

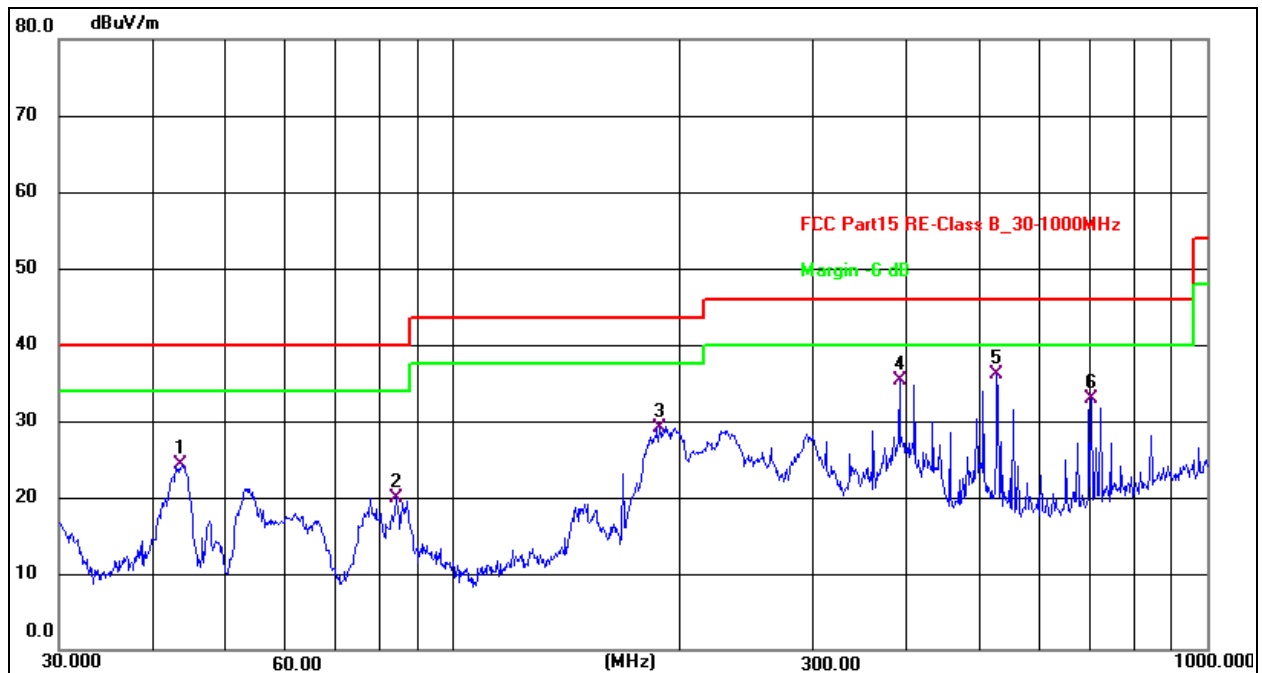
The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

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

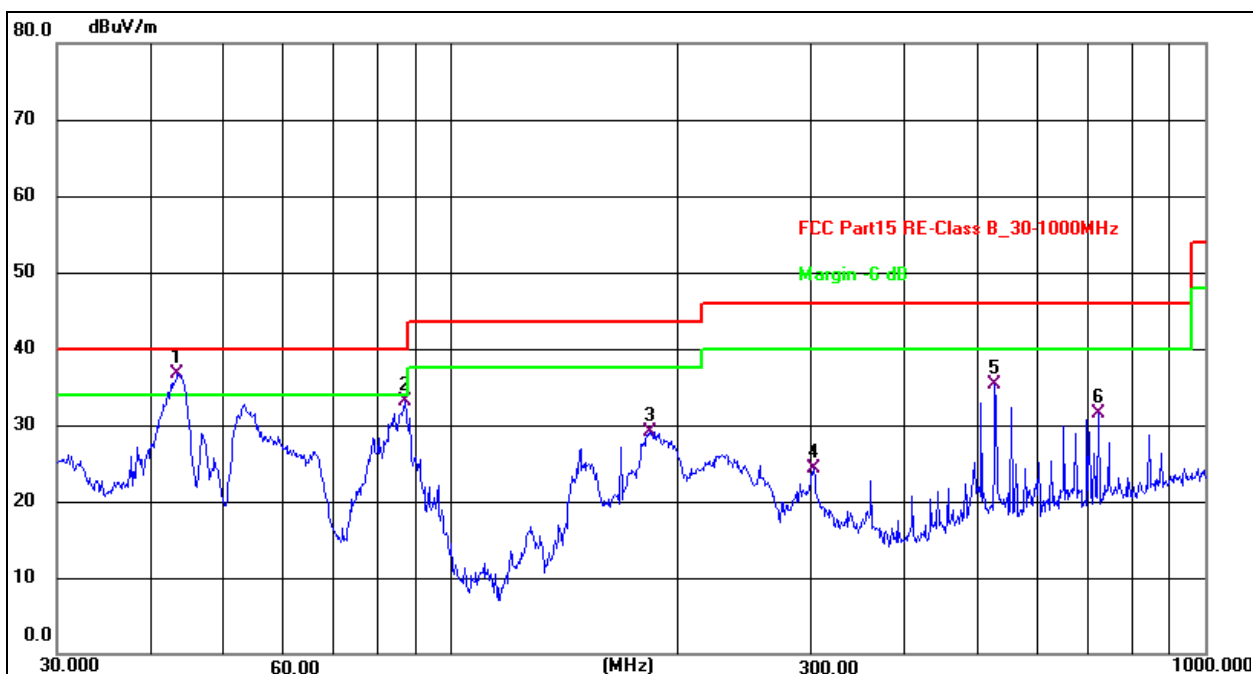


Remark:

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	43.6584	45.33	-21.10	24.23	40.00	-15.77	QP
2	84.1100	43.71	-23.85	19.86	40.00	-20.14	QP
3	187.7530	50.21	-21.03	29.18	43.50	-14.32	QP
4	390.7226	49.55	-14.22	35.33	46.00	-10.67	QP
5 *	526.3967	46.68	-10.55	36.13	46.00	-9.87	QP
6	701.7610	39.19	-6.23	32.96	46.00	-13.04	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 *	43.3534	57.72	-21.09	36.63	40.00	-3.37	QP
2	86.8068	57.00	-23.87	33.13	40.00	-6.87	QP
3	183.2005	49.66	-20.60	29.06	43.50	-14.44	QP
4	302.4812	41.35	-17.07	24.28	46.00	-21.72	QP
5	526.3967	45.84	-10.55	35.29	46.00	-10.71	QP
6	721.7259	37.22	-5.71	31.51	46.00	-14.49	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	4434.010	71.19	-20.73	50.46	68.2	-17.74	Pk
Vertical	4434.010	59.48	-20.73	38.74	54	-15.26	AV
Vertical	10360.013	62.13	-9.36	52.77	68.2	-15.43	Pk
Vertical	10360.013	49.02	-9.36	39.66	54	-14.34	AV
Vertical	15540.011	64.59	-7.84	56.75	74	-17.25	Pk
Vertical	15540.011	49.80	-7.84	41.96	54	-12.04	AV
Horizontal	4434.130	74.94	-20.73	54.21	68.2	-13.99	Pk
Horizontal	4434.130	59.81	-20.73	39.08	54	-14.92	AV
Horizontal	10360.132	64.01	-9.36	54.65	68.2	-13.55	Pk
Horizontal	10360.132	49.40	-9.36	40.04	54	-13.96	AV
Horizontal	15540.148	62.12	-7.84	54.28	74	-19.72	Pk
Horizontal	15540.148	49.73	-7.84	41.89	54	-12.11	AV
middle Channel (5200 MHz)-Above 1G							
Vertical	4592.077	72.22	-20.42	51.80	74	-22.20	Pk
Vertical	4592.077	59.98	-20.42	39.57	54	-14.43	AV
Vertical	10400.068	60.94	-9.30	51.64	68.2	-16.56	Pk
Vertical	10400.068	49.28	-9.30	39.98	54	-14.02	AV
Vertical	15600.133	64.41	-7.82	56.59	74	-17.41	Pk
Vertical	15600.133	49.20	-7.82	41.38	54	-12.62	AV
Horizontal	4592.097	73.84	-20.42	53.42	74	-20.58	Pk
Horizontal	4592.097	59.83	-20.42	39.41	54	-14.59	AV
Horizontal	10400.117	64.56	-9.30	55.26	68.2	-12.94	Pk
Horizontal	10400.117	49.87	-9.30	40.57	54	-13.43	AV
Horizontal	15600.156	62.00	-7.82	54.18	74	-19.82	Pk
Horizontal	15600.156	49.88	-7.82	42.06	54	-11.94	AV
High Channel (5240 MHz)-Above 1G							
Vertical	4739.146	74.40	-20.12	54.28	74	-19.72	Pk
Vertical	4739.146	59.52	-20.12	39.39	54	-14.61	AV
Vertical	10480.097	63.32	-9.18	54.14	68.2	-14.06	Pk
Vertical	10480.097	49.73	-9.18	40.55	54	-13.45	AV
Vertical	15720.123	62.62	-7.78	54.84	74	-19.16	Pk
Vertical	15720.123	49.57	-7.78	41.79	54	-12.21	AV
Horizontal	4739.146	72.66	-20.12	52.54	74	-21.46	Pk
Horizontal	4739.146	59.95	-20.12	39.83	54	-14.17	AV
Horizontal	10480.108	63.12	-9.18	53.94	68.2	-14.26	Pk
Horizontal	10480.108	49.17	-9.18	39.99	54	-14.01	AV
Horizontal	15720.083	63.83	-7.78	56.05	74	-17.95	Pk
Horizontal	15720.083	49.79	-7.78	42.01	54	-11.99	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	4434.106	74.42	-20.73	53.69	68.2	-14.51	Pk
Vertical	4434.106	59.40	-20.73	38.67	54	-15.33	AV
Vertical	10360.127	64.11	-9.36	54.75	68.2	-13.45	Pk
Vertical	10360.127	49.96	-9.36	40.60	54	-13.40	AV
Vertical	15540.029	63.05	-7.84	55.21	74	-18.79	Pk
Vertical	15540.029	49.92	-7.84	42.08	54	-11.92	AV
Horizontal	4434.018	74.19	-20.73	53.46	68.2	-14.74	Pk
Horizontal	4434.018	59.96	-20.73	39.23	54	-14.77	AV
Horizontal	10360.114	62.65	-9.36	53.29	68.2	-14.91	Pk
Horizontal	10360.114	49.26	-9.36	39.90	54	-14.10	AV
Horizontal	15540.029	61.13	-7.84	53.29	74	-20.71	Pk
Horizontal	15540.029	49.60	-7.84	41.76	54	-12.24	AV
middle Channel (5200 MHz)-Above 1G							
Vertical	4592.118	71.50	-20.42	51.09	74	-22.91	Pk
Vertical	4592.118	59.26	-20.42	38.85	54	-15.15	AV
Vertical	10400.153	63.10	-9.30	53.80	68.2	-14.40	Pk
Vertical	10400.153	49.25	-9.30	39.95	54	-14.05	AV
Vertical	15600.174	64.73	-7.82	56.91	74	-17.09	Pk
Vertical	15600.174	49.99	-7.82	42.17	54	-11.83	AV
Horizontal	4592.051	73.62	-20.42	53.20	74	-20.80	Pk
Horizontal	4592.051	59.86	-20.42	39.44	54	-14.56	AV
Horizontal	10400.063	63.79	-9.30	54.49	68.2	-13.71	Pk
Horizontal	10400.063	49.70	-9.30	40.40	54	-13.60	AV
Horizontal	15600.010	63.12	-7.82	55.30	74	-18.70	Pk
Horizontal	15600.010	49.93	-7.82	42.11	54	-11.89	AV
High Channel (5240 MHz)-Above 1G							
Vertical	4739.177	74.54	-20.12	54.41	74	-19.59	Pk
Vertical	4739.177	59.22	-20.12	39.10	54	-14.90	AV
Vertical	10480.076	63.01	-9.18	53.83	68.2	-14.37	Pk
Vertical	10480.076	49.46	-9.18	40.28	54	-13.72	AV
Vertical	15720.183	62.13	-7.78	54.35	74	-19.65	Pk
Vertical	15720.183	49.96	-7.78	42.18	54	-11.82	AV
Horizontal	4739.103	74.06	-20.12	53.94	74	-20.06	Pk
Horizontal	4739.103	59.43	-20.12	39.31	54	-14.69	AV
Horizontal	10480.085	64.17	-9.18	54.99	68.2	-13.21	Pk
Horizontal	10480.085	49.93	-9.18	40.75	54	-13.25	AV
Horizontal	15720.178	64.74	-7.78	56.96	74	-17.04	Pk
Horizontal	15720.178	49.58	-7.78	41.80	54	-12.20	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	4434.146	70.20	-20.73	49.47	68.2	-18.73	Pk
Vertical	4434.146	59.23	-20.73	38.50	54	-15.50	AV
Vertical	10380.105	61.69	-9.33	52.36	68.2	-15.84	Pk
Vertical	10380.105	49.27	-9.33	39.94	54	-14.06	AV
Vertical	15570.027	63.50	-7.83	55.67	74	-18.33	Pk
Vertical	15570.027	49.07	-7.83	41.24	54	-12.76	AV
Horizontal	4434.109	70.04	-20.73	49.31	74	-24.69	Pk
Horizontal	4434.109	59.26	-20.73	38.53	54	-15.47	AV
Horizontal	10380.194	61.60	-9.33	52.27	68.2	-15.93	Pk
Horizontal	10380.194	49.32	-9.33	39.99	54	-14.01	AV
Horizontal	15570.010	60.36	-7.83	52.53	74	-21.47	Pk
Horizontal	15570.010	49.66	-7.83	41.83	54	-12.17	AV
High Channel (5230 MHz)-Above 1G							
Vertical	4739.159	70.39	-20.12	50.27	68.2	-17.93	Pk
Vertical	4739.159	59.06	-20.12	38.94	54	-15.06	AV
Vertical	10460.022	61.74	-9.21	52.53	68.2	-15.67	Pk
Vertical	10460.022	49.99	-9.21	40.78	54	-13.22	AV
Vertical	15690.187	64.06	-7.79	56.27	74	-17.73	Pk
Vertical	15690.187	49.95	-7.79	42.16	54	-11.84	AV
Horizontal	4739.148	70.54	-20.12	50.42	68.2	-17.78	Pk
Horizontal	4739.148	59.09	-20.12	38.97	54	-15.03	AV
Horizontal	10460.089	60.14	-9.21	50.93	68.2	-17.27	Pk
Horizontal	10460.089	49.01	-9.21	39.80	54	-14.20	AV
Horizontal	15690.055	64.68	-7.79	56.89	74	-17.11	Pk
Horizontal	15690.055	49.07	-7.79	41.28	54	-12.72	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(5.1G) - 802.11ac-HT20

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	4434.112	71.26	-20.73	50.53	68.2	-17.67	Pk
Vertical	4434.112	59.79	-20.73	39.06	54	-14.94	AV
Vertical	10360.038	64.34	-9.36	54.98	68.2	-13.22	Pk
Vertical	10360.038	49.99	-9.36	40.63	54	-13.37	AV
Vertical	15540.072	63.22	-7.84	55.38	74	-18.62	Pk
Vertical	15540.072	49.93	-7.84	42.09	54	-11.91	AV
Horizontal	4434.075	71.23	-20.73	50.49	68.2	-17.71	Pk
Horizontal	4434.075	59.01	-20.73	38.28	54	-15.72	AV
Horizontal	10360.193	62.15	-9.36	52.79	68.2	-15.41	Pk
Horizontal	10360.193	49.04	-9.36	39.68	54	-14.32	AV
Horizontal	15540.097	61.28	-7.84	53.44	74	-20.56	Pk
Horizontal	15540.097	49.09	-7.84	41.25	54	-12.75	AV
middle Channel (5200 MHz)-Above 1G							
Vertical	4592.049	73.81	-20.42	53.39	74	-20.61	Pk
Vertical	4592.049	59.05	-20.42	38.64	54	-15.36	AV
Vertical	10400.072	61.50	-9.30	52.20	68.2	-16.00	Pk
Vertical	10400.072	49.23	-9.30	39.93	54	-14.07	AV
Vertical	15600.065	63.04	-7.82	55.22	74	-18.78	Pk
Vertical	15600.065	49.23	-7.82	41.41	54	-12.59	AV
Horizontal	4592.160	72.61	-20.42	52.19	74	-21.81	Pk
Horizontal	4592.160	59.85	-20.42	39.43	54	-14.57	AV
Horizontal	10400.027	64.03	-9.30	54.73	68.2	-13.47	Pk
Horizontal	10400.027	49.23	-9.30	39.93	54	-14.07	AV
Horizontal	15600.133	63.41	-7.82	55.59	74	-18.41	Pk
Horizontal	15600.133	49.09	-7.82	41.27	54	-12.73	AV
High Channel (5240 MHz)-Above 1G							
Vertical	4739.034	74.50	-20.12	54.38	74	-19.62	Pk
Vertical	4739.034	59.96	-20.12	39.84	54	-14.16	AV
Vertical	10480.117	63.57	-9.18	54.39	68.2	-13.81	Pk
Vertical	10480.117	49.27	-9.18	40.09	54	-13.91	AV
Vertical	15720.039	63.64	-7.78	55.86	74	-18.14	Pk
Vertical	15720.039	49.38	-7.78	41.60	54	-12.40	AV
Horizontal	4739.111	70.62	-20.12	50.50	74	-23.50	Pk
Horizontal	4739.111	59.42	-20.12	39.29	54	-14.71	AV
Horizontal	10480.180	62.20	-9.18	53.02	68.2	-15.18	Pk
Horizontal	10480.180	49.10	-9.18	39.92	54	-14.08	AV
Horizontal	15720.185	61.12	-7.78	53.34	74	-20.66	Pk
Horizontal	15720.185	49.94	-7.78	42.16	54	-11.84	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	4434.152	70.71	-20.73	49.98	68.2	-18.22	Pk
Vertical	4434.152	59.53	-20.73	38.80	54	-15.20	AV
Vertical	10380.034	63.65	-9.33	54.32	68.2	-13.88	Pk
Vertical	10380.034	49.28	-9.33	39.95	54	-14.05	AV
Vertical	15570.124	60.05	-7.83	52.22	74	-21.78	Pk
Vertical	15570.124	49.09	-7.83	41.26	54	-12.74	AV
Horizontal	4434.009	74.30	-20.73	53.57	74	-20.43	Pk
Horizontal	4434.009	59.89	-20.73	39.16	54	-14.84	AV
Horizontal	10380.033	61.44	-9.33	52.11	68.2	-16.09	Pk
Horizontal	10380.033	49.43	-9.33	40.10	54	-13.90	AV
Horizontal	15570.100	63.69	-7.83	55.86	74	-18.14	Pk
Horizontal	15570.100	49.79	-7.83	41.96	54	-12.04	AV
middle Channel (5230 MHz)-Above 1G							
Vertical	4739.017	73.98	-20.12	53.86	68.2	-14.34	Pk
Vertical	4739.017	59.89	-20.12	39.77	54	-14.23	AV
Vertical	10460.046	63.26	-9.21	54.05	68.2	-14.15	Pk
Vertical	10460.046	49.25	-9.21	40.04	54	-13.96	AV
Vertical	15690.080	60.87	-7.79	53.08	74	-20.92	Pk
Vertical	15690.080	49.91	-7.79	42.12	54	-11.88	AV
Horizontal	4739.155	72.14	-20.12	52.02	68.2	-16.18	Pk
Horizontal	4739.155	59.72	-20.12	39.60	54	-14.40	AV
Horizontal	10460.033	64.55	-9.21	55.34	68.2	-12.86	Pk
Horizontal	10460.033	49.70	-9.21	40.49	54	-13.51	AV
Horizontal	15690.027	64.52	-7.79	56.73	74	-17.27	Pk
Horizontal	15690.027	49.94	-7.79	42.15	54	-11.85	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	Measure-ment	Limits	Over	Detector Type
(H/V)	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
(5210 MHz)-Above 1G							
Vertical	4434.150	71.99	-20.73	51.25	68.2	-16.95	Pk
Vertical	4434.150	59.30	-20.73	38.57	54	-15.43	AV
Vertical	10420.022	62.21	-9.27	52.94	68.2	-15.26	Pk
Vertical	10420.022	49.36	-9.27	40.09	54	-13.91	AV
Vertical	15630.069	60.54	-7.81	52.73	74	-21.27	Pk
Vertical	15630.069	49.43	-7.81	41.62	54	-12.38	AV
Horizontal	4434.032	74.25	-20.73	53.51	68.2	-14.69	Pk
Horizontal	4434.032	59.50	-20.73	38.77	54	-15.23	AV
Horizontal	10420.134	64.12	-9.27	54.85	68.2	-13.35	Pk
Horizontal	10420.134	49.24	-9.27	39.97	54	-14.03	AV
Horizontal	15630.089	62.31	-7.81	54.50	74	-19.50	Pk
Horizontal	15630.089	49.33	-7.81	41.52	54	-12.48	AV

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

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

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

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

- ☒ Undesirable radiated Undesirable radiated Spurious Emission in Band Edge
- All the modes 802.11a/n/ac has been tested and the worst result 802.11n20 recorded as below:

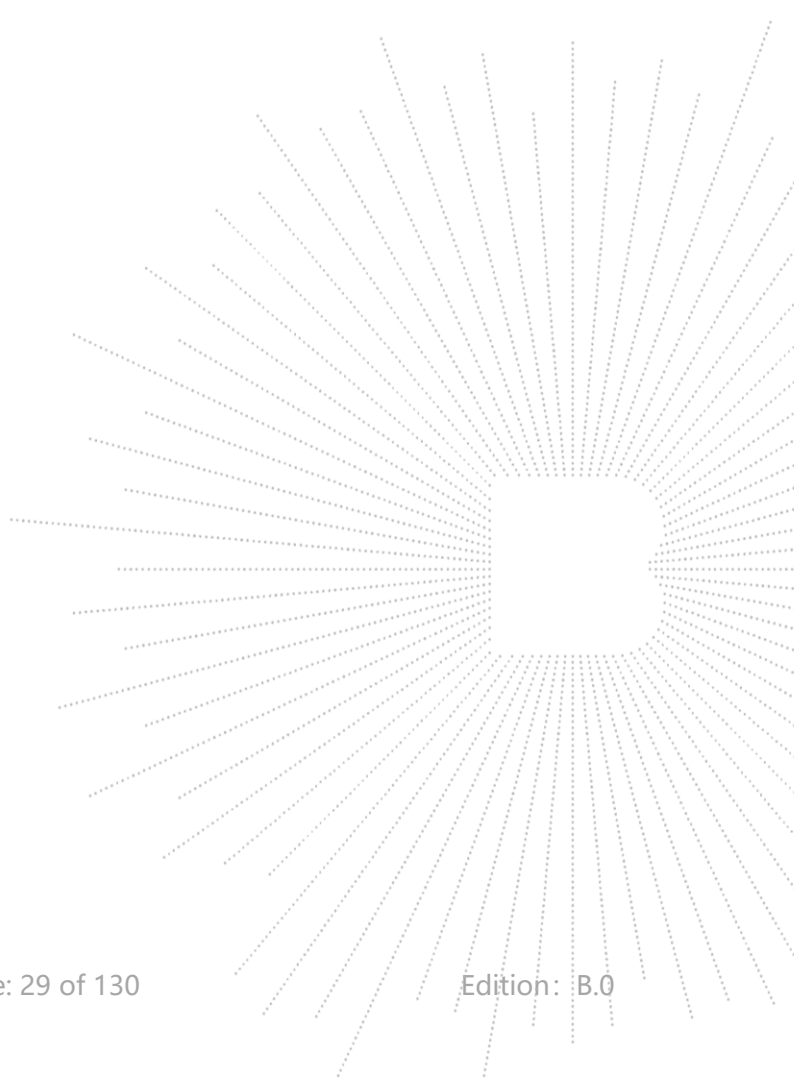
Test mode: 802.11n20 Frequency(MHz): 5180

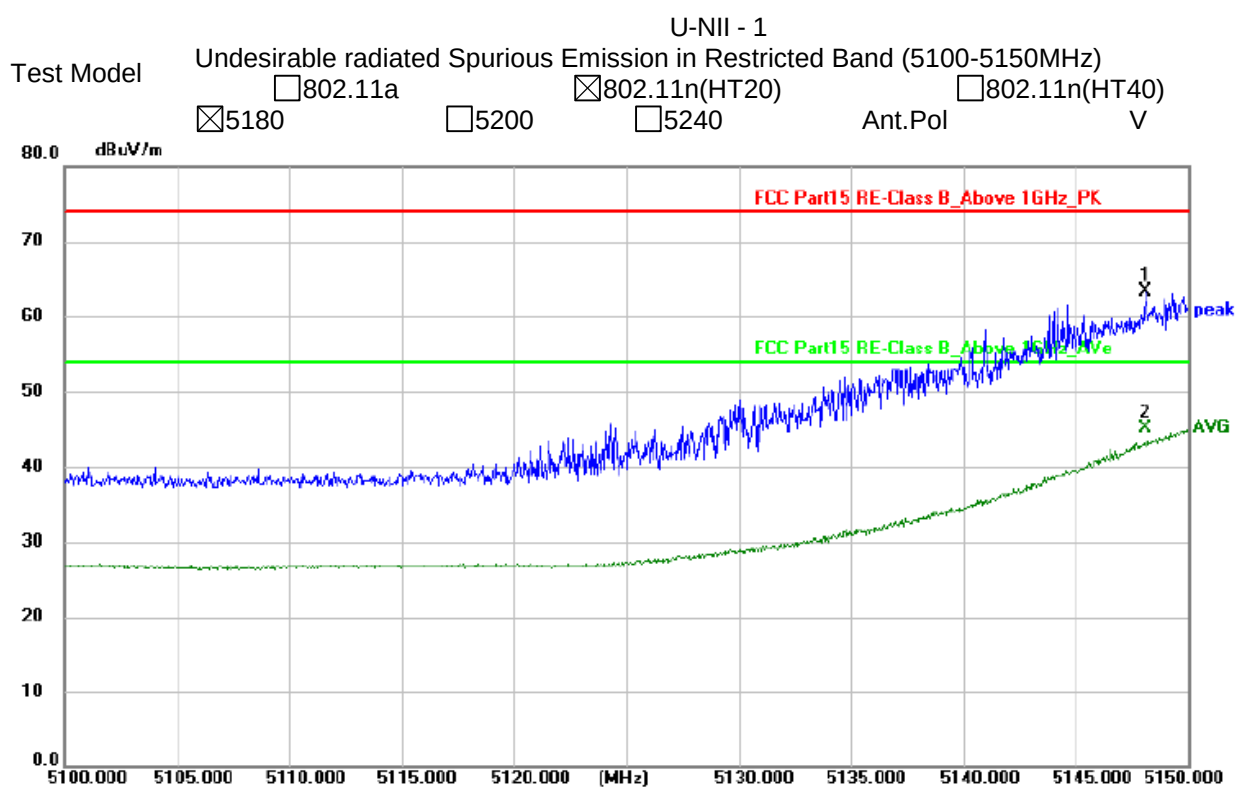
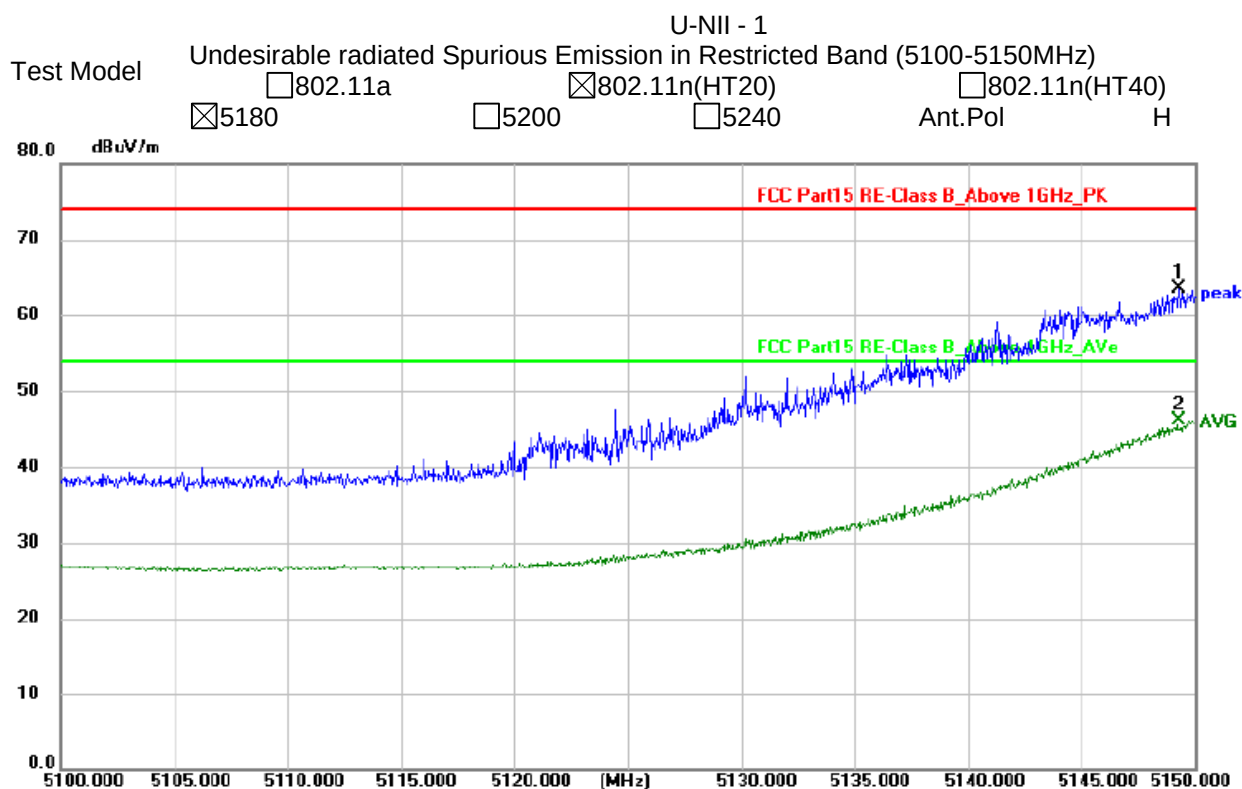
Frequency (MHz)	Polarity	PK(dBuV/m) (VBW=3MHz)	Limit 3m (dBuV/m)	AV(dBuV/m) (VBW=10Hz)	Limit 3m (dBuV/m)
5149.30	H	63.43	74	46.05	54
5148.10	V	63.34	74	45.04	54

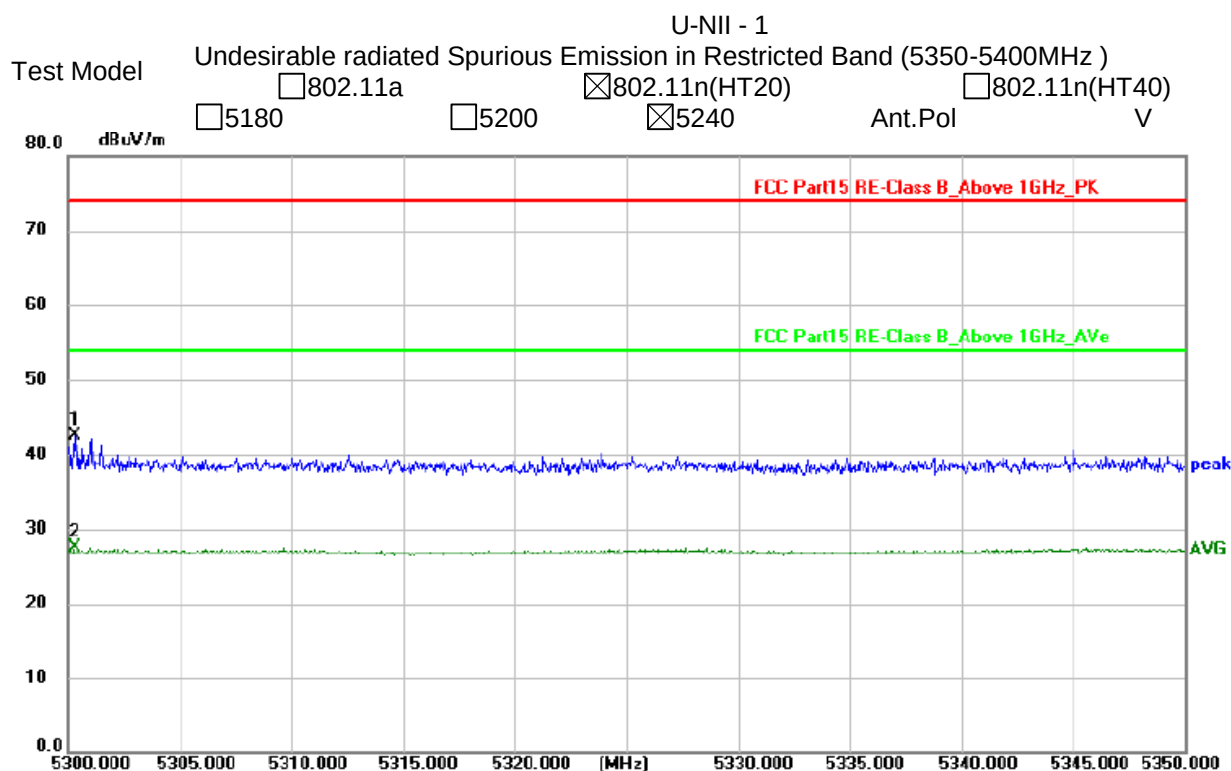
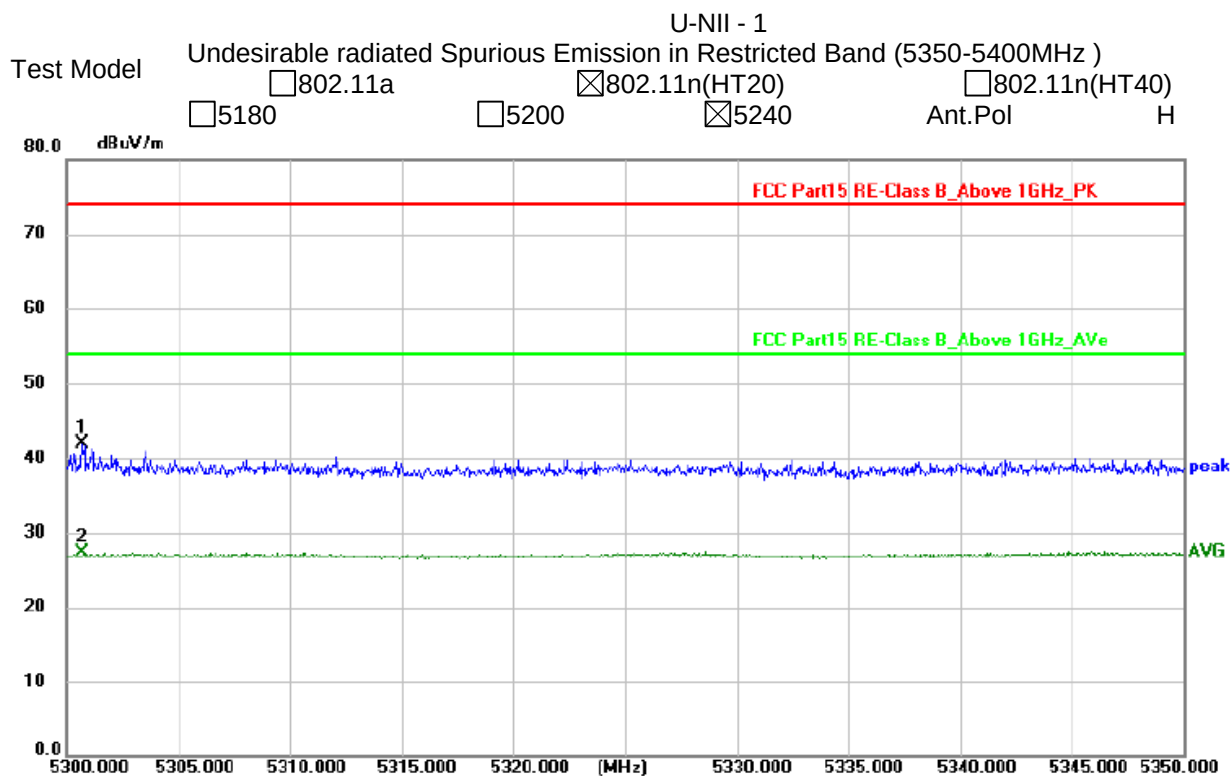
Test mode: 802.11n20 Frequency(MHz): 5240

Frequency (MHz)	Polarity	PK(dBuV/m) (VBW=3MHz)	Limit 3m (dBuV/m)	AV(dBuV/m) (VBW=10Hz)	Limit 3m (dBuV/m)
5300.70	H	41.97	74	27.30	54
5300.30	V	42.45	74	27.48	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	4679.196	70.84	-20.24	50.60	74	-23.40	Pk
Vertical	4679.196	59.27	-20.24	39.03	54	-14.97	AV
Vertical	11490.159	60.65	-8.79	51.86	68.2	-16.34	Pk
Vertical	11490.159	49.68	-8.79	40.89	54	-13.11	AV
Vertical	17235.147	58.88	-3.18	55.70	68.2	-12.50	Pk
Vertical	17235.147	44.01	-3.18	40.83	54	-13.17	AV
Horizontal	4679.155	71.23	-20.73	50.50	74	-23.50	Pk
Horizontal	4679.155	59.80	-20.73	39.07	54	-14.93	AV
Horizontal	11490.101	62.03	-8.79	53.24	68.2	-14.96	Pk
Horizontal	11490.101	49.18	-8.79	40.39	54	-13.61	AV
Horizontal	17235.047	58.19	-3.18	55.01	68.2	-13.19	Pk
Horizontal	17235.047	44.40	-3.18	41.22	54	-12.78	AV
middle Channel (5785 MHz)-Above 1G							
Vertical	4592.023	70.58	-20.42	50.17	74	-23.83	Pk
Vertical	4592.023	59.03	-20.42	38.61	54	-15.39	AV
Vertical	11570.029	63.43	-8.86	54.57	68.2	-13.63	Pk
Vertical	11570.029	49.17	-8.86	40.31	54	-13.69	AV
Vertical	17355.022	55.47	-2.52	52.95	68.2	-15.25	Pk
Vertical	17355.022	44.80	-2.52	42.28	54	-11.72	AV
Horizontal	4592.139	70.37	-20.42	49.96	74	-24.04	Pk
Horizontal	4592.139	59.17	-20.42	38.76	54	-15.24	AV
Horizontal	11570.034	62.45	-8.86	53.59	68.2	-14.61	Pk
Horizontal	11570.034	49.51	-8.86	40.65	54	-13.35	AV
Horizontal	17355.098	56.16	-2.52	53.64	68.2	-14.56	Pk
Horizontal	17355.098	44.49	-2.52	41.97	54	-12.03	AV
High Channel (5825 MHz)-Above 1G							
Vertical	6039.177	73.88	-18.93	54.95	68.2	-13.25	Pk
Vertical	6039.177	59.27	-18.93	40.33	54	-13.67	AV
Vertical	11650.156	63.26	-8.92	54.34	74	-19.66	Pk
Vertical	11650.156	49.73	-8.92	40.81	54	-13.19	AV
Vertical	17475.010	55.40	-1.86	53.54	68.2	-14.66	Pk
Vertical	17475.010	44.50	-1.86	42.64	54	-11.36	AV
Horizontal	6039.041	70.48	-18.93	51.55	68.2	-16.65	Pk
Horizontal	6039.041	59.03	-18.93	40.09	54	-13.91	AV
Horizontal	11650.104	61.54	-8.92	52.62	74	-21.38	Pk
Horizontal	11650.104	49.84	-8.92	40.92	54	-13.08	AV
Horizontal	17475.080	55.08	-1.86	53.22	68.2	-14.98	Pk
Horizontal	17475.080	44.72	-1.86	42.86	54	-11.14	AV

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

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

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

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

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

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	4679.090	73.96	-20.24	53.71	74	-20.29	Pk
Vertical	4679.090	59.52	-20.24	39.27	54	-14.73	AV
Vertical	11490.105	64.14	-8.79	55.35	68.2	-12.85	Pk
Vertical	11490.105	49.89	-8.79	41.10	54	-12.90	AV
Vertical	17235.079	55.14	-3.18	51.96	68.2	-16.24	Pk
Vertical	17235.079	44.72	-3.18	41.54	54	-12.46	AV
Horizontal	4679.126	73.17	-20.24	52.93	74	-21.07	Pk
Horizontal	4679.126	59.15	-20.24	38.90	54	-15.10	AV
Horizontal	11490.063	61.08	-8.79	52.29	68.2	-15.91	Pk
Horizontal	11490.063	49.29	-8.79	40.50	54	-13.50	AV
Horizontal	17235.043	56.07	-3.18	52.89	68.2	-15.31	Pk
Horizontal	17235.043	44.69	-3.18	41.51	54	-12.49	AV
middle Channel (5785 MHz)-Above 1G							
Vertical	4592.066	73.34	-20.42	52.93	74	-21.07	Pk
Vertical	4592.066	59.33	-20.42	38.91	54	-15.09	AV
Vertical	11570.141	61.39	-8.86	52.53	68.2	-15.67	Pk
Vertical	11570.141	49.27	-8.86	40.41	54	-13.59	AV
Vertical	17355.121	57.45	-2.52	54.93	68.2	-13.27	Pk
Vertical	17355.121	44.80	-2.52	42.28	54	-11.72	AV
Horizontal	4592.008	70.04	-20.42	49.62	74	-24.38	Pk
Horizontal	4592.008	59.81	-20.42	39.40	54	-14.60	AV
Horizontal	11570.141	60.78	-8.86	51.92	68.2	-16.28	Pk
Horizontal	11570.141	49.96	-8.86	41.10	54	-12.90	AV
Horizontal	17355.051	57.14	-2.52	54.62	68.2	-13.58	Pk
Horizontal	17355.051	44.23	-2.52	41.71	54	-12.29	AV
High Channel (5825 MHz)-Above 1G							
Vertical	6039.113	71.53	-18.93	52.60	68.2	-15.60	Pk
Vertical	6039.113	59.93	-18.93	41.00	54	-13.00	AV
Vertical	11650.032	64.56	-8.92	55.64	74	-18.36	Pk
Vertical	11650.032	49.27	-8.92	40.35	54	-13.65	AV
Vertical	17475.111	57.63	-1.86	55.77	68.2	-12.43	Pk
Vertical	17475.111	44.66	-1.86	42.80	54	-11.20	AV
Horizontal	6039.164	74.42	-18.93	55.48	68.2	-12.72	Pk
Horizontal	6039.164	59.41	-18.93	40.48	54	-13.52	AV
Horizontal	11650.046	64.13	-8.92	55.21	74	-18.79	Pk
Horizontal	11650.046	49.77	-8.92	40.85	54	-13.15	AV
Horizontal	17475.136	59.42	-1.86	57.56	68.2	-10.64	Pk
Horizontal	17475.136	44.99	-1.86	43.13	54	-10.87	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	4679.113	59.79	-20.24	39.55	54	-14.45	AV
Vertical	11510.199	60.22	-8.81	51.41	74	-22.59	Pk
Vertical	11510.199	49.24	-8.81	40.43	54	-13.57	AV
Vertical	17265.094	59.66	-3.01	56.65	68.2	-11.55	Pk
Vertical	17265.094	44.24	-3.01	41.23	54	-12.77	AV
Horizontal	4679.194	71.56	-20.24	51.32	74	-22.68	Pk
Horizontal	4679.194	59.86	-20.24	39.62	54	-14.38	AV
Horizontal	11510.057	64.46	-8.81	55.65	74	-18.35	Pk
Horizontal	11510.057	49.74	-8.81	40.93	54	-13.07	AV
Horizontal	17265.077	55.54	-3.01	52.53	68.2	-15.67	Pk
Horizontal	17265.077	44.94	-3.01	41.93	54	-12.07	AV
Vertical	4679.113	59.79	-20.24	39.55	54	-14.45	AV
middle Channel (5795 MHz)-Above 1G							
Vertical	6039.123	73.38	-18.93	54.45	68.2	-13.75	Pk
Vertical	6039.123	59.93	-18.93	40.99	54	-13.01	AV
Vertical	11590.113	60.05	-8.87	51.18	74	-22.82	Pk
Vertical	11590.113	49.13	-8.87	40.26	54	-13.74	AV
Vertical	17385.009	55.09	-2.35	52.74	68.2	-15.46	Pk
Vertical	17385.009	44.27	-2.35	41.92	54	-12.08	AV
Horizontal	6039.155	71.92	-18.93	52.99	68.2	-15.21	Pk
Horizontal	6039.155	59.94	-18.93	41.01	54	-12.99	AV
Horizontal	11590.184	63.86	-8.87	54.99	74	-19.01	Pk
Horizontal	11590.184	49.25	-8.87	40.38	54	-13.62	AV
Horizontal	17385.147	56.94	-2.35	54.59	68.2	-13.61	Pk
Horizontal	17385.147	44.26	-2.35	41.91	54	-12.09	AV

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

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

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

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

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	4679.191	71.54	-20.24	51.30	74	-22.70	Pk
Vertical	4679.191	59.07	-20.24	38.83	54	-15.17	AV
Vertical	11490.076	60.64	-8.79	51.85	68.2	-16.35	Pk
Vertical	11490.076	49.66	-8.79	40.87	54	-13.13	AV
Vertical	17235.133	57.54	-3.18	54.36	68.2	-13.84	Pk
Vertical	17235.133	44.06	-3.18	40.88	54	-13.12	AV
Horizontal	4679.176	74.10	-20.24	53.86	74	-20.14	Pk
Horizontal	4679.176	59.10	-20.24	38.86	54	-15.14	AV
Horizontal	11490.110	64.76	-8.79	55.97	68.2	-12.23	Pk
Horizontal	11490.110	49.84	-8.79	41.05	54	-12.95	AV
Horizontal	17235.027	59.71	-3.18	56.53	68.2	-11.67	Pk
Horizontal	17235.027	44.13	-3.18	40.95	54	-13.05	AV
middle Channel (5785 MHz)-Above 1G							
Vertical	4592.162	74.64	-20.42	54.22	74	-19.78	Pk
Vertical	4592.162	59.39	-20.42	38.98	54	-15.02	AV
Vertical	11570.142	64.56	-8.86	55.70	68.2	-12.50	Pk
Vertical	11570.142	49.32	-8.86	40.46	54	-13.54	AV
Vertical	17355.063	55.08	-2.52	52.56	68.2	-15.64	Pk
Vertical	17355.063	44.74	-2.52	42.22	54	-11.78	AV
Horizontal	4592.047	71.09	-20.42	50.67	74	-23.33	Pk
Horizontal	4592.047	59.24	-20.42	38.83	54	-15.17	AV
Horizontal	11570.181	64.79	-8.86	55.93	68.2	-12.27	Pk
Horizontal	11570.181	49.77	-8.86	40.91	54	-13.09	AV
Horizontal	17355.130	56.72	-2.52	54.20	68.2	-14.00	Pk
Horizontal	17355.130	44.67	-2.52	42.15	54	-11.85	AV
High Channel (5825 MHz)-Above 1G							
Vertical	6039.016	71.66	-18.93	52.73	68.2	-15.47	Pk
Vertical	6039.016	59.82	-18.93	40.89	54	-13.11	AV
Vertical	11650.178	63.00	-8.92	54.08	74	-19.92	Pk
Vertical	11650.178	49.40	-8.92	40.48	54	-13.52	AV
Vertical	17475.149	59.14	-1.86	57.28	68.2	-10.92	Pk
Vertical	17475.149	44.14	-1.86	42.28	54	-11.72	AV
Horizontal	6039.053	72.37	-18.93	53.44	68.2	-14.76	Pk
Horizontal	6039.053	59.67	-18.93	40.73	54	-13.27	AV
Horizontal	11650.134	62.92	-8.92	54.00	74	-20.00	Pk
Horizontal	11650.134	49.86	-8.92	40.94	54	-13.06	AV
Horizontal	17475.190	56.45	-1.86	54.59	68.2	-13.61	Pk
Horizontal	17475.190	44.73	-1.86	42.87	54	-11.13	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	4679.191	71.98	-20.24	51.74	74	-22.26	Pk
Vertical	4679.191	59.61	-20.24	39.37	54	-14.63	AV
Vertical	11510.020	64.76	-8.81	55.95	74	-18.05	Pk
Vertical	11510.020	49.97	-8.81	41.16	54	-12.84	AV
Vertical	17265.141	59.29	-3.01	56.28	68.2	-11.92	Pk
Vertical	17265.141	44.33	-3.01	41.32	54	-12.68	AV
Horizontal	4679.068	70.67	-20.24	50.43	74	-23.57	Pk
Horizontal	4679.068	59.35	-20.24	39.11	54	-14.89	AV
Horizontal	11510.010	63.99	-8.81	55.18	74	-18.82	Pk
Horizontal	11510.010	49.26	-8.81	40.45	54	-13.55	AV
Horizontal	17265.163	56.52	-3.01	53.51	68.2	-14.69	Pk
Horizontal	17265.163	44.19	-3.01	41.18	54	-12.82	AV
middle Channel (5795 MHz)-Above 1G							
Vertical	6039.102	73.45	-18.93	54.52	68.2	-13.68	Pk
Vertical	6039.102	59.17	-18.93	40.24	54	-13.76	AV
Vertical	11590.055	61.98	-8.87	53.11	74	-20.89	Pk
Vertical	11590.055	49.40	-8.87	40.53	54	-13.47	AV
Vertical	17385.074	57.17	-2.35	54.82	68.2	-13.38	Pk
Vertical	17385.074	44.04	-2.35	41.69	54	-12.31	AV
Horizontal	6039.198	70.06	-18.93	51.13	68.2	-17.07	Pk
Horizontal	6039.198	59.84	-18.93	40.90	54	-13.10	AV
Horizontal	11590.157	61.51	-8.87	52.64	74	-21.36	Pk
Horizontal	11590.157	49.20	-8.87	40.33	54	-13.67	AV
Horizontal	17385.159	57.53	-2.35	55.18	68.2	-13.02	Pk
Horizontal	17385.159	44.42	-2.35	42.07	54	-11.93	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) - 802.11ac-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	4679.004	73.69	-20.24	53.44	74	-20.56	Pk
Vertical	4679.004	59.08	-20.24	38.84	54	-15.16	AV
Vertical	11550.033	62.65	-8.84	53.81	74	-20.19	Pk
Vertical	11550.033	50.00	-8.84	41.16	54	-12.84	AV
Vertical	17325.024	55.70	-2.68	53.02	68.2	-15.18	Pk
Vertical	17325.024	44.94	-2.68	42.26	54	-11.74	AV
Horizontal	4679.131	73.07	-20.24	52.82	74	-21.18	Pk
Horizontal	4679.131	59.33	-20.24	39.09	54	-14.91	AV
Horizontal	11550.154	61.15	-8.84	52.31	74	-21.69	Pk
Horizontal	11550.154	49.59	-8.84	40.75	54	-13.25	AV
Horizontal	17325.148	59.70	-2.68	57.02	68.2	-11.18	Pk
Horizontal	17325.148	44.51	-2.68	41.83	54	-12.17	AV

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

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

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

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

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

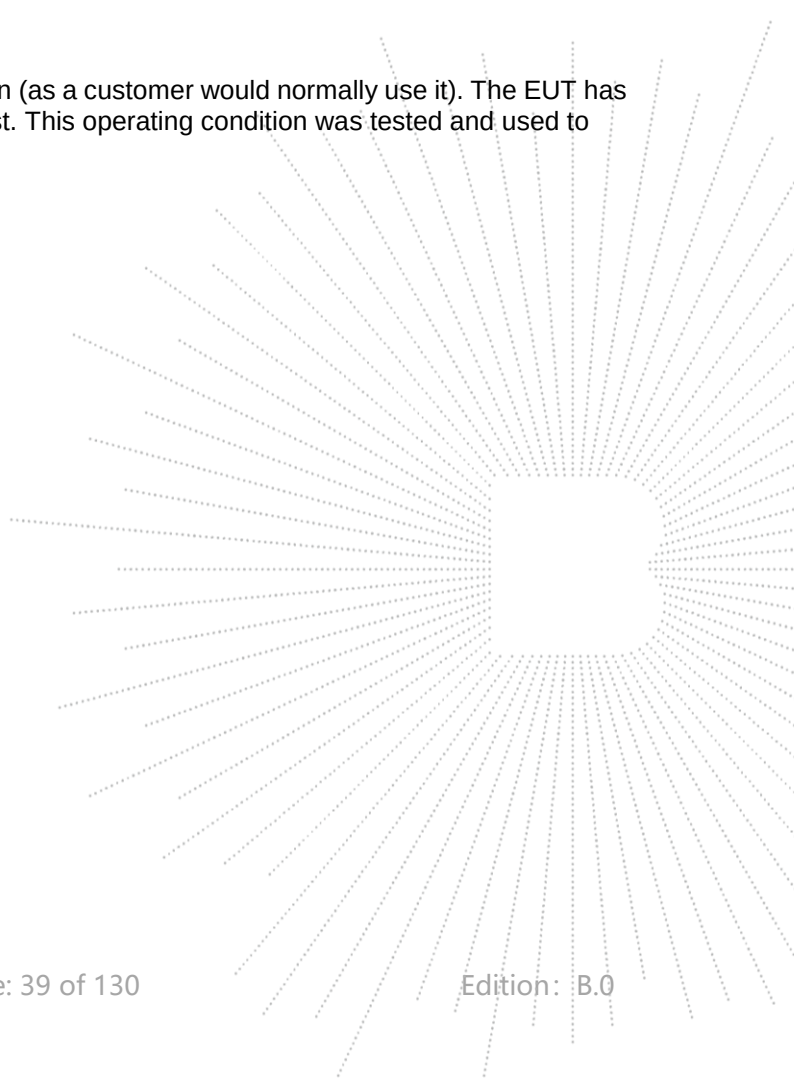
For devices operating in the bands 5.15-5.25 GHz, 5.25-5.35 GHz, and 5.47-5.725 GHz, the above procedures make use of 1 MHz RBW to satisfy directly the 1 MHz reference bandwidth specified in § 15.407(a)(5). For devices operating in the band 5.725-5.85 GHz, the rules specify a measurement bandwidth of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

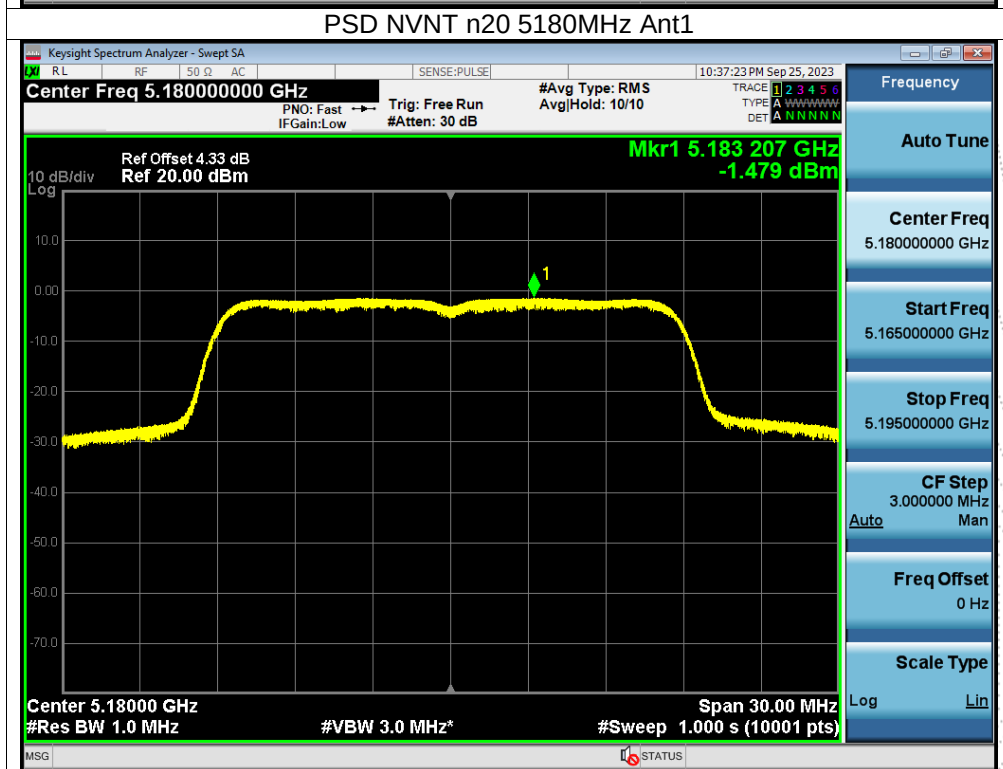
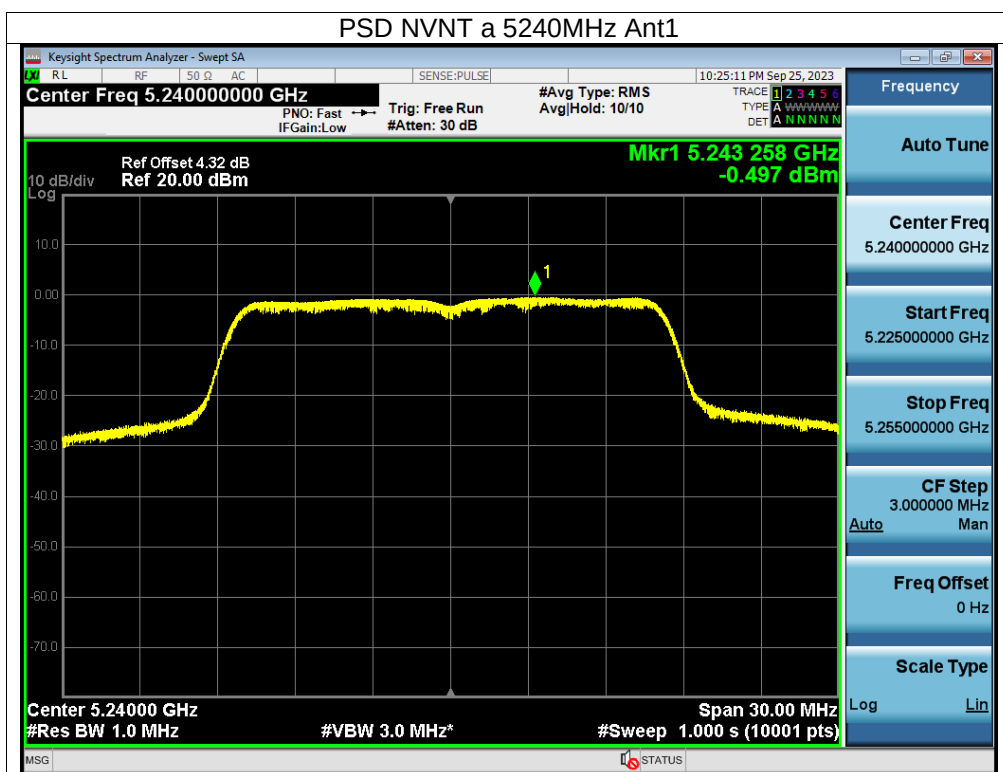


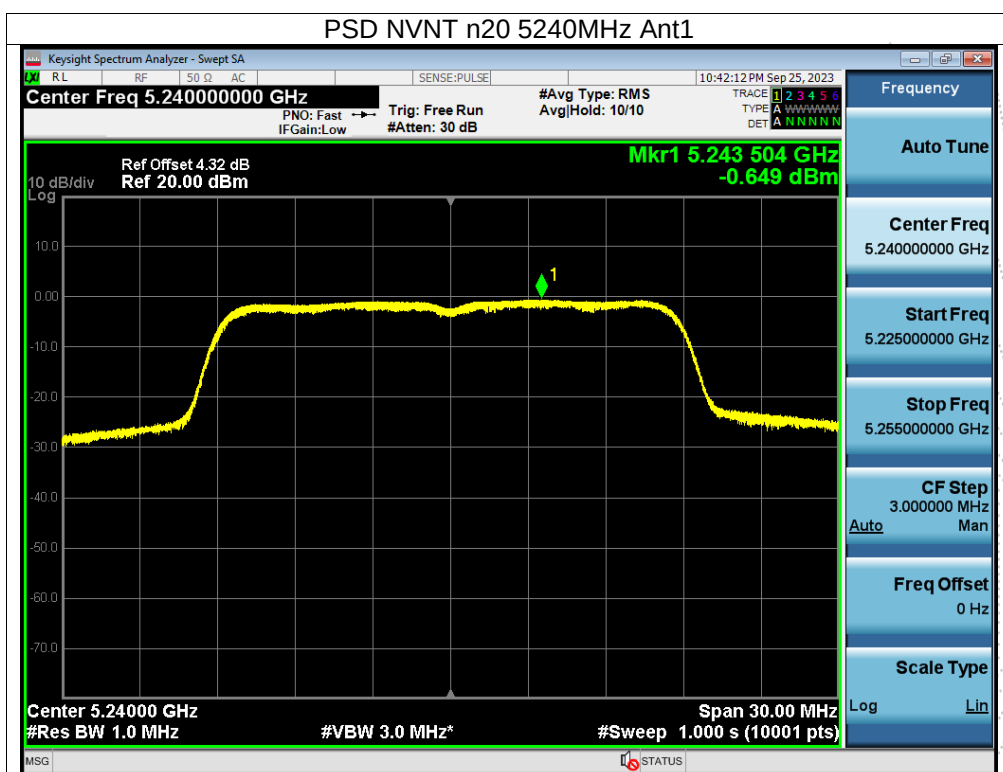
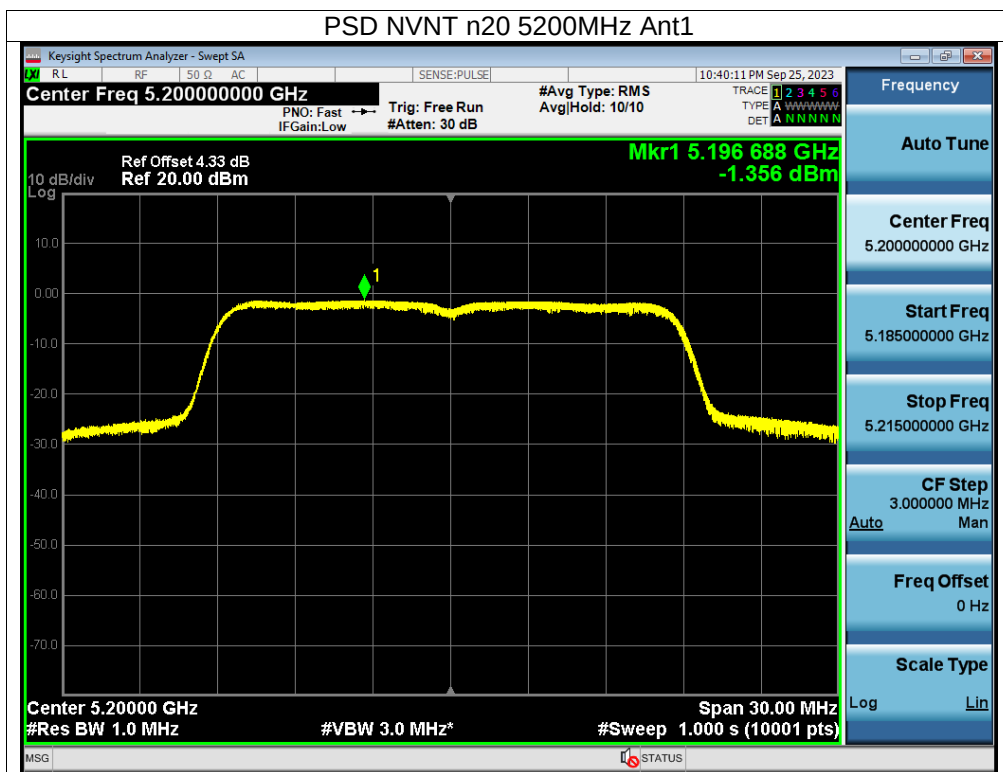
8.5 Test Result

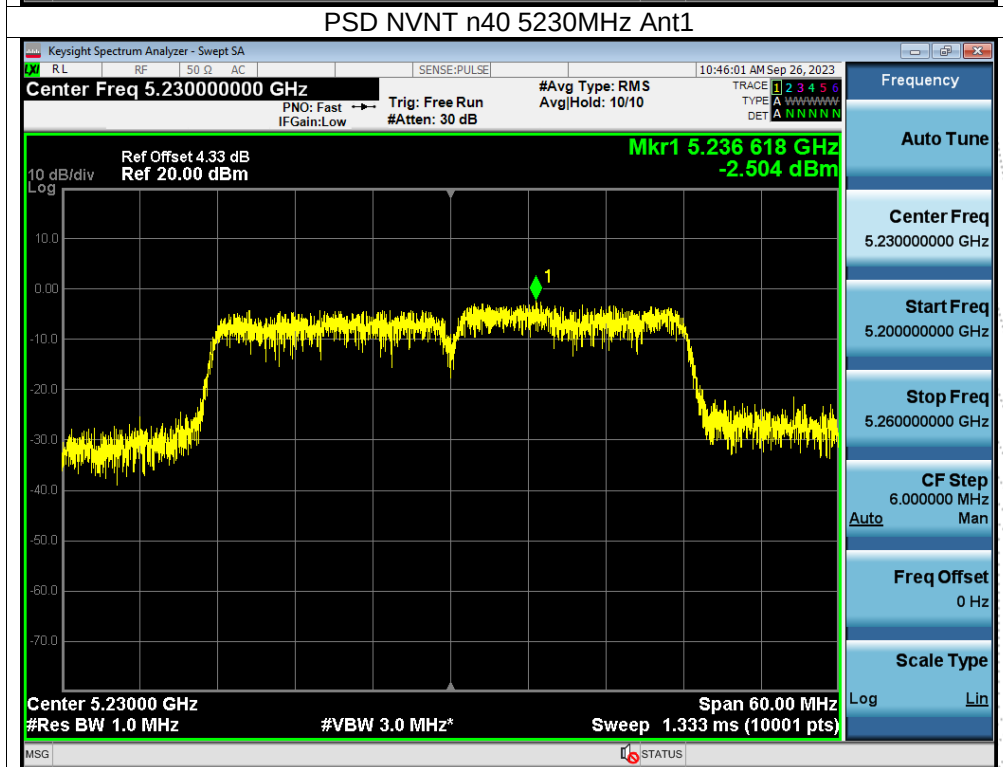
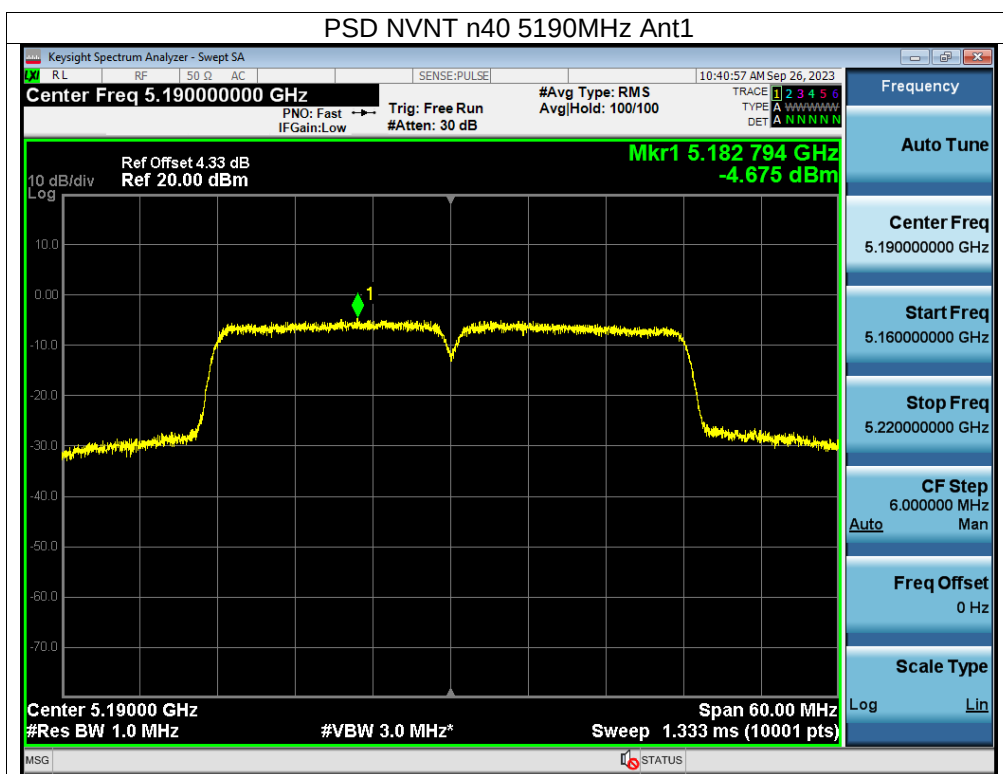
Temperature:	26 °C	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage:	DC 3.8V
Test Mode:	(5180-5240MHz)		

Condition	Mode	Frequency (MHz)	Conducted PSD (dBm/MHz)	Limit (dBm/MHz)	Verdict
NVNT	a	5180	-1.07	11	Pass
NVNT	a	5200	-1.06	11	Pass
NVNT	a	5240	-0.5	11	Pass
NVNT	n20	5180	-1.48	11	Pass
NVNT	n20	5200	-1.36	11	Pass
NVNT	n20	5240	-0.65	11	Pass
NVNT	n40	5190	-4.68	11	Pass
NVNT	n40	5230	-2.5	11	Pass
NVNT	ac20	5180	-2.3	11	Pass
NVNT	ac20	5200	-2.33	11	Pass
NVNT	ac20	5240	-1.29	11	Pass
NVNT	ac40	5190	-4.8	11	Pass
NVNT	ac40	5230	-4.77	11	Pass
NVNT	ac80	5210	-9.32	11	Pass

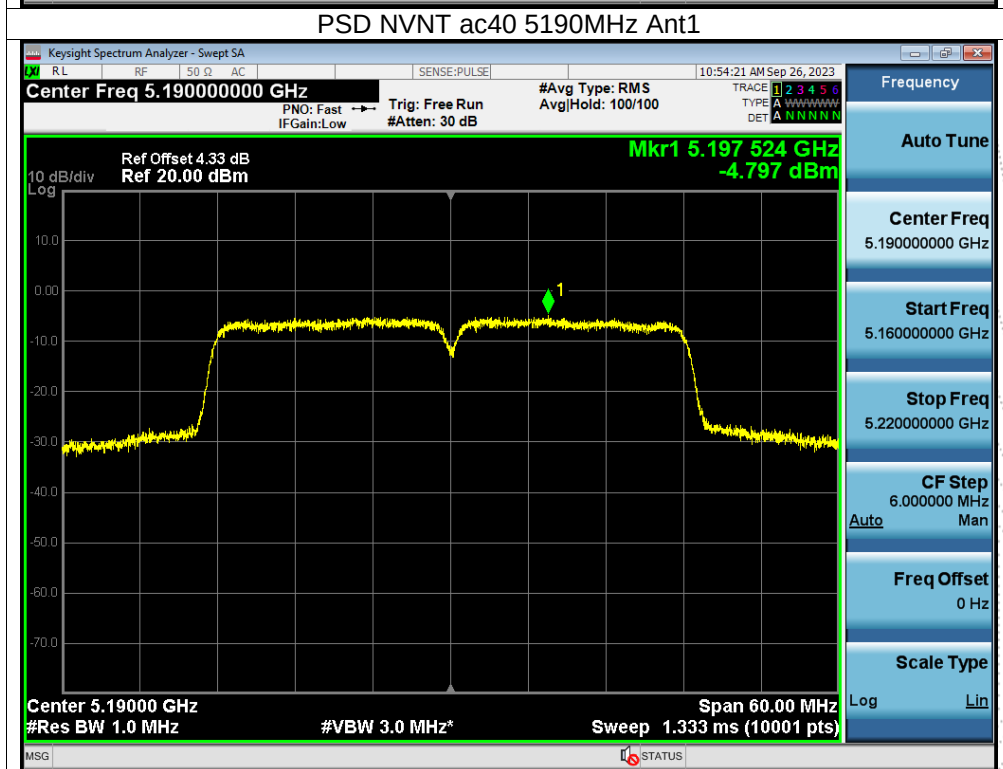
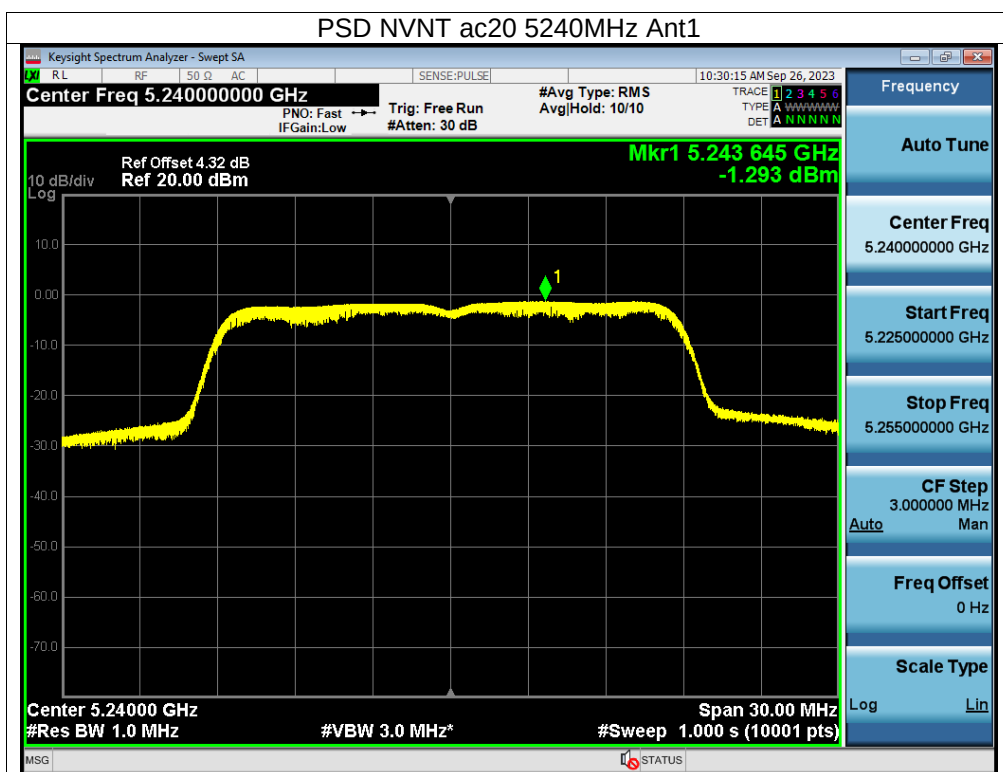


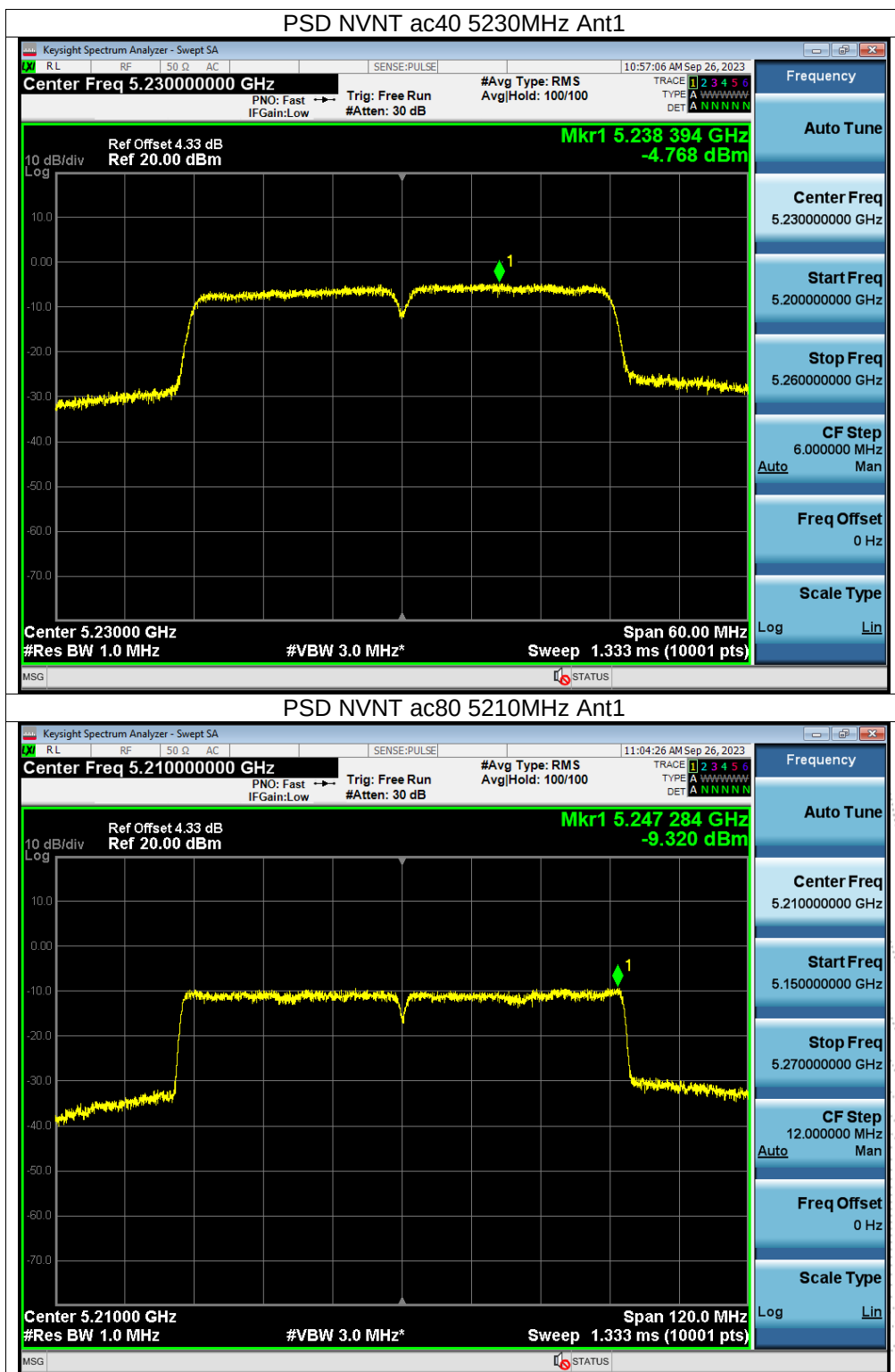






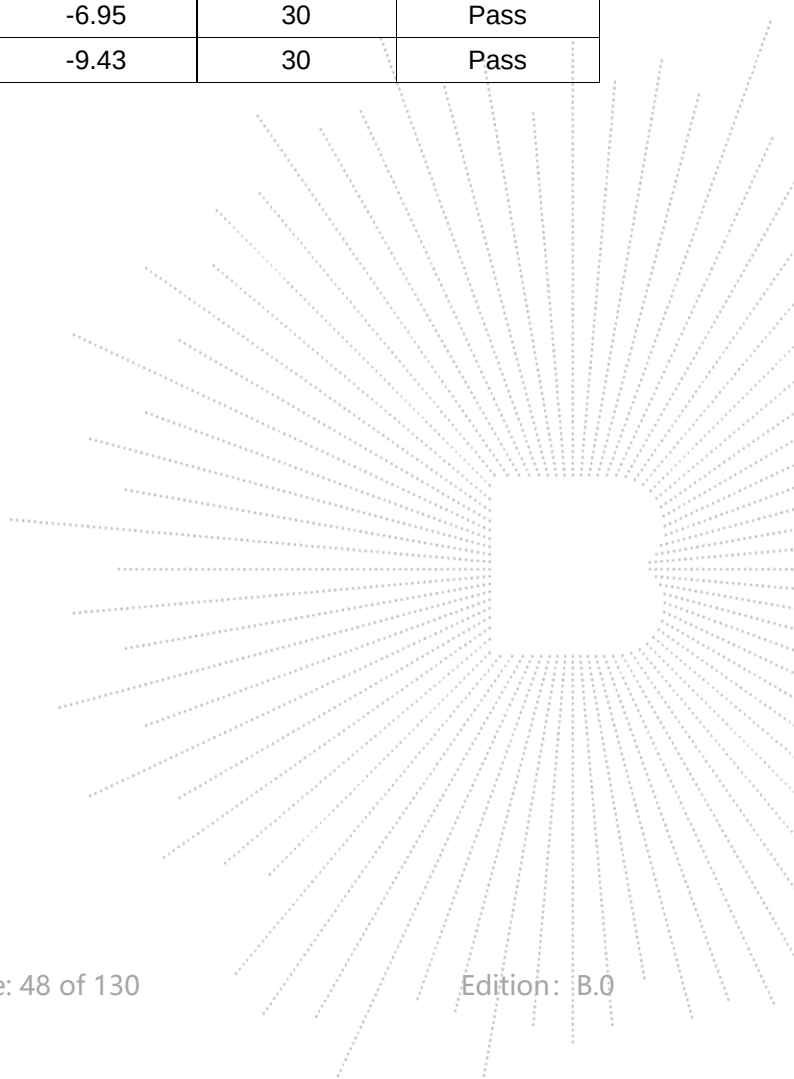


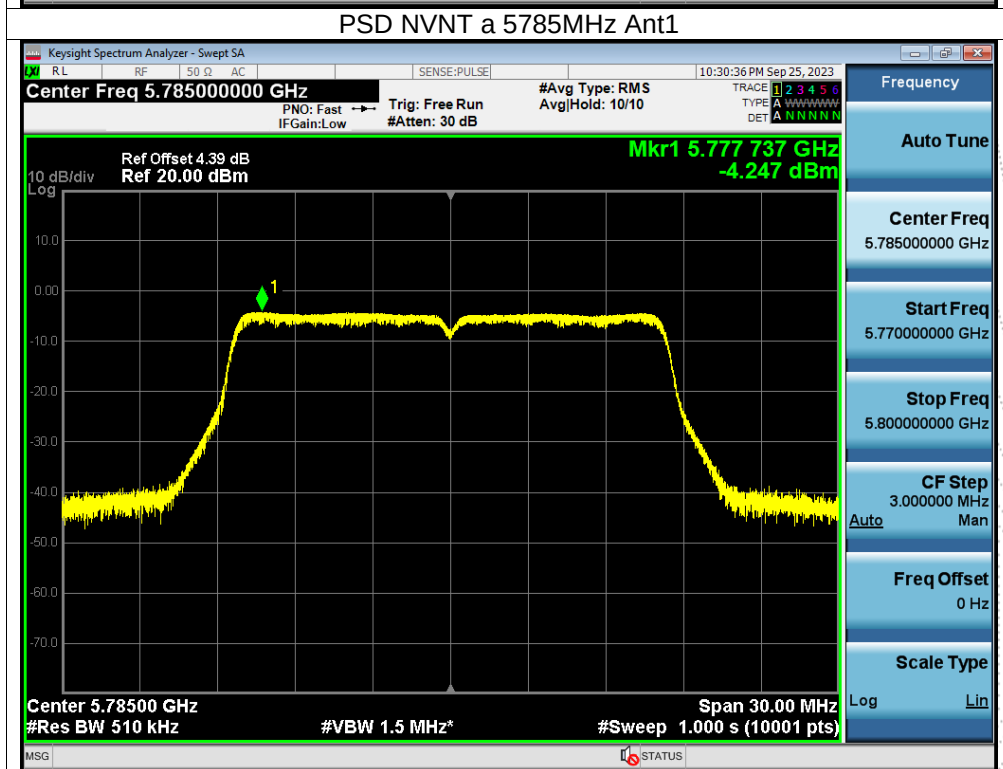
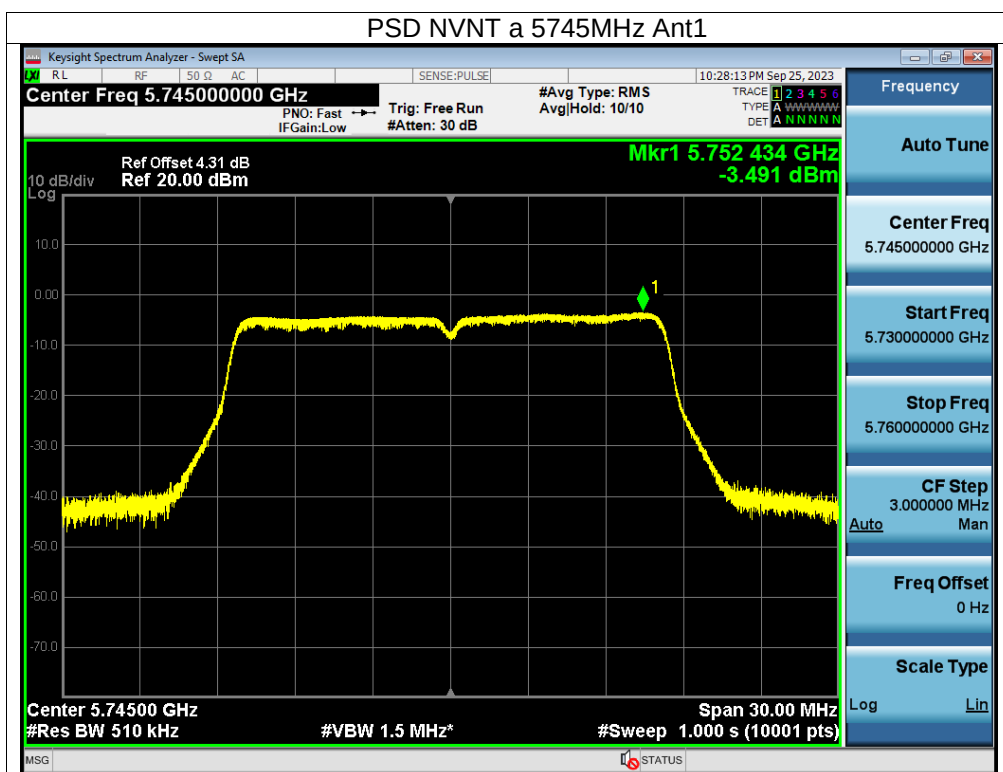




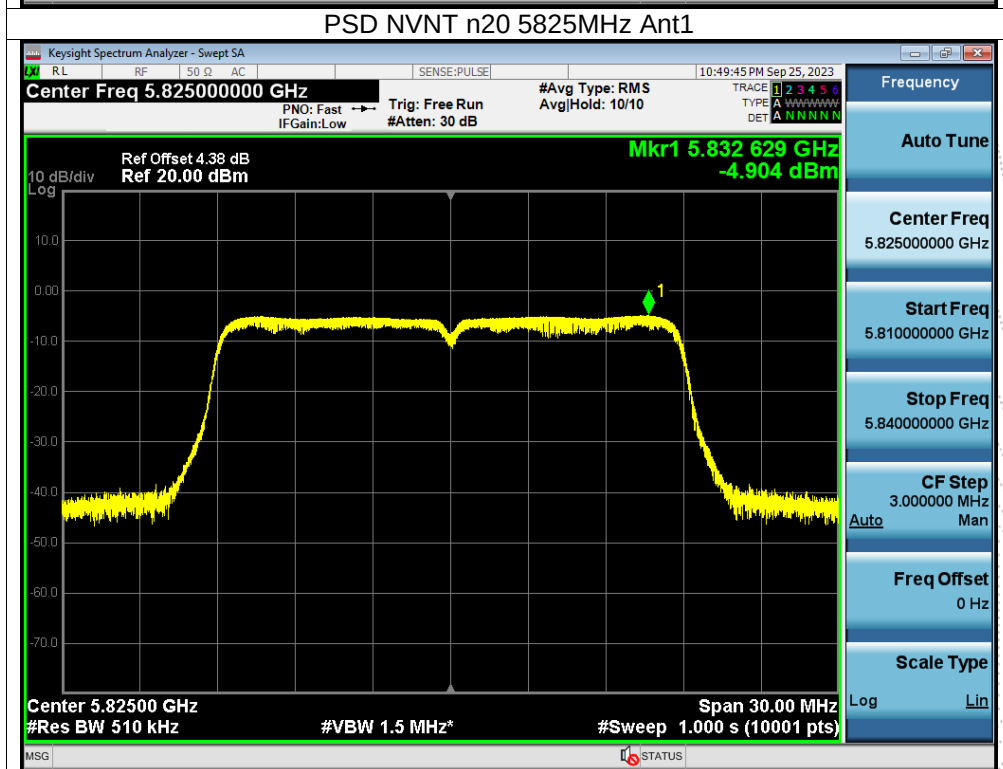
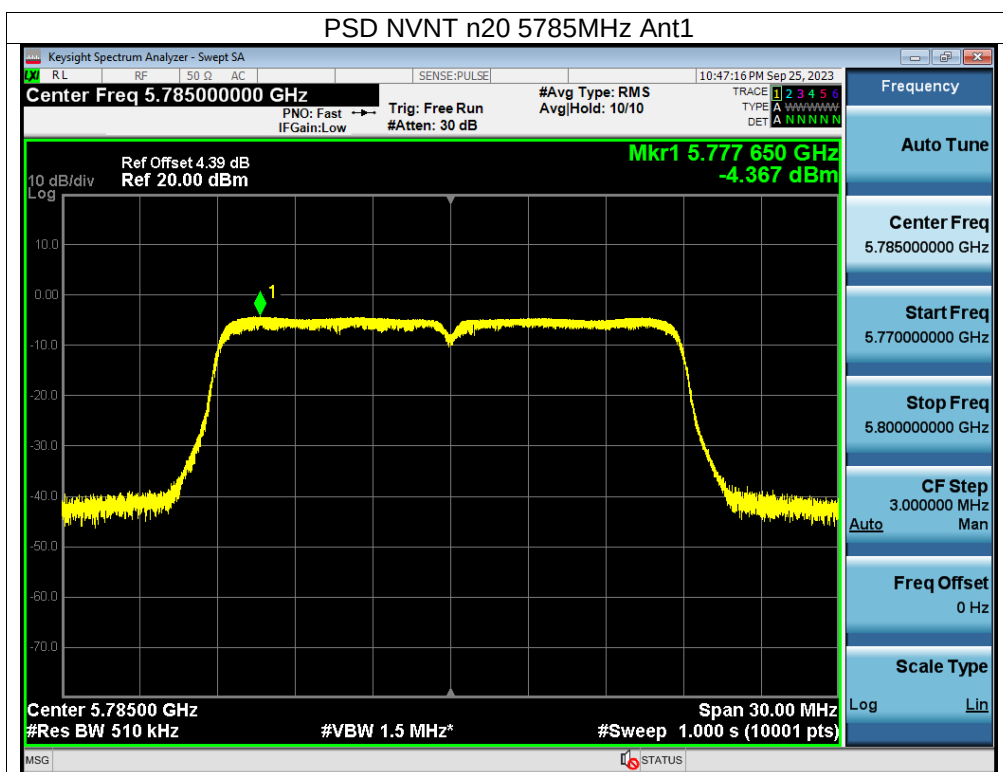
Temperature:	26 °C	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage:	DC 3.8V
Test Mode:	(5745-5825MHz)		

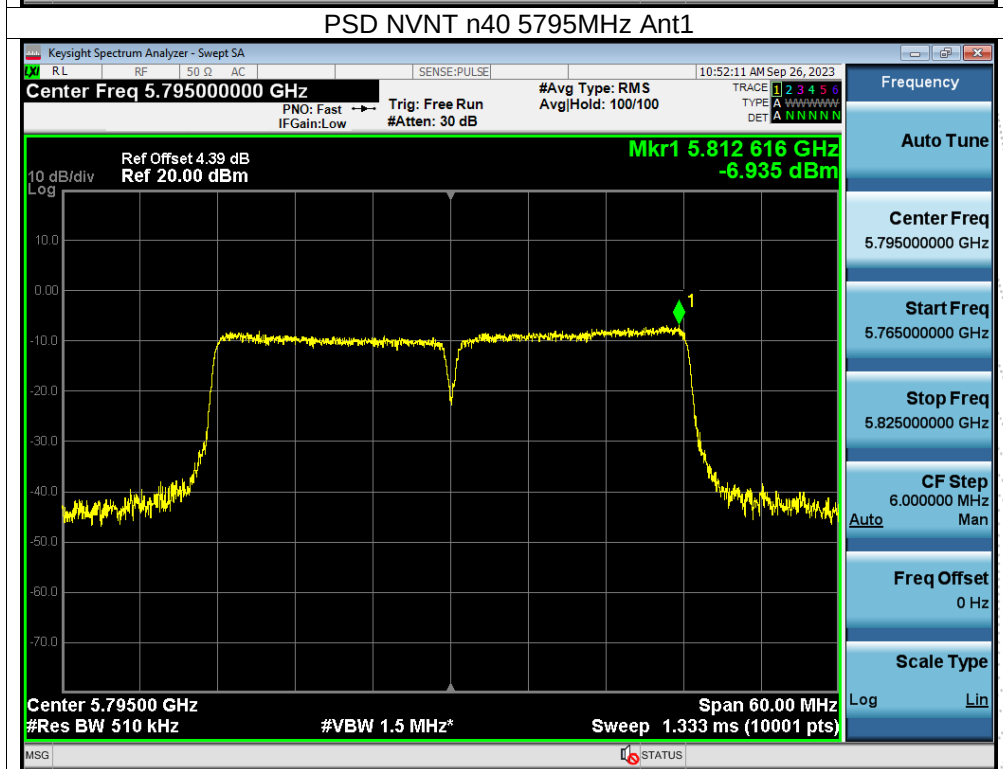
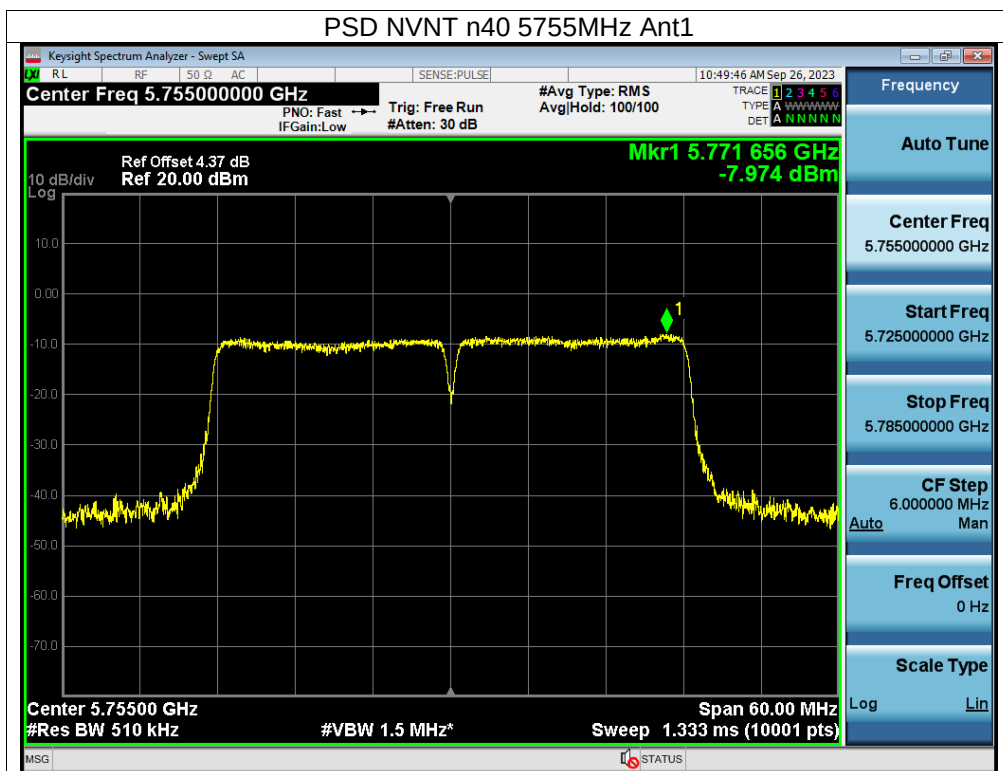
Condition	Mode	Frequency (MHz)	Conducted PSD (dBm/MHz)	Limit (dBm/MHz)	Verdict
NVNT	a	5745	-3.49	30	Pass
NVNT	a	5785	-4.25	30	Pass
NVNT	a	5825	-4.72	30	Pass
NVNT	n20	5745	-3.6	30	Pass
NVNT	n20	5785	-4.37	30	Pass
NVNT	n20	5825	-4.9	30	Pass
NVNT	n40	5755	-7.97	30	Pass
NVNT	n40	5795	-6.94	30	Pass
NVNT	ac20	5745	-3.7	30	Pass
NVNT	ac20	5785	-4.9	30	Pass
NVNT	ac20	5825	-4.76	30	Pass
NVNT	ac40	5755	-6.39	30	Pass
NVNT	ac40	5795	-6.95	30	Pass
NVNT	ac80	5775	-9.43	30	Pass

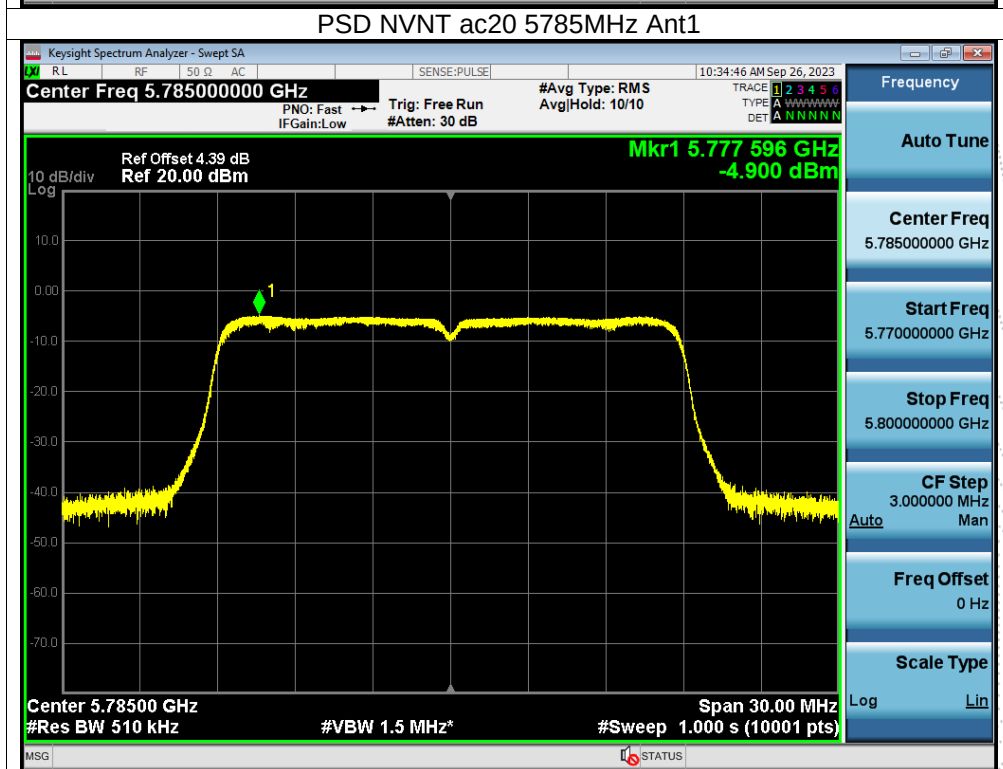
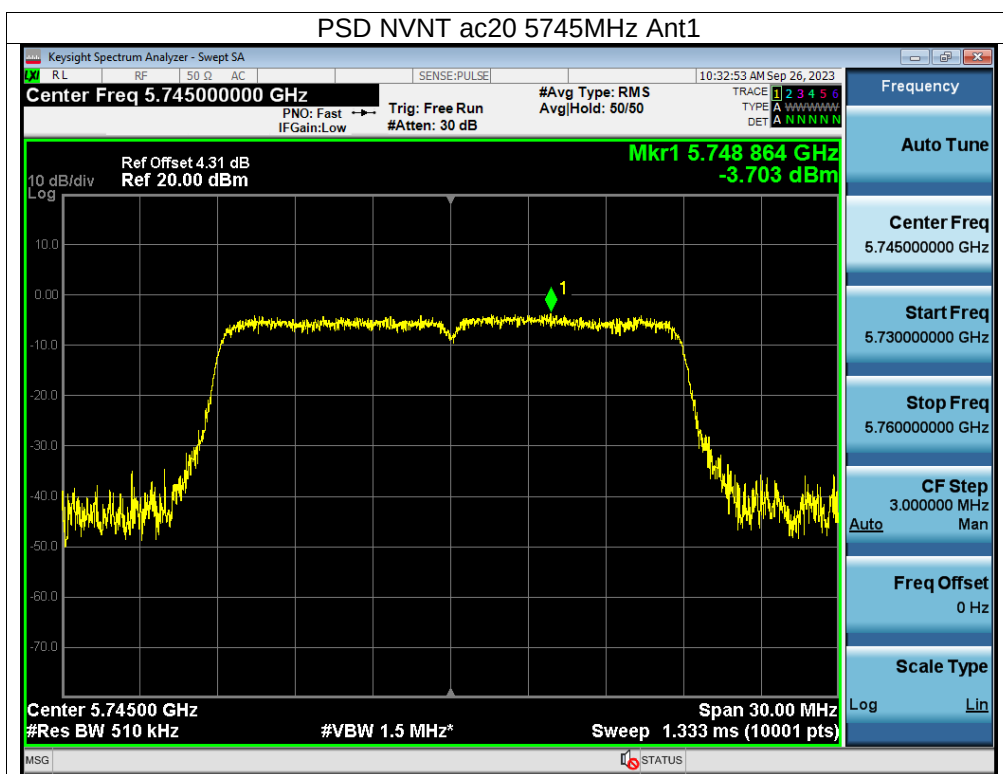




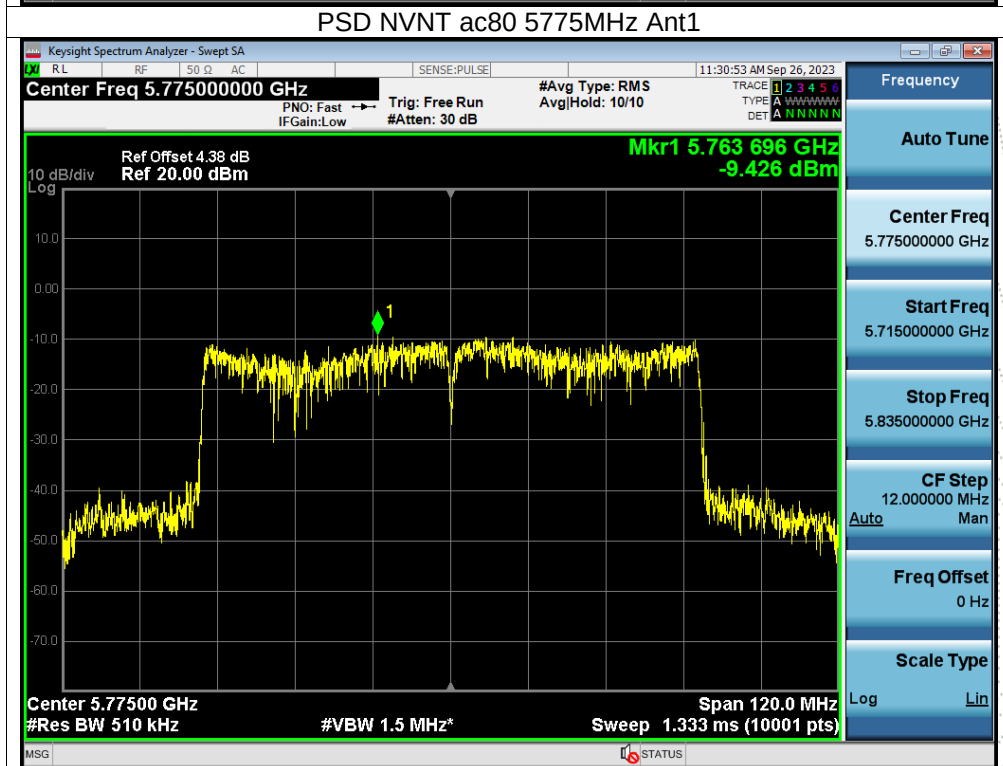
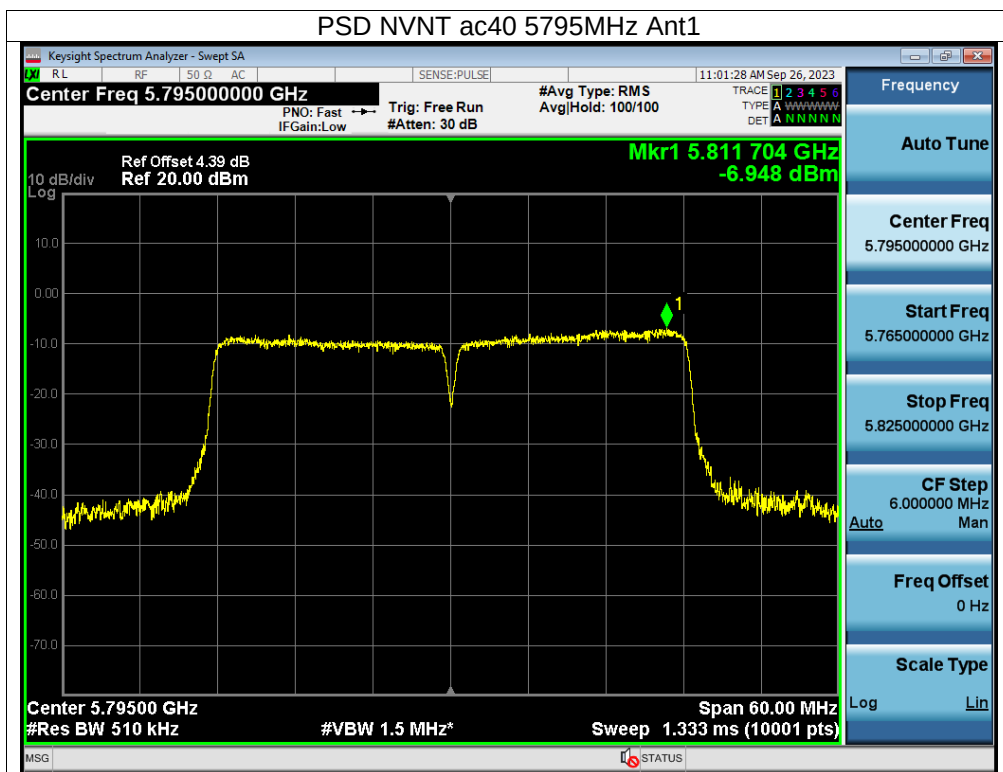






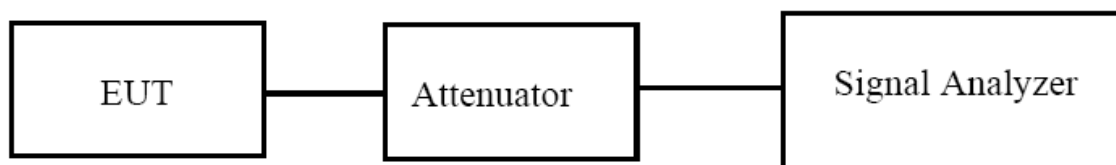






9. 26dB & 6dB & 99% Emission Bandwidth

9.1 Block Diagram Of Test Setup



9.2 Limit

The maximum power spectral density is measured as a conducted emission by direct connection of a calibrated test instrument to the equipment under test. If the device cannot be connected directly, alternative techniques acceptable to the Commission may be used. Measurements in the 5.725-5.85 GHz band are made over a reference bandwidth of 500 kHz or the 26 dB emission bandwidth of the device, whichever is less. Measurements in the 5.15-5.25 GHz, 5.25-5.35 GHz, and the 5.47-5.725 GHz bands are made over a bandwidth of 1 MHz or the 26 dB emission bandwidth of the device, whichever is less. A narrower resolution bandwidth can be used, provided that the measured power is integrated over the full reference bandwidth.

9.3 Test Procedure

- Set RBW = approximately 1% of the emission bandwidth.
- Set the VBW > RBW.
- Detector = Peak.
- Trace mode = max hold.
- 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:

- Set center frequency to the nominal EUT channel center frequency.
- Set span = 1.5 times to 5.0 times the OBW.
- Set RBW = 1 % to 5 % of the OBW
- Set VBW $\geq 3 \cdot$ RBW
- 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.
- Use the 99 % power bandwidth function of the instrument (if available).
- 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 3.8V
Test Mode:	(5180-5240MHz)		

Condition	Mode	Frequency (MHz)	-26 dB Bandwidth (MHz)	Verdict
NVNT	a	5180	27.314	Pass
NVNT	a	5200	28.748	Pass
NVNT	a	5240	28.826	Pass
NVNT	n20	5180	26.724	Pass
NVNT	n20	5200	29.689	Pass
NVNT	n20	5240	29.331	Pass
NVNT	n40	5190	50.271	Pass
NVNT	n40	5230	50.476	Pass
NVNT	ac20	5180	28.3	Pass
NVNT	ac20	5200	29.134	Pass
NVNT	ac20	5240	29.721	Pass
NVNT	ac40	5190	51.151	Pass
NVNT	ac40	5230	42.61	Pass
NVNT	ac80	5210	83.312	Pass

Condition	Mode	Frequency (MHz)	99% OBW (MHz)
NVNT	a	5180	16.766
NVNT	a	5200	16.933
NVNT	a	5240	16.877
NVNT	n20	5180	17.746
NVNT	n20	5200	17.803
NVNT	n20	5240	17.835
NVNT	n40	5190	36.457
NVNT	n40	5230	36.848
NVNT	ac20	5180	17.734
NVNT	ac20	5200	17.864
NVNT	ac20	5240	17.872
NVNT	ac40	5190	36.534
NVNT	ac40	5230	36.85
NVNT	ac80	5210	76.144

