

TEST REPORT

Report No.: BCTC2202997306-2E

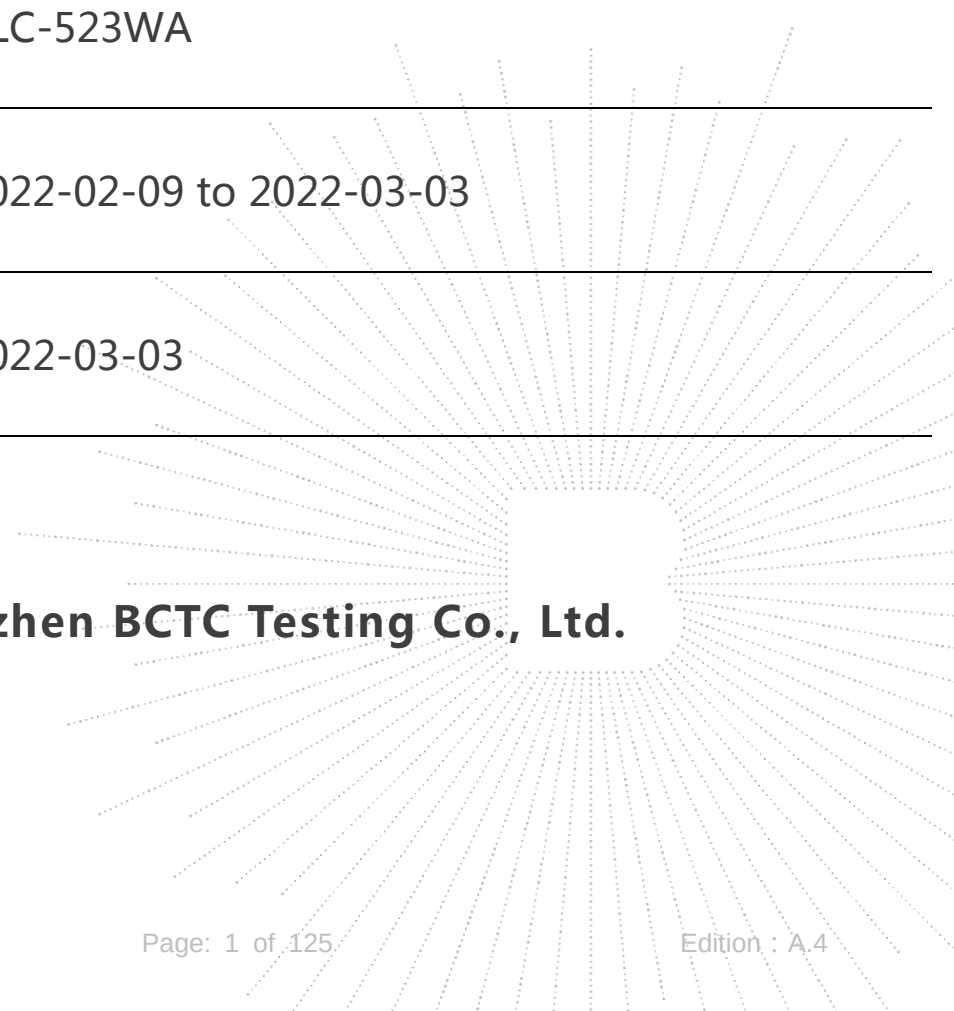
Applicant: REOLINK INNOVATION LIMITED

Product Name: WiFi IP Camera

Model/Type
reference: RLC-523WA

Tested Date: 2022-02-09 to 2022-03-03

Issued Date: 2022-03-03



Shenzhen BCTC Testing Co., Ltd.

FCC ID: 2AYHE-2201F

Product Name: WiFi IP Camera

Trademark: Reolink

Model/Type reference: RLC-523WA

Prepared For: REOLINK INNOVATION LIMITED

Address: FLAT/RM 705 7/F FA YUEN COMMERCIAL BUILDING 75-77 FA YUEN STREET
MONG KOK KL HONG KONG

Manufacturer: REOLINK INNOVATION LIMITED

Address: FLAT/RM 705 7/F FA YUEN COMMERCIAL BUILDING 75-77 FA YUEN STREET
MONG KOK KL HONG KONG

Factory: Shenzhen Reolink Technology Co., Ltd.

Address: 2-4th Floor, Building 2, Yuanling Industrial Park, ShangWu, Shiyan Street, Bao'an District, Shenzhen, 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: 2022-02-09

Sample tested Date: 2022-02-09 to 2022-03-03

Issue Date: 2022-03-03

Report No.: BCTC2202997306-2E

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

Test Results: PASS

Remark: This is WIFI-5GHz band radio test report.

Tested by:

/Project Handler

Approved by:

/Reviewer

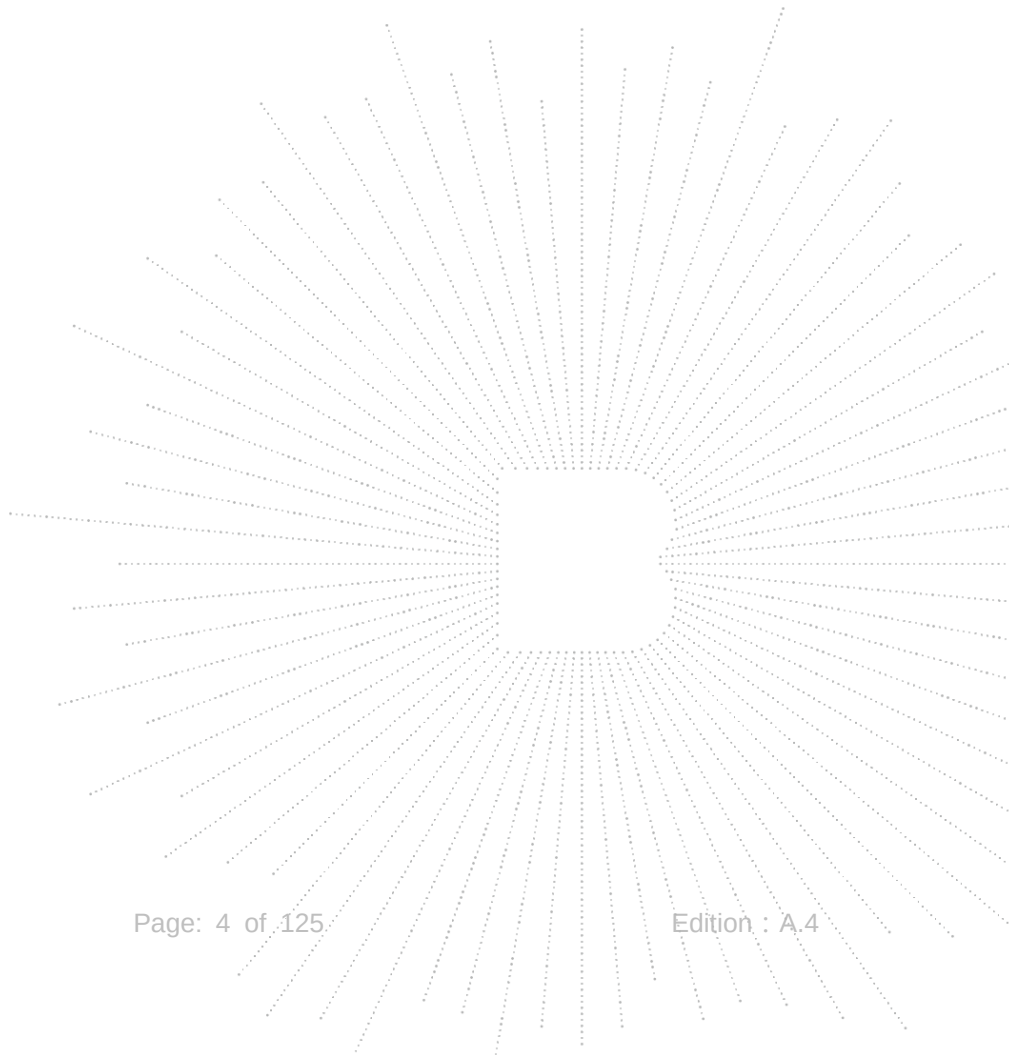
The test report is effective only with both signature and specialized stamp. This result(s) shown in this report refer only to the sample(s) tested. Without written approval of Shenzhen BCTC Testing Co., Ltd, this report can't be reproduced except in full. The tested sample(s) and the sample information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

Table Of Content

Test Report Declaration	Page
1. Version	5
2. Test Summary	6
3. Measurement Uncertainty	7
4. Product Information And Test Setup	8
4.1 Product Information	8
4.2 Test Setup Configuration	9
4.3 Support Equipment	9
4.4 Channel List	10
4.5 Test Mode	11
4.6 Table Of Parameters Of Text Software Setting	11
4.7 Antenna	11
5. Test Facility And Test Instrument Used	12
5.1 Test Facility	12
5.2 Test Instrument Used	12
6. Conducted Emissions	14
6.1 Block Diagram Of Test Setup	14
6.2 Limit	14
6.3 Test procedure	14
6.4 EUT operating Conditions	14
6.5 Test Result	15
7. Radiated Emissions	17
7.1 Block Diagram Of Test Setup	17
7.2 Limit	18
7.3 Test procedure	19
7.4 EUT operating Conditions	20
7.5 Test Result	20
8. Power Spectral Density Test	35
8.1 Block Diagram Of Test Setup	35
8.2 Limit	35
8.3 Test procedure	36
8.4 EUT operating Conditions	36
8.5 Test Result	37
9. 26dB & 6dB & 99% Emission Bandwidth	52
9.1 Block Diagram Of Test Setup	52
9.2 Limit	52
9.3 Test procedure	52
9.4 EUT operating Conditions	53
9.5 Test Result	53
10. Maximum Conducted Output Power	83
10.1 Block Diagram Of Test Setup	83
10.2 Limit	83
10.3 Test procedure	83
10.4 EUT operating Conditions	84
10.5 Test Result	85
11. Out Of Band Emissions	86

11.1	Block Diagram Of Test Setup.....	86
11.2	Limit	86
11.3	Test procedure	86
11.4	EUT operating Conditions	86
11.5	Test Result.....	87
12.	Spurious RF Conducted Emissions.....	99
12.1	Block Diagram Of Test Setup.....	99
12.2	Limit	99
12.3	Test procedure	99
12.4	Test Result.....	99
13.	Frequency Stability Measurement	114
13.1	Block Diagram Of Test Setup.....	114
13.2	Limit	114
13.3	Test procedure	114
13.4	Test Result.....	115
14.	Antenna Requirement	121
14.1	Limit	121
14.2	Test Antenna.....	121
15.	EUT Photographs.....	122
16.	EUT Test Setup Photographs.....	123

(Note: N/A Means Not Applicable)



1. Version

Report No.	Issue Date	Description	Approved
BCTC2202997306-2E	2022-03-03	Original	Valid

2. Test Summary

The Product has been tested according to the following specifications:

1	Test Parameter	Clause No.	Results
1	Spurious Radiated Emissions	15.209(a), 15.407 (b)(1) 15.407 (b)(4) 15.407 (b)(8)	PASS
2	Conducted Emission	15.207	PASS
3	26 dB and 99% Emission Bandwidth	15.407 (a)(12) 15.1049	PASS
4	Minimum 6 dB bandwidth	15.407(e)	PASS
5	Maximum Conducted Output Power	15.407 (a)(1) 15.407 (a)(3)	PASS
6	Band Edge	2.1051, 15.407(b)(1) 15.407(b)(4)	PASS
7	Power Spectral Density	15.407 (a)(1) 15.407 (a)(3)	PASS
8	Spurious Emissions at Antenna Terminals	2.1051, 15.407(b)	PASS
9	Antenna Requirement	15.203	PASS

3. Measurement Uncertainty

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

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

4. Product Information And Test Setup

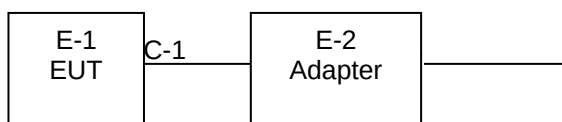
4.1 Product Information

Model/Type reference:	RLC-523WA
Model differences:	N/A
IEEE 802.11 WLAN Mode Supported:	802.11a/n/ac(20MHz channel bandwidth) 802.11n/ac(40MHz channel bandwidth) 802.11ac(80MHz channel bandwidth)
Operation Frequency:	5180-5240MHz for 802.11a/n(HT20)/ac20; 5190-5230MHz for 802.11n(HT40)/ac40; 5210MHz for 802.11 ac80; 5745-5825 MHz for 802.11a/n(HT20)/ac20; 5755-5795 MHz for 802.11a/n(HT40)/ac40; 5775MHz for 802.11 ac80;
Data Rate:	802.11a: 6,9,12,18,24,36,48,54Mbps; 802.11n(HT20/HT40):MCS0-MCS15; 802.11ac(VHT20): NSS1, MCS0-MCS8 802.11ac(VHT40/VHT80):NSS1, MCS0-MCS
Type of Modulation:	OFDM with BPSK/QPSK/16QAM/64QAM/256QAM for 802.11a/n/ac;
Number Of Channel:	4 channels for 802.11a/n20 in the 5180-5240MHz band ; 2 channels for 802.11 n40 in the 5190-5230MHz band ; 1 channels for 802.11 ac80 in the 5210MHz band ; 5 channels for 802.11a/n20 in the 5745-5825MHz band ; 2 channels for 802.11 n40 in the 5755-5795MHz band ; 1 channels for 802.11 ac80 in the 5775MHz band ;
Antenna installation:	External antenna*2
Antenna Gain:	WiFi (5.1GHz): Antenna A : 2.02 dBi Antenna B : 2.02 dBi WiFi (5.8GHz): Antenna A : 2.19 dBi Antenna B : 2.19 dBi
Ratings:	DC 12V
Adapter:	Model: DCT24W120200US-A0 Input:100-240V~50/60Hz 0.7A max Output: DC 12.0V 2.0A

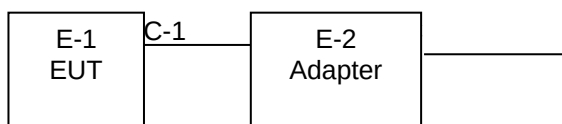
4.2 Test Setup Configuration

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-2	Adapter	N/A	DCT24W120200US-A0	N/A	

Item	Shielded Type	Ferrite Core	Length	Note
C-1	N/A	N/A	3M	DC cable unshielded

Notes:

1. All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.
2. Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.

4.4 Channel List

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

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

802.11n/ac(40MHz) Carrier Frequency Channel							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
38	5190	46	5230	-	-	-	-

802.11ac (80MHz) Carrier Frequency Channel							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
42	5210	-	-	-	-	-	-

Frequency and Channel list for 802.11a/n /ac (5745-5825MHz):

802.11a/n/ac(20MHz) 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)	Channel	Frequency (MHz)
151	5755	159	5795	-	-	-	-

802.11ac (80MHz) Carrier Frequency Channel							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	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 ac80 CH 42/CH 155
Mode 4	Link Mode

Conducted Emission	
Final Test Mode	Description
Mode 4	Link Mode

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

Note: The measurements are performed at all Bit Rate of Transmitter, the worst data was reported.

4.6 Table Of Parameters Of Text Software Setting

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

Test software Version	CMD		
Parameters	DEF	DEF	DEF

4.7 Antenna

Table for External antenna

Ant.	Brand	Model Name	Antenna Type	Gain (dBi)	NOTE
A	N/A	N/A	External antenna	2.02	5.1GHz
B	N/A	N/A	External antenna	2.02	5.1GHz
A	N/A	N/A	External antenna	2.19	5.8GHz
B	N/A	N/A	External antenna	2.19	5.8GHz

EUT has two External antennas with Max gain GANT 2.02dBi (5.1G) and 2.19dBi (5.8G) on every antenna, CDD device with two spatial streams, also can operat with one spatial streams according to KDB662911 D01 v02r01,

Directional gain= GANT + Array Gain, where Array Gain is as follows.

1)For power spectral density(PSD) measurements,

Array Gain=10log(NANT/NSS)dB=10log(2/1)=3.01dB,

So the directional gain for PSD is (5.1GHz): 5.03dBi, (5.8GHz): 5.20

2)For power measurements,

The Array gain=0 dB for NANT≤4,

So the directional gain for Power measurements is (5.1GHz): 2.02dBi (5.8GHz): 2.19dBi

5. Test Facility And Test Instrument Used

5.1 Test Facility

All measurement facilities used to collect the measurement data are located at Shenzhen BCTC Testing Co., Ltd. Address:1-2/F., Building B, Pengzhou Industrial Park, No.158, Fuyuan 1st Road, Tangwei, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, China. The site and apparatus are constructed in conformance with the requirements of ANSI C63.4 and CISPR 16-1-1 other equivalent standards.

FCC Test Firm Registration Number: 712850

IC Registered No.: 23583

5.2 Test Instrument Used

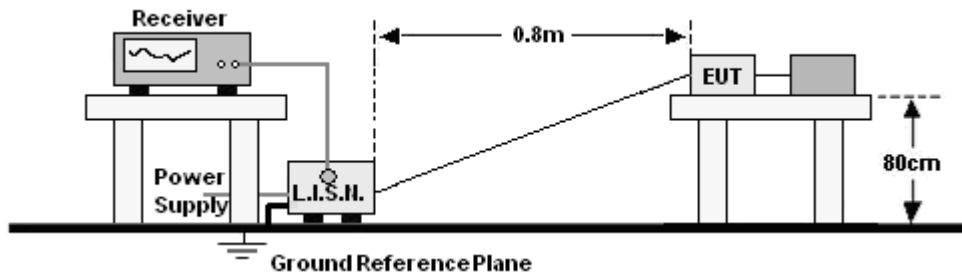
Conducted Emissions Test					
Equipment	Manufacturer	Model#	Serial#	Last Cal.	Next Cal.
Receiver	R&S	ESR3	102075	May 28, 2021	May 27, 2022
LISN	R&S	ENV216	101375	May 28, 2021	May 27, 2022
Software	Frad	EZ-EMC	EMC-CON 3A1	\	\
Attenuator	\	10dB C-6GHz	1650	May 28, 2021	May 27, 2022

RF Conducted Test					
Equipment	Manufacturer	Model#	Serial#	Last Cal.	Next Cal.
Power Metter	Keysight	E4419	\	May 28, 2021	May 27, 2022
Power Sensor (AV)	Keysight	E9300A	\	May 28, 2021	May 27, 2022
Signal Analyzer 20kHz-26.5G Hz	Keysight	N9020A	MY49100060	May 28, 2021	May 27, 2022
Spectrum Analyzer 9kHz-40GHz	R&S	FSP 40	\	May 28, 2021	May 27, 2022

Radiated Emissions Test (966 Chamber)					
Equipment	Manufacturer	Model#	Serial#	Last Cal.	Next Cal.
966 chamber	ChengYu	966 Room	966	Jun. 06. 2020	Jun. 05, 2023
Receiver	R&S	ESR3	102075	May 28, 2021	May 27, 2022
Receiver	R&S	ESRP	101154	May 28, 2021	May 27, 2022
Amplifier	SKET	LAPA_01G18 G-45dB	\	May 28, 2021	May 27, 2022
Amplifier	Schwarzbeck	BBV9744	9744-0037	May 28, 2021	May 27, 2022
TRILOG Broadband Antenna	Schwarzbeck	VULB9163	942	Jun. 01, 2021	May 31, 2022
Horn Antenna	Schwarzbeck	BBHA9120D	1541	Jun. 02, 2021	Jun. 01, 2022
Horn Antenn (18GHz-40GHz)	Schwarzbeck	BBHA9170	00822	Jun. 15, 2021	Jun. 14, 2022
Amplifier (18GHz-40GHz)	MITEQ	TTA1840-35- HG	2034381	May 28, 2021	May 27, 2022
Loop Antenna (9kHz-30MHz)	Schwarzbeck	FMZB1519B	00014	Jun. 02, 2021	Jun. 01, 2022
RF cables1 (9kHz-30MHz)	Huber+Suhner	9kHz-30MHz	B1702988-000 8	May 28, 2021	May 27, 2022
RF cables2 (30MHz-1GHz)	Huber+Suhner	30MHz-1GHz	1486150	May 28, 2021	May 27, 2022
RF cables3 (1GHz-40GHz)	Huber+Suhner	1GHz-40GHz	1607106	May 28, 2021	May 27, 2022
Power Metter	Keysight	E4419	\	May 28, 2021	May 27, 2022
Power Sensor (AV)	Keysight	E9300A	\	May 28, 2021	May 27, 2022
Signal Analyzer 20kHz-26.5G Hz	Keysight	N9020A	MY49100060	May 28, 2021	May 27, 2022
Spectrum Analyzer 9kHz-40GHz	R&S	FSP 40	\	May 28, 2021	May 27, 2022
Software	Frad	EZ-EMC	FA-03A2 RE	\	\

6. Conducted Emissions

6.1 Block Diagram Of Test Setup



6.2 Limit

Frequency (MHz)	Limit (dBuV)	
	Quas-peak	Average
0.15 -0.5	66 - 56 *	56 - 46 *
0.50 -5.0	56.00	46.00
5.0 -30.0	60.00	50.00

Notes:

- *Decreasing linearly with logarithm of frequency.
- The lower limit shall apply at the transition frequencies.

6.3 Test procedure

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

- The Product was placed on a nonconductive table 0.8 m above the horizontal ground reference plane, and 0.4 m from the vertical ground reference plane, and connected to the main through Line Impedance Stability Network (L.I.S.N).
- The RBW of the receiver was set at 9 kHz in 150 kHz ~ 30MHz with Peak and AVG detector in Max Hold mode. Run the receiver's pre-scan to record the maximum disturbance generated from Product in all power lines in the full band.
- For each frequency whose maximum record was higher or close to limit, measure its QP and AVG values and record.

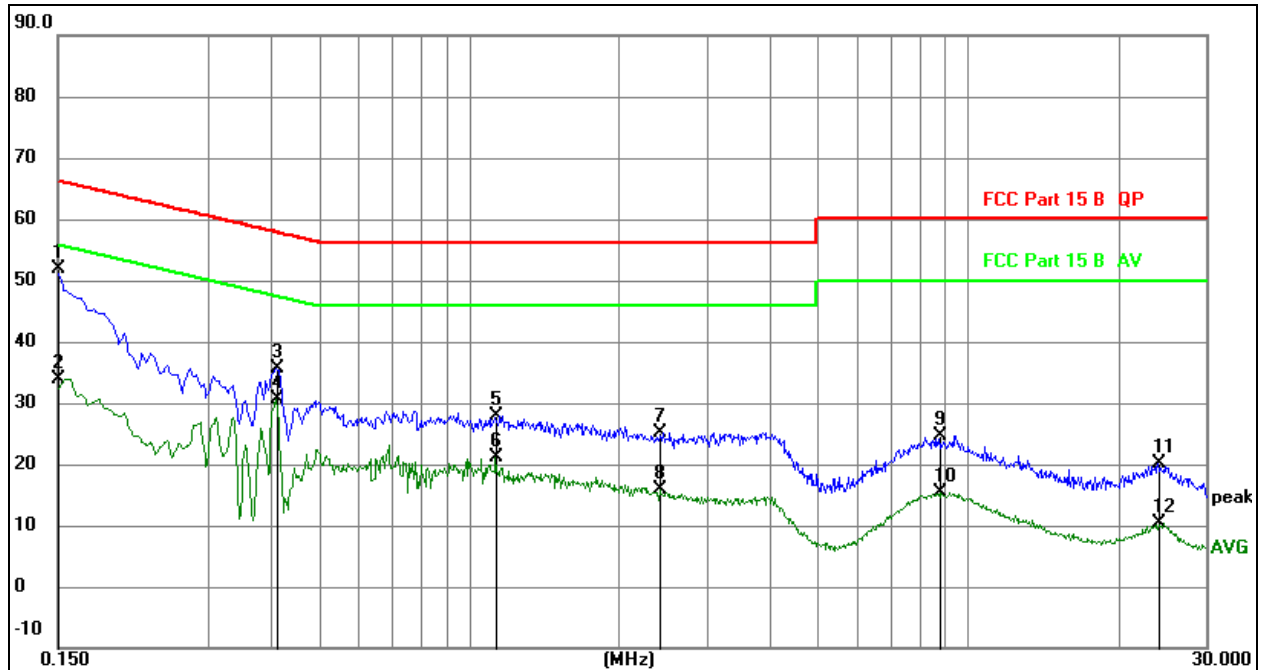
6.4 EUT operating Conditions

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

We pretest AC 120V and AC 240V, the worst voltage was AC 120V and the data recording in the report.

6.5 Test Result

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

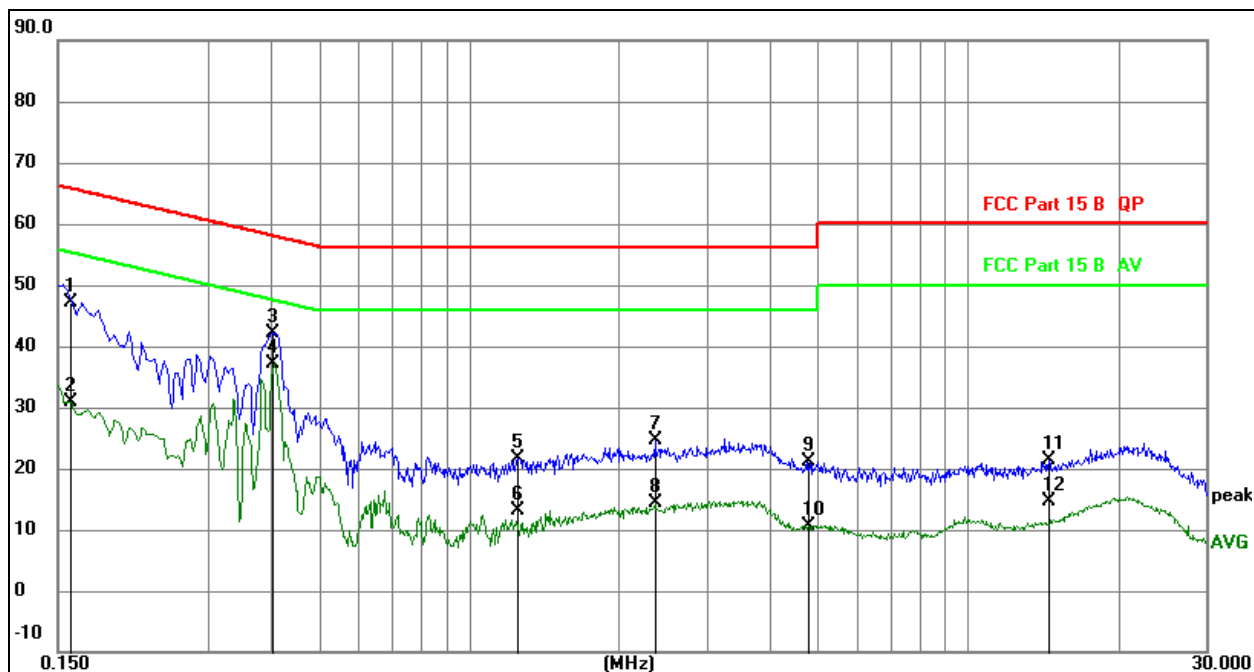


Remark:

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 dB	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector
1	*	0.1500	32.31	19.60	51.91	66.00	-14.09	QP
2		0.1500	14.38	19.60	33.98	56.00	-22.02	AVG
3		0.4110	15.98	19.61	35.59	57.63	-22.04	QP
4		0.4110	10.92	19.61	30.53	47.63	-17.10	AVG
5		1.1310	8.16	19.62	27.78	56.00	-28.22	QP
6		1.1310	1.43	19.62	21.05	46.00	-24.95	AVG
7		2.4135	5.57	19.63	25.20	56.00	-30.80	QP
8		2.4135	-3.82	19.63	15.81	46.00	-30.19	AVG
9		8.8170	4.76	19.77	24.53	60.00	-35.47	QP
10		8.8170	-4.30	19.77	15.47	50.00	-34.53	AVG
11		24.1259	0.28	19.73	20.01	60.00	-39.99	QP
12		24.1259	-9.31	19.73	10.42	50.00	-39.58	AVG

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



Remark:

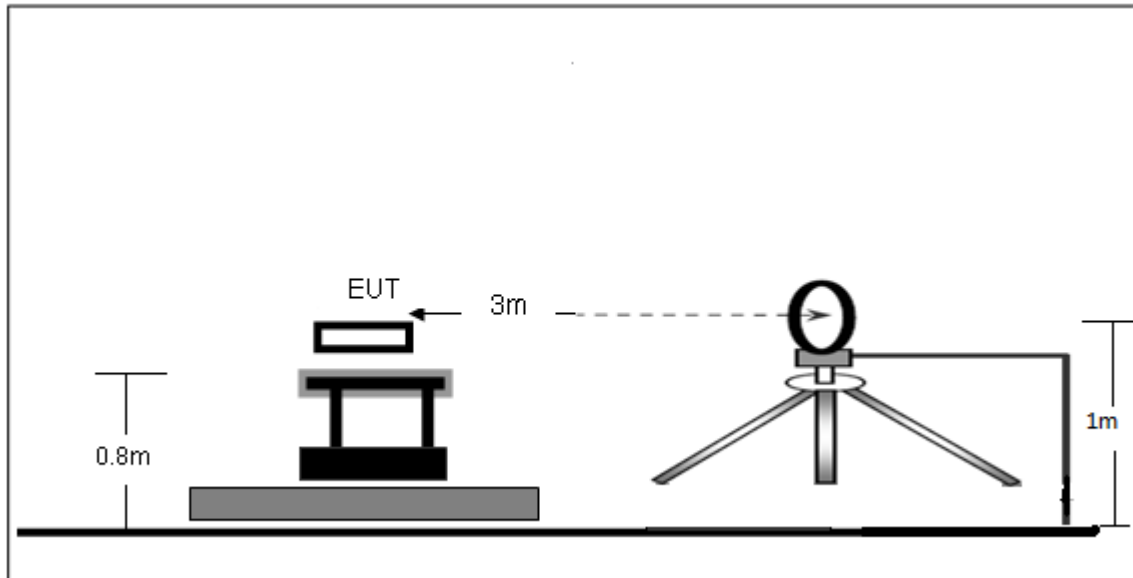
1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.
3. Measurement = Reading Level + Correct Factor
4. Over = Measurement - Limit

No.	Mk.	Freq. MHz	Reading Level dB	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector
1		0.1582	27.47	19.60	47.07	65.56	-18.49	QP
2		0.1582	11.34	19.60	30.94	55.56	-24.62	AVG
3		0.4019	22.46	19.61	42.07	57.81	-15.74	QP
4	*	0.4019	17.49	19.61	37.10	47.81	-10.71	AVG
5		1.2488	2.12	19.62	21.74	56.00	-34.26	QP
6		1.2488	-6.44	19.62	13.18	46.00	-32.82	AVG
7		2.3585	4.94	19.63	24.57	56.00	-31.43	QP
8		2.3585	-5.22	19.63	14.41	46.00	-31.59	AVG
9		4.7969	1.42	19.69	21.11	56.00	-34.89	QP
10		4.7969	-8.95	19.69	10.74	46.00	-35.26	AVG
11		14.5171	1.52	19.77	21.29	60.00	-38.71	QP
12		14.5171	-5.22	19.77	14.55	50.00	-35.45	AVG

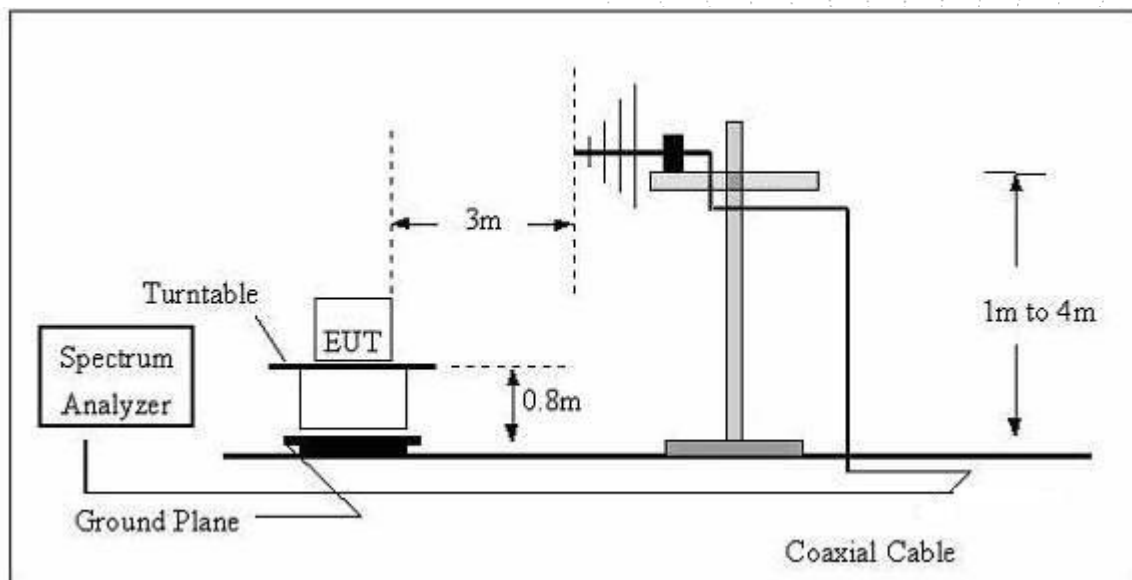
7. Radiated Emissions

7.1 Block Diagram Of Test Setup

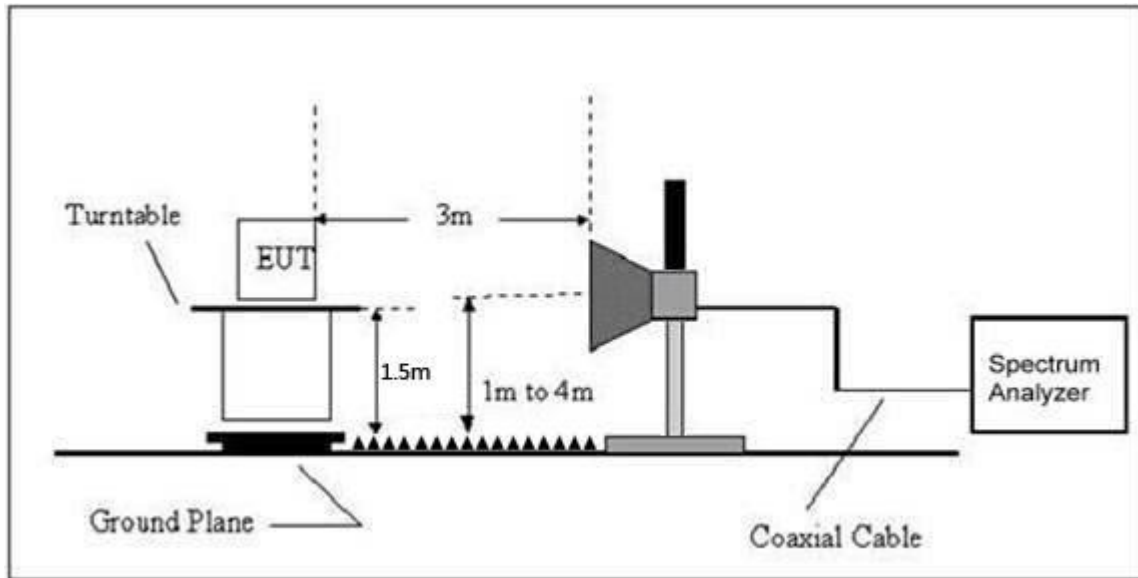
(A) Radiated Emission Test-Up Frequency Below 30MHz



(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(kHz)	300	$10000 * 2400/F(\text{kHz})$	$20\log^{(2400/F(\text{kHz}))} + 80$
0.490 ~ 1.705	24000/F(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

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

Note:

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

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

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

Note: for the frequency ranges below 30 MHz, a narrower RBW is used for these ranges but the measured value should add a RBW correction factor (RBWCF) where $RBWCF [dB] = 10 \cdot \lg(100 [kHz] / \text{narrower RBW} [kHz])$. , the narrower RBW is 1 kHz and RBWCF is 20 dB for the frequency 9 kHz to 150 kHz, and the narrower RBW is 10 kHz and RBWCF is 10 dB for the frequency 150 kHz to 30 MHz.

7.4 EUT operating Conditions

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

7.5 Test Result

Below 30MHz

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

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

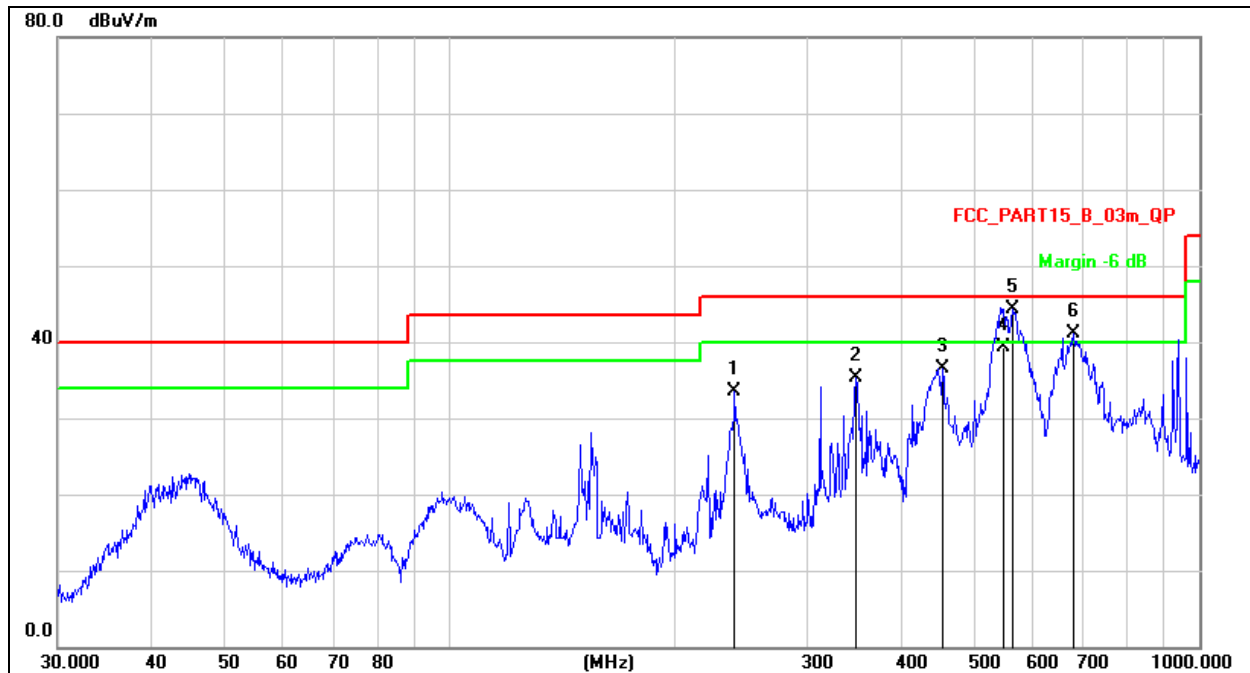
Note:

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

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

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

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

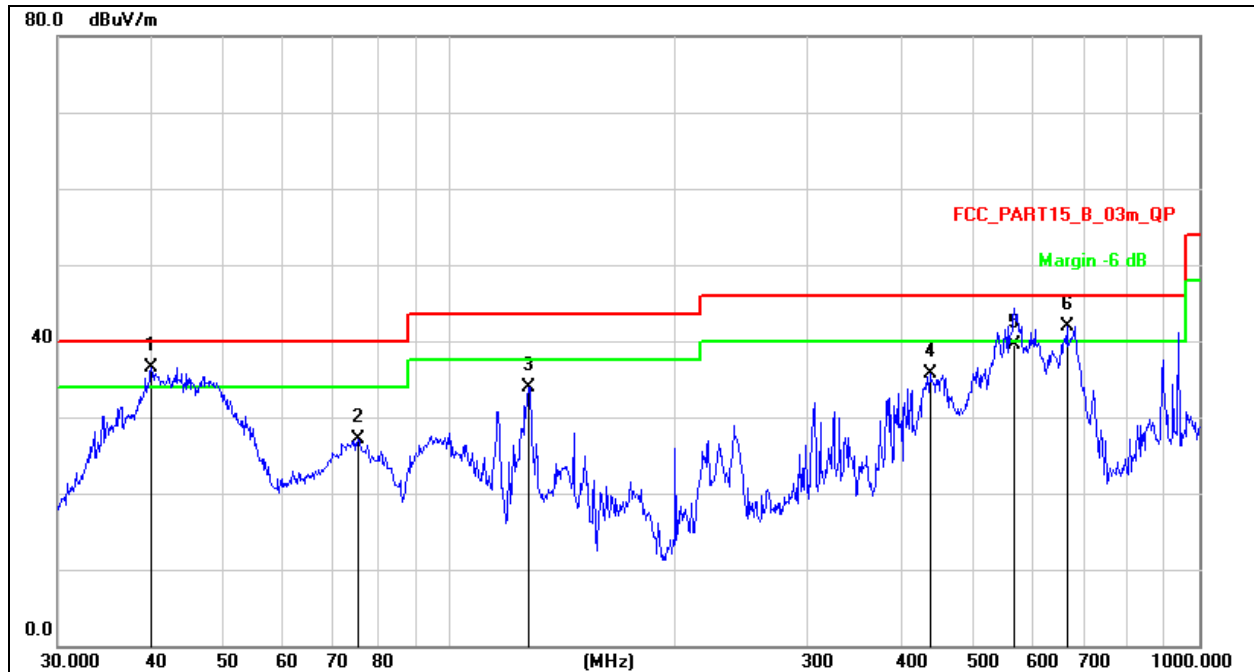


Remark:

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

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector
1		239.9874	48.87	-15.38	33.49	46.00	-12.51	QP
2		348.0274	47.64	-12.28	35.36	46.00	-10.64	QP
3		454.3100	46.34	-9.88	36.46	46.00	-9.54	QP
4		549.9472	46.92	-7.68	39.24	46.00	-6.76	QP
5	*	564.6389	51.65	-7.34	44.31	46.00	-1.69	QP
6	!	679.9600	46.91	-5.81	41.10	46.00	-4.90	QP

Temperature:	26 °C	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage :	AC120V/60Hz
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.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector
1	*	39.9941	51.86	-15.41	36.45	40.00	-3.55	QP
2		75.4462	46.42	-19.40	27.02	40.00	-12.98	QP
3		127.6645	52.02	-18.06	33.96	43.50	-9.54	QP
4		437.1197	45.95	-10.26	35.69	46.00	-10.31	QP
5		566.8730	46.86	-7.29	39.57	46.00	-6.43	QP
6	!	665.8034	48.23	-6.28	41.95	46.00	-4.05	QP

Test Mode:	TX(5.1G) - 802.11a
------------	--------------------

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Cable loss (dB)	Antenna Factor dB/m	Preamp Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
Low Channel (5180 MHz)-Above 1G									
V	4434.044	60.76	5.94	35.40	44.00	58.10	68.2	-10.10	PK
V	4434.044	43.12	5.94	35.40	44.00	40.46	54	-13.54	AV
V	10360.063	62.63	8.46	39.75	44.50	66.34	68.2	-1.86	PK
V	10360.063	43.55	8.46	39.75	44.50	47.26	54	-6.74	AV
V	15540.113	61.47	10.12	38.80	44.10	66.29	74	-7.71	PK
V	15540.113	43.83	10.12	38.80	42.70	50.05	54	-3.95	AV
H	4434.005	60.05	5.94	35.18	44.00	57.17	68.2	-11.03	PK
H	4434.005	43.45	5.94	35.18	44.00	40.57	54	-13.43	AV
H	10360.117	54.25	8.46	38.71	44.50	56.92	68.2	-11.28	PK
H	10360.117	42.35	8.46	38.71	44.50	45.02	54	-8.98	AV
H	15540.078	54.64	10.12	38.38	44.10	59.04	74	-14.96	PK
H	15540.078	40.07	10.12	38.38	44.10	44.47	54	-9.53	AV
Middle Channel (5200 MHz)-Above 1G									
V	4592.010	63.93	6.48	36.35	44.05	62.71	74	-11.29	PK
V	4592.010	43.75	6.48	36.35	44.05	42.53	54	-11.47	AV
V	10400.038	61.09	8.47	37.88	44.51	62.93	68.2	-5.27	PK
V	10400.038	43.48	8.47	37.88	44.51	45.32	54	-8.68	AV
V	15600.193	63.38	10.12	38.80	44.10	68.20	74	-5.80	PK
V	15600.193	43.71	10.12	38.80	42.70	49.93	54	-4.07	AV
H	4592.010	62.99	6.48	36.37	44.05	61.79	74	-12.21	PK
H	4592.010	43.77	6.48	36.37	44.05	42.57	54	-11.43	AV
H	10400.080	52.32	8.47	38.64	44.50	54.93	68.2	-13.27	PK
H	10400.080	43.43	8.47	38.64	44.50	46.04	54	-7.96	AV
H	15600.019	52.14	10.12	38.38	44.10	56.54	74	-17.46	PK
H	15600.019	43.00	10.12	38.38	44.10	47.40	54	-6.60	AV
High Channel (5240 MHz)-Above 1G									
V	4739.085	60.23	7.10	37.24	43.50	61.07	74	-12.93	PK
V	4739.085	43.67	7.10	37.24	43.50	44.51	54	-9.49	AV
V	10480.165	61.92	8.46	37.68	44.50	63.56	68.2	-4.64	PK
V	10480.165	43.41	8.46	37.68	44.50	45.05	54	-8.95	AV
V	15720.030	60.25	10.12	38.80	44.10	65.07	74	-8.93	PK
V	15720.030	43.84	10.12	38.80	42.70	50.06	54	-3.94	AV
H	4739.091	62.68	7.10	37.24	43.50	63.52	74	-10.48	PK
H	4739.091	43.43	7.10	37.24	43.50	44.27	54	-9.73	AV
H	10480.151	54.79	8.46	38.57	44.50	57.32	68.2	-10.88	PK
H	10480.151	44.95	8.46	38.57	44.50	47.48	54	-6.52	AV
H	15720.051	54.53	10.12	38.38	44.10	58.93	74	-15.07	PK
H	15720.051	40.79	10.12	38.38	44.10	45.19	54	-8.81	AV

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

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

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

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

The worst case is Antenna A.

Test Mode: TX(5.1G) - 802.11n-HT20

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Cable loss (dB)	Antenna Factor dB/m	Preamp Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
Low Channel (5180 MHz)-Above 1G									
V	4434.029	60.80	5.94	35.40	44.00	58.14	68.2	-10.06	PK
V	4434.029	43.13	5.94	35.40	44.00	40.47	54	-13.53	AV
V	10360.026	61.67	8.46	39.75	44.50	65.38	68.2	-2.82	PK
V	10360.026	43.65	8.46	39.75	44.50	47.36	54	-6.64	AV
V	15540.165	62.90	10.12	38.80	44.10	67.72	74	-6.28	PK
V	15540.165	43.67	10.12	38.80	42.70	49.89	54	-4.11	AV
H	4434.146	63.49	5.94	35.18	44.00	60.61	68.2	-7.59	PK
H	4434.146	43.32	5.94	35.18	44.00	40.44	54	-13.56	AV
H	10360.062	53.72	8.46	38.71	44.50	56.39	68.2	-11.81	PK
H	10360.062	43.16	8.46	38.71	44.50	45.83	54	-8.17	AV
H	15540.137	53.88	10.12	38.38	44.10	58.28	74	-15.72	PK
H	15540.137	44.11	10.12	38.38	44.10	48.51	54	-5.49	AV
Middle Channel (5200 MHz)-Above 1G									
V	4592.120	63.78	6.48	36.35	44.05	62.56	74	-11.44	PK
V	4592.120	43.60	6.48	36.35	44.05	42.38	54	-11.62	AV
V	10400.183	63.11	8.47	37.88	44.51	64.95	68.2	-3.25	PK
V	10400.183	43.62	8.47	37.88	44.51	45.46	54	-8.54	AV
V	15600.133	60.88	10.12	38.80	44.10	65.70	74	-8.30	PK
V	15600.133	43.29	10.12	38.80	42.70	49.51	54	-4.49	AV
H	4592.069	62.95	6.48	36.37	44.05	61.75	74	-12.25	PK
H	4592.069	43.39	6.48	36.37	44.05	42.19	54	-11.81	AV
H	10400.078	51.06	8.47	38.64	44.50	53.67	68.2	-14.53	PK
H	10400.078	40.88	8.47	38.64	44.50	43.49	54	-10.51	AV
H	15600.185	52.68	10.12	38.38	44.10	57.08	74	-16.92	PK
H	15600.185	44.93	10.12	38.38	44.10	49.33	54	-4.67	AV
High Channel (5240 MHz)-Above 1G									
V	4739.139	64.83	7.10	37.24	43.50	65.67	74	-8.33	PK
V	4739.139	43.84	7.10	37.24	43.50	44.68	54	-9.32	AV
V	10480.100	62.99	8.46	37.68	44.50	64.63	68.2	-3.57	PK
V	10480.100	43.06	8.46	37.68	44.50	44.70	54	-9.30	AV
V	15720.096	62.95	10.12	38.80	44.10	67.77	74	-6.23	PK
V	15720.096	43.56	10.12	38.80	42.70	49.78	54	-4.22	AV
H	4739.068	61.02	7.10	37.24	43.50	61.86	74	-12.14	PK
H	4739.068	43.43	7.10	37.24	43.50	44.27	54	-9.73	AV
H	10480.140	52.59	8.46	38.57	44.50	55.12	68.2	-13.08	PK
H	10480.140	43.63	8.46	38.57	44.50	46.16	54	-7.84	AV
H	15720.029	50.67	10.12	38.38	44.10	55.07	74	-18.93	PK
H	15720.029	41.39	10.12	38.38	44.10	45.79	54	-8.21	AV

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

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

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

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

Test Mode is MIMO Mode.

Test Mode:	TX(5.1G) - 802.11n-HT40
------------	-------------------------

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Cable loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
Low Channel (5190 MHz)-Above 1G									
V	4434.176	60.62	5.94	35.40	44.00	57.96	68.2	-10.24	PK
V	4434.176	43.83	5.94	35.40	44.00	41.17	54	-12.83	AV
V	10380.081	60.26	8.46	39.75	44.50	63.97	68.2	-4.23	PK
V	10380.081	43.82	8.46	39.75	44.50	47.53	54	-6.47	AV
V	15570.126	61.79	10.12	38.80	44.10	66.61	74	-7.39	PK
V	15570.126	43.06	10.12	38.80	42.70	49.28	54	-4.72	AV
H	4434.092	62.55	5.94	35.18	44.00	59.67	74	-14.33	PK
H	4434.092	43.56	5.94	35.18	44.00	40.68	54	-13.32	AV
H	10380.167	52.52	8.46	38.71	44.50	55.19	68.2	-13.01	PK
H	10380.167	44.05	8.46	38.71	44.50	46.72	54	-7.28	AV
H	15570.170	51.95	10.12	38.38	44.10	56.35	74	-17.65	PK
H	15570.170	41.09	10.12	38.38	44.10	45.49	54	-8.51	AV
High Channel (5230 MHz)-Above 1G									
V	4739.072	61.23	6.48	36.35	44.05	60.01	68.2	-8.19	PK
V	4739.072	43.15	6.48	36.35	44.05	41.93	54	-12.07	AV
V	10460.016	61.71	8.47	37.88	44.51	63.55	68.2	-4.65	PK
V	10460.016	43.28	8.47	37.88	44.51	45.12	54	-8.88	AV
V	15690.077	61.07	10.12	38.80	44.10	65.89	74	-8.11	PK
V	15690.077	43.64	10.12	38.80	42.70	49.86	54	-4.14	AV
H	4739.142	61.74	6.48	36.37	44.05	60.54	68.2	-7.66	PK
H	4739.142	43.88	6.48	36.37	44.05	42.68	54	-11.32	AV
H	10460.100	53.78	8.47	38.64	44.50	56.39	68.2	-11.81	PK
H	10460.100	41.00	8.47	38.64	44.50	43.61	54	-10.39	AV
H	15690.081	53.29	10.12	38.38	44.10	57.69	74	-16.31	PK
H	15690.081	40.31	10.12	38.38	44.10	44.71	54	-9.29	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 is MIMO Mode.

Test Mode:	TX(5.1G) - 802.11ac-HT20
------------	--------------------------

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Cable loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
Low Channel (5180 MHz)-Above 1G									
V	4434.121	60.57	5.94	35.40	44.00	57.91	68.2	-10.29	PK
V	4434.121	43.81	5.94	35.40	44.00	41.15	54	-12.85	AV
V	10360.079	61.70	8.46	39.75	44.50	65.41	68.2	-2.79	PK
V	10360.079	43.14	8.46	39.75	44.50	46.85	54	-7.15	AV
V	15540.162	62.16	10.12	38.80	44.10	66.98	74	-7.02	PK
V	15540.162	43.44	10.12	38.80	42.70	49.66	54	-4.34	AV
H	4434.142	61.12	5.94	35.18	44.00	58.24	68.2	-9.96	PK
H	4434.142	43.65	5.94	35.18	44.00	40.77	54	-13.23	AV
H	10360.123	51.48	8.46	38.71	44.50	54.15	68.2	-14.05	PK
H	10360.123	43.96	8.46	38.71	44.50	46.63	54	-7.37	AV
H	15540.008	50.53	10.12	38.38	44.10	54.93	74	-19.07	PK
H	15540.008	43.18	10.12	38.38	44.10	47.58	54	-6.42	AV
Middle Channel (5200 MHz)-Above 1G									
V	4592.052	63.70	6.48	36.35	44.05	62.48	74	-11.52	PK
V	4592.052	43.53	6.48	36.35	44.05	42.31	54	-11.69	AV
V	10400.078	62.34	8.47	37.88	44.51	64.18	68.2	-4.02	PK
V	10400.078	43.07	8.47	37.88	44.51	44.91	54	-9.09	AV
V	15600.150	64.06	10.12	38.80	44.10	68.88	74	-5.12	PK
V	15600.150	43.43	10.12	38.80	42.70	49.65	54	-4.35	AV
H	4592.054	62.75	6.48	36.37	44.05	61.55	74	-12.45	PK
H	4592.054	43.89	6.48	36.37	44.05	42.69	54	-11.31	AV
H	10400.097	53.81	8.47	38.64	44.50	56.42	68.2	-11.78	PK
H	10400.097	40.90	8.47	38.64	44.50	43.51	54	-10.49	AV
H	15600.005	54.34	10.12	38.38	44.10	58.74	74	-15.26	PK
H	15600.005	42.80	10.12	38.38	44.10	47.20	54	-6.80	AV
High Channel (5240 MHz)-Above 1G									
V	4739.007	60.36	7.10	37.24	43.50	61.20	74	-12.80	PK
V	4739.007	43.42	7.10	37.24	43.50	44.26	54	-9.74	AV
V	10480.069	60.18	8.46	37.68	44.50	61.82	68.2	-6.38	PK
V	10480.069	43.15	8.46	37.68	44.50	44.79	54	-9.21	AV
V	15720.178	61.67	10.12	38.80	44.10	66.49	74	-7.51	PK
V	15720.178	43.30	10.12	38.80	42.70	49.52	54	-4.48	AV
H	4739.073	60.71	7.10	37.24	43.50	61.55	74	-12.45	PK
H	4739.073	43.63	7.10	37.24	43.50	44.47	54	-9.53	AV
H	10480.045	54.07	8.46	38.57	44.50	56.60	68.2	-11.60	PK
H	10480.045	40.44	8.46	38.57	44.50	42.97	54	-11.03	AV
H	15720.005	53.12	10.12	38.38	44.10	57.52	74	-16.48	PK
H	15720.005	44.33	10.12	38.38	44.10	48.73	54	-5.27	AV

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

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

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

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

Test Mode is MIMO Mode.

Test Mode:	TX(5.1G) - 802.11ac-HT40
------------	--------------------------

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Cable loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
Low Channel (5190 MHz)-Above 1G									
V	4434.173	60.59	5.94	35.40	44.00	57.93	68.2	-10.27	PK
V	4434.173	43.46	5.94	35.40	44.00	40.80	54	-13.20	AV
V	10380.066	60.10	8.46	39.75	44.50	63.81	68.2	-4.39	PK
V	10380.066	43.39	8.46	39.75	44.50	47.10	54	-6.90	AV
V	15570.051	62.71	10.12	38.80	44.10	67.53	74	-6.47	PK
V	15570.051	43.97	10.12	38.80	42.70	50.19	54	-3.81	AV
H	4434.104	62.10	5.94	35.18	44.00	59.22	74	-14.78	PK
H	4434.104	43.77	5.94	35.18	44.00	40.89	54	-13.11	AV
H	10380.157	53.23	8.46	38.71	44.50	55.90	68.2	-12.30	PK
H	10380.157	43.84	8.46	38.71	44.50	46.51	54	-7.49	AV
H	15570.149	51.85	10.12	38.38	44.10	56.25	74	-17.75	PK
H	15570.149	43.15	10.12	38.38	44.10	47.55	54	-6.45	AV
High Channel (5230 MHz)-Above 1G									
V	4739.139	64.27	6.48	36.35	44.05	63.05	68.2	-5.15	PK
V	4739.139	43.80	6.48	36.35	44.05	42.58	54	-11.42	AV
V	10460.116	62.33	8.47	37.88	44.51	64.17	68.2	-4.03	PK
V	10460.116	43.09	8.47	37.88	44.51	44.93	54	-9.07	AV
V	15690.169	63.46	10.12	38.80	44.10	68.28	74	-5.72	PK
V	15690.169	43.36	10.12	38.80	42.70	49.58	54	-4.42	AV
H	4739.108	64.73	6.48	36.37	44.05	63.53	68.2	-4.67	PK
H	4739.108	43.05	6.48	36.37	44.05	41.85	54	-12.15	AV
H	10460.056	50.73	8.47	38.64	44.50	53.34	68.2	-14.86	PK
H	10460.056	43.01	8.47	38.64	44.50	45.62	54	-8.38	AV
H	15690.150	54.71	10.12	38.38	44.10	59.11	74	-14.89	PK
H	15690.150	44.51	10.12	38.38	44.10	48.91	54	-5.09	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 is MIMO Mode.

Test Mode:	TX(5.1G) - 802.11ac-HT80
------------	--------------------------

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Cable loss (dB)	Antenna Factor dB/m	Preamp Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
(5210 MHz)-Above 1G									
V	4434.090	63.84	5.94	35.40	44.00	61.18	68.2	-7.02	PK
V	4434.090	43.73	5.94	35.40	44.00	41.07	54	-12.93	AV
V	10420.138	62.41	8.46	39.75	44.50	66.12	68.2	-2.08	PK
V	10420.138	43.70	8.46	39.75	44.50	47.41	54	-6.59	AV
V	15630.112	60.30	10.12	38.80	44.10	65.12	74	-8.88	PK
V	15630.112	43.52	10.12	38.80	42.70	49.74	54	-4.26	AV
H	4434.114	63.08	5.94	35.18	44.00	60.20	68.2	-8.00	PK
H	4434.114	43.40	5.94	35.18	44.00	40.52	54	-13.48	AV
H	10420.104	52.79	8.46	38.71	44.50	55.46	68.2	-12.74	PK
H	10420.104	43.98	8.46	38.71	44.50	46.65	54	-7.35	AV
H	15630.105	53.02	10.12	38.38	44.10	57.42	74	-16.58	PK
H	15630.105	42.21	10.12	38.38	44.10	46.61	54	-7.39	AV

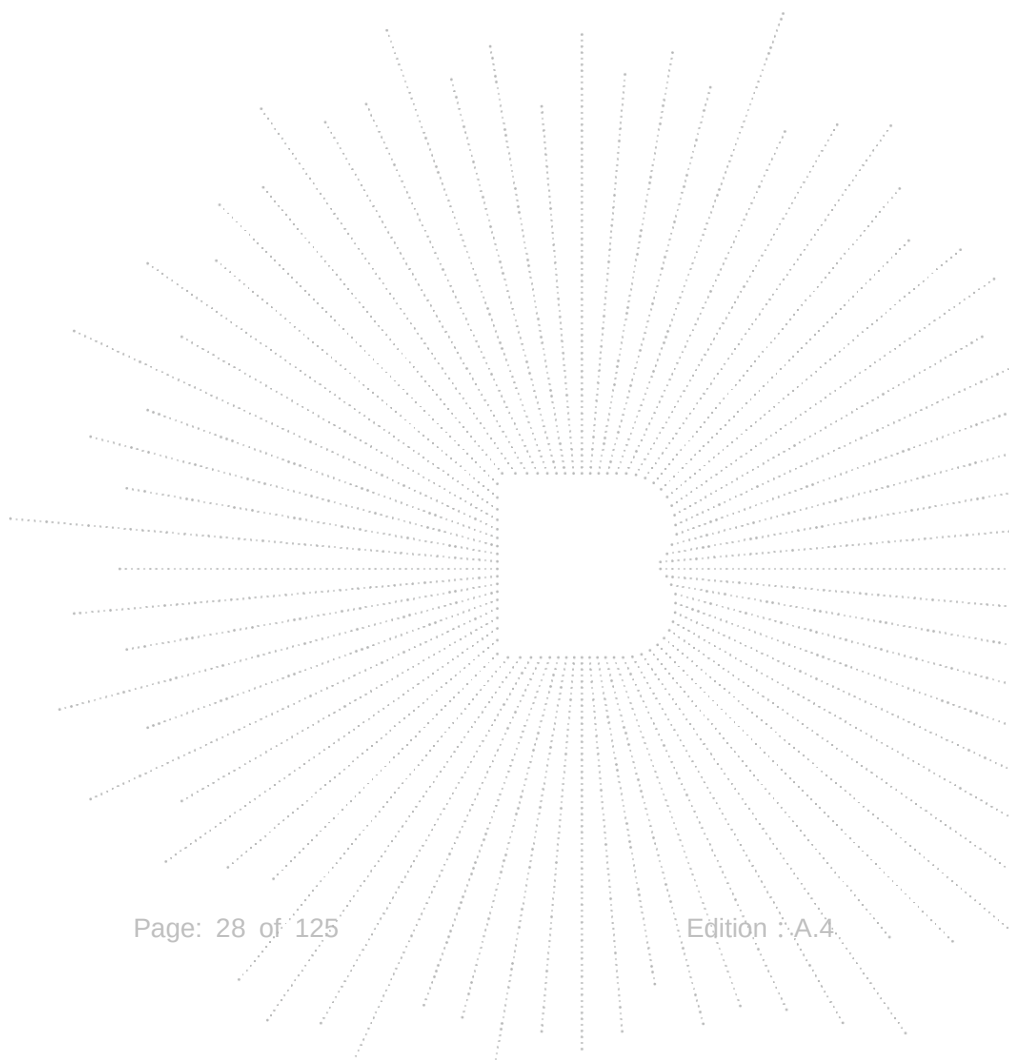
Note: PK value is lower than the Average value limit, So average didn't record.

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

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

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

Test Mode is MIMO Mode.



Test Mode:	TX(5.8G) - 802.11a
------------	--------------------

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Cable loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
Low Channel (5745 MHz)-Above 1G									
V	4679.098	57.16	5.94	35.40	44.00	54.50	74	-19.50	PK
V	4679.098	43.13	5.94	35.40	44.00	40.47	54	-13.53	AV
V	11490.024	56.45	8.46	39.75	44.50	60.16	68.2	-8.04	PK
V	11490.024	43.57	8.46	39.75	44.50	47.28	54	-6.72	AV
V	17235.018	60.24	10.12	38.80	44.10	65.06	68.2	-3.14	PK
V	17235.018	43.24	10.12	38.80	42.70	49.46	54	-4.54	AV
H	4679.183	55.49	5.94	35.18	44.00	52.61	74	-21.39	PK
H	4679.183	43.06	5.94	35.18	44.00	40.18	54	-13.82	AV
H	11490.056	52.74	8.46	38.71	44.50	55.41	68.2	-12.79	PK
H	11490.056	42.40	8.46	38.71	44.50	45.07	54	-8.93	AV
H	17235.047	50.51	10.12	38.38	44.10	54.91	68.2	-13.29	PK
H	17235.047	41.77	10.12	38.38	44.10	46.17	54	-7.83	AV
Middle Channel (5785 MHz)-Above 1G									
V	4592.133	55.81	6.48	36.35	44.05	54.59	74	-19.41	PK
V	4592.133	43.47	6.48	36.35	44.05	42.25	54	-11.75	AV
V	11570.059	55.46	8.47	37.88	44.51	57.30	68.2	-10.90	PK
V	11570.059	43.54	8.47	37.88	44.51	45.38	54	-8.62	AV
V	17355.003	57.10	10.12	38.80	44.10	61.92	68.2	-6.28	PK
V	17355.003	39.39	10.12	38.80	42.70	45.61	54	-8.39	AV
H	4592.162	59.03	6.48	36.37	44.05	57.83	74	-16.17	PK
H	4592.162	43.04	6.48	36.37	44.05	41.84	54	-12.16	AV
H	11570.096	51.86	8.47	38.64	44.50	54.47	68.2	-13.73	PK
H	11570.096	44.13	8.47	38.64	44.50	46.74	54	-7.26	AV
H	17355.096	53.72	10.12	38.38	44.10	58.12	68.2	-10.08	PK
H	17355.096	44.99	10.12	38.38	44.10	49.39	54	-4.61	AV
High Channel (5825 MHz)-Above 1G									
V	6039.172	56.20	7.10	37.24	43.50	57.04	68.2	-11.16	PK
V	6039.172	43.18	7.10	37.24	43.50	44.02	54	-9.98	AV
V	11650.117	60.08	8.46	37.68	44.50	61.72	74	-12.28	PK
V	11650.117	43.42	8.46	37.68	44.50	45.06	54	-8.94	AV
V	17475.149	54.56	10.12	38.80	44.10	59.38	68.2	-8.82	PK
V	17475.149	43.60	10.12	38.80	42.70	49.82	54	-4.18	AV
H	6039.157	55.07	7.10	37.24	43.50	55.91	68.2	-12.29	PK
H	6039.157	43.73	7.10	37.24	43.50	44.57	54	-9.43	AV
H	11650.089	53.83	8.46	38.57	44.50	56.36	74	-17.64	PK
H	11650.089	41.94	8.46	38.57	44.50	44.47	54	-9.53	AV
H	17475.155	50.11	10.12	38.38	44.10	54.51	68.2	-13.69	PK
H	17475.155	41.43	10.12	38.38	44.10	45.83	54	-8.17	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.

The worst case is Antenna A.

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

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Cable loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
Low Channel (5745 MHz)-Above 1G									
V	4679.072	57.22	5.94	35.40	44.00	54.56	74	-19.44	PK
V	4679.072	43.59	5.94	35.40	44.00	40.93	54	-13.07	AV
V	11490.017	54.06	8.46	39.75	44.50	57.77	68.2	-10.43	PK
V	11490.017	43.88	8.46	39.75	44.50	47.59	54	-6.41	AV
V	17235.073	60.65	10.12	38.80	44.10	65.47	68.2	-2.73	PK
V	17235.073	44.00	10.12	38.80	42.70	50.22	54	-3.78	AV
H	4679.018	58.39	5.94	35.18	44.00	55.51	74	-18.49	PK
H	4679.018	43.38	5.94	35.18	44.00	40.50	54	-13.50	AV
H	11490.042	47.72	8.46	38.71	44.50	50.39	68.2	-17.81	PK
H	11490.042	44.15	8.46	38.71	44.50	46.82	54	-7.18	AV
H	17235.101	50.69	10.12	38.38	44.10	55.09	68.2	-13.11	PK
H	17235.101	41.98	10.12	38.38	44.10	46.38	54	-7.62	AV
Middle Channel (5785 MHz)-Above 1G									
V	4592.014	58.53	6.48	36.35	44.05	57.31	74	-16.69	PK
V	4592.014	43.37	6.48	36.35	44.05	42.15	54	-11.85	AV
V	11570.104	55.21	8.47	37.88	44.51	57.05	68.2	-11.15	PK
V	11570.104	43.76	8.47	37.88	44.51	45.60	54	-8.40	AV
V	17355.159	60.47	10.12	38.80	44.10	65.29	68.2	-2.91	PK
V	17355.159	43.33	10.12	38.80	42.70	49.55	54	-4.45	AV
H	4592.037	58.28	6.48	36.37	44.05	57.08	74	-16.92	PK
H	4592.037	43.12	6.48	36.37	44.05	41.92	54	-12.08	AV
H	11570.064	51.83	8.47	38.64	44.50	54.44	68.2	-13.76	PK
H	11570.064	43.44	8.47	38.64	44.50	46.05	54	-7.95	AV
H	17355.087	50.15	10.12	38.38	44.10	54.55	68.2	-13.65	PK
H	17355.087	40.21	10.12	38.38	44.10	44.61	54	-9.39	AV
High Channel (5825 MHz)-Above 1G									
V	6039.057	56.51	7.10	37.24	43.50	57.35	68.2	-10.85	PK
V	6039.057	43.91	7.10	37.24	43.50	44.75	54	-9.25	AV
V	11650.194	58.11	8.46	37.68	44.50	59.75	74	-14.25	PK
V	11650.194	43.75	8.46	37.68	44.50	45.39	54	-8.61	AV
V	17475.028	55.09	10.12	38.80	44.10	59.91	68.2	-8.29	PK
V	17475.028	43.76	10.12	38.80	42.70	49.98	54	-4.02	AV
H	6039.147	56.68	7.10	37.24	43.50	57.52	68.2	-10.68	PK
H	6039.147	43.40	7.10	37.24	43.50	44.24	54	-9.76	AV
H	11650.144	52.49	8.46	38.57	44.50	55.02	74	-18.98	PK
H	11650.144	41.61	8.46	38.57	44.50	44.14	54	-9.86	AV
H	17475.066	52.89	10.12	38.38	44.10	57.29	68.2	-10.91	PK
H	17475.066	42.51	10.12	38.38	44.10	46.91	54	-7.09	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 is MIMO Mode.

Test Mode:	TX(5.8G) - 802.11n-HT40
------------	-------------------------

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Cable loss (dB)	Antenna Factor dB/m	Preamp Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
Low Channel (5755 MHz)-Above 1G									
V	4679.105	57.59	5.94	35.40	44.00	54.93	74	-19.07	PK
V	4679.105	43.54	5.94	35.40	44.00	40.88	54	-13.12	AV
V	11510.096	56.04	8.46	39.75	44.50	59.75	74	-14.25	PK
V	11510.096	43.47	8.46	39.75	44.50	47.18	54	-6.82	AV
V	17265.038	55.99	10.12	38.80	44.10	60.81	68.2	-7.39	PK
V	17265.038	2.00	10.12	38.80	42.70	8.22	54	-45.78	AV
H	4679.081	57.12	5.94	35.18	44.00	54.24	74	-19.76	PK
H	4679.081	43.75	5.94	35.18	44.00	40.87	54	-13.13	AV
H	11510.056	50.37	8.46	38.71	44.50	53.04	74	-20.96	PK
H	11510.056	40.72	8.46	38.71	44.50	43.39	54	-10.61	AV
H	17265.145	51.98	10.12	38.38	44.10	56.38	68.2	-11.82	PK
H	17265.145	43.00	10.12	38.38	44.10	47.40	54	-6.60	AV
High Channel (5795 MHz)-Above 1G									
V	6039.026	59.28	6.48	36.35	44.05	58.06	68.2	-10.14	PK
V	6039.026	43.17	6.48	36.35	44.05	41.95	54	-12.05	AV
V	11590.001	58.66	8.47	37.88	44.51	60.50	74	-13.50	PK
V	11590.001	43.46	8.47	37.88	44.51	45.30	54	-8.70	AV
V	17385.077	55.91	10.12	38.80	44.10	60.73	68.2	-7.47	PK
V	17385.077	41.57	10.12	38.80	42.70	47.79	54	-6.21	AV
H	6039.134	60.53	6.48	36.37	44.05	59.33	68.2	-8.87	PK
H	6039.134	43.11	6.48	36.37	44.05	41.91	54	-12.09	AV
H	11590.134	53.78	8.47	38.64	44.50	56.39	74	-17.61	PK
H	11590.134	40.18	8.47	38.64	44.50	42.79	54	-11.21	AV
H	17385.082	52.91	10.12	38.38	44.10	57.31	68.2	-10.89	PK
H	17385.082	43.41	10.12	38.38	44.10	47.81	54	-6.19	AV

Note: PK value is lower than the Average value limit, So average didn't record.
The 26.5-40G amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value has no need to be reported.
Emission level (dBuV/m) = 20 log Emission level (uV/m).
Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.
Test Mode is MIMO Mode.

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

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Cable loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
Low Channel (5745 MHz)-Above 1G									
V	4679.164	57.80	5.94	35.40	44.00	55.14	74	-18.86	PK
V	4679.164	43.54	5.94	35.40	44.00	40.88	54	-13.12	AV
V	11490.055	54.90	8.46	39.75	44.50	58.61	68.2	-9.59	PK
V	11490.055	43.75	8.46	39.75	44.50	47.46	54	-6.54	AV
V	17235.134	61.23	10.12	38.80	44.10	66.05	68.2	-2.15	PK
V	17235.134	43.89	10.12	38.80	42.70	50.11	54	-3.89	AV
H	4679.175	60.84	5.94	35.18	44.00	57.96	74	-16.04	PK
H	4679.175	43.80	5.94	35.18	44.00	40.92	54	-13.08	AV
H	11490.059	51.05	8.46	38.71	44.50	53.72	68.2	-14.48	PK
H	11490.059	43.18	8.46	38.71	44.50	45.85	54	-8.15	AV
H	17235.172	51.33	10.12	38.38	44.10	55.73	68.2	-12.47	PK
H	17235.172	40.30	10.12	38.38	44.10	44.70	54	-9.30	AV
Middle Channel (5785 MHz)-Above 1G									
V	4592.119	61.68	6.48	36.35	44.05	60.46	74	-13.54	PK
V	4592.119	43.87	6.48	36.35	44.05	42.65	54	-11.35	AV
V	11570.001	55.00	8.47	37.88	44.51	56.84	68.2	-11.36	PK
V	11570.001	43.65	8.47	37.88	44.51	45.49	54	-8.51	AV
V	17355.121	60.20	10.12	38.80	44.10	65.02	68.2	-3.18	PK
V	17355.121	43.18	10.12	38.80	42.70	49.40	54	-4.60	AV
H	4592.040	57.74	6.48	36.37	44.05	56.54	74	-17.46	PK
H	4592.040	43.23	6.48	36.37	44.05	42.03	54	-11.97	AV
H	11570.001	52.00	8.47	38.64	44.50	54.61	68.2	-13.59	PK
H	11570.001	41.14	8.47	38.64	44.50	43.75	54	-10.25	AV
H	17355.131	50.49	10.12	38.38	44.10	54.89	68.2	-13.31	PK
H	17355.131	41.92	10.12	38.38	44.10	46.32	54	-7.68	AV
High Channel (5825 MHz)-Above 1G									
V	6039.093	59.00	7.10	37.24	43.50	59.84	68.2	-8.36	PK
V	6039.093	43.18	7.10	37.24	43.50	44.02	54	-9.98	AV
V	11650.183	59.36	8.46	37.68	44.50	61.00	74	-13.00	PK
V	11650.183	43.50	8.46	37.68	44.50	45.14	54	-8.86	AV
V	17475.094	57.86	10.12	38.80	44.10	62.68	68.2	-5.52	PK
V	17475.094	43.84	10.12	38.80	42.70	50.06	54	-3.94	AV
H	6039.065	55.50	7.10	37.24	43.50	56.34	68.2	-11.86	PK
H	6039.065	43.46	7.10	37.24	43.50	44.30	54	-9.70	AV
H	11650.125	53.03	8.46	38.57	44.50	55.56	74	-18.44	PK
H	11650.125	43.08	8.46	38.57	44.50	45.61	54	-8.39	AV
H	17475.198	51.26	10.12	38.38	44.10	55.66	68.2	-12.54	PK
H	17475.198	40.06	10.12	38.38	44.10	44.46	54	-9.54	AV

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

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

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

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

Test Mode is MIMO Mode.

Test Mode:	TX(5.8G) - 802.11ac-HT40
------------	--------------------------

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Cable loss (dB)	Antenna Factor dB/m	Preamp Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
Low Channel (5755 MHz)-Above 1G									
V	4679.081	57.29	5.94	35.40	44.00	54.63	74	-19.37	PK
V	4679.081	43.21	5.94	35.40	44.00	40.55	54	-13.45	AV
V	11510.147	55.51	8.46	39.75	44.50	59.22	74	-14.78	PK
V	11510.147	43.51	8.46	39.75	44.50	47.22	54	-6.78	AV
V	17265.181	58.32	10.12	38.80	44.10	63.14	68.2	-5.06	PK
V	17265.181	2.00	10.12	38.80	42.70	8.22	54	-45.78	AV
H	4679.043	57.37	5.94	35.18	44.00	54.49	74	-19.51	PK
H	4679.043	43.50	5.94	35.18	44.00	40.62	54	-13.38	AV
H	11510.003	51.24	8.46	38.71	44.50	53.91	74	-20.09	PK
H	11510.003	41.27	8.46	38.71	44.50	43.94	54	-10.06	AV
H	17265.138	51.09	10.12	38.38	44.10	55.49	68.2	-12.71	PK
H	17265.138	40.63	10.12	38.38	44.10	45.03	54	-8.97	AV
High Channel (5795 MHz)-Above 1G									
V	6039.170	59.51	6.48	36.35	44.05	58.29	68.2	-9.91	PK
V	6039.170	43.31	6.48	36.35	44.05	42.09	54	-11.91	AV
V	11590.024	57.87	8.47	37.88	44.51	59.71	74	-14.29	PK
V	11590.024	43.62	8.47	37.88	44.51	45.46	54	-8.54	AV
V	17385.130	55.16	10.12	38.80	44.10	59.98	68.2	-8.22	PK
V	17385.130	41.64	10.12	38.80	42.70	47.86	54	-6.14	AV
H	6039.115	56.10	6.48	36.37	44.05	54.90	68.2	-13.30	PK
H	6039.115	43.30	6.48	36.37	44.05	42.10	54	-11.90	AV
H	11590.182	52.53	8.47	38.64	44.50	55.14	74	-18.86	PK
H	11590.182	40.45	8.47	38.64	44.50	43.06	54	-10.94	AV
H	17385.187	54.51	10.12	38.38	44.10	58.91	68.2	-9.29	PK
H	17385.187	44.73	10.12	38.38	44.10	49.13	54	-4.87	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 is MIMO Mode.

Test Mode:	TX(5.8G) - 802.11ac-HT80
------------	--------------------------

Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Cable loss (dB)	Antenna Factor dB/m	Preamp Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Detector Type
(5775 MHz)-Above 1G									
V	4679.134	56.93	5.94	35.40	44.00	54.27	74	-19.73	PK
V	4679.134	43.08	5.94	35.40	44.00	40.42	54	-13.58	AV
V	11550.008	55.63	8.46	39.75	44.50	59.34	74	-14.66	PK
V	11550.008	42.71	8.46	39.75	44.50	46.42	54	-7.58	AV
V	17325.184	56.80	10.12	38.80	44.10	61.62	68.2	-6.58	PK
V	17325.184	41.33	10.12	38.80	42.70	47.55	54	-6.45	AV
H	4679.096	55.06	5.94	35.18	44.00	52.18	74	-21.82	PK
H	4679.096	43.22	5.94	35.18	44.00	40.34	54	-13.66	AV
H	11550.027	51.28	8.46	38.71	44.50	53.95	74	-20.05	PK
H	11550.027	42.46	8.46	38.71	44.50	45.13	54	-8.87	AV
H	17325.084	50.41	10.12	38.38	44.10	54.81	68.2	-13.39	PK
H	17325.084	40.95	10.12	38.38	44.10	45.35	54	-8.65	AV

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

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

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

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

Test Mode is MIMO Mode.

8. Power Spectral Density Test

8.1 Block Diagram Of Test Setup



8.2 Limit

For the band 5.15-5.25 GHz,

(i) For an outdoor Wifi Repeater operating in the band 5.15-5.25 GHz, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. The maximum e.i.r.p. at any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm).

(ii) For an indoor Wifi Repeater operating in the band 5.15-5.25 GHz, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(iii) For fixed point-to-point Wifi Repeaters operating in the band 5.15-5.25 GHz, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. Fixed point-to-point U-NII devices may employ antennas with directional gain up to 23 dBi without any corresponding reduction in the maximum conducted output power or maximum power spectral density. For fixed point-to-point transmitters that employ a directional antenna gain greater than 23 dBi, a 1 dB reduction in maximum conducted output power and maximum power spectral density is required for each 1 dB of antenna gain in excess of 23 dBi. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

(iv) For client devices in the 5.15-5.25 GHz band, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

For the band 5.725-5.85 GHz

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

8.3 Test procedure

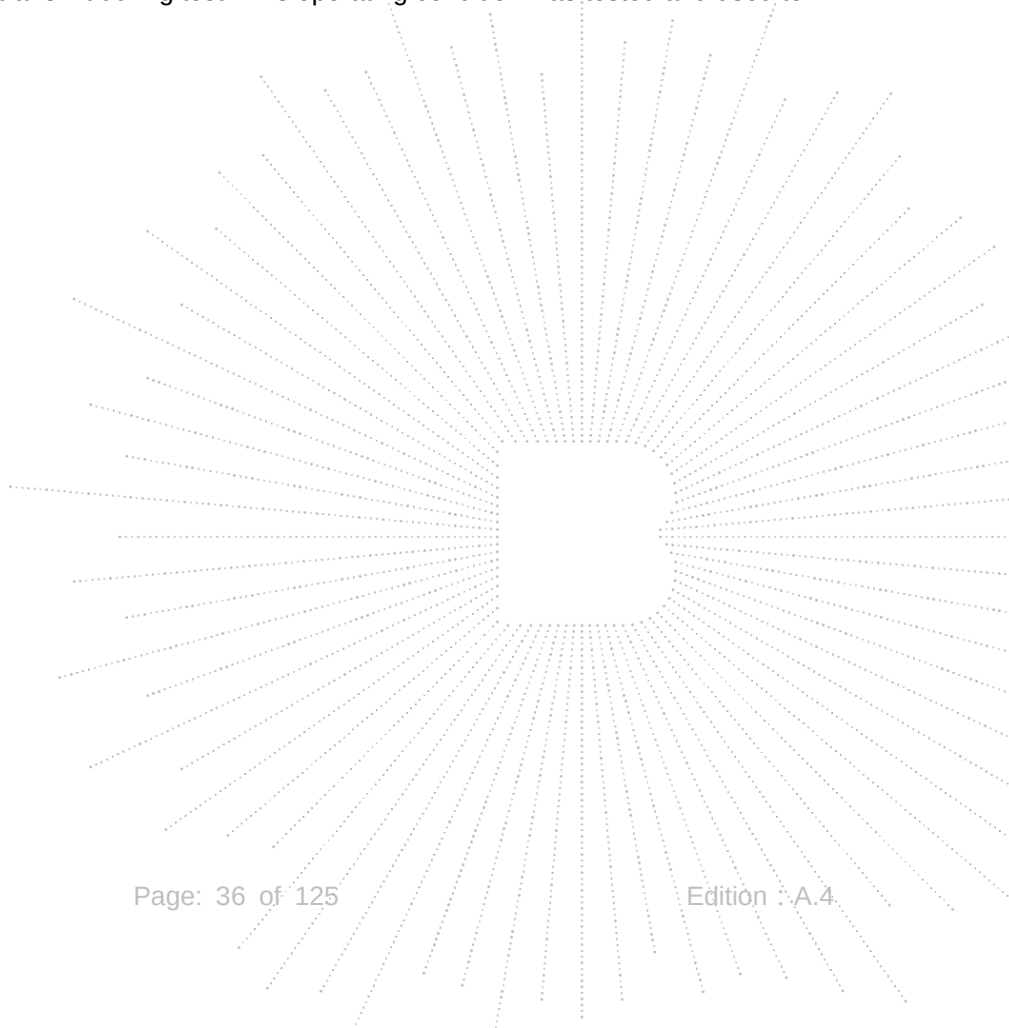
For devices operating in the bands 5.15-5.25 GHz, 5.25-5.35 GHz, and 5.47-5.725 GHz, the above procedures make use of 1 MHz RBW to satisfy directly the 1 MHz reference bandwidth specified in § 15.407(a)(5). For devices operating in the band 5.725-5.85 GHz, the rules specify a measurement bandwidth of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

- a) Set $RBW \geq 1/T$, where T is defined in section II.B.I.a).
- b) Set $VBW \geq 3 RBW$.
- c) If measurement bandwidth of Maximum PSD is specified in 500 kHz, add $10\log(500\text{kHz}/RBW)$ to the measured result, whereas RBW (< 500 KHz) is the reduced resolution bandwidth of the spectrum analyzer set during measurement.
- d) If measurement bandwidth of Maximum PSD is specified in 1 MHz, add $10\log(1\text{MHz}/RBW)$ to the measured result, whereas RBW (< 1 MHz) is the reduced resolution bandwidth of spectrum analyzer set during measurement.
- e) Care must be taken to ensure that the measurements are performed during a period of continuous transmission or are corrected upward for duty cycle.

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

8.4 EUT operating Conditions

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



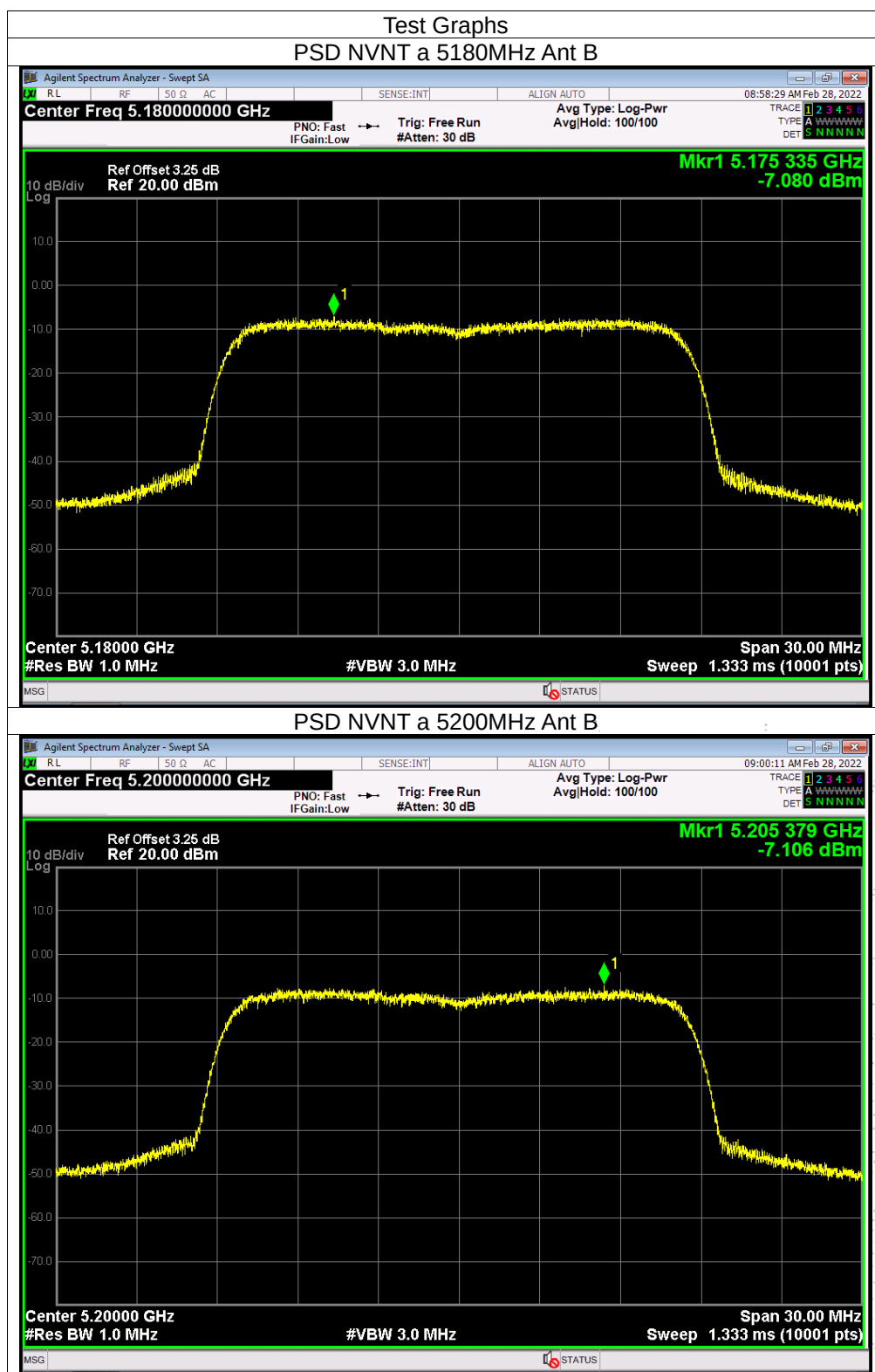
8.5 Test Result

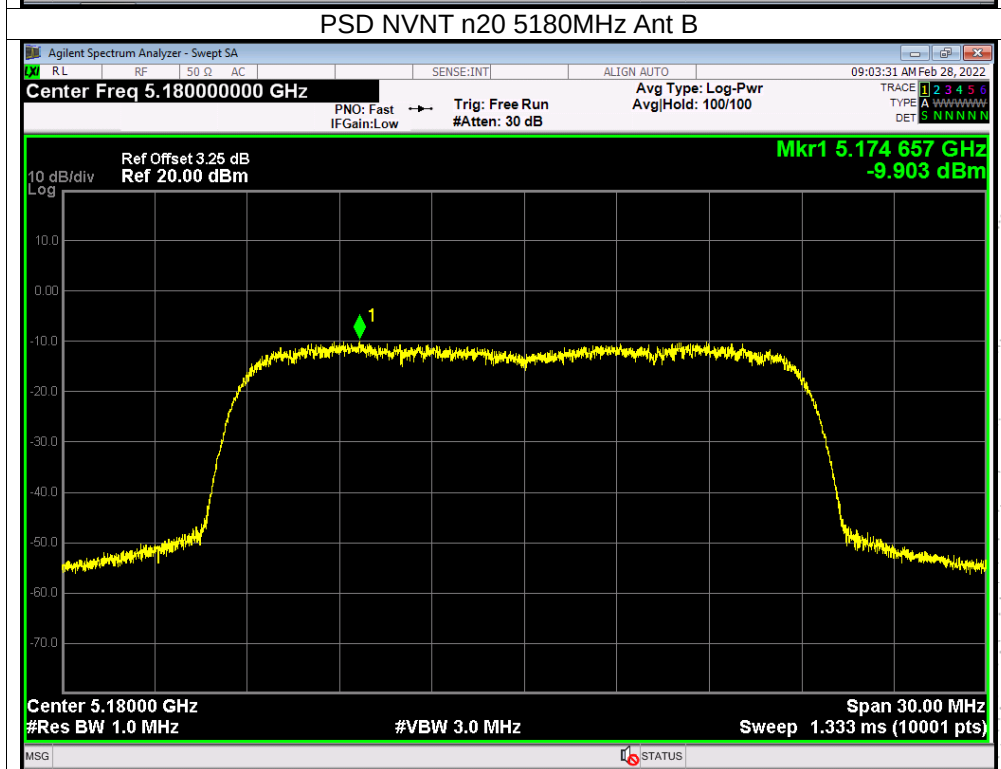
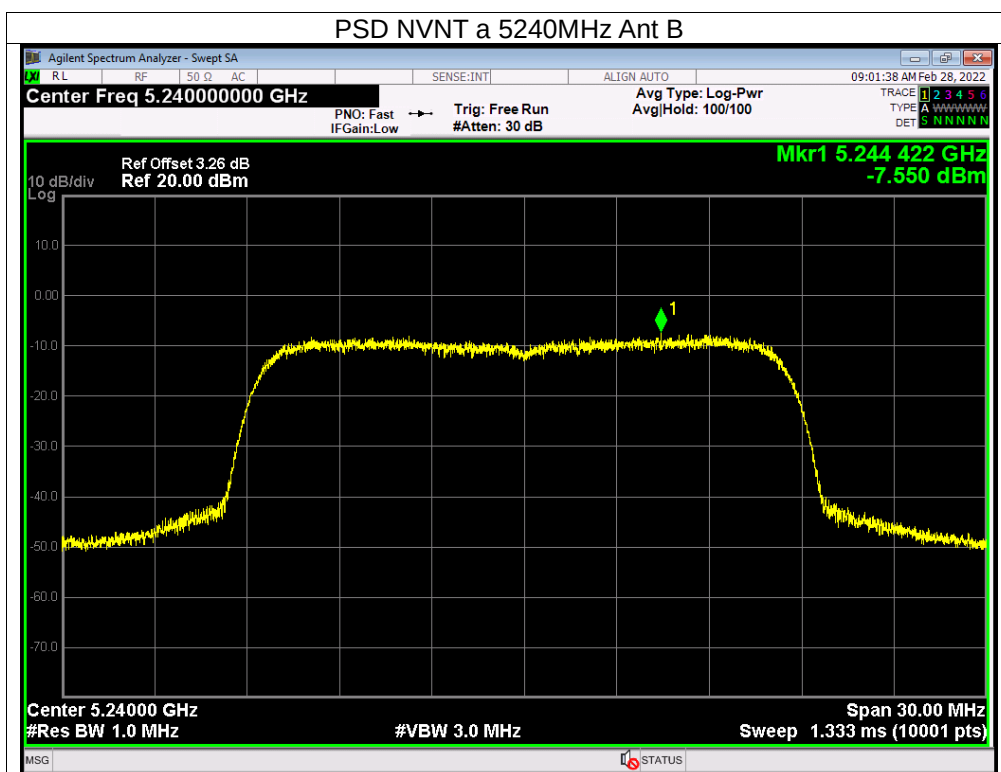
Temperature:	26 °C	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage:	AC120V/60Hz
Test Mode:	(5180-5240MHz); (5745-5825MHz)		

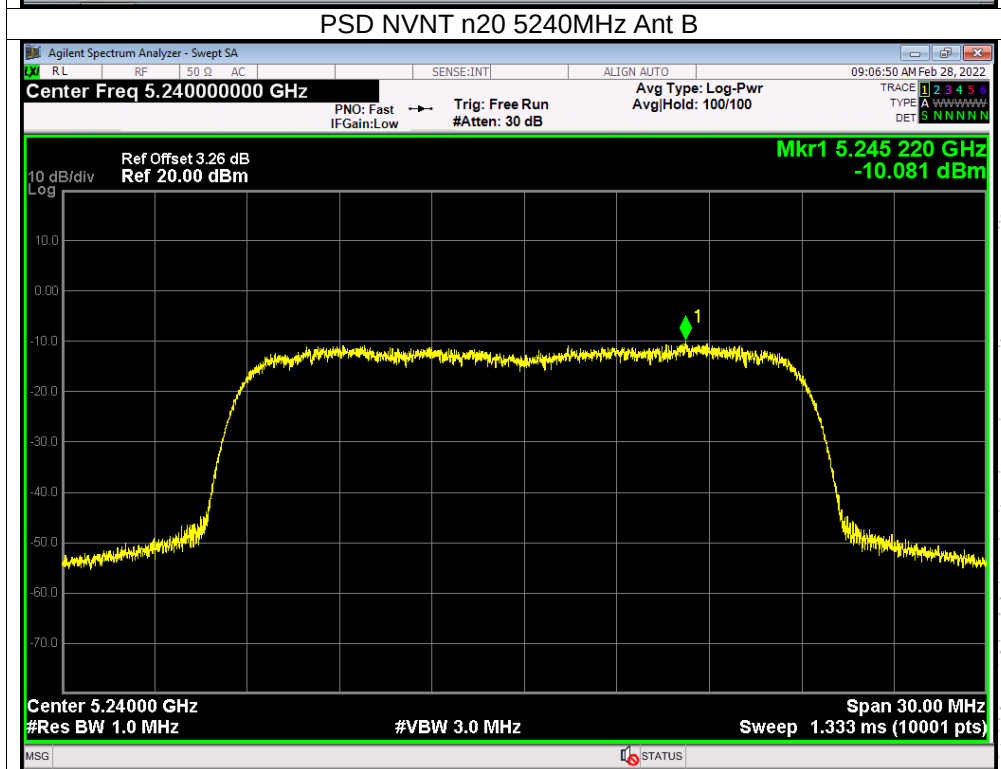
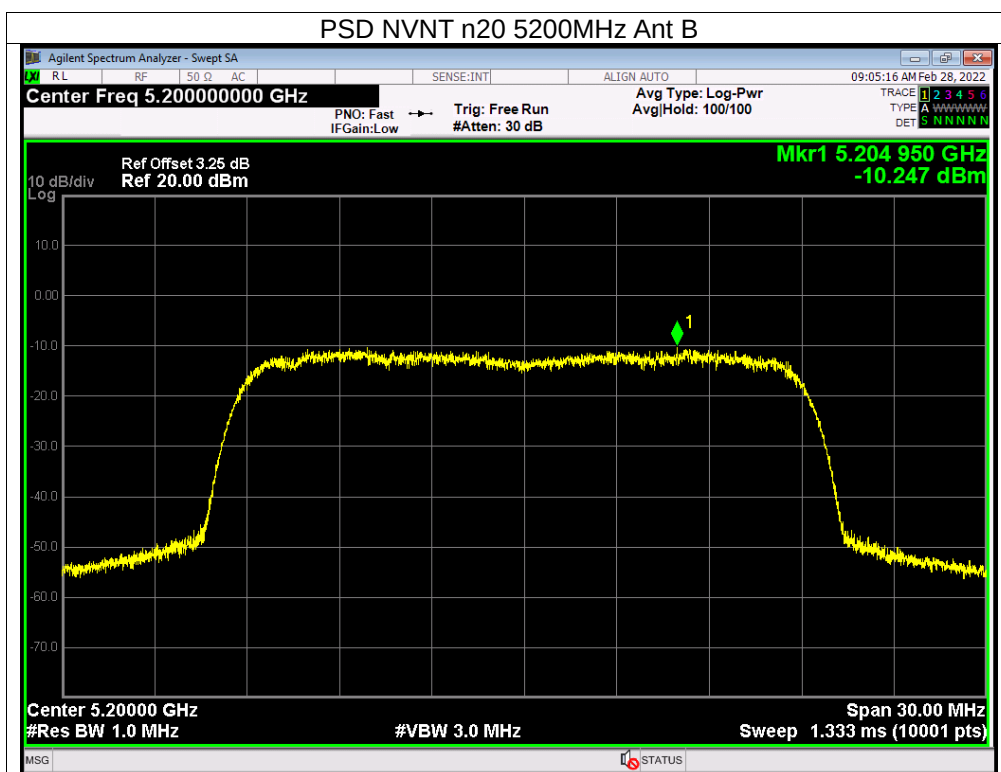
Condition	Mode	Frequency (MHz)	Conducted PSD (dBm/MHz)		Total power density (dBm/MHz)	Limit (dBm/MHz)	Verdict
			Ant A	Ant B			
NVNT	a	5180	-6.66	-7.08	/	11	Pass
NVNT	a	5200	-6.84	-7.11	/	11	Pass
NVNT	a	5240	-7.53	-7.55	/	11	Pass
NVNT	n20	5180	-9.89	-9.9	-6.88	11	Pass
NVNT	n20	5200	-10.3	-10.25	-7.26	11	Pass
NVNT	n20	5240	-11.1	-10.08	-7.55	11	Pass
NVNT	n40	5190	-12.91	-12.52	-9.70	11	Pass
NVNT	n40	5230	-14.12	-13.18	-10.61	11	Pass
NVNT	ac20	5180	-9.95	-9.93	-6.93	11	Pass
NVNT	ac20	5200	-10.3	-10.26	-7.27	11	Pass
NVNT	ac20	5240	-11.33	-10.2	-7.72	11	Pass
NVNT	ac40	5190	-12.88	-12.99	-9.92	11	Pass
NVNT	ac40	5230	-13.98	-13.06	-10.49	11	Pass
NVNT	ac80	5210	-16.36	-15.81	-13.07	11	Pass

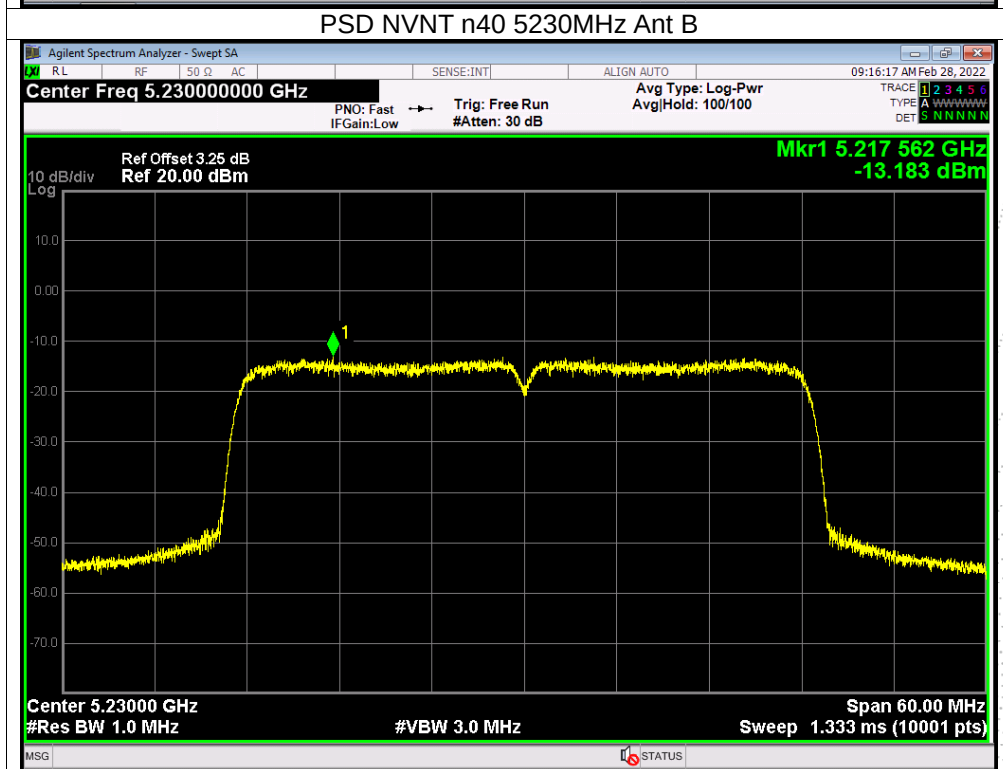
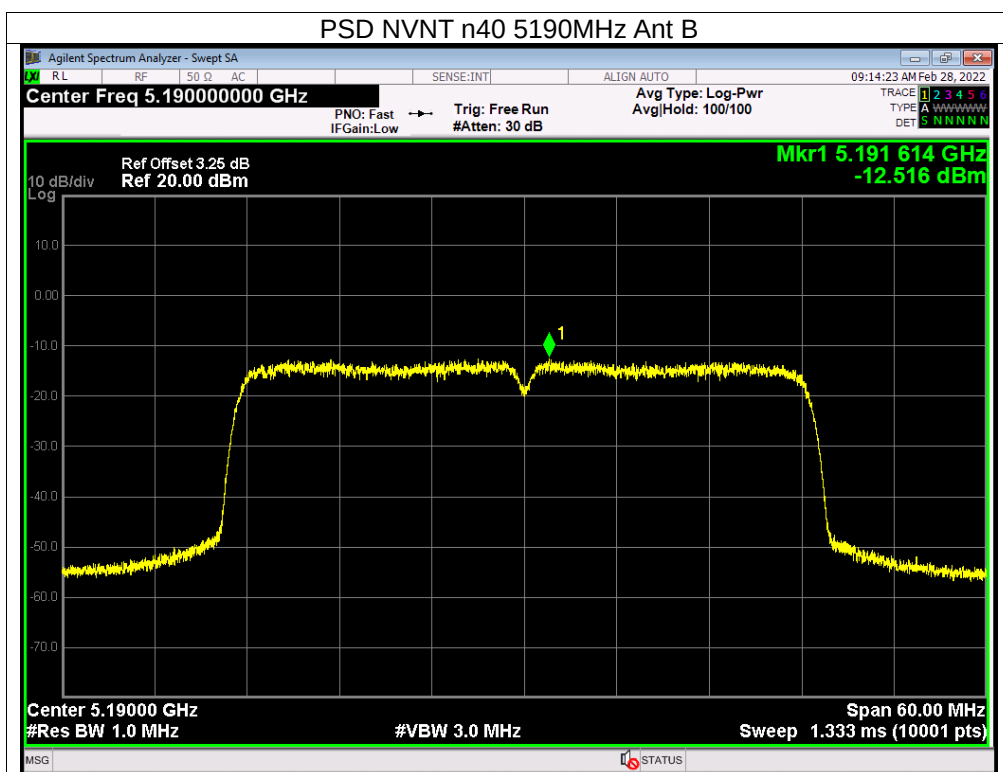
Condition	Mode	Frequency (MHz)	Conducted PSD (dBm/500KHz)		Total power density (dBm/500KHz)	Limit (dBm/500KHz)	Verdict
			Ant A	Ant B			
NVNT	a	5745	-3.53	-3.32	/	30	Pass
NVNT	a	5785	-4.14	-5.98	/	30	Pass
NVNT	a	5825	-3.88	-4.13	/	30	Pass
NVNT	n20	5745	-5.65	-6.05	-2.84	30	Pass
NVNT	n20	5785	-6.27	-6.17	-3.21	30	Pass
NVNT	n20	5825	-6.76	-6.4	-3.57	30	Pass
NVNT	n40	5755	-9.21	-9.77	-6.47	30	Pass
NVNT	n40	5795	-9.33	-9.87	-6.58	30	Pass
NVNT	ac20	5745	-5.51	-6.38	-2.91	30	Pass
NVNT	ac20	5785	-5.76	-6.69	-3.19	30	Pass
NVNT	ac20	5825	-6.22	-6.59	-3.39	30	Pass
NVNT	ac40	5755	-9.24	-9.68	-6.44	30	Pass
NVNT	ac40	5795	-9.77	-9.8	-6.77	30	Pass
NVNT	ac80	5775	-11.99	-12.59	-9.27	30	Pass

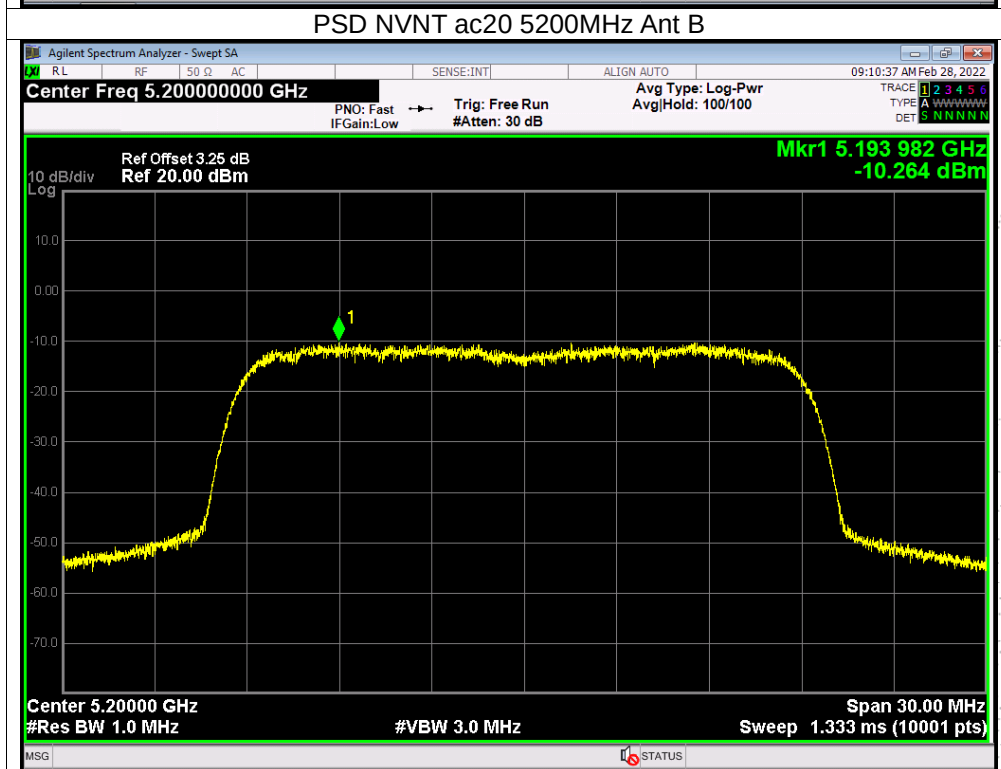
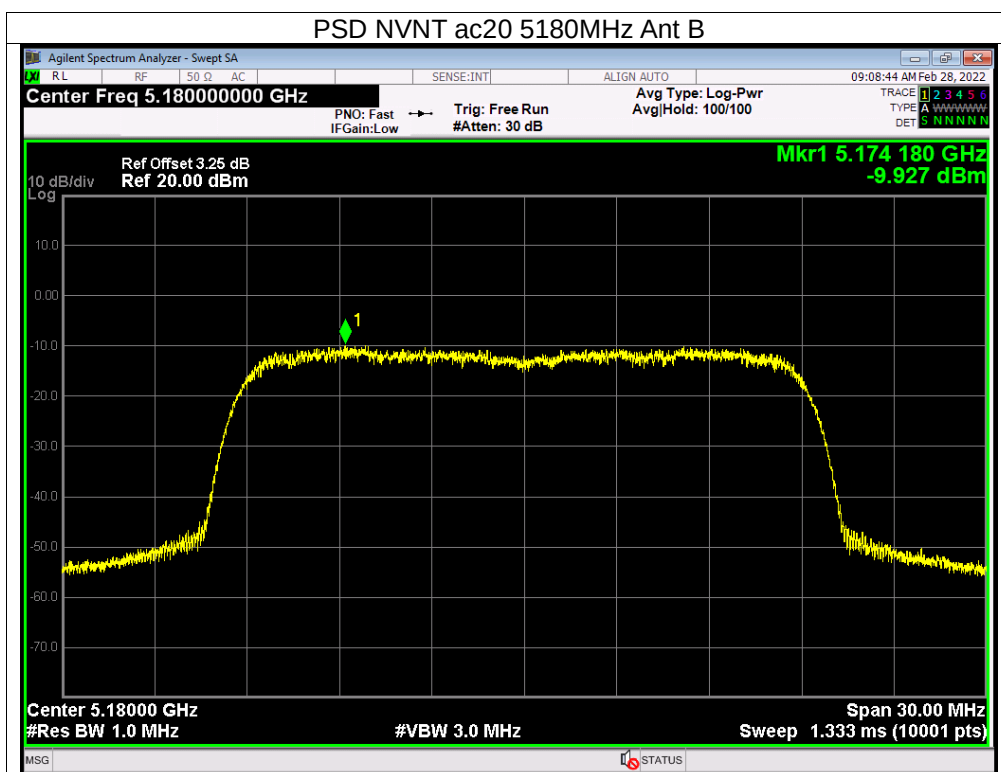
Note: A(B) Represent the value of antenna A and B, The worst data is Antenna B, only shown Antenna B Plot.

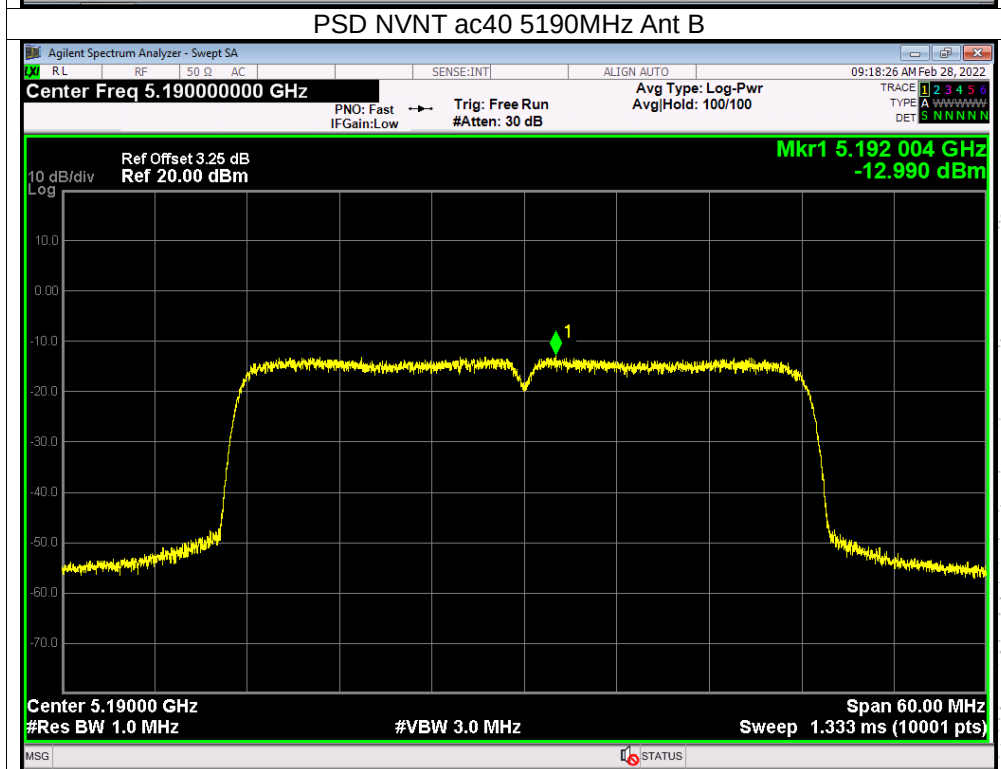
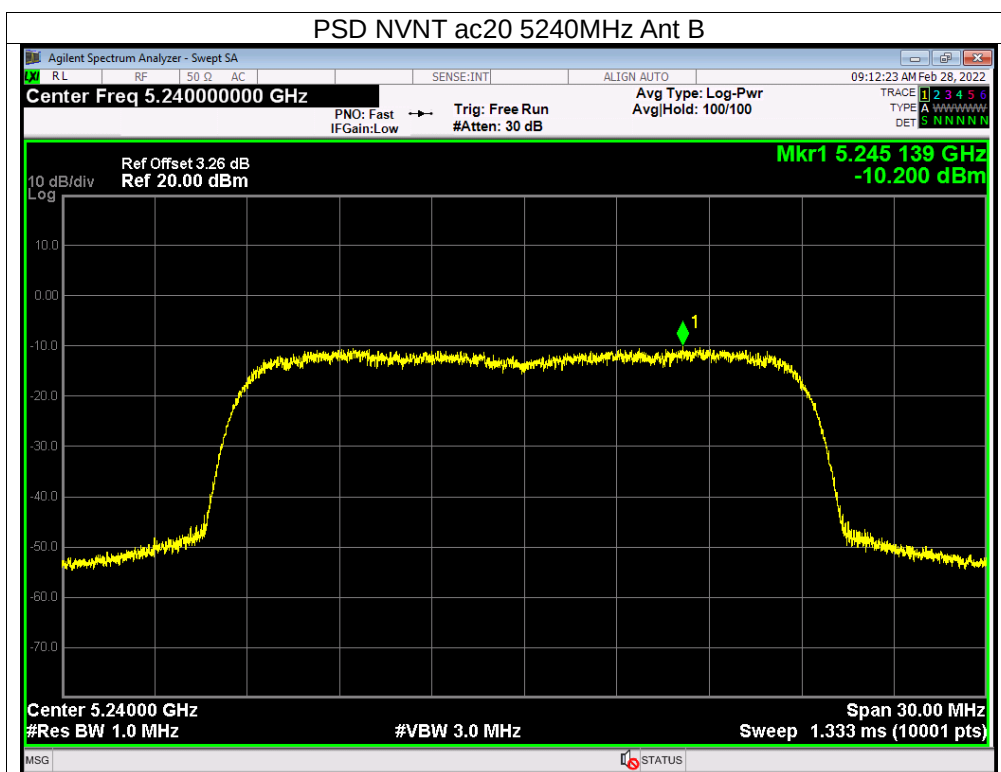


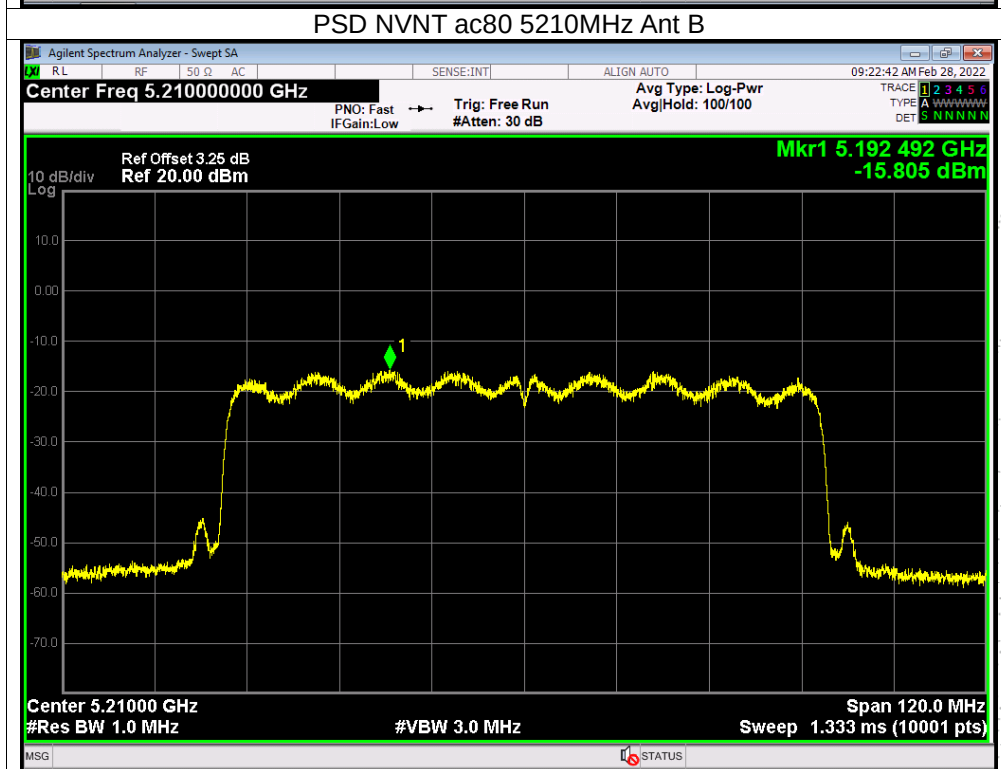
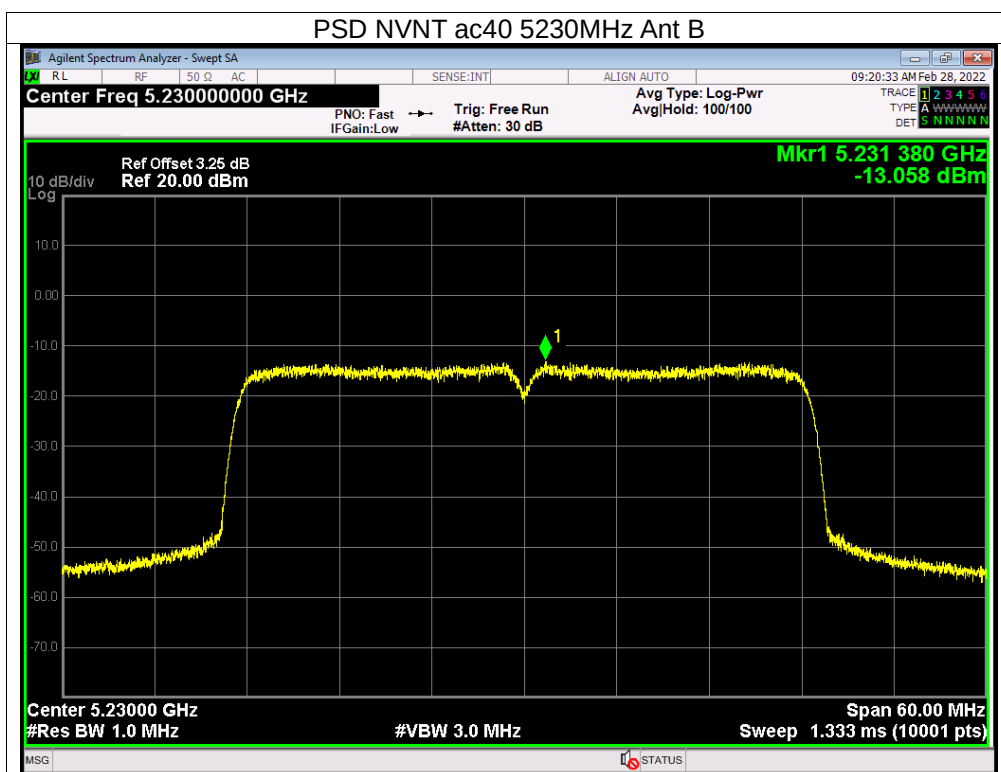


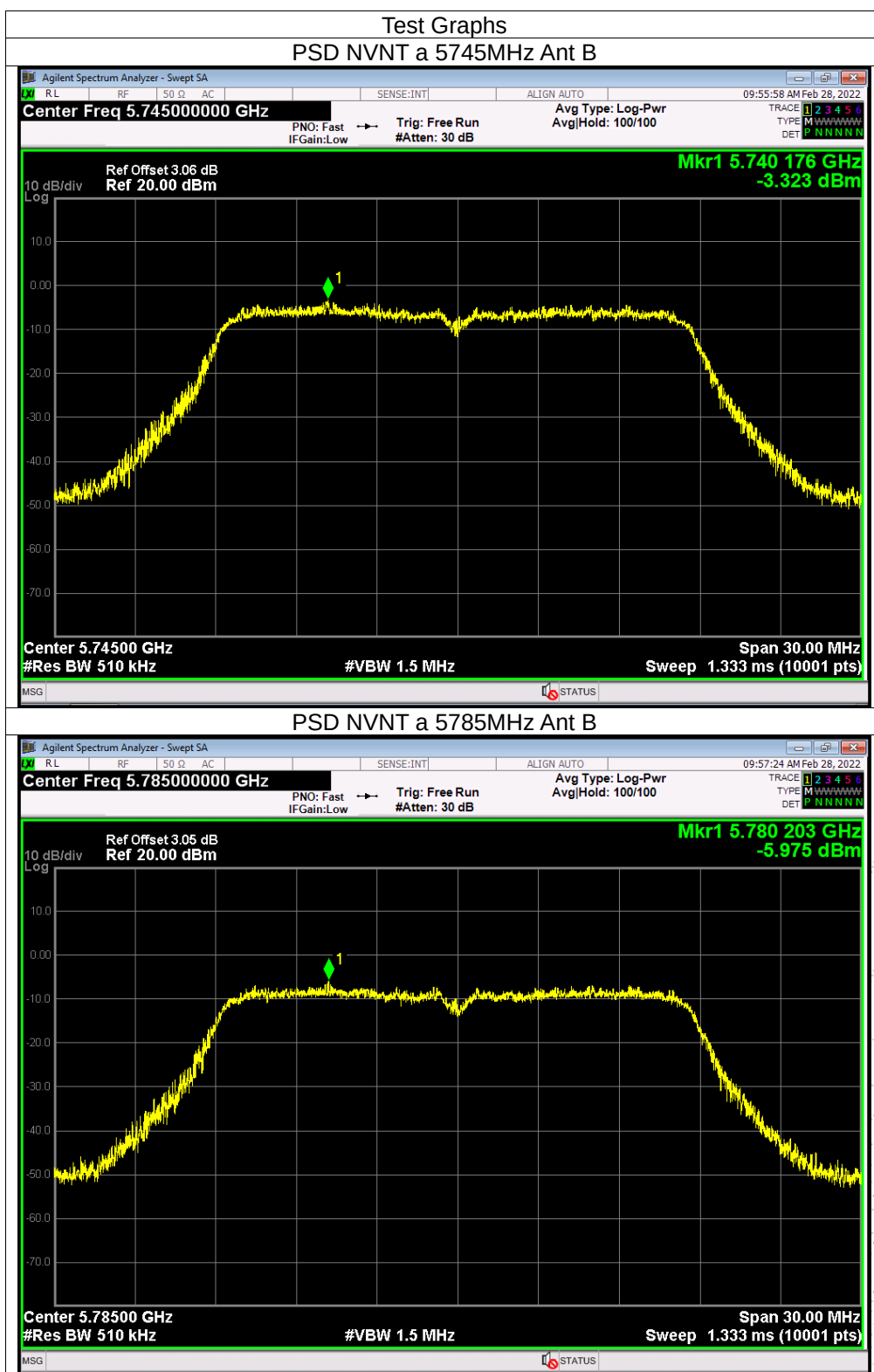


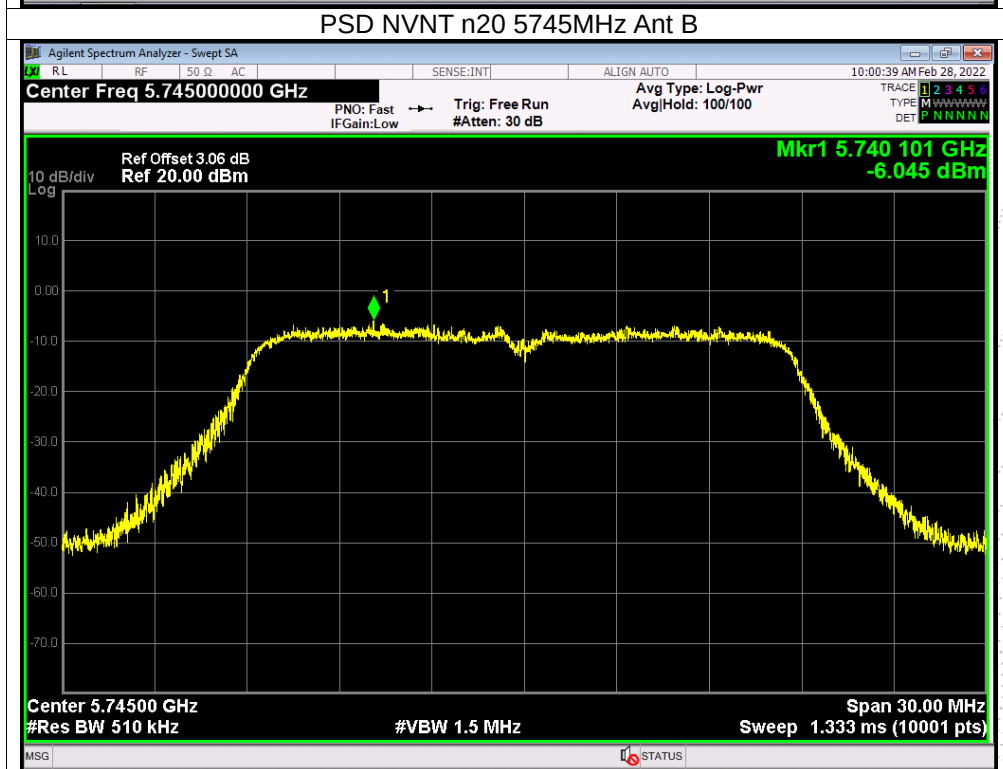
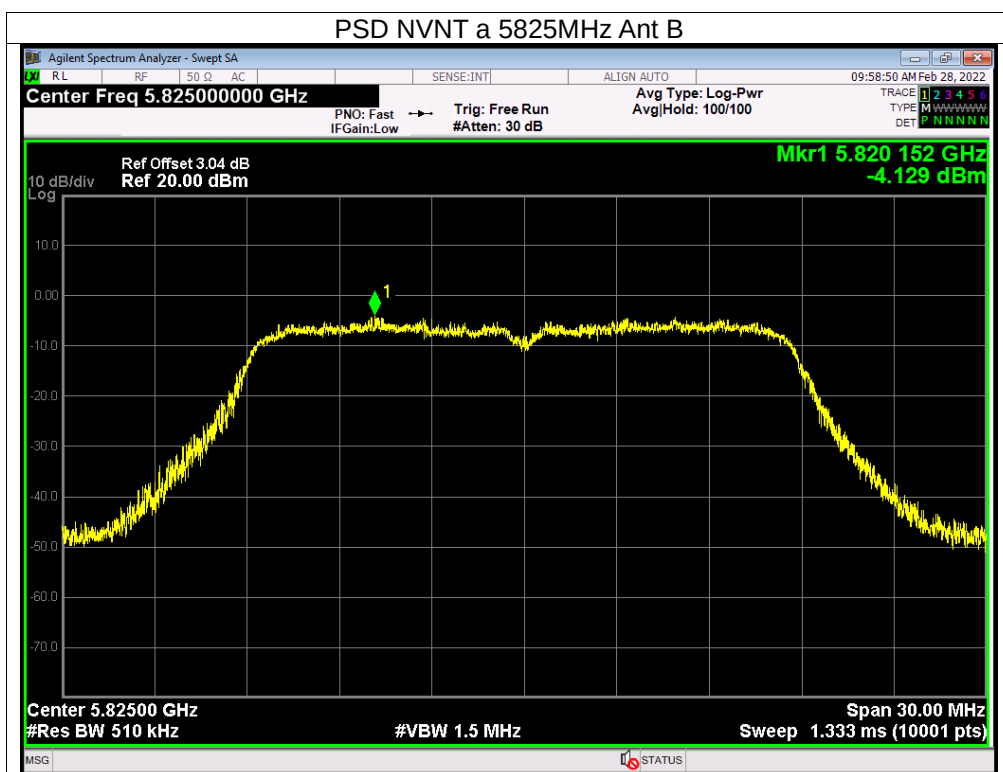


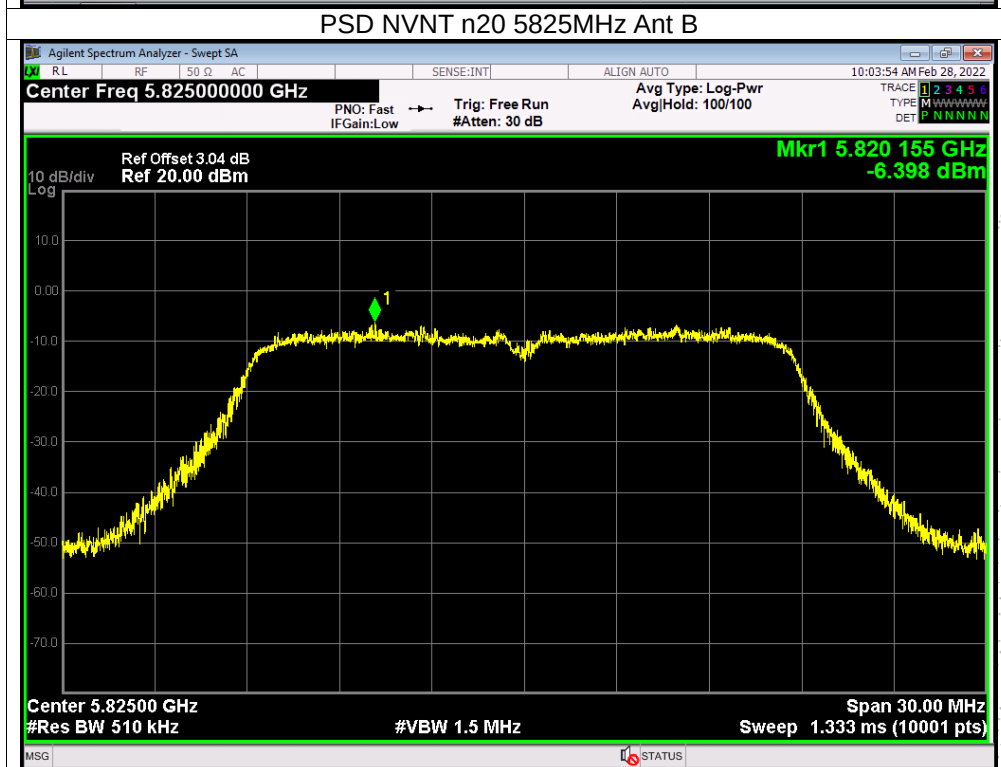
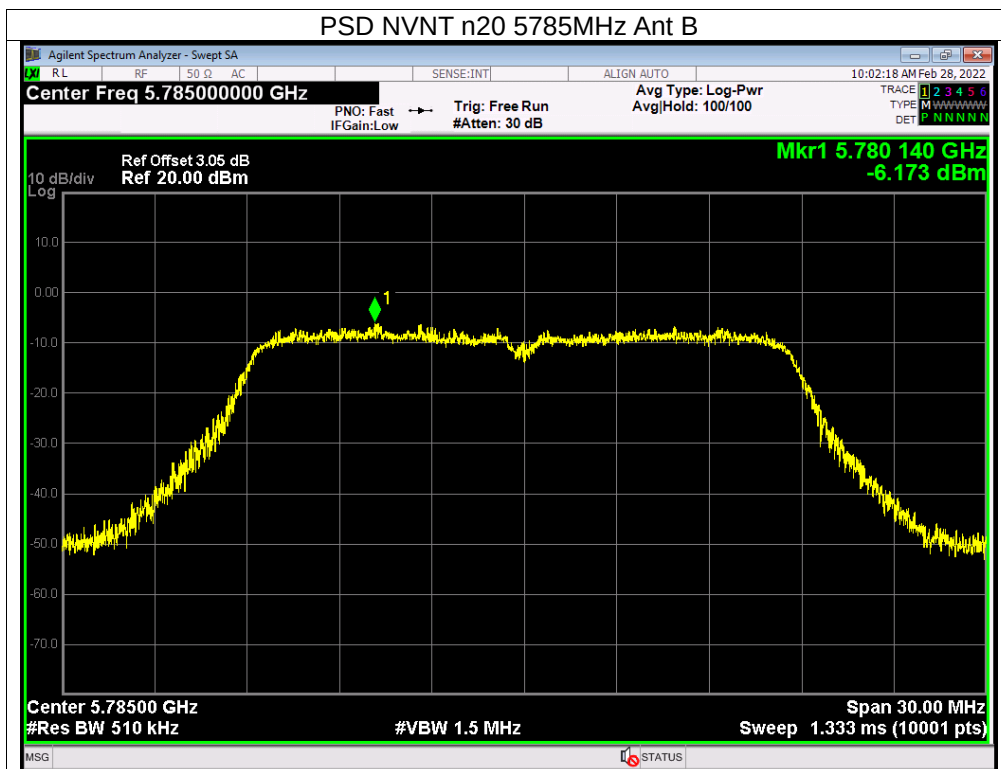


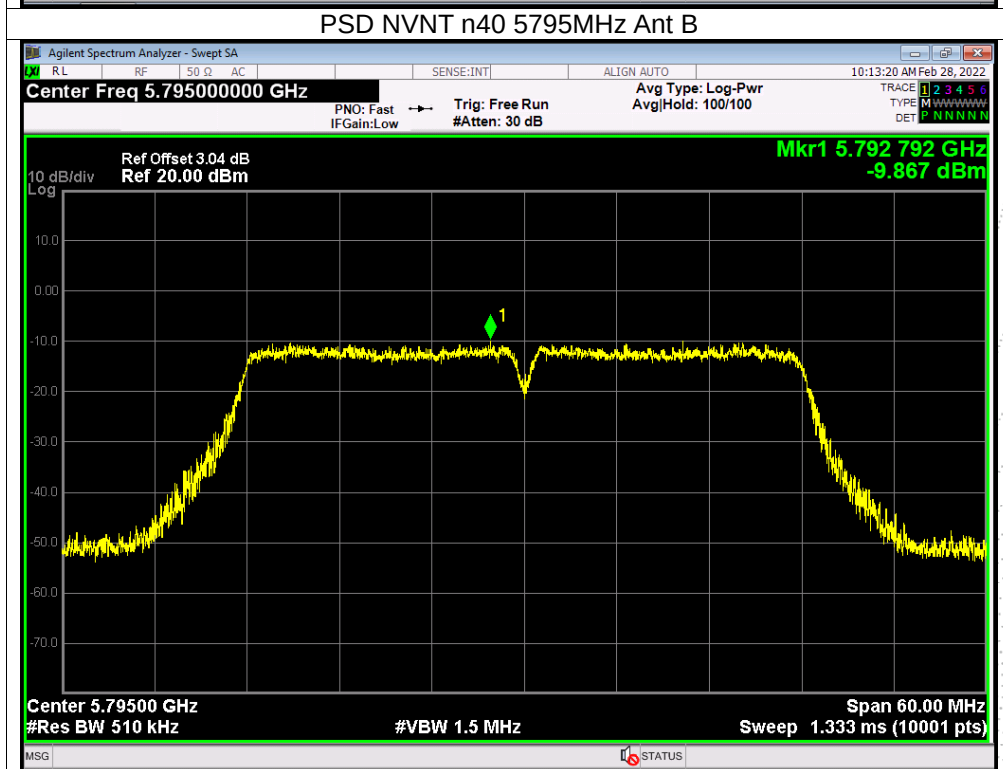
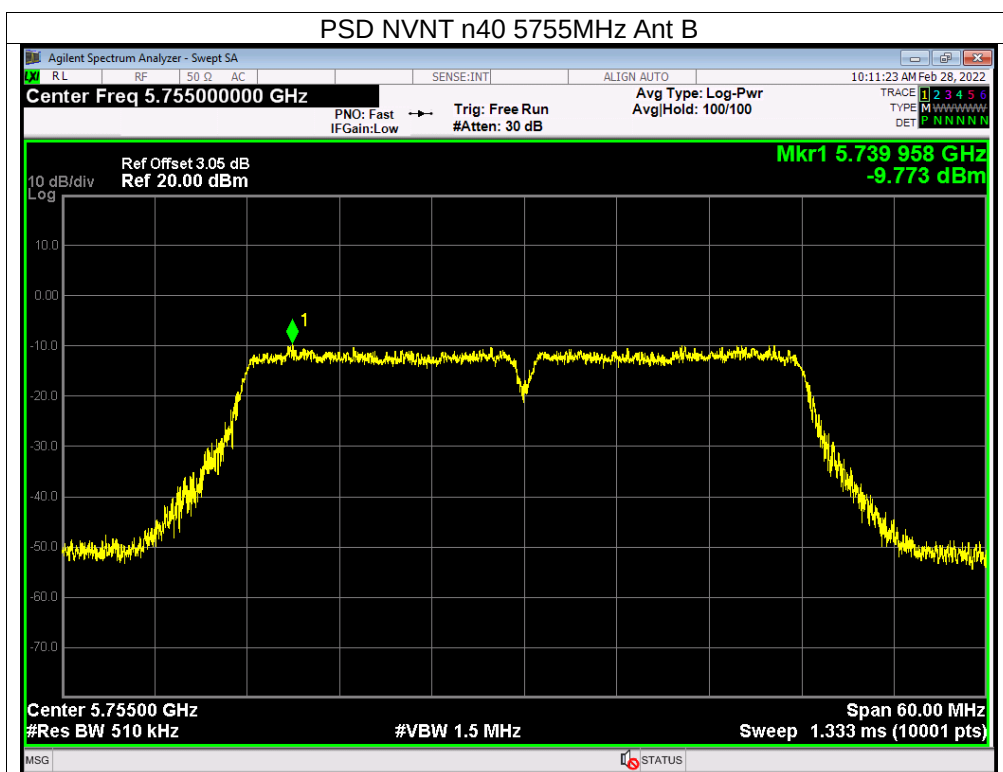


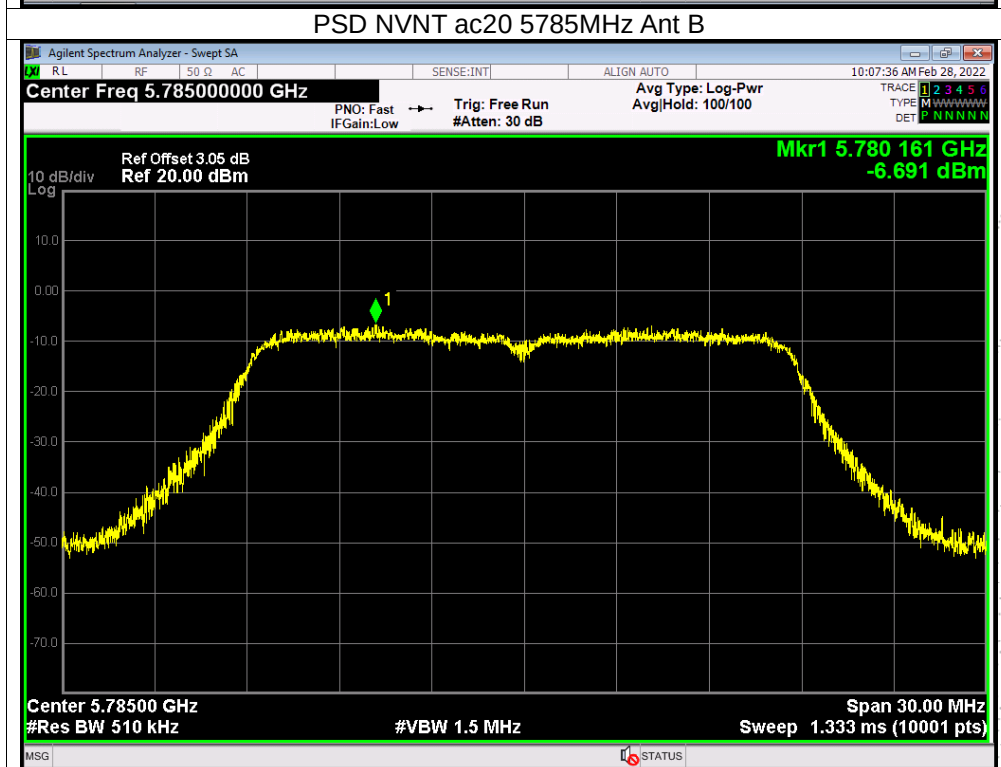
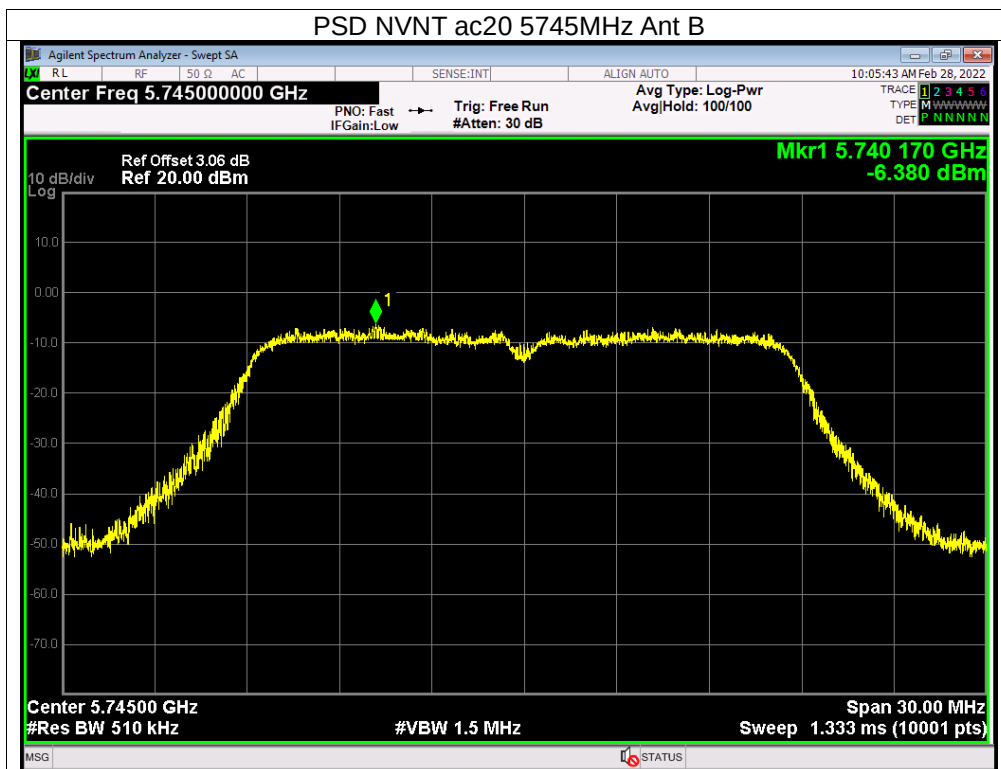


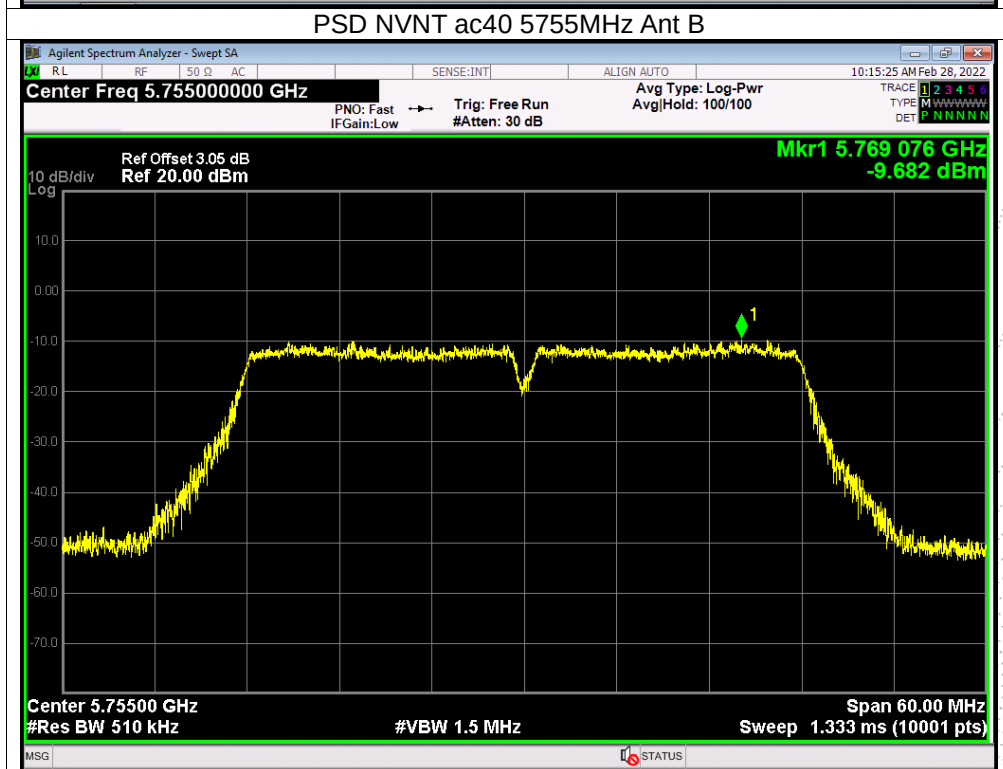
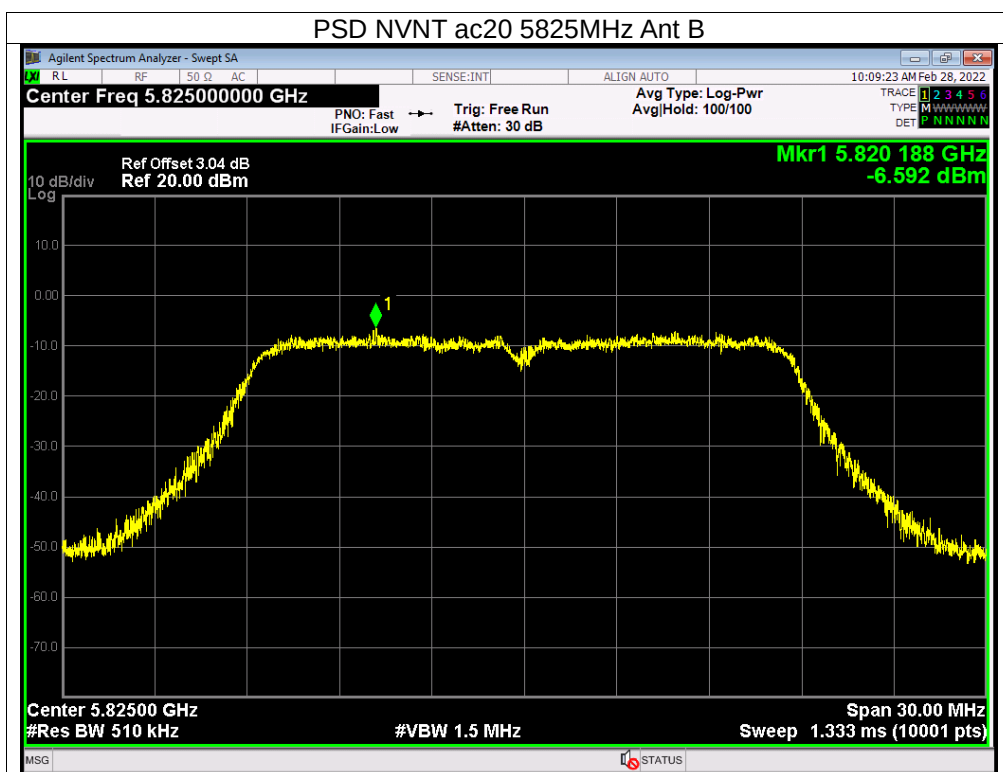


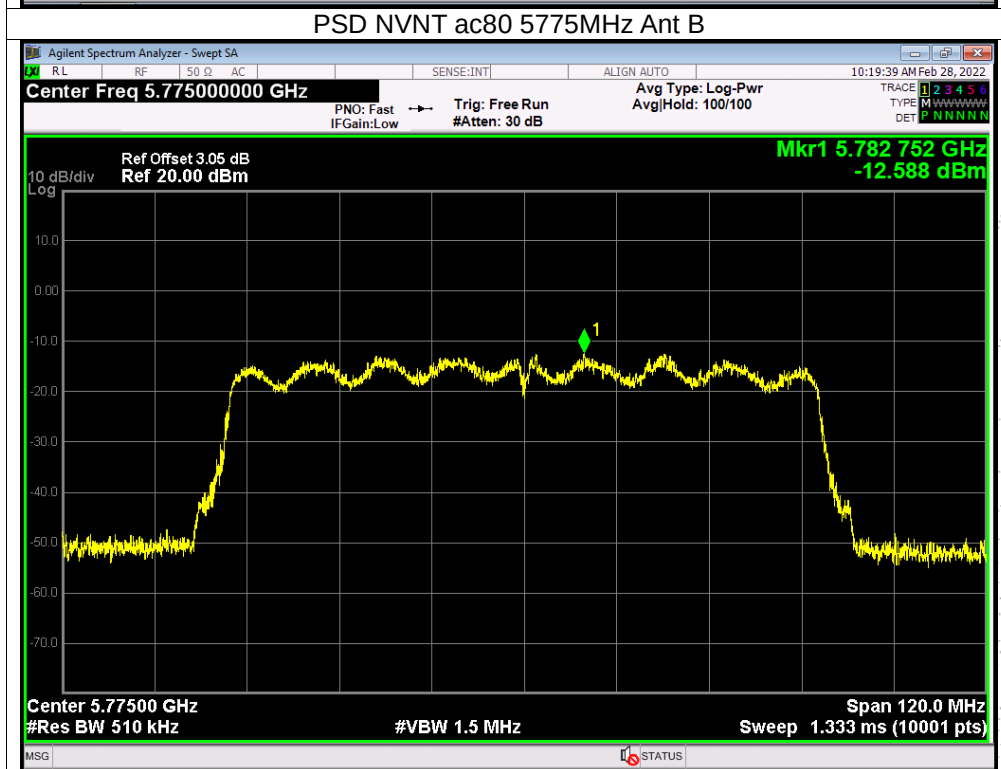
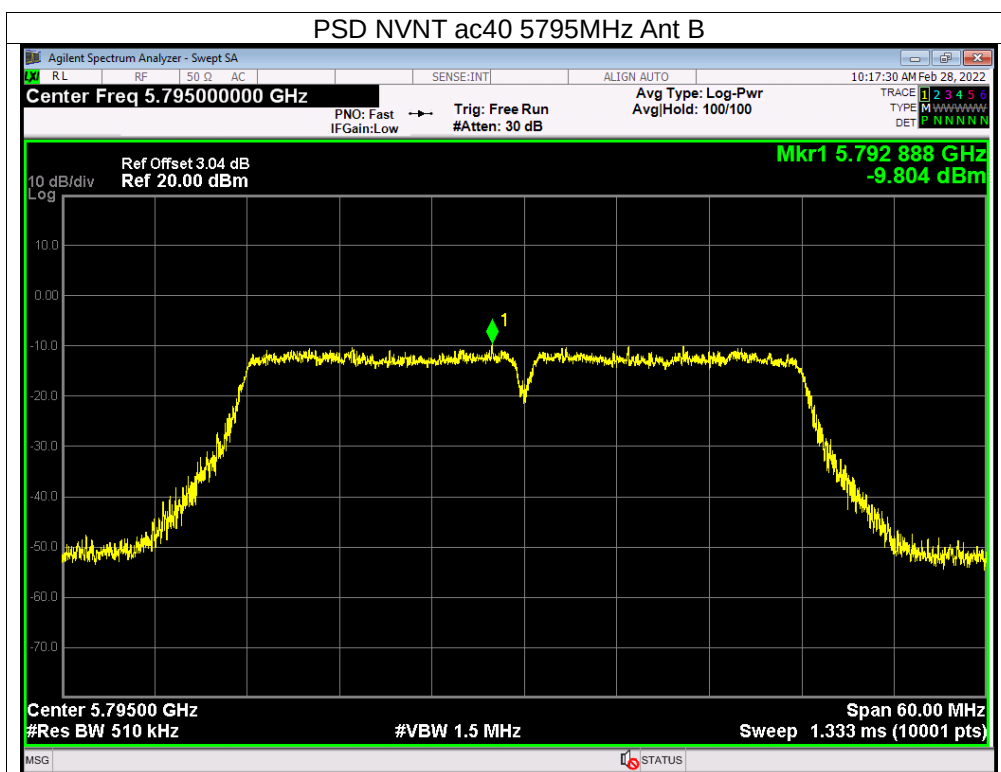






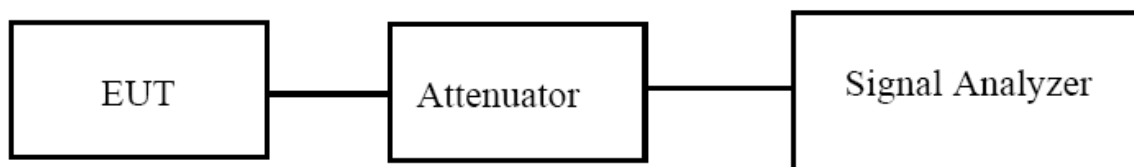






9. 26dB & 6dB & 99% Emission Bandwidth

9.1 Block Diagram Of Test Setup



9.2 Limit

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

9.3 Test procedure

a) Set RBW = approximately 1% of the emission bandwidth.

b) Set the VBW > RBW.

c) Detector = Peak.

d) Trace mode = max hold.

e) Measure the maximum width of the emission that is 26 dB down from the maximum of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.

The following procedure shall be used for measuring (99 %) power bandwidth:

1. Set center frequency to the nominal EUT channel center frequency.

2. Set span = 1.5 times to 5.0 times the OBW.

3. Set RBW = 1 % to 5 % of the OBW

4. Set VBW $\geq 3 \cdot$ RBW

5. Video averaging is not permitted. Where practical, a sample detection and single sweep mode shall be used. Otherwise, peak detection and max hold mode (until the trace stabilizes) shall be used.

6. Use the 99 % power bandwidth function of the instrument (if available).

7. If the instrument does not have a 99 % power bandwidth function, the trace data points are recovered and directly summed in power units. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5 % of the total is reached; that frequency is recorded as the lower frequency. The process is repeated until 99.5 % of the total is reached; that frequency is recorded as the upper frequency. The 99% occupied bandwidth is the difference between these two frequencies.

9.4 EUT operating Conditions

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

9.5 Test Result

Temperature:	26 °C	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage:	AC120V/60Hz
Test Mode:	(5180-5240MHz)		

Condition	Mode	Frequency (MHz)	-26 dB Bandwidth (MHz)		Limit -26 dB Bandwidth (MHz)	Verdict
			Ant A	Ant B		
NVNT	a	5180	20.273	20.26	/	Pass
NVNT	a	5200	20.149	20.398	/	Pass
NVNT	a	5240	20.306	20.318	/	Pass
NVNT	n20	5180	21.013	20.917	/	Pass
NVNT	n20	5200	20.845	21.026	/	Pass
NVNT	n20	5240	20.88	20.87	/	Pass
NVNT	n40	5190	41.398	41.566	/	Pass
NVNT	n40	5230	41.539	41.358	/	Pass
NVNT	ac20	5180	20.731	20.964	/	Pass
NVNT	ac20	5200	20.553	20.956	/	Pass
NVNT	ac20	5240	20.96	21.152	/	Pass
NVNT	ac40	5190	41.627	41.563	/	Pass
NVNT	ac40	5230	41.936	42.109	/	Pass
NVNT	ac80	5210	79.736	80.153	/	Pass

Condition	Mode	Frequency (MHz)	99% OBW (MHz)	
			Ant A	Ant B
NVNT	a	5180	16.427	16.456
NVNT	a	5200	16.447	16.476
NVNT	a	5240	16.49	16.458
NVNT	n20	5180	17.57	17.556
NVNT	n20	5200	17.575	17.567
NVNT	n20	5240	17.587	17.576
NVNT	n40	5190	36.224	36.204
NVNT	n40	5230	36.311	36.258
NVNT	ac20	5180	17.577	17.573
NVNT	ac20	5200	17.562	17.57
NVNT	ac20	5240	17.592	17.584
NVNT	ac40	5190	36.241	36.225
NVNT	ac40	5230	36.277	36.222
NVNT	ac80	5210	75.413	75.228

Temperature:	26 °C	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage:	AC120V/60Hz
Test Mode:	(5745-5825MHz)		

Condition	Mode	Frequency (MHz)	-6 dB Bandwidth (MHz)		Limit -6 dB Bandwidth (MHz)	Verdict
			Ant A	Ant B		
NVNT	a	5745	16.446	17.588	0.5	Pass
NVNT	a	5785	16.482	17.616	0.5	Pass
NVNT	a	5825	16.462	17.61	0.5	Pass
NVNT	n20	5745	17.611	17.582	0.5	Pass
NVNT	n20	5785	17.59	17.614	0.5	Pass
NVNT	n20	5825	17.599	17.594	0.5	Pass
NVNT	n40	5755	36.448	36.454	0.5	Pass
NVNT	n40	5795	36.48	36.453	0.5	Pass
NVNT	ac20	5745	17.604	17.595	0.5	Pass
NVNT	ac20	5785	17.613	17.635	0.5	Pass
NVNT	ac20	5825	17.599	17.604	0.5	Pass
NVNT	ac40	5755	36.444	36.438	0.5	Pass
NVNT	ac40	5795	36.413	36.428	0.5	Pass
NVNT	ac80	5775	75.985	75.935	0.5	Pass

Condition	Mode	Frequency (MHz)	99% OBW (MHz)	
			Ant A	Ant B
NVNT	a	5745	16.458	17.578
NVNT	a	5785	16.479	17.582
NVNT	a	5825	16.442	17.569
NVNT	n20	5745	17.575	17.572
NVNT	n20	5785	17.585	17.582
NVNT	n20	5825	17.568	17.565
NVNT	n40	5755	36.27	36.248
NVNT	n40	5795	36.285	36.244
NVNT	ac20	5745	17.582	17.564
NVNT	ac20	5785	17.595	17.585
NVNT	ac20	5825	17.583	17.579
NVNT	ac40	5755	36.251	36.275
NVNT	ac40	5795	36.231	36.204
NVNT	ac80	5775	75.218	75.254

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

