

TEST REPORT

Report No.: BCTC2307525960-4E

Applicant: SHENZHEN NST INDUSTRY AND TRADE CO.,LTD

Product Name: 15.6 inch laptop

Model/Type
reference: X15

Tested Date: 2023-07-28 to 2023-08-07

Issued Date: 2023-08-08

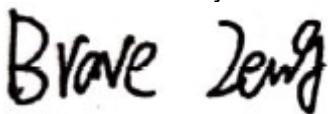
Shenzhen BCTC Testing Co., Ltd.



FCC ID: 2AAMS-SGINX15V2

Product Name: 15.6 inch laptop
Trademark: N/A
Model/Type reference: X15
M156NN
Prepared For: SHENZHEN NST INDUSTRY AND TRADE CO.,LTD
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Sample Received Date: 2023-07-28
Sample tested Date: 2023-07-28 to 2023-08-07
Issue Date: 2023-08-08
Report No.: BCTC2307525960-4E
FCC Part15 15.407
Test Standards: 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

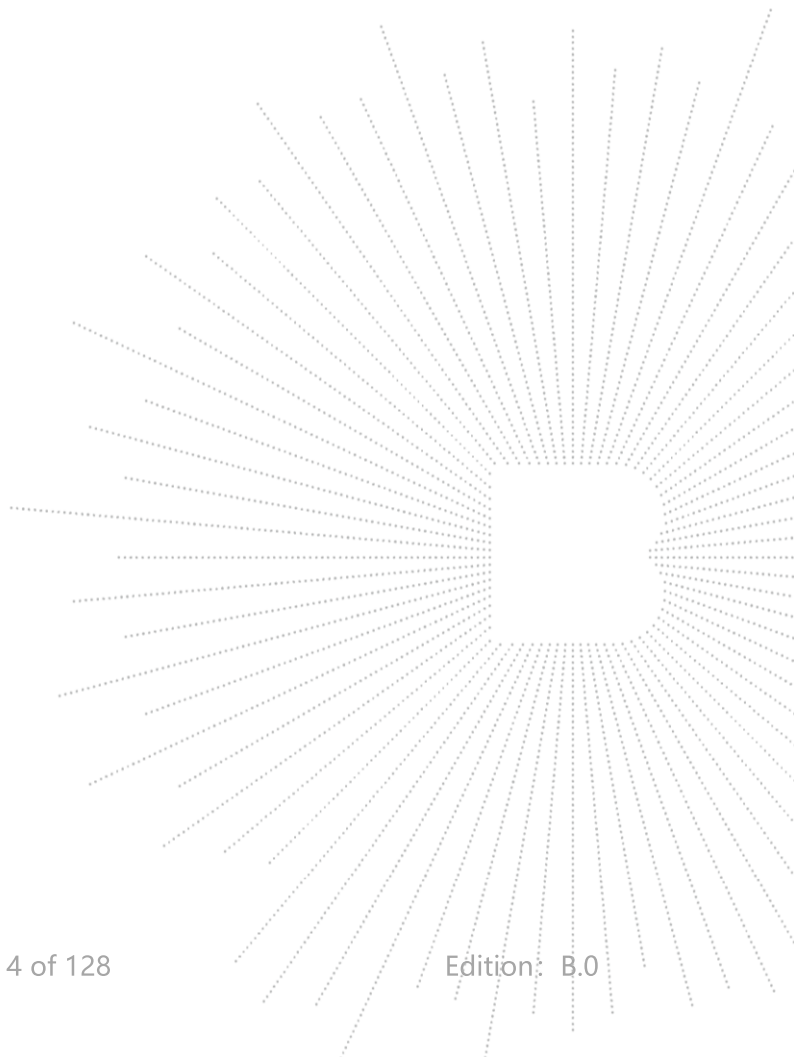
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Table Of Content

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	9
4.5 Test Mode	10
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	53
9.1 Block Diagram Of Test Setup	53
9.2 Limit	53
9.3 Test Procedure	53
9.4 EUT Operating Conditions	54
9.5 Test Result	55
10. Maximum Conducted Output Power	85
10.1 Block Diagram Of Test Setup	85
10.2 Limit	85
10.3 Test Procedure	85
10.4 EUT Operating Conditions	86
10.5 Test Result	87

11. Out Of Band Emissions	89
11.1 Block Diagram Of Test Setup.....	89
11.2 Limit	89
11.3 Test Procedure	89
11.4 EUT Operating Conditions	89
11.5 Test Result.....	89
12. Spurious RF Conducted Emissions.....	102
12.1 Block Diagram Of Test Setup.....	102
12.2 Limit	102
12.3 Test Procedure	102
12.4 Test Result.....	102
13. Frequency Stability Measurement	117
13.1 Block Diagram Of Test Setup.....	117
13.2 Limit	117
13.3 Test Procedure	117
13.4 Test Result.....	118
14. Antenna Requirement	124
14.1 Limit	124
14.2 Test Result.....	124
15. EUT Photographs.....	125
16. EUT Test Setup Photographs.....	126

(Note: N/A Means Not Applicable)



1. Version

Report No.	Issue Date	Description	Approved
BCTC2307525960-4E	2023-08-08	Original	Valid

2. Test Summary

The Product has been tested according to the following specifications:

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

Note: The device shall automatically discontinue transmission in case of either absence of information to transmit or operational failure.

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

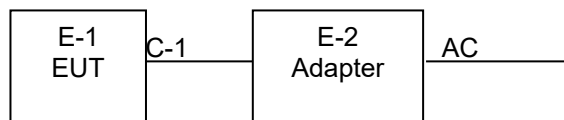
4.1 Product Information

Model/Type Ref.:	X15 M156NN
Model differences:	All the model are the same circuit and RF module, except model names.
Hardware Version:	X133JR630
Software Version:	win11 home
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); 5190-5230MHz for 802.11n(HT40); 5210MHz for 802.11 ac80; 5745-5825 MHz for 802.11a/n(HT20); 5755-5795 MHz for 802.11n(HT40); 5775MHz for 802.11 ac80;
Data Rate	802.11a: 6,9,12,18,24,36,48,54Mbps; 802.11n(HT20/HT40):MCS0-MCS15; 802.11ac(VHT20): NSS1, MCS0-MCS8 802.11ac(VHT40/VHT80):NSS1, MCS0-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:	Internal antenna
Antenna Gain:	5.1G: Antenna A: 2.67dBi Antenna B: 2.67dBi 5.8G: Antenna A: 2.67dBi Antenna B: 2.67dBi
Ratings:	DC 12V from adapter
Adapter Information:	MODEL: J302-1203000UX INPUT: 100-240V~50/60Hz 1.5A OUTPUT: DC 12.0V 3.0A 36.0W

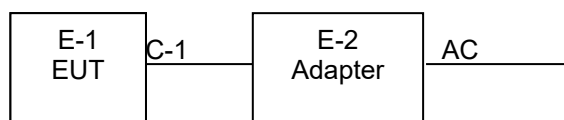
4.2 Test Setup Configuration

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	15.6 inch laptop	N/A	X15	N/A	EUT
E-2	Adapter	N/A	J302-1203000UX	N/A	Auxiliary

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

5.1G

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

5.8G

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 ac80 CH 42/CH 155
Mode 4	Link Mode

Note:

- (1) The measurements are performed at all Bit Rate of Transmitter, the worst data was reported.
- (2) We're testing antenna A data.

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

5.1G

1)For power spectral density(PSD) measurements,
Array Gain= $10\log(\text{NANT}/\text{NSS})\text{dB}=10\log(2/1)=3.01\text{dB}$,

So the directional gain for PSD is 5.68dBi

2)For power measurements,

The Array gain=0 dB for $\text{NANT} \leq 4$,

So the directional gain for Power measurements is 2.67 dBi

Antenna	Brand	Model Name	Antenna Type	Gain (dBi)	NOTE
A	N/A	N/A	Internal antenna	2.67	
B	N/A	N/A	Internal antenna	2.67	

5.8G

For power spectral density(PSD) measurements,
Array Gain= $10\log(\text{NANT}/\text{NSS})\text{dB}=10\log(2/1)=3.01\text{dB}$,

So the directional gain for PSD is 5.68dBi

2)For power measurements,

The Array gain=0 dB for $\text{NANT} \leq 4$,

So the directional gain for Power measurements is 2.67dBi

Antenna	Brand	Model Name	Antenna Type	Gain (dBi)	NOTE
A	N/A	N/A	Internal antenna	2.67	
B	N/A	N/A	Internal antenna	2.67	

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

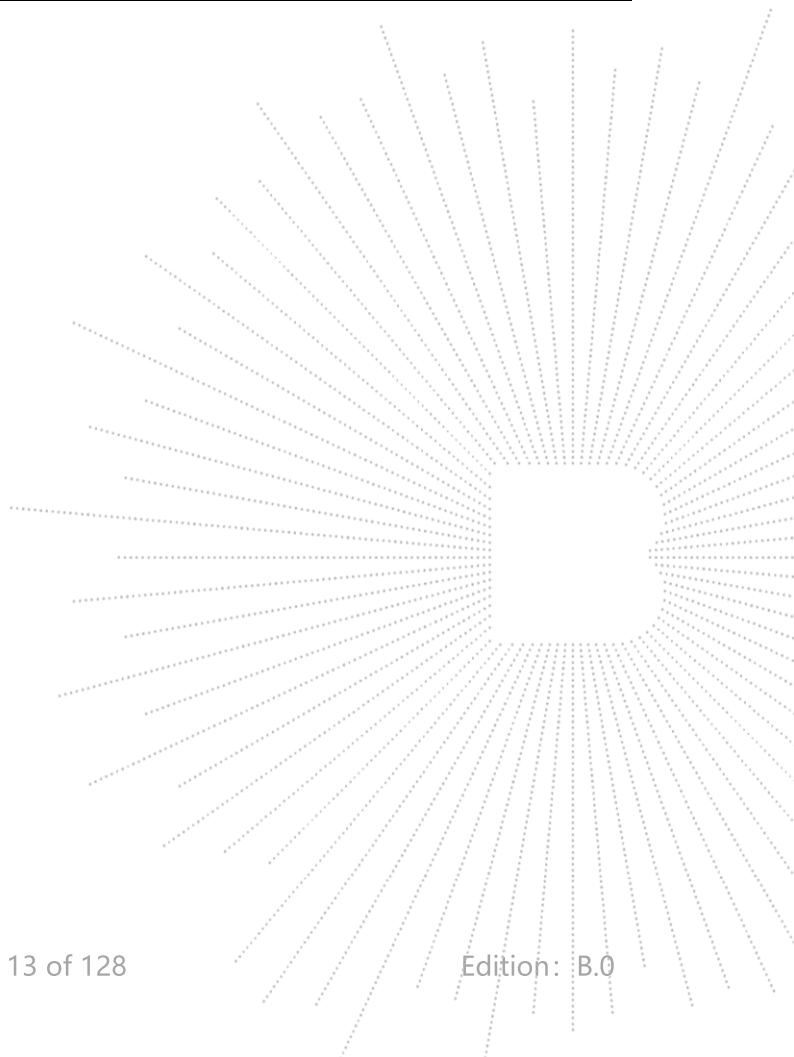
ISED CAB identifier: CN0017

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

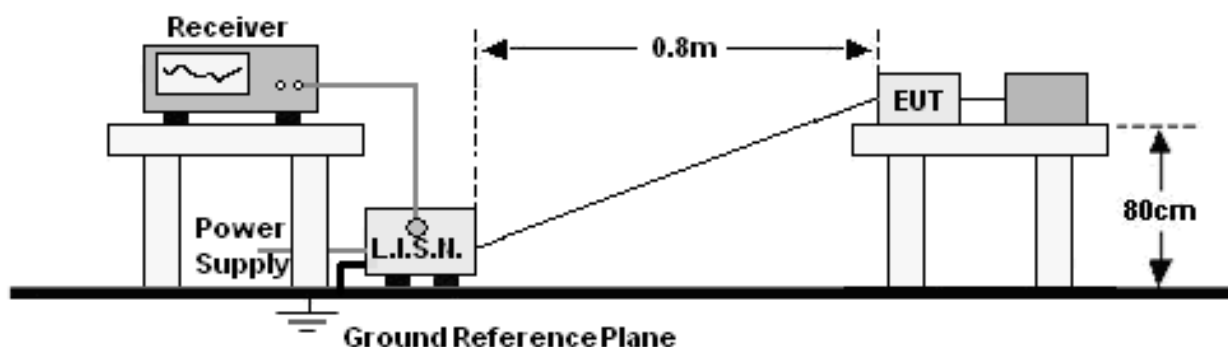
RF Conducted Test					
Equipment	Manufacturer	Model#	Serial#	Last Cal.	Next Cal.
Power Meter	Keysight	E4419	\	May 15, 2023	May 14, 2024
Power Sensor (AV)	Keysight	E9300A	\	May 15, 2023	May 14, 2024
Signal Analyzer20kHz-26.5GHz	Keysight	N9020A	MY49100060	May 15, 2023	May 14, 2024
Spectrum Analyzer9kHz-40GHz	R&S	FSP40	100363	May 15, 2023	May 14, 2024
Radio frequency control box	MAIWEI	MW100-RFC B	\	\	\
Software	MAIWEI	MTS 8310	\	\	\

Radiated Emissions Test (966 Chamber02)					
Equipment	Manufacturer	Model#	Serial#	Last Cal.	Next Cal.
966 chamber	SKET	966 Room	966	Nov. 02. 2021	Nov. 01.2024
Receiver	R&S	ESR3	102075	May 15, 2023	May 14, 2024
Receiver	R&S	ESRI7	100010	Nov. 08. 2022	Nov. 07.2023
Amplifier	SKET	LNPA-30M01 G-30	SK202108200 4	Nov. 08. 2022	Nov. 07.2023
TRILOG Broadband Antenna	Schwarzbeck	VULB9168	1323	Mar. 06, 2022	Mar. 05, 2024
Loop Antenna(9KHz -30MHz)	Schwarzbeck	FMZB1519B	00014	May 31, 2023	May 30, 2024
Amplifier	SKET	LAPA_01G18 G-45dB	\	May 15, 2023	May 14, 2024
Horn Antenna	Schwarzbeck	BBHA9120D	1541	May 31, 2023	May 30, 2024
Amplifier(18G Hz-40GHz)	MITEQ	TTA1840-35- HG	2034381	May 15, 2023	May 14, 2024
Horn Antenna(18G Hz-40GHz)	Schwarzbeck	BBHA9170	00822	May 31, 2023	May 30, 2024
Spectrum Analyzer9kHz- 40GHz	R&S	FSP40	100363	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

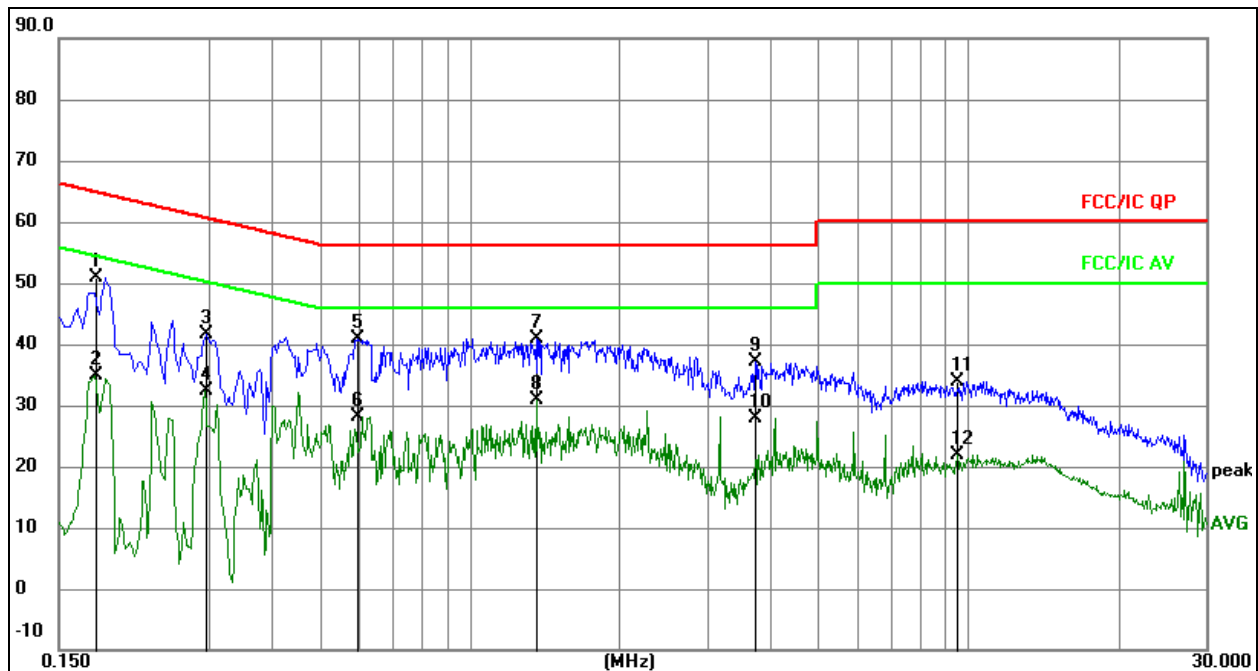
- The Product was placed on a nonconductive table 0.8 m above the horizontal ground reference plane, and 0.4 m from the vertical ground reference plane, and connected to the main through Line Impedance Stability Network (L.I.S.N).
- The RBW of the receiver was set at 9 kHz in 150 kHz ~ 30MHz with Peak 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	Phase :	L
Test Mode:	Mode 4	Test Voltage :	AC120V/60Hz

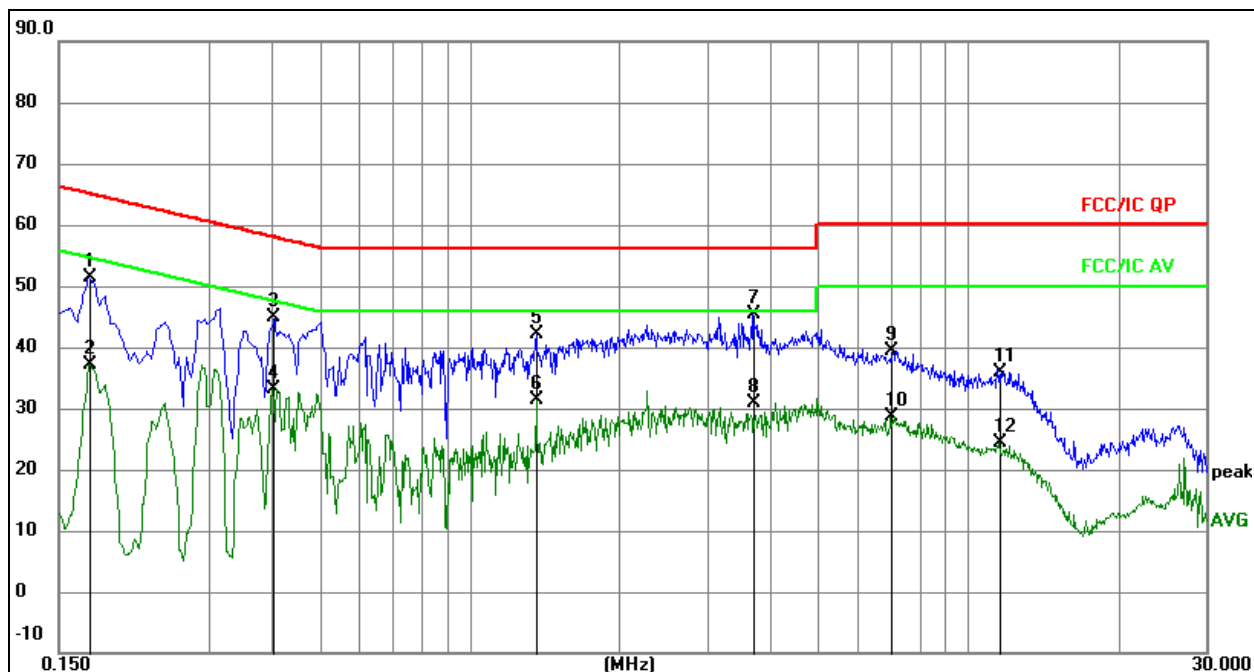


Remark:

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
1 *	0.1768	41.32	9.56	50.88	64.63	-13.75	QP
2	0.1768	25.26	9.56	34.82	54.63	-19.81	AVG
3	0.2940	31.91	9.61	41.52	60.41	-18.89	QP
4	0.2940	22.69	9.61	32.30	50.41	-18.11	AVG
5	0.5979	31.32	9.62	40.94	56.00	-15.06	QP
6	0.5979	18.48	9.62	28.10	46.00	-17.90	AVG
7	1.3593	31.05	9.73	40.78	56.00	-15.22	QP
8	1.3593	21.25	9.73	30.98	46.00	-15.02	AVG
9	3.7395	27.40	9.83	37.23	56.00	-18.77	QP
10	3.7395	17.98	9.83	27.81	46.00	-18.19	AVG
11	9.5016	24.20	9.67	33.87	60.00	-26.13	QP
12	9.5016	12.13	9.67	21.80	50.00	-28.20	AVG

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



Remark:

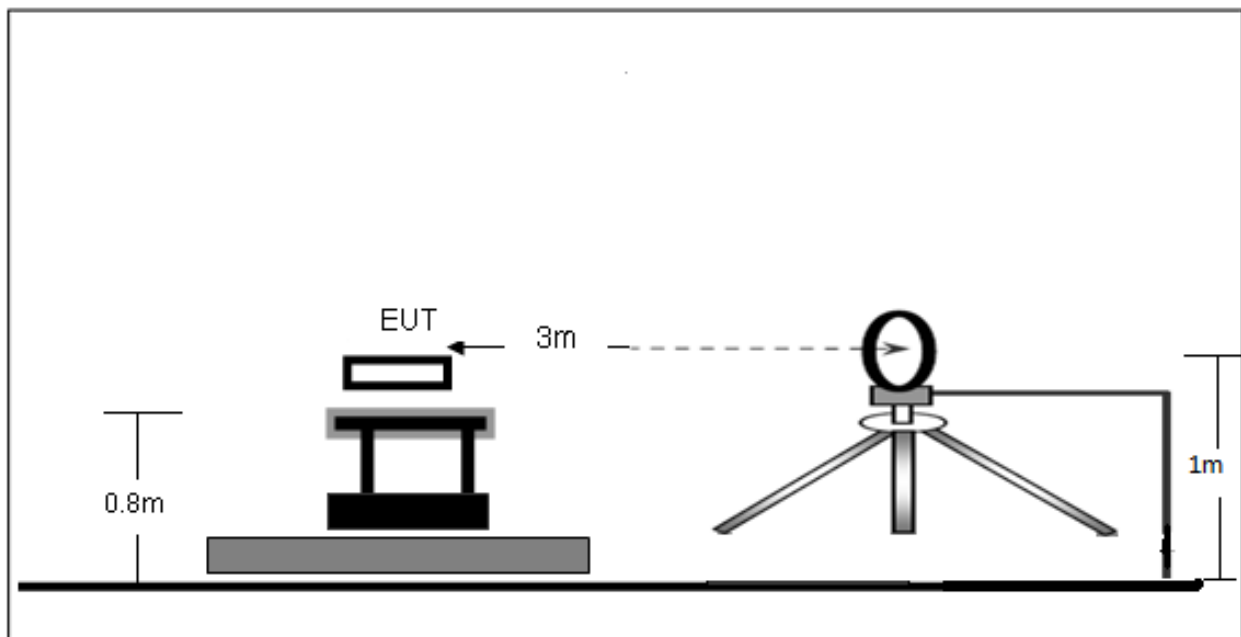
1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.
3. Measurement=Reading Level+ Correct Factor
4. Over= Measurement-Limit

No.	Mk.	Freq. MHz	Reading Level	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector
1		0.1725	41.91	9.55	51.46	64.84	-13.38	QP
2		0.1725	27.60	9.55	37.15	54.84	-17.69	AVG
3		0.4020	35.33	9.62	44.95	57.81	-12.86	QP
4		0.4020	23.50	9.62	33.12	47.81	-14.69	AVG
5		1.3650	32.34	9.73	42.07	56.00	-13.93	QP
6		1.3650	21.63	9.73	31.36	46.00	-14.64	AVG
7	*	3.7185	35.46	9.82	45.28	56.00	-10.72	QP
8		3.7185	21.07	9.82	30.89	46.00	-15.11	AVG
9		6.9900	29.66	9.74	39.40	60.00	-20.60	QP
10		6.9900	18.96	9.74	28.70	50.00	-21.30	AVG
11		11.5170	26.25	9.66	35.91	60.00	-24.09	QP
12		11.5170	14.63	9.66	24.29	50.00	-25.71	AVG

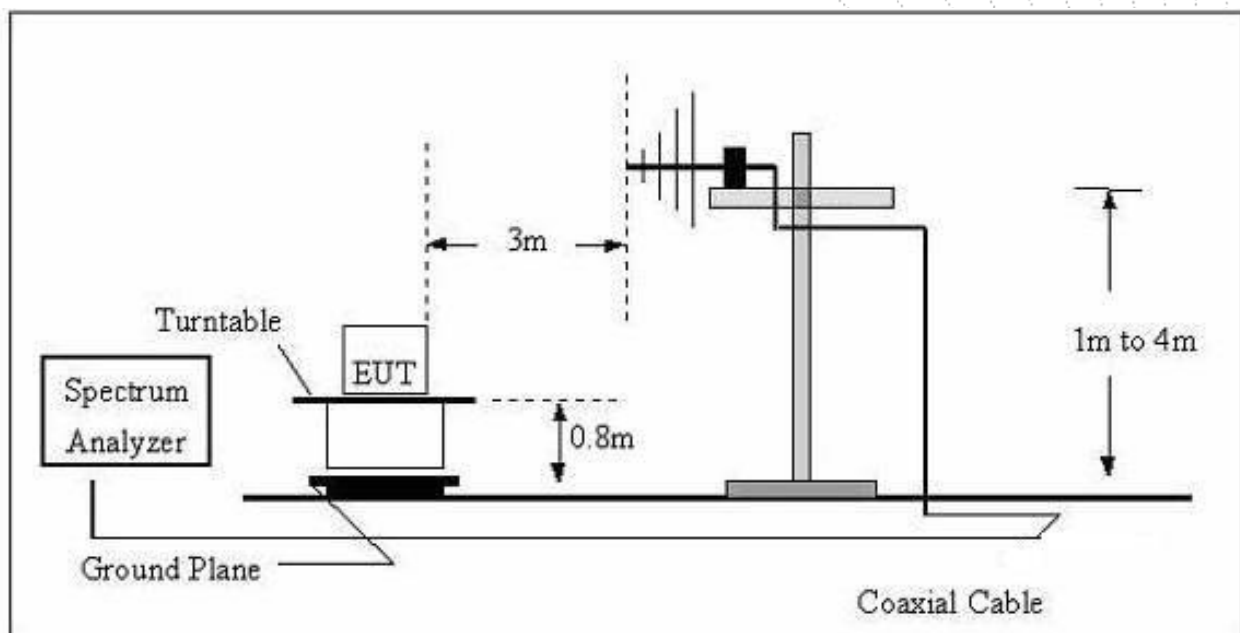
7. Radiated Emissions

7.1 Block Diagram Of Test Setup

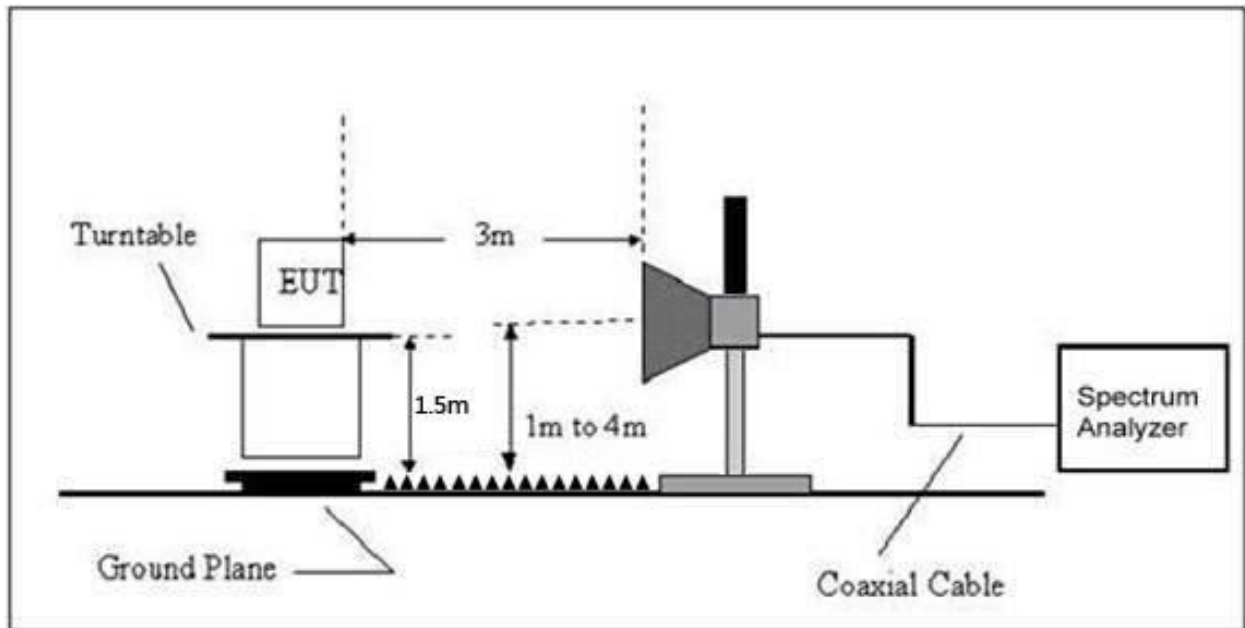
(A) Radiated Emission Test-Up Frequency Below 30MHz



(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:	AC120V/60Hz
Test Mode:	Mode 4	Polarization:	--

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

Note:

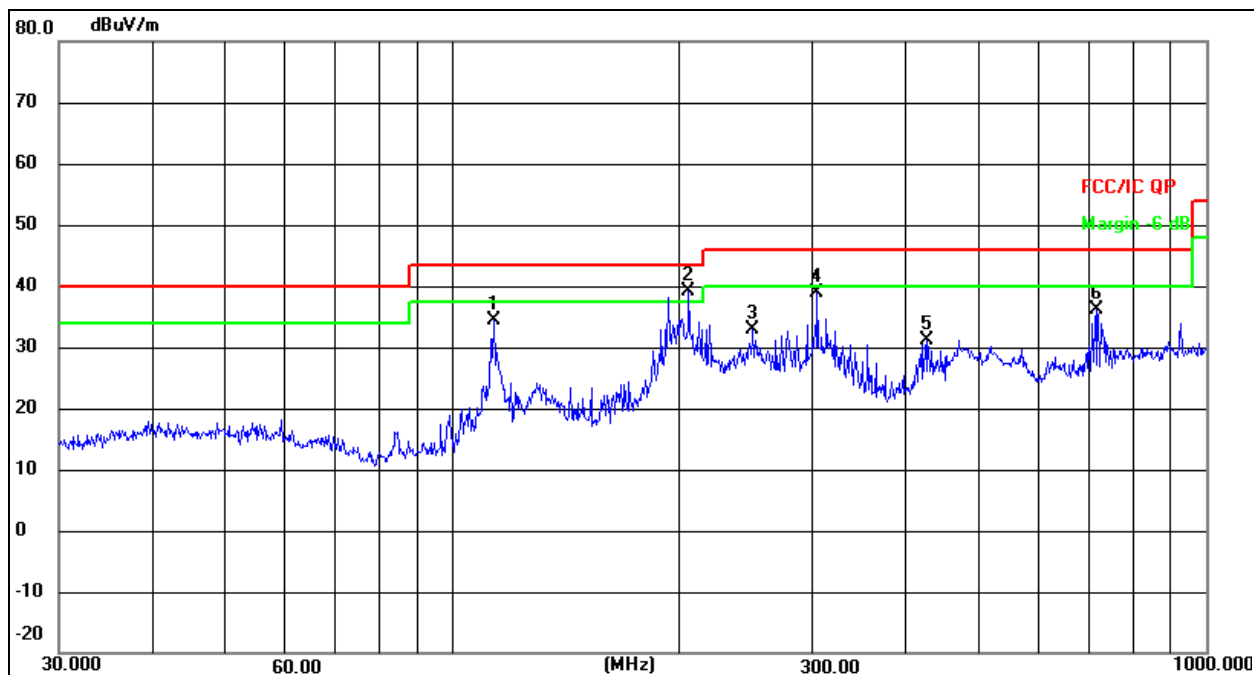
The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

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

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

Between 30MHz – 1GHz

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

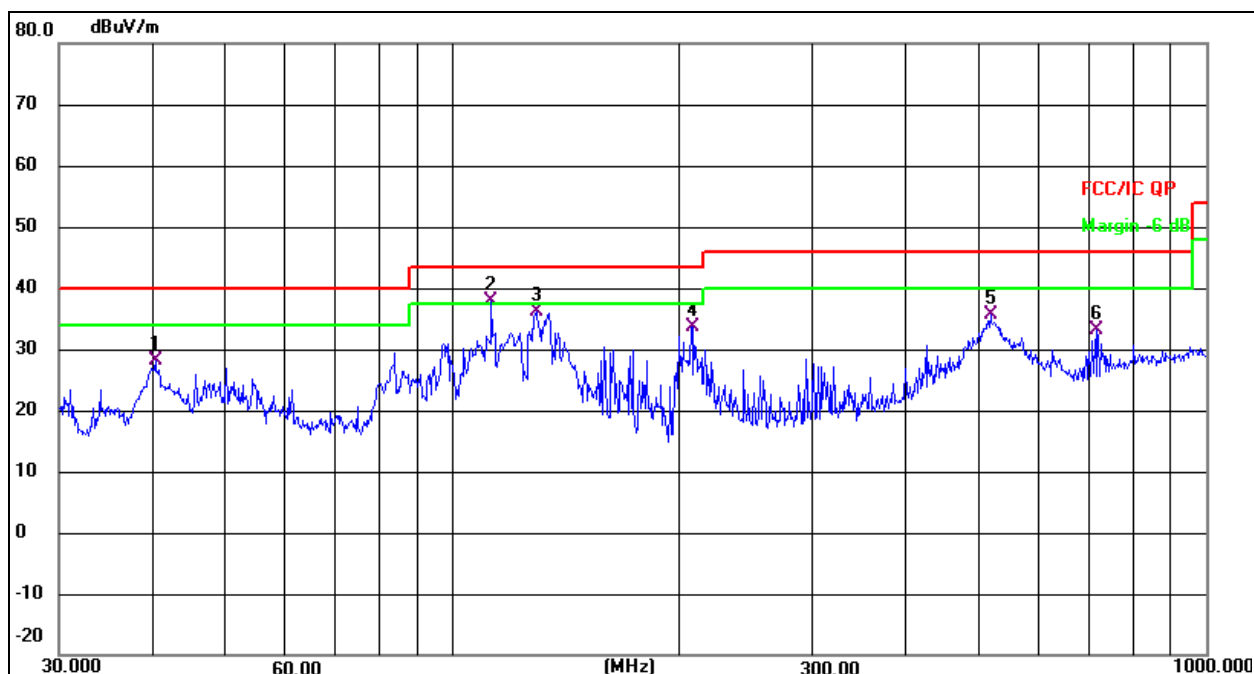


Remark:

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	113.3163	47.59	-13.16	34.43	43.50	-9.07	QP
2 *	205.6751	52.52	-13.32	39.20	43.50	-4.30	QP
3	250.3012	44.24	-11.28	32.96	46.00	-13.04	QP
4	304.6099	48.01	-9.17	38.84	46.00	-7.16	QP
5	425.0280	36.84	-5.59	31.25	46.00	-14.75	QP
6	716.6820	35.57	0.48	36.05	46.00	-9.95	QP

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



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	40.2757	38.39	-10.25	28.14	40.00	-11.86	QP
2 *	112.5244	51.27	-13.29	37.98	43.50	-5.52	QP
3	129.0146	47.74	-11.62	36.12	43.50	-7.38	QP
4	207.8501	46.98	-13.24	33.74	43.50	-9.76	QP
5	517.2480	37.57	-1.84	35.73	46.00	-10.27	QP
6	716.6820	32.66	0.48	33.14	46.00	-12.86	QP

Between 1GHz – 40GHz

Test Mode:	TX(5.1G) - 802.11a
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Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Cable loss (dB)	Antenna Factor dB/m	Preamp Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/ m)	Margin (dB)	Detector Type
Low Channel (5180 MHz)-Above 1G									
V	4434.197	61.54	5.94	35.40	44.00	58.88	68.2	-9.32	PK
V	4434.197	43.06	5.94	35.40	44.00	40.40	54	-13.60	AV
V	10360.109	61.47	8.46	39.75	44.50	65.18	68.2	-3.02	PK
V	10360.109	43.16	8.46	39.75	44.50	46.87	54	-7.13	AV
V	15540.060	63.59	10.12	38.80	44.10	68.41	74	-5.59	PK
V	15540.060	43.35	10.12	38.80	42.70	49.57	54	-4.43	AV
H	4434.084	60.80	5.94	35.18	44.00	57.92	68.2	-10.28	PK
H	4434.084	43.61	5.94	35.18	44.00	40.73	54	-13.27	AV
H	10360.093	51.84	8.46	38.71	44.50	54.51	68.2	-13.69	PK
H	10360.093	40.56	8.46	38.71	44.50	43.23	54	-10.77	AV
H	15540.065	52.12	10.12	38.38	44.10	56.52	74	-17.48	PK
H	15540.065	41.45	10.12	38.38	44.10	45.85	54	-8.15	AV
middle Channel (5200 MHz)-Above 1G									
V	4592.176	64.64	6.48	36.35	44.05	63.42	74	-10.58	PK
V	4592.176	43.76	6.48	36.35	44.05	42.54	54	-11.46	AV
V	10400.150	61.76	8.47	37.88	44.51	63.60	68.2	-4.60	PK
V	10400.150	43.94	8.47	37.88	44.51	45.78	54	-8.22	AV
V	15600.055	61.92	10.12	38.80	44.10	66.74	74	-7.26	PK
V	15600.055	43.36	10.12	38.80	42.70	49.58	54	-4.42	AV
H	4592.027	63.53	6.48	36.37	44.05	62.33	74	-11.67	PK
H	4592.027	43.45	6.48	36.37	44.05	42.25	54	-11.75	AV
H	10400.103	52.28	8.47	38.64	44.50	54.89	68.2	-13.31	PK
H	10400.103	41.89	8.47	38.64	44.50	44.50	54	-9.50	AV
H	15600.077	54.60	10.12	38.38	44.10	59.00	74	-15.00	PK
H	15600.077	43.92	10.12	38.38	44.10	48.32	54	-5.68	AV
High Channel (5240 MHz)-Above 1G									
V	4739.035	61.45	7.10	37.24	43.50	62.29	74	-11.71	PK
V	4739.035	43.48	7.10	37.24	43.50	44.32	54	-9.68	AV
V	10480.039	60.07	8.46	37.68	44.50	61.71	68.2	-6.49	PK
V	10480.039	43.76	8.46	37.68	44.50	45.40	54	-8.60	AV
V	15720.190	60.49	10.12	38.80	44.10	65.31	74	-8.69	PK
V	15720.190	43.06	10.12	38.80	42.70	49.28	54	-4.72	AV
H	4739.183	61.83	7.10	37.24	43.50	62.67	74	-11.33	PK
H	4739.183	43.74	7.10	37.24	43.50	44.58	54	-9.42	AV
H	10480.152	52.42	8.46	38.57	44.50	54.95	68.2	-13.25	PK
H	10480.152	44.33	8.46	38.57	44.50	46.86	54	-7.14	AV
H	15720.014	51.01	10.12	38.38	44.10	55.41	74	-18.59	PK
H	15720.014	41.40	10.12	38.38	44.10	45.80	54	-8.20	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.

The worst case is Antenna A.

Test Mode:	TX(5.1G) - 802.11n-HT20
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Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Cable loss (dB)	Antenna Factor dB/m	Preamp Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/ m)	Margin (dB)	Detector Type
Low Channel (5180 MHz)-Above 1G									
V	4434.055	60.64	5.94	35.40	44.00	57.98	68.2	-10.22	PK
V	4434.055	43.19	5.94	35.40	44.00	40.53	54	-13.47	AV
V	10360.158	61.71	8.46	39.75	44.50	65.42	68.2	-2.78	PK
V	10360.158	43.14	8.46	39.75	44.50	46.85	54	-7.15	AV
V	15540.067	62.45	10.12	38.80	44.10	67.27	74	-6.73	PK
V	15540.067	43.29	10.12	38.80	42.70	49.51	54	-4.49	AV
H	4434.149	62.20	5.94	35.18	44.00	59.32	68.2	-8.88	PK
H	4434.149	43.91	5.94	35.18	44.00	41.03	54	-12.97	AV
H	10360.047	51.12	8.46	38.71	44.50	53.79	68.2	-14.41	PK
H	10360.047	41.19	8.46	38.71	44.50	43.86	54	-10.14	AV
H	15540.031	54.53	10.12	38.38	44.10	58.93	74	-15.07	PK
H	15540.031	41.08	10.12	38.38	44.10	45.48	54	-8.52	AV
middle Channel (5200 MHz)-Above 1G									
V	4592.187	64.46	6.48	36.35	44.05	63.24	74	-10.76	PK
V	4592.187	43.06	6.48	36.35	44.05	41.84	54	-12.16	AV
V	10400.088	62.71	8.47	37.88	44.51	64.55	68.2	-3.65	PK
V	10400.088	43.23	8.47	37.88	44.51	45.07	54	-8.93	AV
V	15600.135	60.27	10.12	38.80	44.10	65.09	74	-8.91	PK
V	15600.135	43.85	10.12	38.80	42.70	50.07	54	-3.93	AV
H	4592.109	64.40	6.48	36.37	44.05	63.20	74	-10.80	PK
H	4592.109	43.05	6.48	36.37	44.05	41.85	54	-12.15	AV
H	10400.110	54.27	8.47	38.64	44.50	56.88	68.2	-11.32	PK
H	10400.110	40.74	8.47	38.64	44.50	43.35	54	-10.65	AV
H	15600.040	51.32	10.12	38.38	44.10	55.72	74	-18.28	PK
H	15600.040	43.35	10.12	38.38	44.10	47.75	54	-6.25	AV
High Channel (5240 MHz)-Above 1G									
V	4739.199	62.75	7.10	37.24	43.50	63.59	74	-10.41	PK
V	4739.199	43.96	7.10	37.24	43.50	44.80	54	-9.20	AV
V	10480.051	61.53	8.46	37.68	44.50	63.17	68.2	-5.03	PK
V	10480.051	43.63	8.46	37.68	44.50	45.27	54	-8.73	AV
V	15720.004	63.85	10.12	38.80	44.10	68.67	74	-5.33	PK
V	15720.004	43.38	10.12	38.80	42.70	49.60	54	-4.40	AV
H	4739.089	62.79	7.10	37.24	43.50	63.63	74	-10.37	PK
H	4739.089	43.37	7.10	37.24	43.50	44.21	54	-9.79	AV
H	10480.060	50.56	8.46	38.57	44.50	53.09	68.2	-15.11	PK
H	10480.060	44.28	8.46	38.57	44.50	46.81	54	-7.19	AV
H	15720.015	53.66	10.12	38.38	44.10	58.06	74	-15.94	PK
H	15720.015	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) - 802.11n-HT40
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Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Cable loss (dB)	Antenna Factor dB/m	Preamp Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/ m)	Margin (dB)	Detector Type
Low Channel (5190 MHz)-Above 1G									
V	4434.035	64.64	5.94	35.40	44.00	61.98	68.2	-6.22	PK
V	4434.035	43.50	5.94	35.40	44.00	40.84	54	-13.16	AV
V	10380.173	63.85	8.46	39.75	44.50	67.56	68.2	-0.64	PK
V	10380.173	43.02	8.46	39.75	44.50	46.73	54	-7.27	AV
V	15570.005	64.67	10.12	38.80	44.10	69.49	74	-4.51	PK
V	15570.005	43.39	10.12	38.80	42.70	49.61	54	-4.39	AV
H	4434.094	60.99	5.94	35.18	44.00	58.11	74	-15.89	PK
H	4434.094	43.10	5.94	35.18	44.00	40.22	54	-13.78	AV
H	10380.154	54.05	8.46	38.71	44.50	56.72	68.2	-11.48	PK
H	10380.154	42.89	8.46	38.71	44.50	45.56	54	-8.44	AV
H	15570.081	54.27	10.12	38.38	44.10	58.67	74	-15.33	PK
H	15570.081	43.55	10.12	38.38	44.10	47.95	54	-6.05	AV
middle Channel (5230 MHz)-Above 1G									
V	4739.020	60.16	6.48	36.35	44.05	58.94	68.2	-9.26	PK
V	4739.020	43.44	6.48	36.35	44.05	42.22	54	-11.78	AV
V	10460.098	63.45	8.47	37.88	44.51	65.29	68.2	-2.91	PK
V	10460.098	43.06	8.47	37.88	44.51	44.90	54	-9.10	AV
V	15690.057	64.33	10.12	38.80	44.10	69.15	74	-4.85	PK
V	15690.057	43.97	10.12	38.80	42.70	50.19	54	-3.81	AV
H	4739.086	62.65	6.48	36.37	44.05	61.45	68.2	-6.75	PK
H	4739.086	43.33	6.48	36.37	44.05	42.13	54	-11.87	AV
H	10460.030	50.29	8.47	38.64	44.50	52.90	68.2	-15.30	PK
H	10460.030	41.19	8.47	38.64	44.50	43.80	54	-10.20	AV
H	15690.145	51.96	10.12	38.38	44.10	56.36	74	-17.64	PK
H	15690.145	41.48	10.12	38.38	44.10	45.88	54	-8.12	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
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Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Cable loss (dB)	Antenna Factor dB/m	Preamp Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/ m)	Margin (dB)	Detector Type
Low Channel (5180 MHz)-Above 1G									
V	4434.057	60.86	5.94	35.40	44.00	58.20	68.2	-10.00	PK
V	4434.057	43.40	5.94	35.40	44.00	40.74	54	-13.26	AV
V	10360.105	63.20	8.46	39.75	44.50	66.91	68.2	-1.29	PK
V	10360.105	43.25	8.46	39.75	44.50	46.96	54	-7.04	AV
V	15540.071	64.34	10.12	38.80	44.10	69.16	74	-4.84	PK
V	15540.071	43.04	10.12	38.80	42.70	49.26	54	-4.74	AV
H	4434.019	63.95	5.94	35.18	44.00	61.07	68.2	-7.13	PK
H	4434.019	43.99	5.94	35.18	44.00	41.11	54	-12.89	AV
H	10360.169	51.93	8.46	38.71	44.50	54.60	68.2	-13.60	PK
H	10360.169	40.84	8.46	38.71	44.50	43.51	54	-10.49	AV
H	15540.044	50.69	10.12	38.38	44.10	55.09	74	-18.91	PK
H	15540.044	44.41	10.12	38.38	44.10	48.81	54	-5.19	AV
middle Channel (5200 MHz)-Above 1G									
V	4592.104	61.57	6.48	36.35	44.05	60.35	74	-13.65	PK
V	4592.104	43.38	6.48	36.35	44.05	42.16	54	-11.84	AV
V	10400.032	63.17	8.47	37.88	44.51	65.01	68.2	-3.19	PK
V	10400.032	43.28	8.47	37.88	44.51	45.12	54	-8.88	AV
V	15600.024	61.64	10.12	38.80	44.10	66.46	74	-7.54	PK
V	15600.024	43.66	10.12	38.80	42.70	49.88	54	-4.12	AV
H	4592.069	64.10	6.48	36.37	44.05	62.90	74	-11.10	PK
H	4592.069	43.33	6.48	36.37	44.05	42.13	54	-11.87	AV
H	10400.089	53.11	8.47	38.64	44.50	55.72	68.2	-12.48	PK
H	10400.089	43.85	8.47	38.64	44.50	46.46	54	-7.54	AV
H	15600.081	54.32	10.12	38.38	44.10	58.72	74	-15.28	PK
H	15600.081	40.43	10.12	38.38	44.10	44.83	54	-9.17	AV
High Channel (5240 MHz)-Above 1G									
V	4739.004	63.67	7.10	37.24	43.50	64.51	74	-9.49	PK
V	4739.004	43.11	7.10	37.24	43.50	43.95	54	-10.05	AV
V	10480.032	64.73	8.46	37.68	44.50	66.37	68.2	-1.83	PK
V	10480.032	43.93	8.46	37.68	44.50	45.57	54	-8.43	AV
V	15720.182	63.89	10.12	38.80	44.10	68.71	74	-5.29	PK
V	15720.182	43.27	10.12	38.80	42.70	49.49	54	-4.51	AV
H	4739.091	61.73	7.10	37.24	43.50	62.57	74	-11.43	PK
H	4739.091	43.34	7.10	37.24	43.50	44.18	54	-9.82	AV
H	10480.008	50.93	8.46	38.57	44.50	53.46	68.2	-14.74	PK
H	10480.008	41.44	8.46	38.57	44.50	43.97	54	-10.03	AV
H	15720.074	53.42	10.12	38.38	44.10	57.82	74	-16.18	PK
H	15720.074	41.83	10.12	38.38	44.10	46.23	54	-7.77	AV

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

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

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

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

Test Mode is MIMO Mode.

Test Mode:	TX(5.1G) - 802.11ac-HT40
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Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Cable loss (dB)	Antenna Factor dB/m	Preamp Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/ m)	Margin (dB)	Detector Type
Low Channel (5190 MHz)-Above 1G									
V	4434.160	62.72	5.94	35.40	44.00	60.06	68.2	-8.14	PK
V	4434.160	43.58	5.94	35.40	44.00	40.92	54	-13.08	AV
V	10380.086	61.76	8.46	39.75	44.50	65.47	68.2	-2.73	PK
V	10380.086	43.48	8.46	39.75	44.50	47.19	54	-6.81	AV
V	15570.194	60.79	10.12	38.80	44.10	65.61	74	-8.39	PK
V	15570.194	43.41	10.12	38.80	42.70	49.63	54	-4.37	AV
H	4434.022	60.17	5.94	35.18	44.00	57.29	74	-16.71	PK
H	4434.022	43.56	5.94	35.18	44.00	40.68	54	-13.32	AV
H	10380.144	50.38	8.46	38.71	44.50	53.05	68.2	-15.15	PK
H	10380.144	41.78	8.46	38.71	44.50	44.45	54	-9.55	AV
H	15570.104	54.68	10.12	38.38	44.10	59.08	74	-14.92	PK
H	15570.104	41.97	10.12	38.38	44.10	46.37	54	-7.63	AV
middle Channel (5230 MHz)-Above 1G									
V	4739.029	63.31	6.48	36.35	44.05	62.09	68.2	-6.11	PK
V	4739.029	43.79	6.48	36.35	44.05	42.57	54	-11.43	AV
V	10460.130	61.24	8.47	37.88	44.51	63.08	68.2	-5.12	PK
V	10460.130	43.19	8.47	37.88	44.51	45.03	54	-8.97	AV
V	15690.158	64.78	10.12	38.80	44.10	69.60	74	-4.40	PK
V	15690.158	43.90	10.12	38.80	42.70	50.12	54	-3.88	AV
H	4739.021	62.74	6.48	36.37	44.05	61.54	68.2	-6.66	PK
H	4739.021	43.08	6.48	36.37	44.05	41.88	54	-12.12	AV
H	10460.186	52.81	8.47	38.64	44.50	55.42	68.2	-12.78	PK
H	10460.186	42.14	8.47	38.64	44.50	44.75	54	-9.25	AV
H	15690.138	50.30	10.12	38.38	44.10	54.70	74	-19.30	PK
H	15690.138	44.57	10.12	38.38	44.10	48.97	54	-5.03	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 80
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Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Cable loss (dB)	Antenna Factor dB/m	Preamp Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/ m)	Margin (dB)	Detector Type
Low Channel (5210 MHz)-Above 1G									
V	4434.009	61.15	5.94	35.40	44.00	58.49	68.2	-9.71	PK
V	4434.009	43.32	5.94	35.40	44.00	40.66	54	-13.34	AV
V	10420.054	62.77	8.46	39.75	44.50	66.48	68.2	-1.72	PK
V	10420.054	43.01	8.46	39.75	44.50	46.72	54	-7.28	AV
V	15630.046	60.18	10.12	38.80	44.10	65.00	74	-9.00	PK
V	15630.046	43.74	10.12	38.80	42.70	49.96	54	-4.04	AV
H	4434.122	60.51	5.94	35.18	44.00	57.63	68.2	-10.57	PK
H	4434.122	43.67	5.94	35.18	44.00	40.79	54	-13.21	AV
H	10420.129	50.63	8.46	38.71	44.50	53.30	68.2	-14.90	PK
H	10420.129	40.12	8.46	38.71	44.50	42.79	54	-11.21	AV
H	15630.128	50.82	10.12	38.38	44.10	55.22	74	-18.78	PK
H	15630.128	40.60	10.12	38.38	44.10	45.00	54	-9.00	AV

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

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

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

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

Test Mode is MIMO Mode.

Test Mode:	TX (5.8G) -- 802.11a
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Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Cable loss (dB)	Antenna Factor dB/m	Preamp Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/ m)	Margin (dB)	Detector Type
Low Channel (5745 MHz)-Above 1G									
V	4679.003	58.28	5.94	35.40	44.00	55.62	74	-18.38	PK
V	4679.003	43.69	5.94	35.40	44.00	41.03	54	-12.97	AV
V	11490.064	54.16	8.46	39.75	44.50	57.87	68.2	-10.33	PK
V	11490.064	43.93	8.46	39.75	44.50	47.64	54	-6.36	AV
V	17235.029	60.08	10.12	38.80	44.10	64.90	68.2	-3.30	PK
V	17235.029	43.72	10.12	38.80	42.70	49.94	54	-4.06	AV
H	4679.130	55.72	5.94	35.18	44.00	52.84	74	-21.16	PK
H	4679.130	43.50	5.94	35.18	44.00	40.62	54	-13.38	AV
H	11490.188	53.41	8.46	38.71	44.50	56.08	68.2	-12.12	PK
H	11490.188	44.18	8.46	38.71	44.50	46.85	54	-7.15	AV
H	17235.097	54.65	10.12	38.38	44.10	59.05	68.2	-9.15	PK
H	17235.097	44.76	10.12	38.38	44.10	49.16	54	-4.84	AV
middle Channel (5785 MHz)-Above 1G									
V	4592.130	57.85	6.48	36.35	44.05	56.63	74	-17.37	PK
V	4592.130	43.47	6.48	36.35	44.05	42.25	54	-11.75	AV
V	11570.022	56.60	8.47	37.88	44.51	58.44	68.2	-9.76	PK
V	11570.022	43.30	8.47	37.88	44.51	45.14	54	-8.86	AV
V	17355.182	56.37	10.12	38.80	44.10	61.19	68.2	-7.01	PK
V	17355.182	39.58	10.12	38.80	42.70	45.80	54	-8.20	AV
H	4592.194	57.08	6.48	36.37	44.05	55.88	74	-18.12	PK
H	4592.194	43.55	6.48	36.37	44.05	42.35	54	-11.65	AV
H	11570.141	54.07	8.47	38.64	44.50	56.68	68.2	-11.52	PK
H	11570.141	44.82	8.47	38.64	44.50	47.43	54	-6.57	AV
H	17355.107	53.23	10.12	38.38	44.10	57.63	68.2	-10.57	PK
H	17355.107	41.36	10.12	38.38	44.10	45.76	54	-8.24	AV
High Channel (5825 MHz)-Above 1G									
V	6039.054	57.69	7.10	37.24	43.50	58.53	68.2	-9.67	PK
V	6039.054	43.45	7.10	37.24	43.50	44.29	54	-9.71	AV
V	11650.082	62.50	8.46	37.68	44.50	64.14	74	-9.86	PK
V	11650.082	43.28	8.46	37.68	44.50	44.92	54	-9.08	AV
V	17475.147	54.61	10.12	38.80	44.10	59.43	68.2	-8.77	PK
V	17475.147	43.24	10.12	38.80	42.70	49.46	54	-4.54	AV
H	6039.110	54.16	7.10	37.24	43.50	55.00	68.2	-13.20	PK
H	6039.110	43.18	7.10	37.24	43.50	44.02	54	-9.98	AV
H	11650.150	51.61	8.46	38.57	44.50	54.14	74	-19.86	PK
H	11650.150	44.30	8.46	38.57	44.50	46.83	54	-7.17	AV
H	17475.003	50.13	10.12	38.38	44.10	54.53	68.2	-13.67	PK
H	17475.003	43.20	10.12	38.38	44.10	47.60	54	-6.40	AV

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

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

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

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

The Worst mode is Antenna A.

Test Mode:	TX (5.8G) --802.11n-HT20
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Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Cable loss (dB)	Antenna Factor dB/m	Preamp Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/ m)	Margin (dB)	Detector Type
Low Channel (5745 MHz)-Above 1G									
V	4679.119	56.13	5.94	35.40	44.00	53.47	74	-20.53	PK
V	4679.119	43.48	5.94	35.40	44.00	40.82	54	-13.18	AV
V	11490.184	53.05	8.46	39.75	44.50	56.76	68.2	-11.44	PK
V	11490.184	43.93	8.46	39.75	44.50	47.64	54	-6.36	AV
V	17235.031	57.20	10.12	38.80	44.10	62.02	68.2	-6.18	PK
V	17235.031	43.09	10.12	38.80	42.70	49.31	54	-4.69	AV
H	4679.030	57.20	5.94	35.18	44.00	54.32	74	-19.68	PK
H	4679.030	43.11	5.94	35.18	44.00	40.23	54	-13.77	AV
H	11490.122	48.87	8.46	38.71	44.50	51.54	68.2	-16.66	PK
H	11490.122	40.05	8.46	38.71	44.50	42.72	54	-11.28	AV
H	17235.113	53.13	10.12	38.38	44.10	57.53	68.2	-10.67	PK
H	17235.113	43.62	10.12	38.38	44.10	48.02	54	-5.98	AV
middle Channel (5785 MHz)-Above 1G									
V	4592.124	61.00	6.48	36.35	44.05	59.78	74	-14.22	PK
V	4592.124	43.28	6.48	36.35	44.05	42.06	54	-11.94	AV
V	11570.174	57.97	8.47	37.88	44.51	59.81	68.2	-8.39	PK
V	11570.174	43.37	8.47	37.88	44.51	45.21	54	-8.79	AV
V	17355.063	57.24	10.12	38.80	44.10	62.06	68.2	-6.14	PK
V	17355.063	43.98	10.12	38.80	42.70	50.20	54	-3.80	AV
H	4592.128	57.29	6.48	36.37	44.05	56.09	74	-17.91	PK
H	4592.128	43.90	6.48	36.37	44.05	42.70	54	-11.30	AV
H	11570.052	54.33	8.47	38.64	44.50	56.94	68.2	-11.26	PK
H	11570.052	42.13	8.47	38.64	44.50	44.74	54	-9.26	AV
H	17355.141	50.63	10.12	38.38	44.10	55.03	68.2	-13.17	PK
H	17355.141	43.88	10.12	38.38	44.10	48.28	54	-5.72	AV
High Channel (5825 MHz)-Above 1G									
V	6039.198	55.98	7.10	37.24	43.50	56.82	68.2	-11.38	PK
V	6039.198	43.89	7.10	37.24	43.50	44.73	54	-9.27	AV
V	11650.195	57.45	8.46	37.68	44.50	59.09	74	-14.91	PK
V	11650.195	43.44	8.46	37.68	44.50	45.08	54	-8.92	AV
V	17475.008	59.15	10.12	38.80	44.10	63.97	68.2	-4.23	PK
V	17475.008	43.29	10.12	38.80	42.70	49.51	54	-4.49	AV
H	6039.016	59.68	7.10	37.24	43.50	60.52	68.2	-7.68	PK
H	6039.016	43.02	7.10	37.24	43.50	43.86	54	-10.14	AV
H	11650.199	51.94	8.46	38.57	44.50	54.47	74	-19.53	PK
H	11650.199	41.16	8.46	38.57	44.50	43.69	54	-10.31	AV
H	17475.190	51.98	10.12	38.38	44.10	56.38	68.2	-11.82	PK
H	17475.190	41.54	10.12	38.38	44.10	45.94	54	-8.06	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
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Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Cable loss (dB)	Antenna Factor dB/m	Preamp Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/ m)	Margin (dB)	Detector Type
Low Channel (5755 MHz)-Above 1G									
V	4679.004	58.58	5.94	35.40	44.00	55.92	74	-18.08	PK
V	4679.004	43.28	5.94	35.40	44.00	40.62	54	-13.38	AV
V	11510.087	56.12	8.46	39.75	44.50	59.83	74	-14.17	PK
V	11510.087	43.26	8.46	39.75	44.50	46.97	54	-7.03	AV
V	17265.194	58.40	10.12	38.80	44.10	63.22	68.2	-4.98	PK
V	17265.194	43.49	10.12	38.80	42.70	49.71	54	-4.29	AV
H	4679.008	57.65	5.94	35.18	44.00	54.77	74	-19.23	PK
H	4679.008	43.27	5.94	35.18	44.00	40.39	54	-13.61	AV
H	11510.060	52.88	8.46	38.71	44.50	55.55	74	-18.45	PK
H	11510.060	43.53	8.46	38.71	44.50	46.20	54	-7.80	AV
H	17265.173	54.55	10.12	38.38	44.10	58.95	68.2	-9.25	PK
H	17265.173	42.15	10.12	38.38	44.10	46.55	54	-7.45	AV
middle Channel (5795 MHz)-Above 1G									
V	6039.119	60.47	6.48	36.35	44.05	59.25	68.2	-8.95	PK
V	6039.119	43.99	6.48	36.35	44.05	42.77	54	-11.23	AV
V	11590.064	59.16	8.47	37.88	44.51	61.00	74	-13.00	PK
V	11590.064	43.32	8.47	37.88	44.51	45.16	54	-8.84	AV
V	17385.001	55.01	10.12	38.80	44.10	59.83	68.2	-8.37	PK
V	17385.001	41.22	10.12	38.80	42.70	47.44	54	-6.56	AV
H	6039.099	58.57	6.48	36.37	44.05	57.37	68.2	-10.83	PK
H	6039.099	43.64	6.48	36.37	44.05	42.44	54	-11.56	AV
H	11590.068	52.38	8.47	38.64	44.50	54.99	74	-19.01	PK
H	11590.068	41.73	8.47	38.64	44.50	44.34	54	-9.66	AV
H	17385.152	51.27	10.12	38.38	44.10	55.67	68.2	-12.53	PK
H	17385.152	44.85	10.12	38.38	44.10	49.25	54	-4.75	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
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Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Cable loss (dB)	Antenna Factor dB/m	Preamp Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/ m)	Margin (dB)	Detector Type
Low Channel (5745 MHz)-Above 1G									
V	4679.200	59.76	5.94	35.40	44.00	57.10	74	-16.90	PK
V	4679.200	43.28	5.94	35.40	44.00	40.62	54	-13.38	AV
V	11490.030	55.35	8.46	39.75	44.50	59.06	68.2	-9.14	PK
V	11490.030	43.39	8.46	39.75	44.50	47.10	54	-6.90	AV
V	17235.178	58.51	10.12	38.80	44.10	63.33	68.2	-4.87	PK
V	17235.178	43.55	10.12	38.80	42.70	49.77	54	-4.23	AV
H	4679.070	56.10	5.94	35.18	44.00	53.22	74	-20.78	PK
H	4679.070	43.09	5.94	35.18	44.00	40.21	54	-13.79	AV
H	11490.169	49.24	8.46	38.71	44.50	51.91	68.2	-16.29	PK
H	11490.169	44.49	8.46	38.71	44.50	47.16	54	-6.84	AV
H	17235.033	52.73	10.12	38.38	44.10	57.13	68.2	-11.07	PK
H	17235.033	44.88	10.12	38.38	44.10	49.28	54	-4.72	AV
middle Channel (5785 MHz)-Above 1G									
V	4592.071	61.94	6.48	36.35	44.05	60.72	74	-13.28	PK
V	4592.071	43.93	6.48	36.35	44.05	42.71	54	-11.29	AV
V	11570.095	56.52	8.47	37.88	44.51	58.36	68.2	-9.84	PK
V	11570.095	43.69	8.47	37.88	44.51	45.53	54	-8.47	AV
V	17355.131	61.46	10.12	38.80	44.10	66.28	68.2	-1.92	PK
V	17355.131	43.61	10.12	38.80	42.70	49.83	54	-4.17	AV
H	4592.151	57.31	6.48	36.37	44.05	56.11	74	-17.89	PK
H	4592.151	43.86	6.48	36.37	44.05	42.66	54	-11.34	AV
H	11570.033	53.59	8.47	38.64	44.50	56.20	68.2	-12.00	PK
H	11570.033	41.02	8.47	38.64	44.50	43.63	54	-10.37	AV
H	17355.071	50.65	10.12	38.38	44.10	55.05	68.2	-13.15	PK
H	17355.071	43.80	10.12	38.38	44.10	48.20	54	-5.80	AV
High Channel (5825 MHz)-Above 1G									
V	6039.131	56.46	7.10	37.24	43.50	57.30	68.2	-10.90	PK
V	6039.131	43.34	7.10	37.24	43.50	44.18	54	-9.82	AV
V	11650.139	59.15	8.46	37.68	44.50	60.79	74	-13.21	PK
V	11650.139	43.53	8.46	37.68	44.50	45.17	54	-8.83	AV
V	17475.168	58.74	10.12	38.80	44.10	63.56	68.2	-4.64	PK
V	17475.168	43.74	10.12	38.80	42.70	49.96	54	-4.04	AV
H	6039.037	56.44	7.10	37.24	43.50	57.28	68.2	-10.92	PK
H	6039.037	43.69	7.10	37.24	43.50	44.53	54	-9.47	AV
H	11650.089	50.15	8.46	38.57	44.50	52.68	74	-21.32	PK
H	11650.089	43.80	8.46	38.57	44.50	46.33	54	-7.67	AV
H	17475.047	51.69	10.12	38.38	44.10	56.09	68.2	-12.11	PK
H	17475.047	42.79	10.12	38.38	44.10	47.19	54	-6.81	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.

Test Mode is MIMO Mode.

Test Mode :	TX (5.8G) -- 802.11ac-HT40
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Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Cable loss (dB)	Antenna Factor dB/m	Preamp Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/ m)	Margin (dB)	Detector Type
Low Channel (5755 MHz)-Above 1G									
V	4679.139	60.57	5.94	35.40	44.00	57.91	74	-16.09	PK
V	4679.139	44.00	5.94	35.40	44.00	41.34	54	-12.66	AV
V	11510.150	55.54	8.46	39.75	44.50	59.25	74	-14.75	PK
V	11510.150	43.16	8.46	39.75	44.50	46.87	54	-7.13	AV
V	17265.075	55.36	10.12	38.80	44.10	60.18	68.2	-8.02	PK
V	17265.075	43.47	10.12	38.80	42.70	49.69	54	-4.31	AV
H	4679.010	60.75	5.94	35.18	44.00	57.87	74	-16.13	PK
H	4679.010	43.81	5.94	35.18	44.00	40.93	54	-13.07	AV
H	11510.141	51.89	8.46	38.71	44.50	54.56	74	-19.44	PK
H	11510.141	44.60	8.46	38.71	44.50	47.27	54	-6.73	AV
H	17265.058	53.91	10.12	38.38	44.10	58.31	68.2	-9.89	PK
H	17265.058	42.71	10.12	38.38	44.10	47.11	54	-6.89	AV
middle Channel (5795 MHz)-Above 1G									
V	6039.064	58.05	6.48	36.35	44.05	56.83	68.2	-11.37	PK
V	6039.064	43.65	6.48	36.35	44.05	42.43	54	-11.57	AV
V	11590.157	56.84	8.47	37.88	44.51	58.68	74	-15.32	PK
V	11590.157	43.26	8.47	37.88	44.51	45.10	54	-8.90	AV
V	17385.103	55.53	10.12	38.80	44.10	60.35	68.2	-7.85	PK
V	17385.103	41.31	10.12	38.80	42.70	47.53	54	-6.47	AV
H	6039.014	56.92	6.48	36.37	44.05	55.72	68.2	-12.48	PK
H	6039.014	43.86	6.48	36.37	44.05	42.66	54	-11.34	AV
H	11590.166	51.59	8.47	38.64	44.50	54.20	74	-19.80	PK
H	11590.166	40.51	8.47	38.64	44.50	43.12	54	-10.88	AV
H	17385.044	53.55	10.12	38.38	44.10	57.95	68.2	-10.25	PK
H	17385.044	41.13	10.12	38.38	44.10	45.53	54	-8.47	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 80
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Polar (H/V)	Frequency (MHz)	Meter Reading (dBuV)	Cable loss (dB)	Antenna Factor dB/m	Preamp Factor (dB)	Emission Level (dBuV/m)	Limits (dBuV/ m)	Margin (dB)	Detector Type
Low Channel (5775 MHz)-Above 1G									
V	4679.175	58.77	5.94	35.40	44.00	56.11	74	-17.89	PK
V	4679.175	43.46	5.94	35.40	44.00	40.80	54	-13.20	AV
V	11550.046	58.46	8.46	39.75	44.50	62.17	74	-11.83	PK
V	11550.046	43.86	8.46	39.75	44.50	47.57	54	-6.43	AV
V	17325.111	57.66	10.12	38.80	44.10	62.48	68.2	-5.72	PK
V	17325.111	41.34	10.12	38.80	42.70	47.56	54	-6.44	AV
H	4679.162	57.14	5.94	35.18	44.00	54.26	74	-19.74	PK
H	4679.162	43.94	5.94	35.18	44.00	41.06	54	-12.94	AV
H	11550.044	51.41	8.46	38.71	44.50	54.08	74	-19.92	PK
H	11550.044	42.18	8.46	38.71	44.50	44.85	54	-9.15	AV
H	17325.118	52.83	10.12	38.38	44.10	57.23	68.2	-10.97	PK
H	17325.118	42.04	10.12	38.38	44.10	46.44	54	-7.56	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 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 colocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

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

For the band 5.725-5.85 GHz

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

8.3 Test Procedure

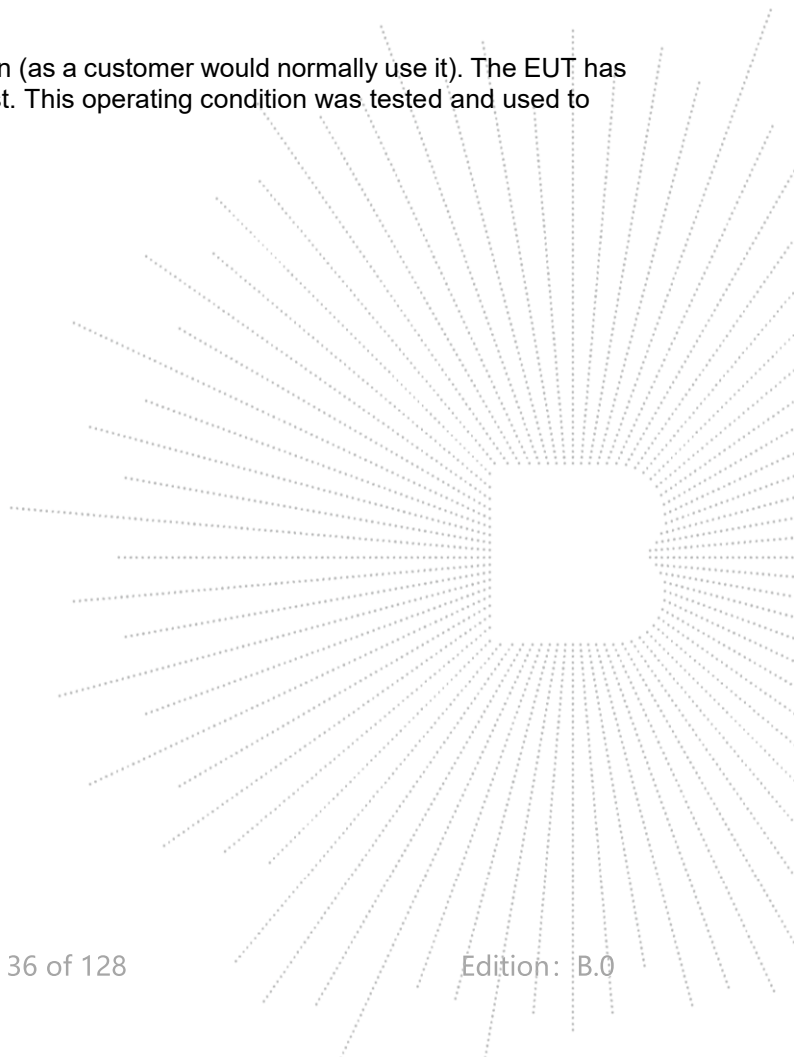
For devices operating in the bands 5.15-5.25 GHz, 5.25-5.35 GHz, and 5.47-5.725 GHz, the above procedures make use of 1 MHz RBW to satisfy directly the 1 MHz reference bandwidth specified in § 15.407(a)(5). For devices operating in the band 5.725-5.85 GHz, the rules specify a measurement bandwidth of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

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

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

8.4 EUT Operating Conditions

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

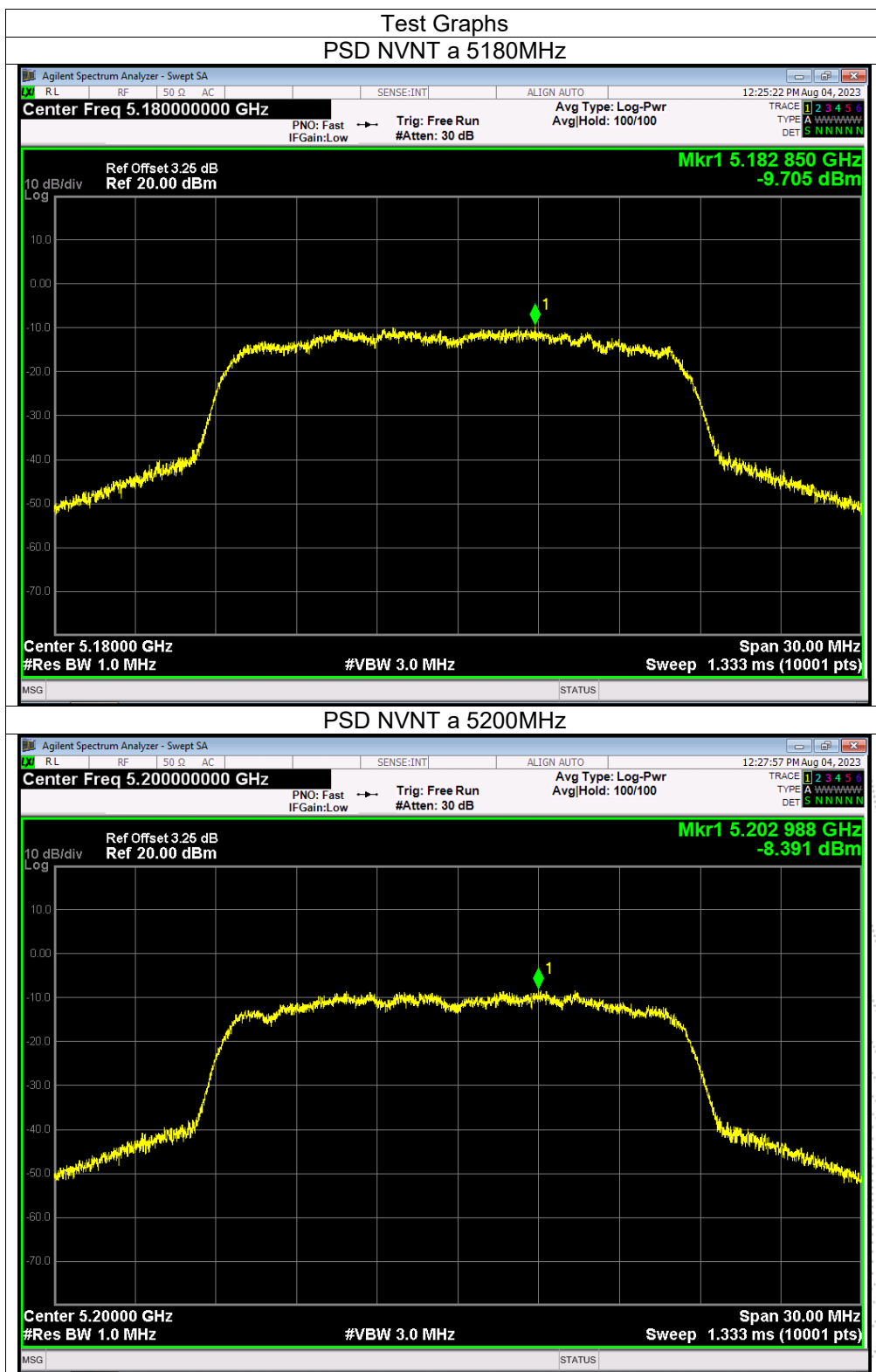


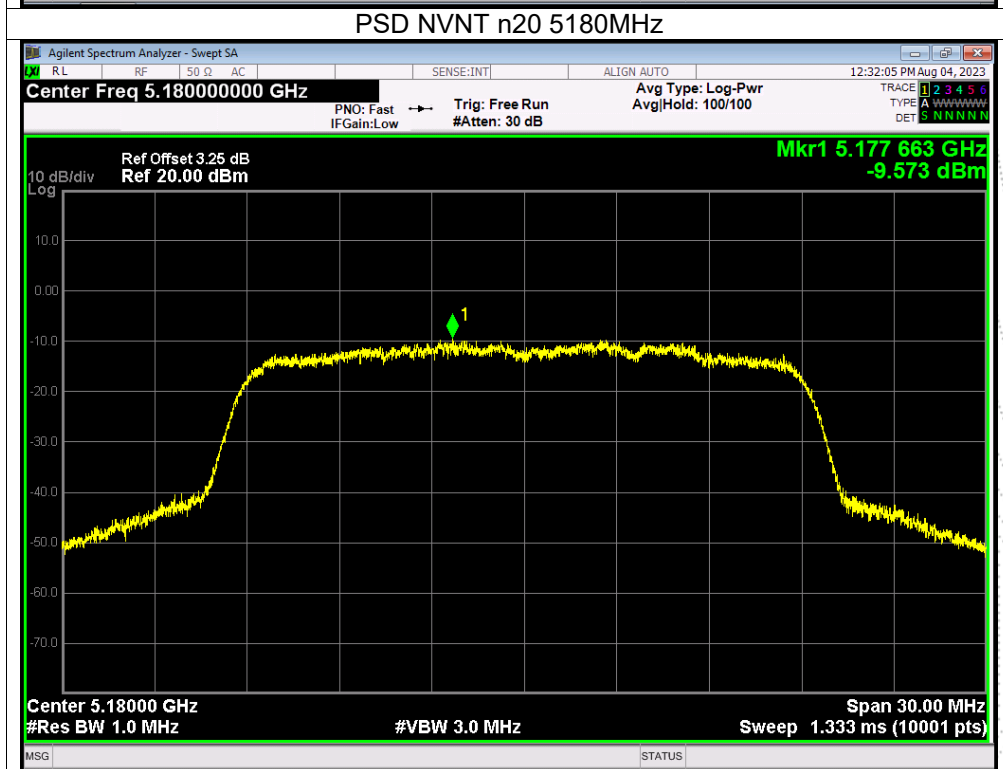
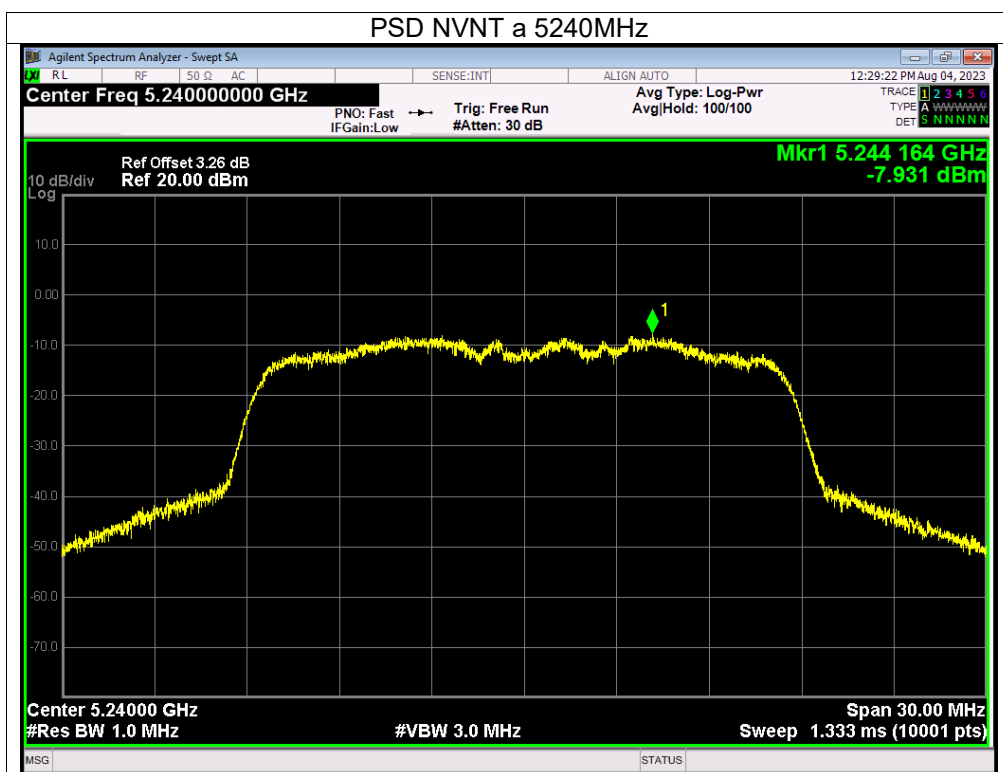
8.5 Test Result

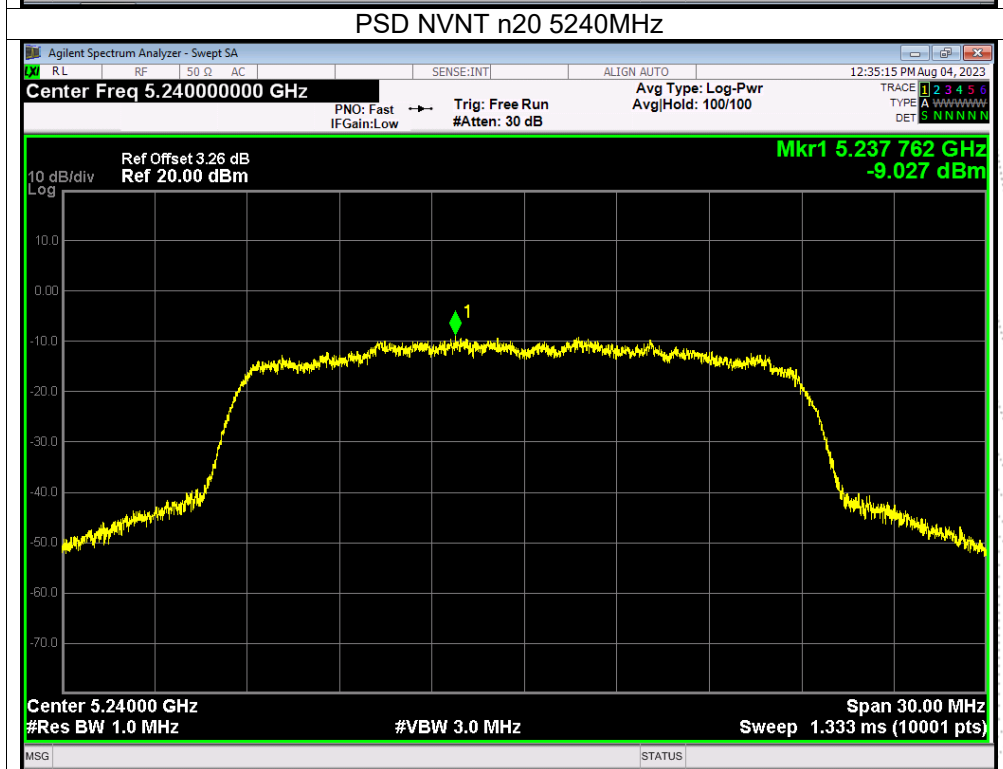
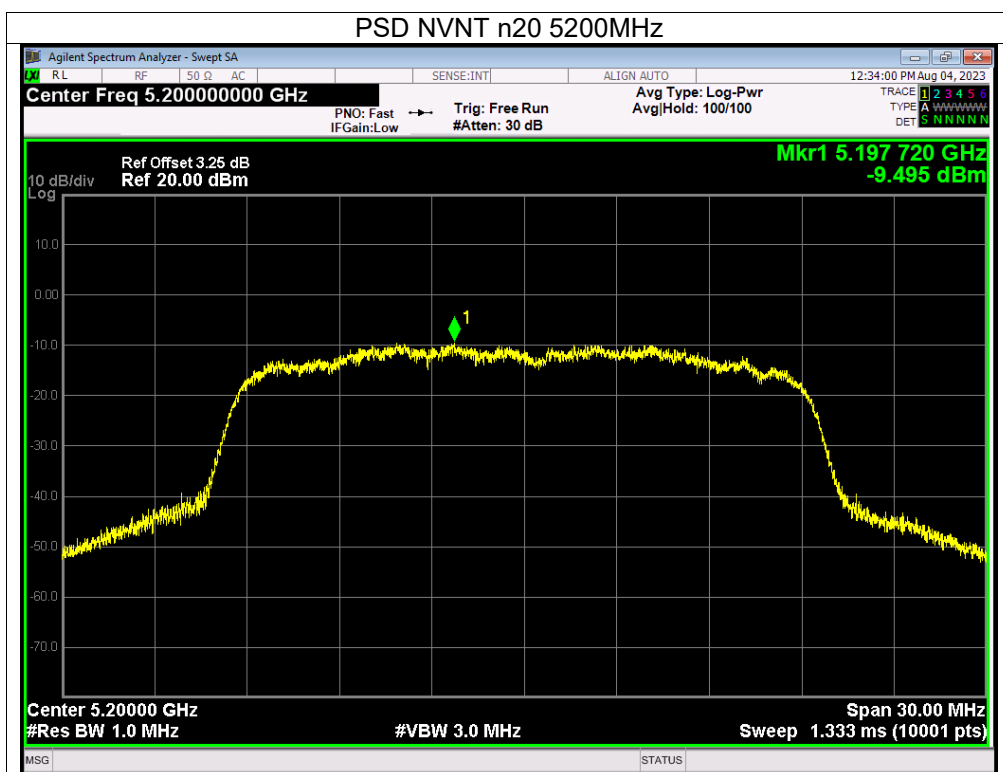
Temperature :	26 °C	Relative Humidity :	54%
Pressure :	101kPa	Test Voltage :	DC 12V
Test Mode :	TX Frequency U-NII-1 (5180-5240MHz)		

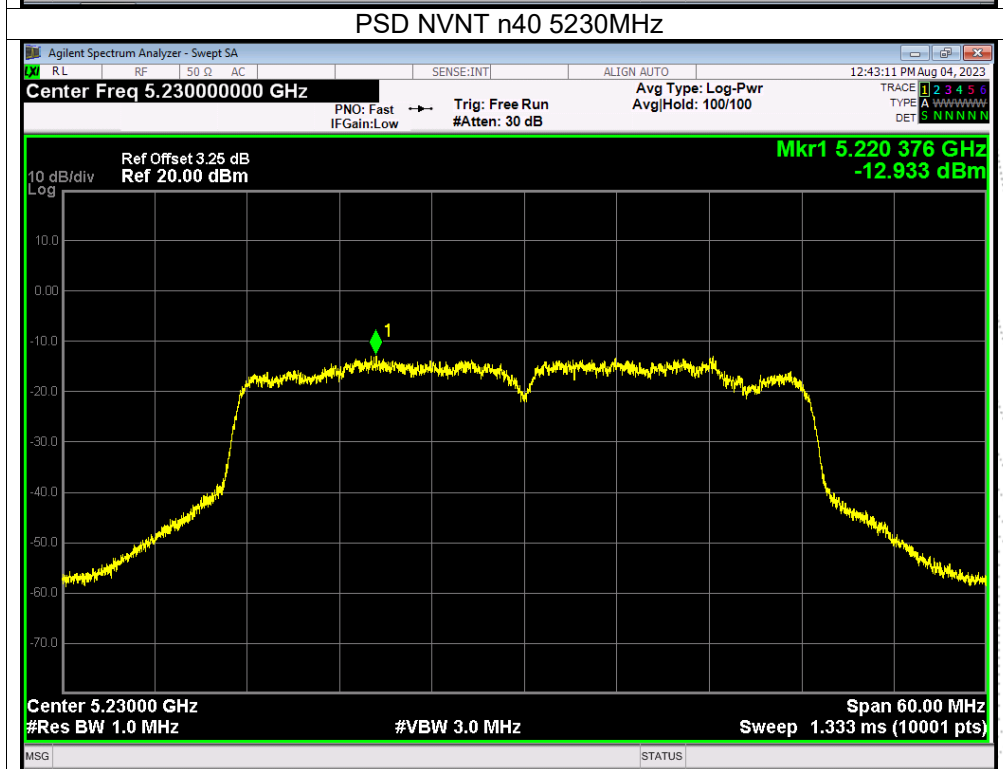
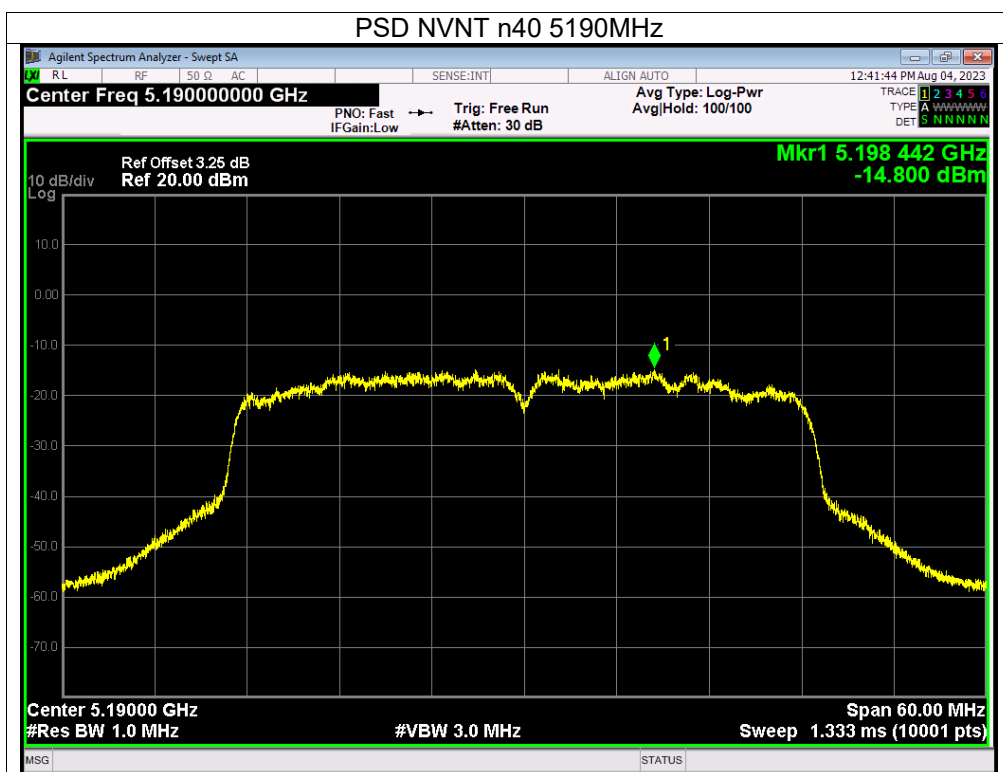
Note: A(B) Represent the value of antenna A and B, The worst data is Antenna A, only shown Antenna A Plot.

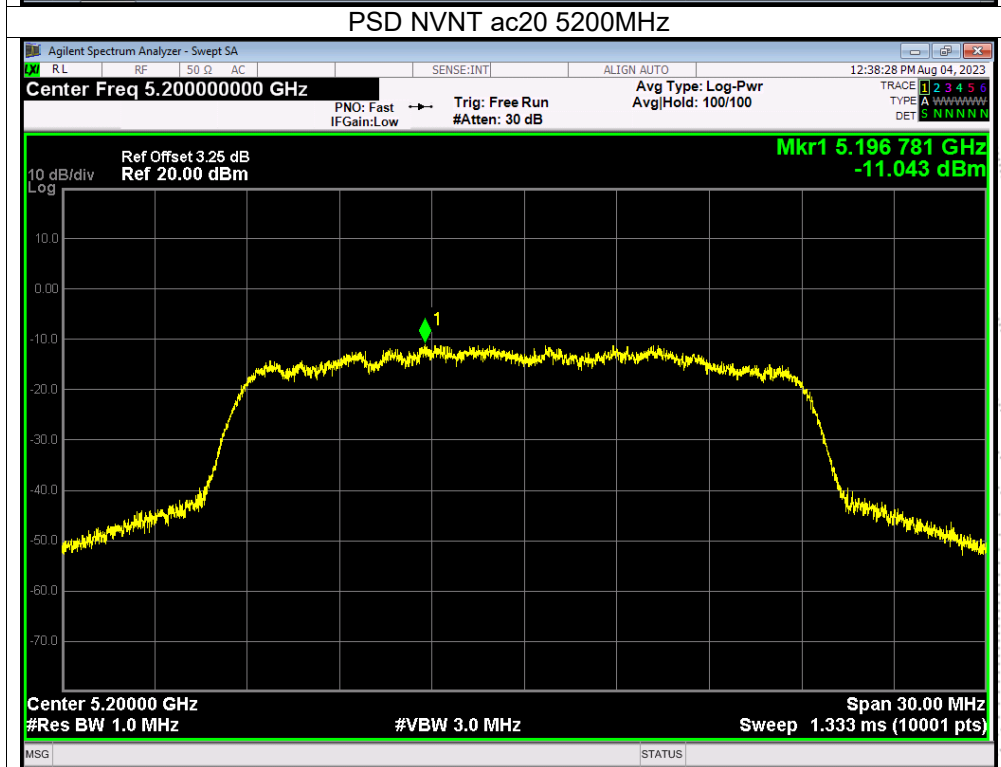
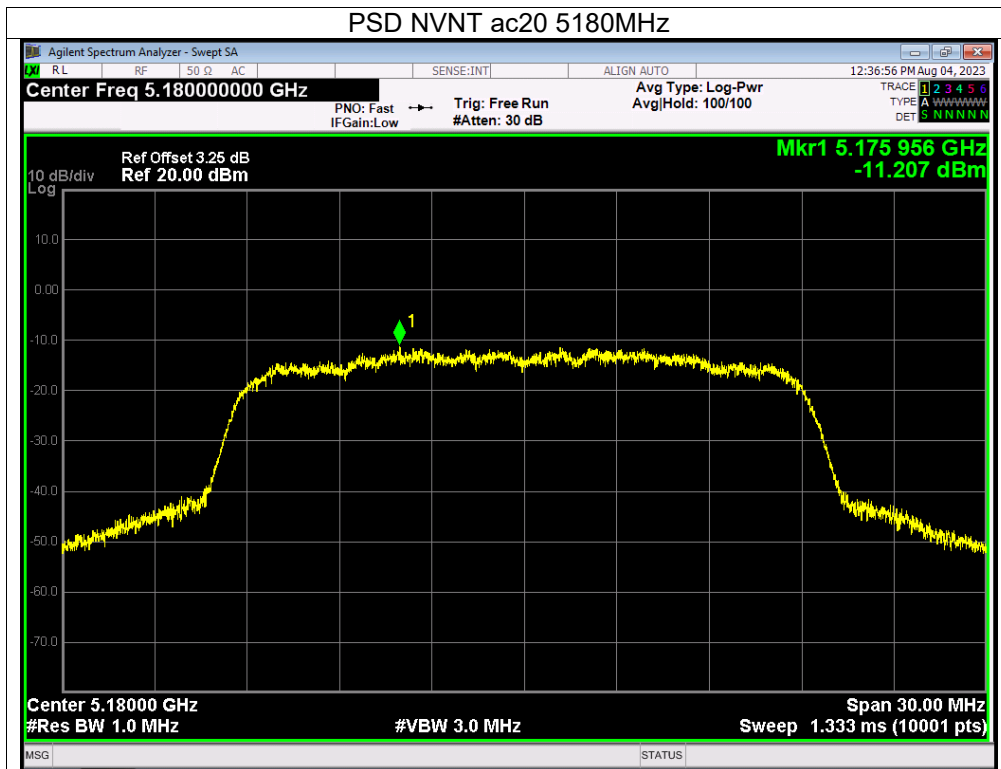
Mode	Frequency	Measured Power Density (dBm/MHz)			Limit (dBm/MHz)	Result
		ANT A	ANT B	Total		
802.11 a	5180 MHz	-9.71	-8.97	/	11	PASS
	5200 MHz	-8.39	-9.01	/	11	PASS
	5240 MHz	-7.93	-10.79	/	11	PASS
802.11 n20	5180 MHz	-9.57	-10.04	-6.79	11	PASS
	5200 MHz	-9.49	-10.94	-7.14	11	PASS
	5240 MHz	-9.03	-12.67	-7.47	11	PASS
802.11 n40	5190 MHz	-14.8	-13.96	-11.35	11	PASS
	5230 MHz	-12.93	-14.08	-10.46	11	PASS
802.11 ac20	5180 MHz	-11.21	-10.17	-7.65	11	PASS
	5200 MHz	-11.04	-10.21	-7.59	11	PASS
	5240 MHz	-9.51	-10.7	-7.05	11	PASS
802.11 ac40	5190 MHz	-15.19	-13.41	-11.20	11	PASS
	5230 MHz	-12.39	-13.39	-9.85	11	PASS
802.11 AC80	5210 MHz	-18.11	-20.34	-16.07	11	PASS

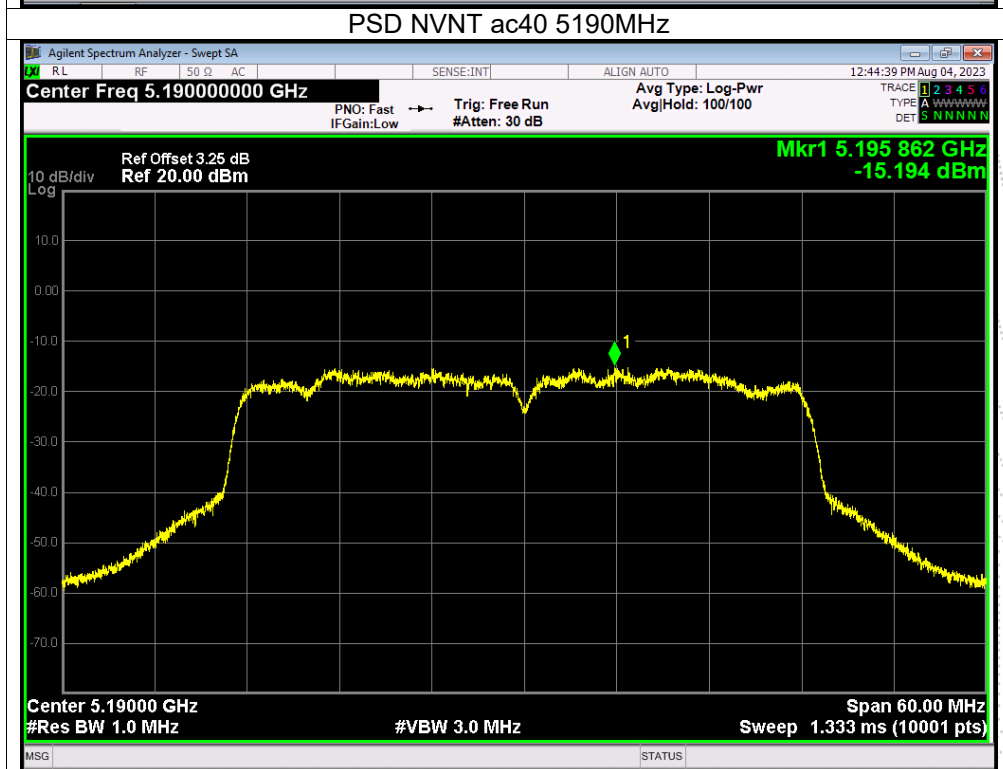
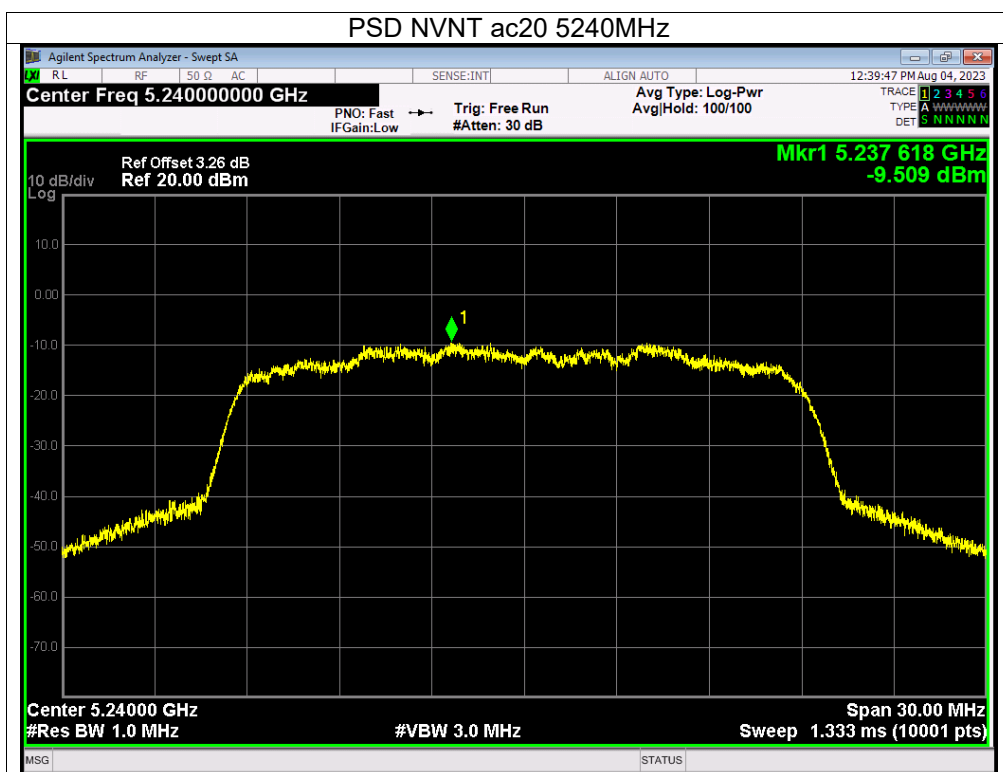


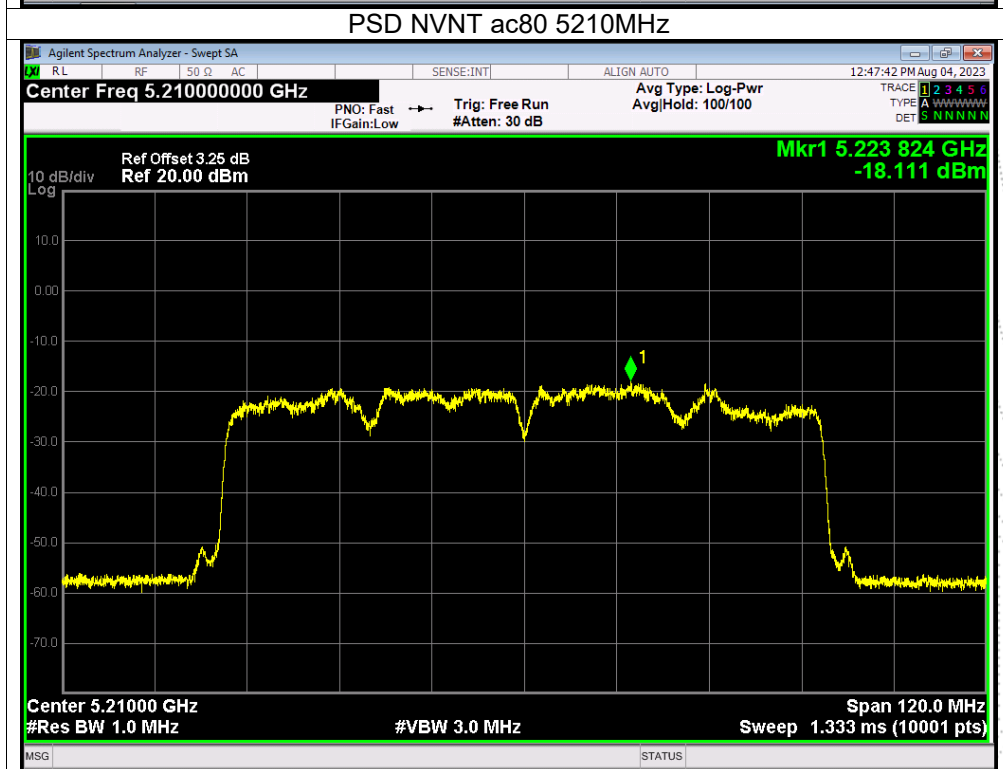
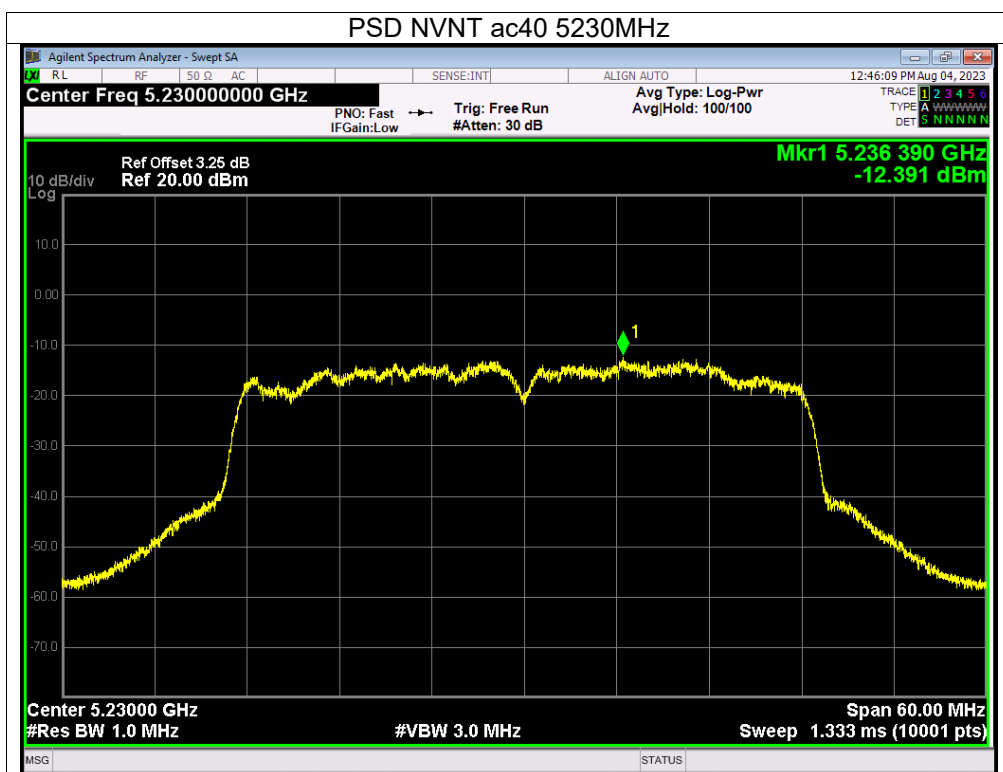








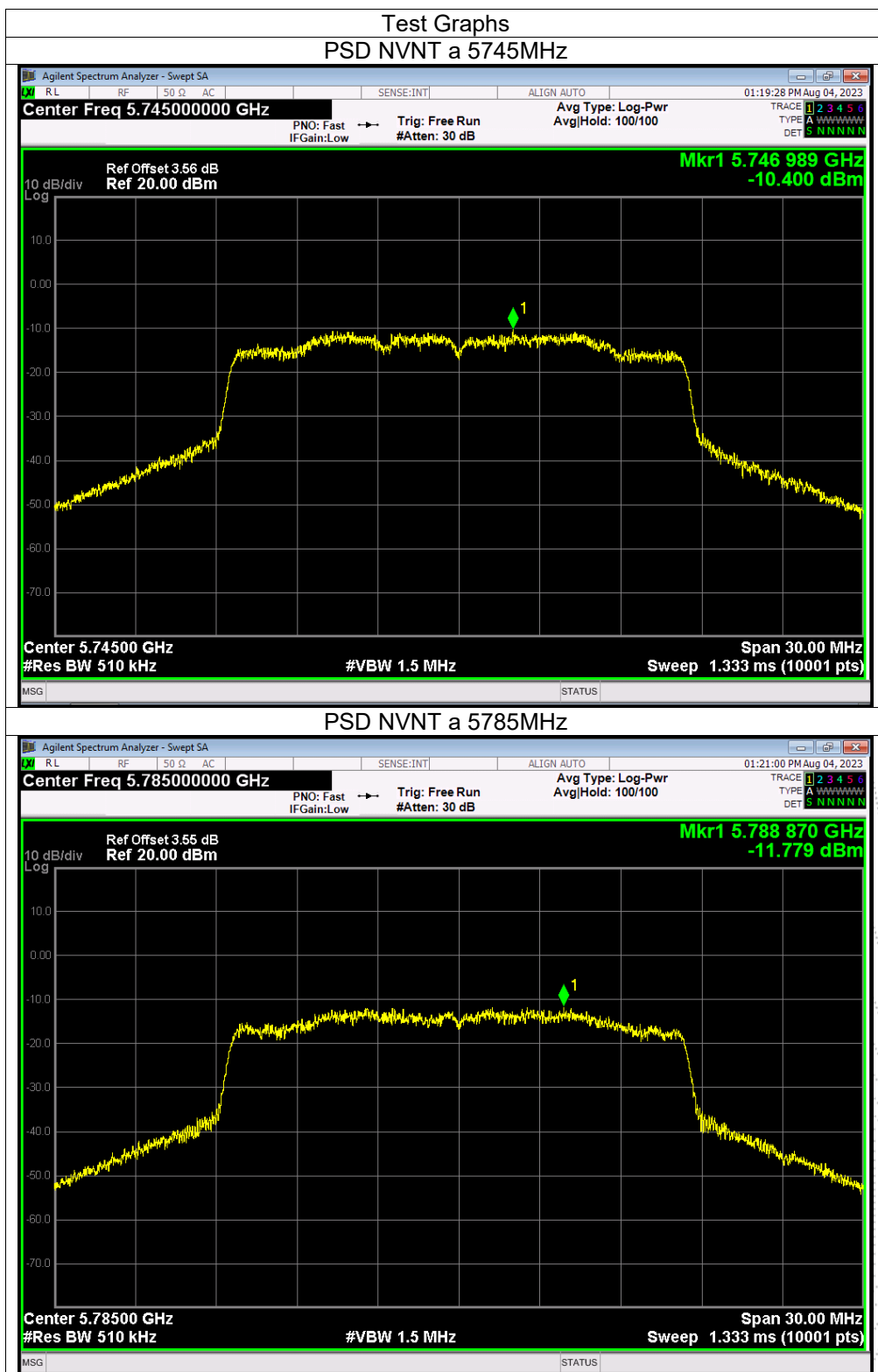


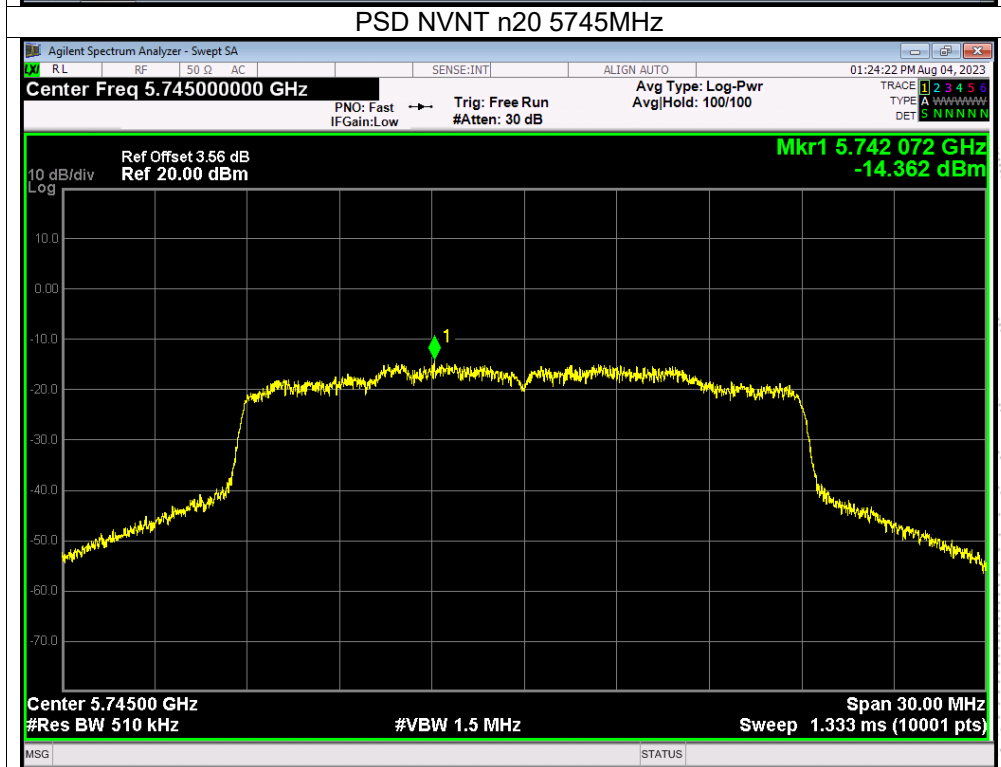
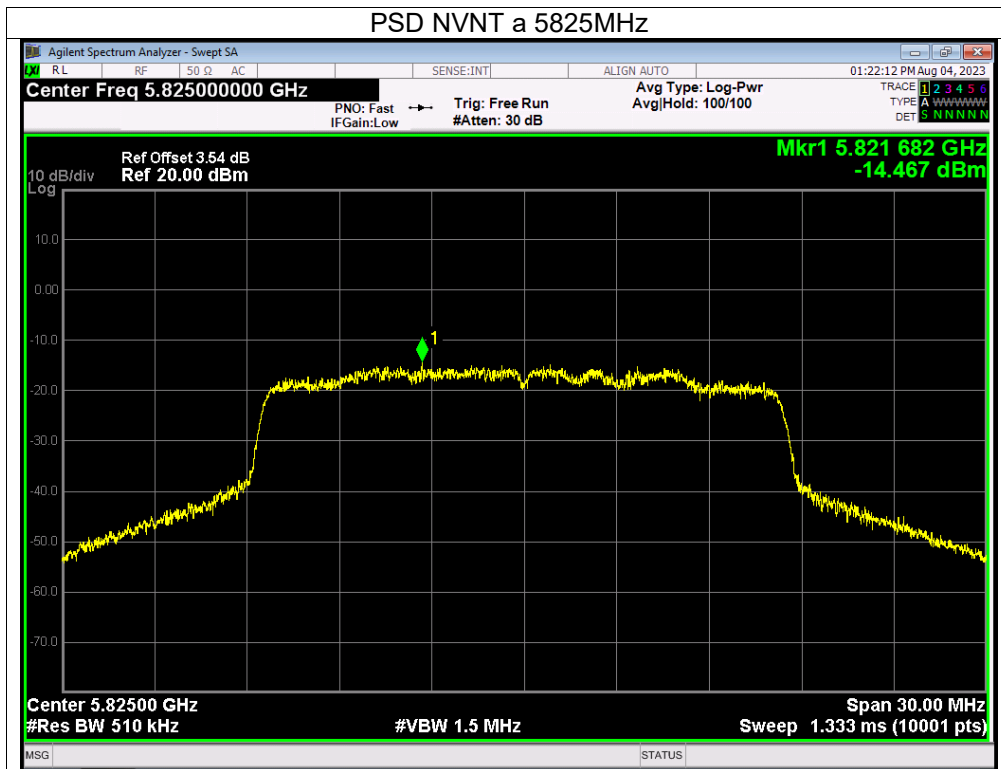


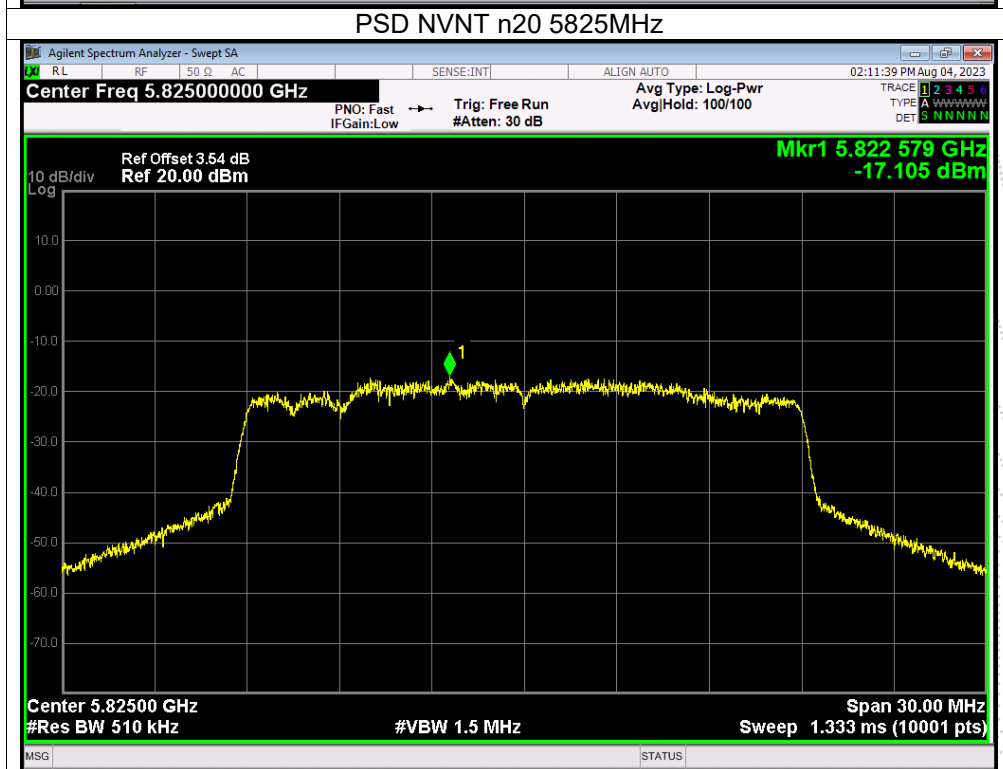
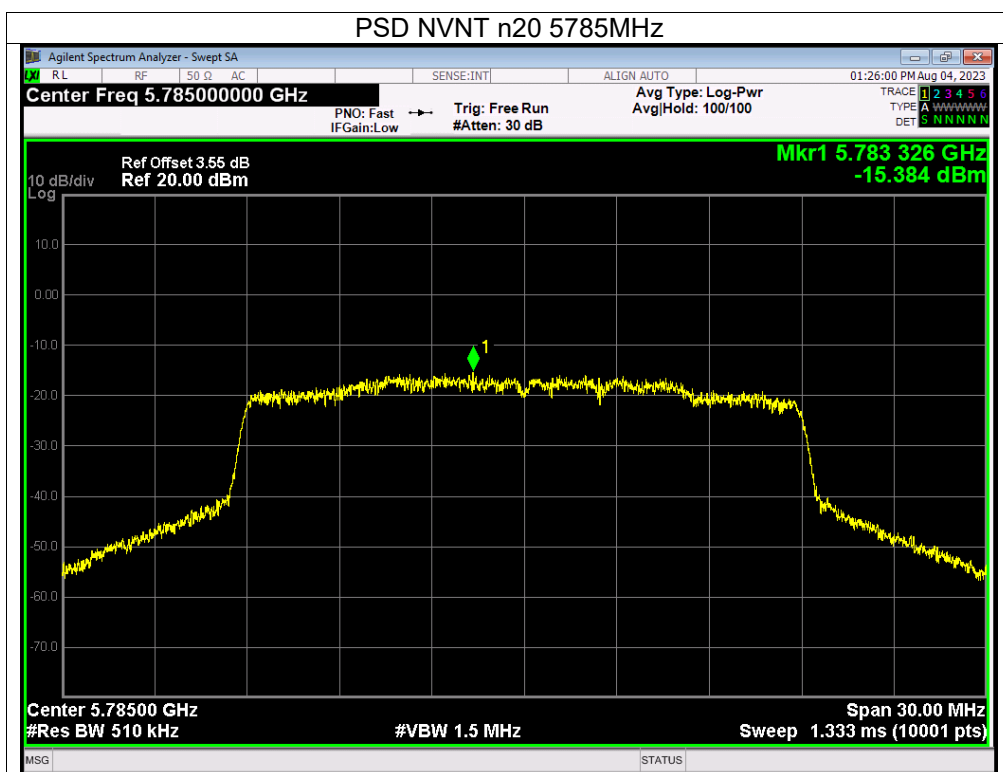
Temperature :	26 °C	Relative Humidity :	54%
Pressure :	101kPa	Test Voltage :	DC 12V
Test Mode :	TX Frequency U-NII-3 (5745-5825MHz)		

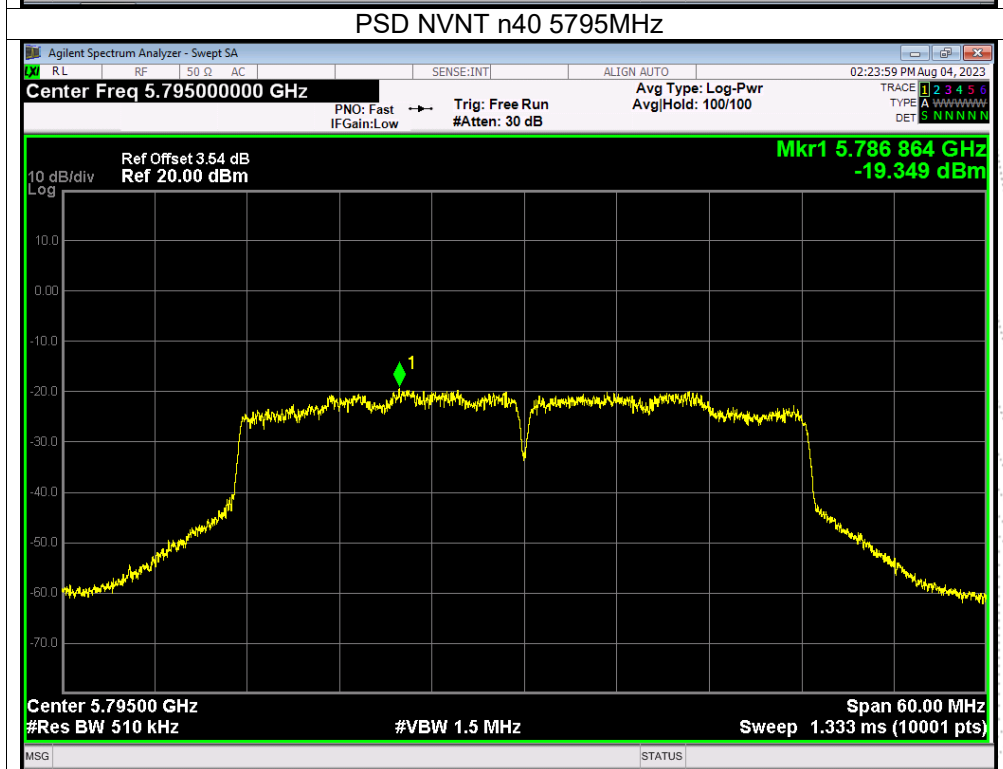
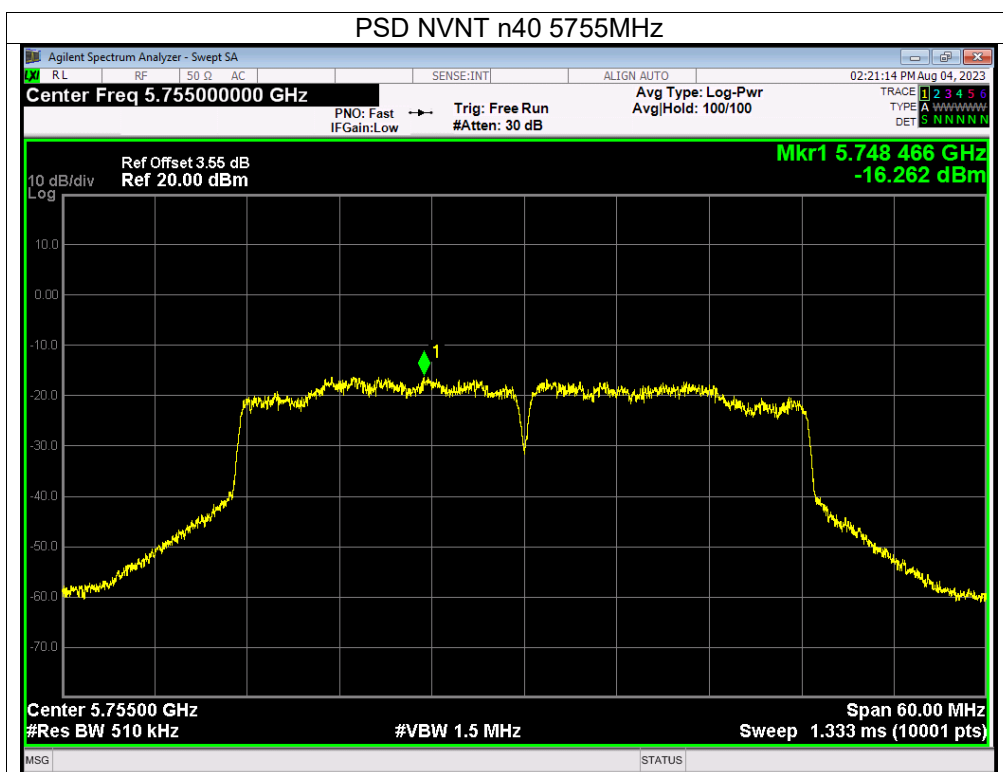
Note: A(B) Represent the value of antenna A and B, The worst data is Antenna B, only shown Antenna B Plot.

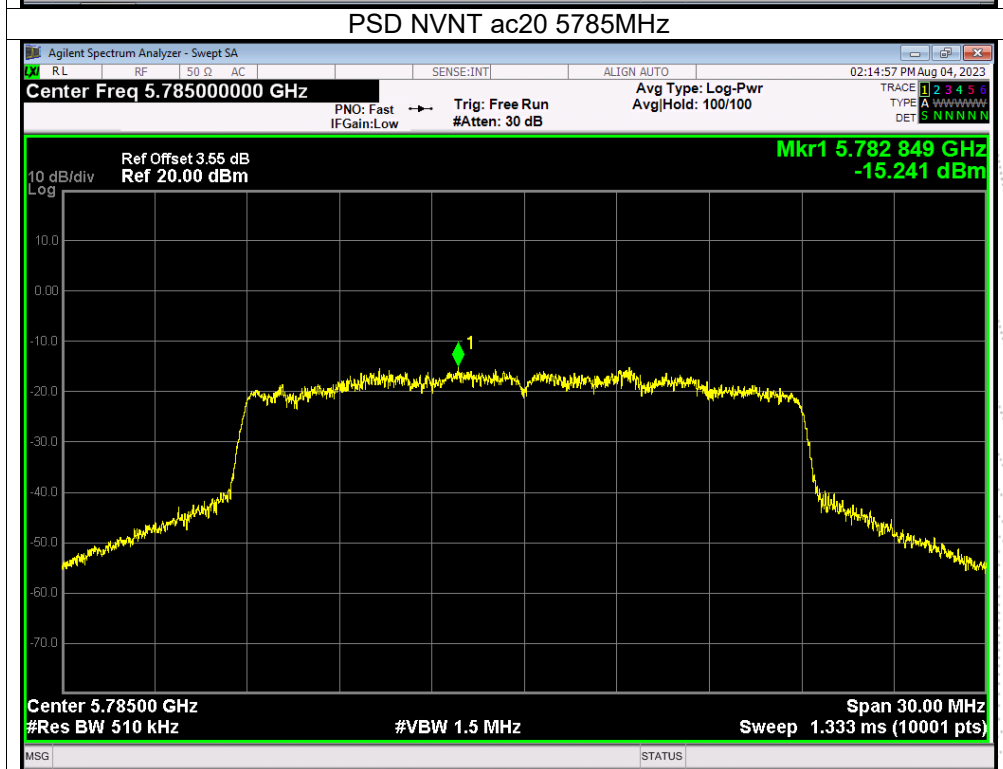
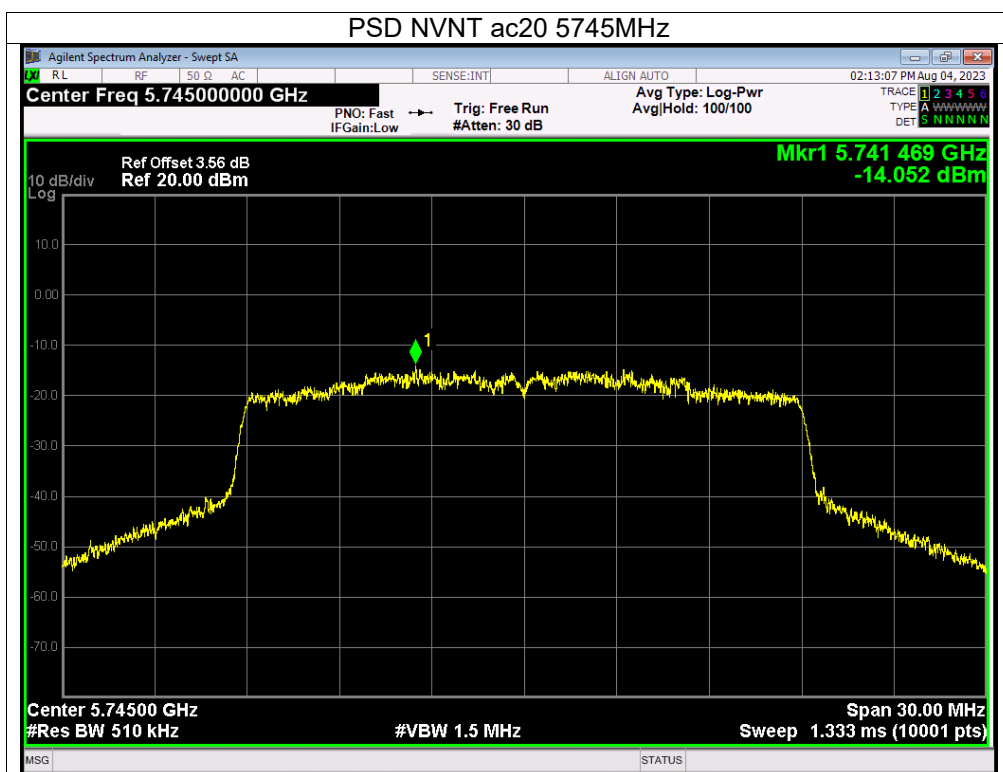
Mode	Frequency	Measured Power Density (dBm/500KHz)			Limit (dBm/500kHz)	Result
		ANT A	ANT B	Total		
802.11 a	5745 MHz	-12.17	-10.4	/	30	PASS
	5785 MHz	-14.71	-11.78	/	30	PASS
	5825 MHz	-16.63	-14.47	/	30	PASS
802.11 n20	5745 MHz	-13.43	-14.36	-10.86	30	PASS
	5785 MHz	-14.32	-15.38	-11.81	30	PASS
	5825 MHz	-17.79	-17.11	-14.43	30	PASS
802.11 n40	5755 MHz	-16.51	-16.26	-13.37	30	PASS
	5795 MHz	-19.75	-19.35	-16.54	30	PASS
802.11 ac20	5745 MHz	-14.55	-14.05	-11.28	30	PASS
	5785 MHz	-14.2	-15.24	-11.68	30	PASS
	5825 MHz	-17.65	-16.89	-14.24	30	PASS
802.11 ac40	5755 MHz	-18.7	-18.23	-15.45	30	PASS
	5795 MHz	-19.66	-19.68	-16.66	30	PASS
802.11 AC80	5775 MHz	-21.29	-21.63	-18.45	30	PASS

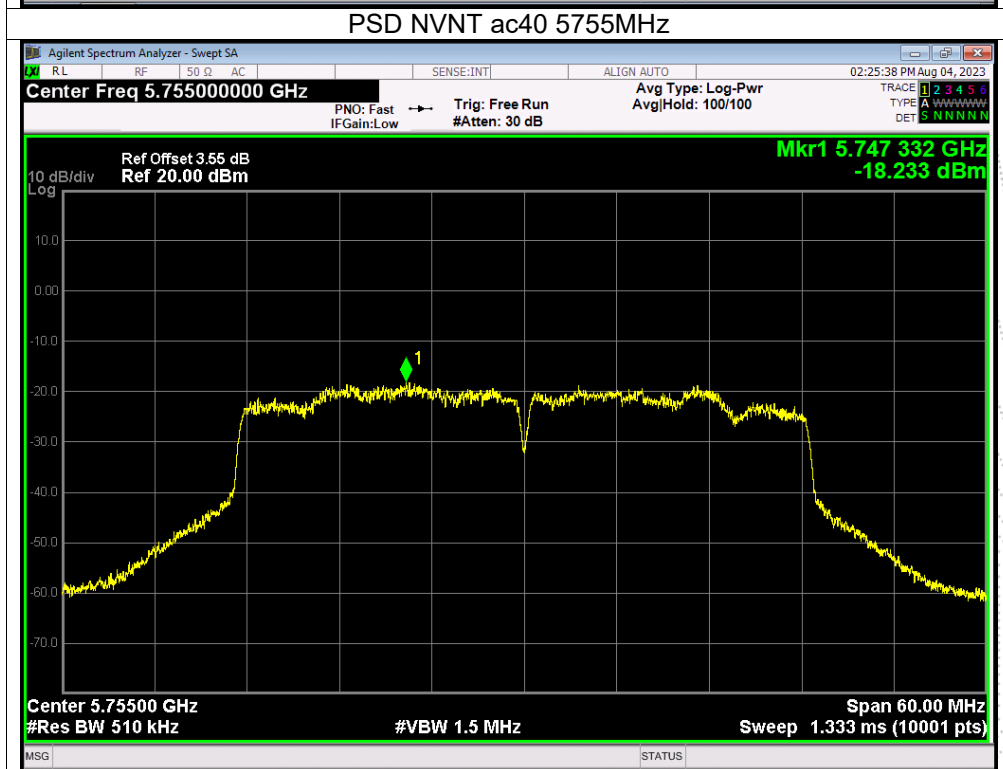
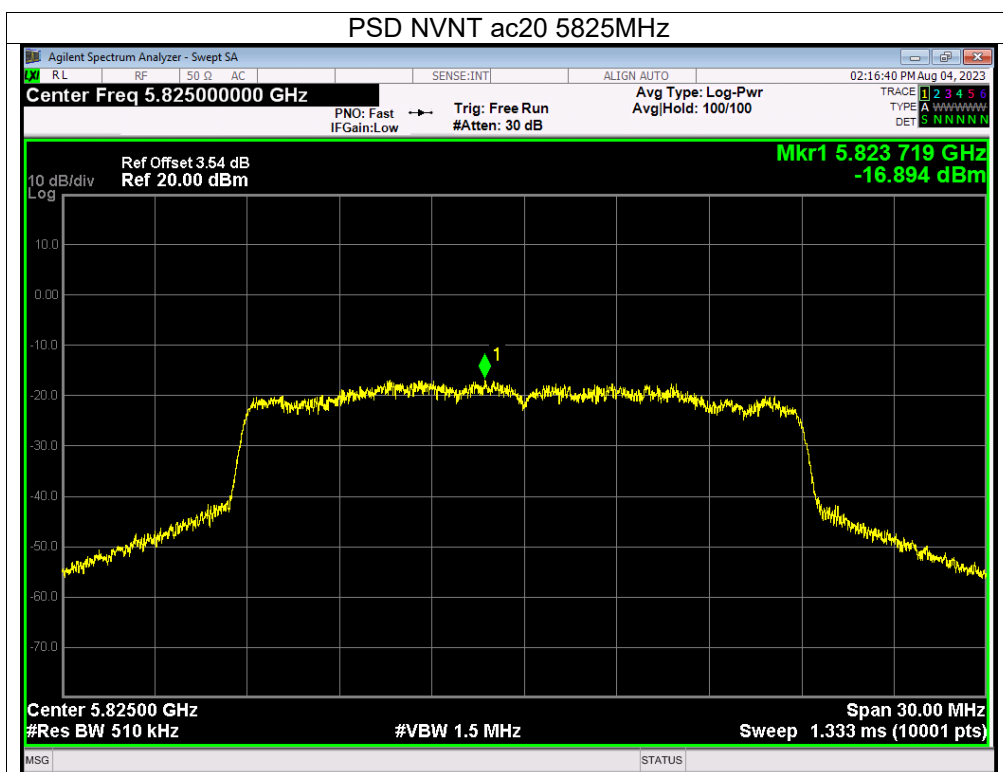


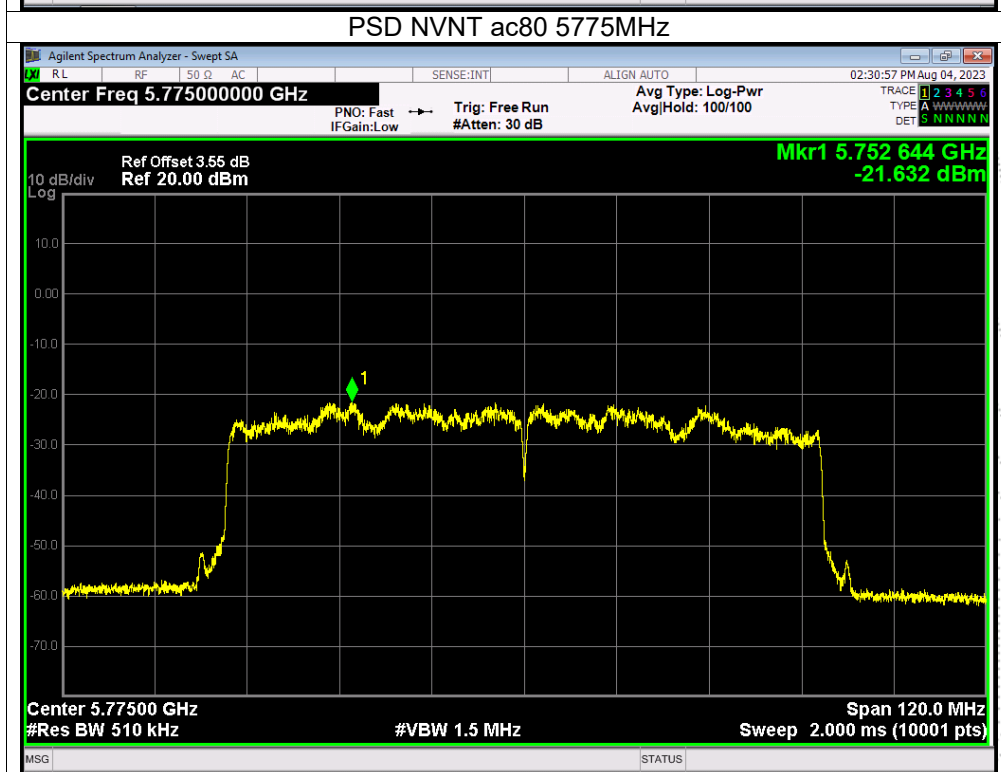
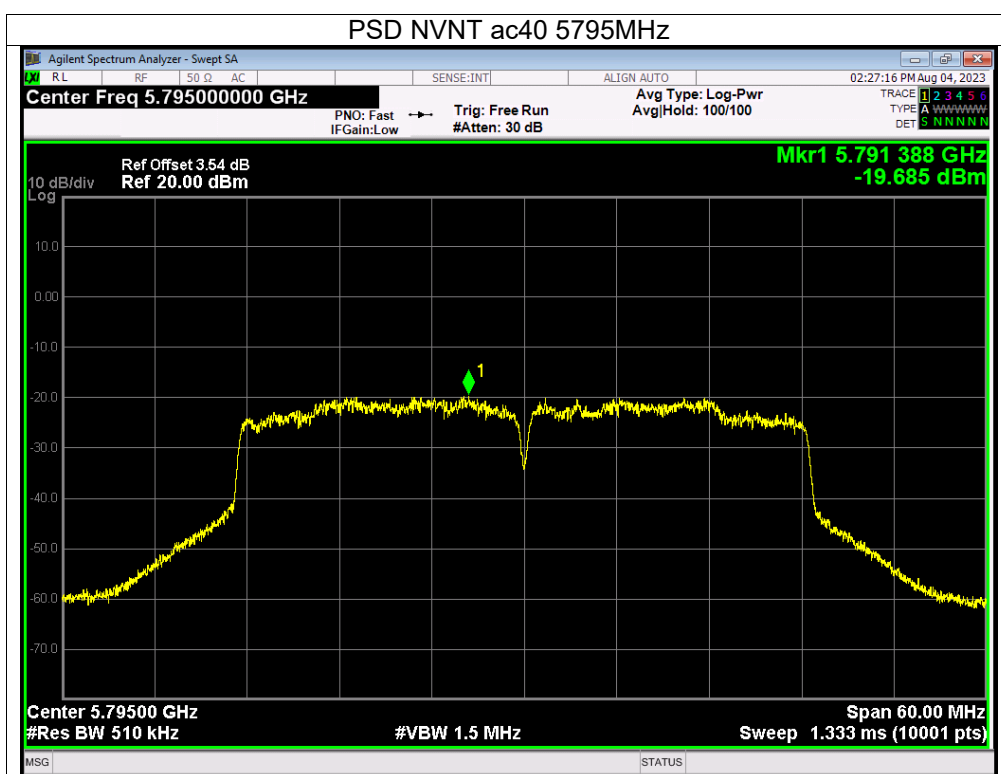






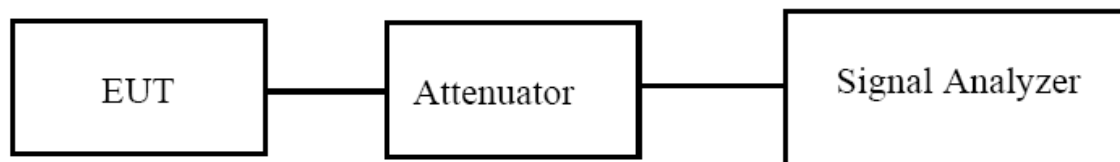






9. 26dB & 6dB & 99% Emission Bandwidth

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.
(6dB bandwidth)>500kHz

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.

6dB

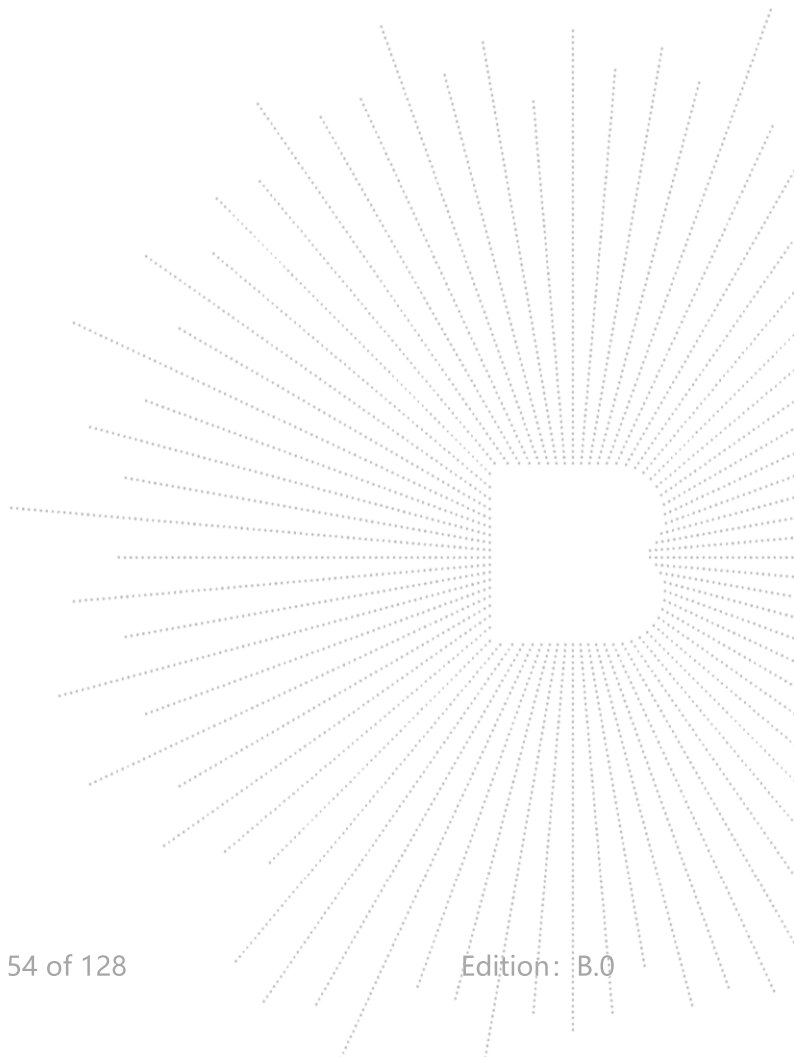
- Set RBW = 100 kHz.
- Set the video bandwidth (VBW) $\geq 3 \times$ RBW.
- Detector = Peak.
- Trace mode = max hold.
- Sweep = auto couple.

6. Allow the trace to stabilize.

7. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.

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.



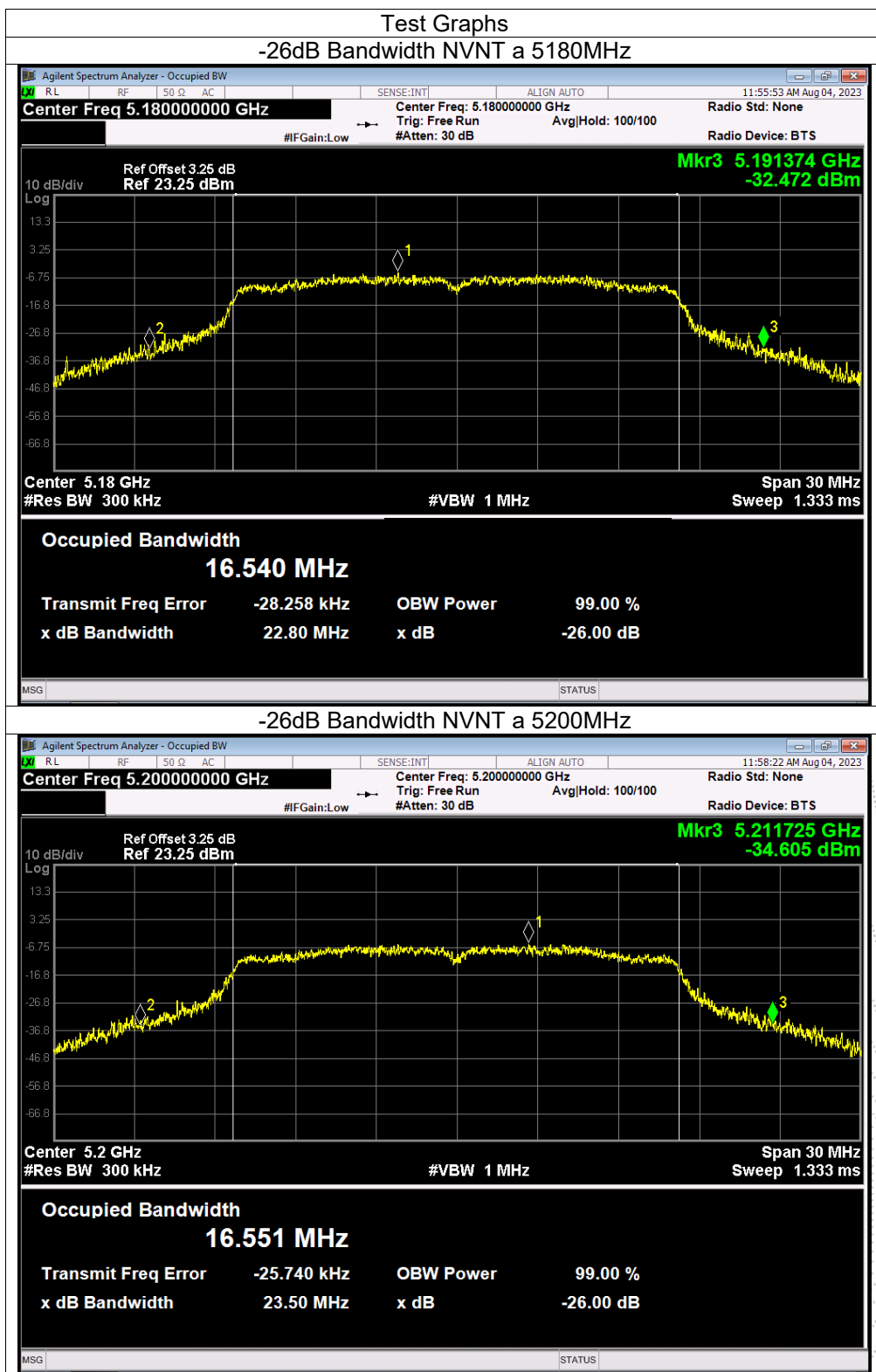
9.5 Test Result

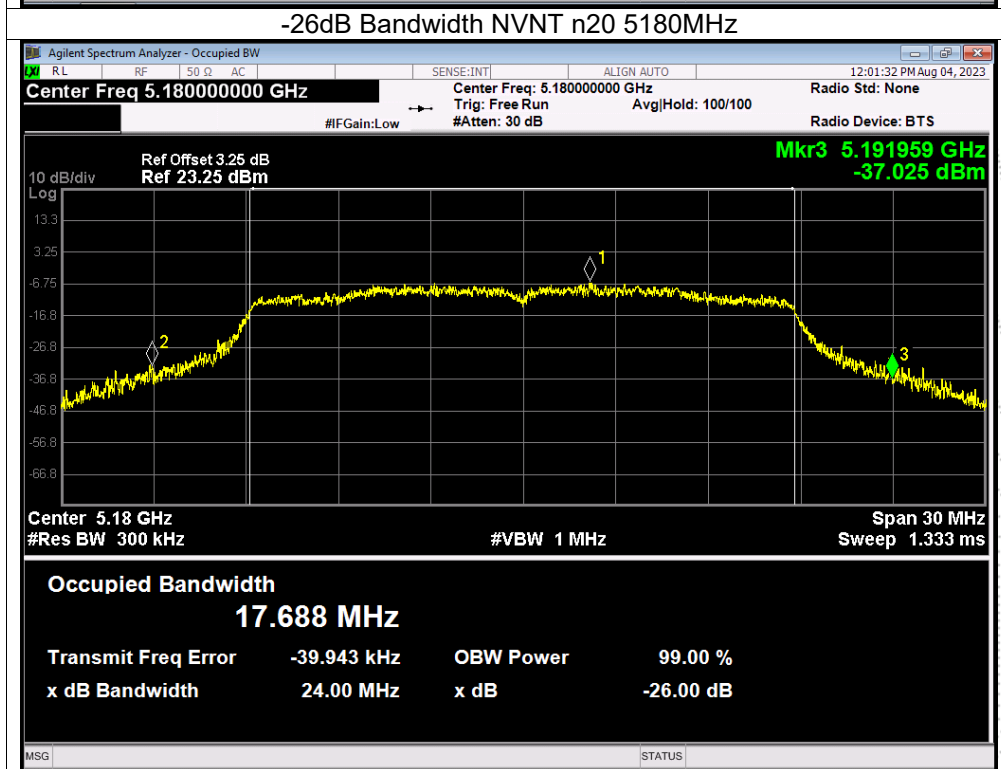
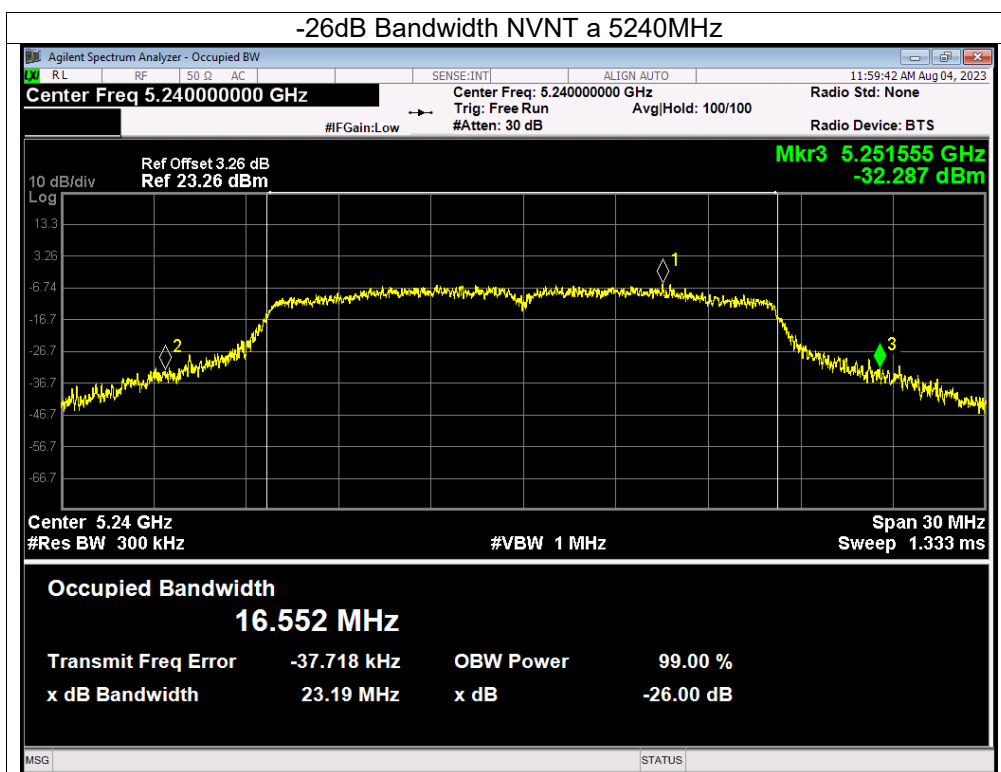
Temperature :	26 °C	Relative Humidity :	54%
Pressure :	101kPa	Test Voltage :	DC 12V
Test Mode :	TX Frequency U-NII-1 (5180-5240MHz)		

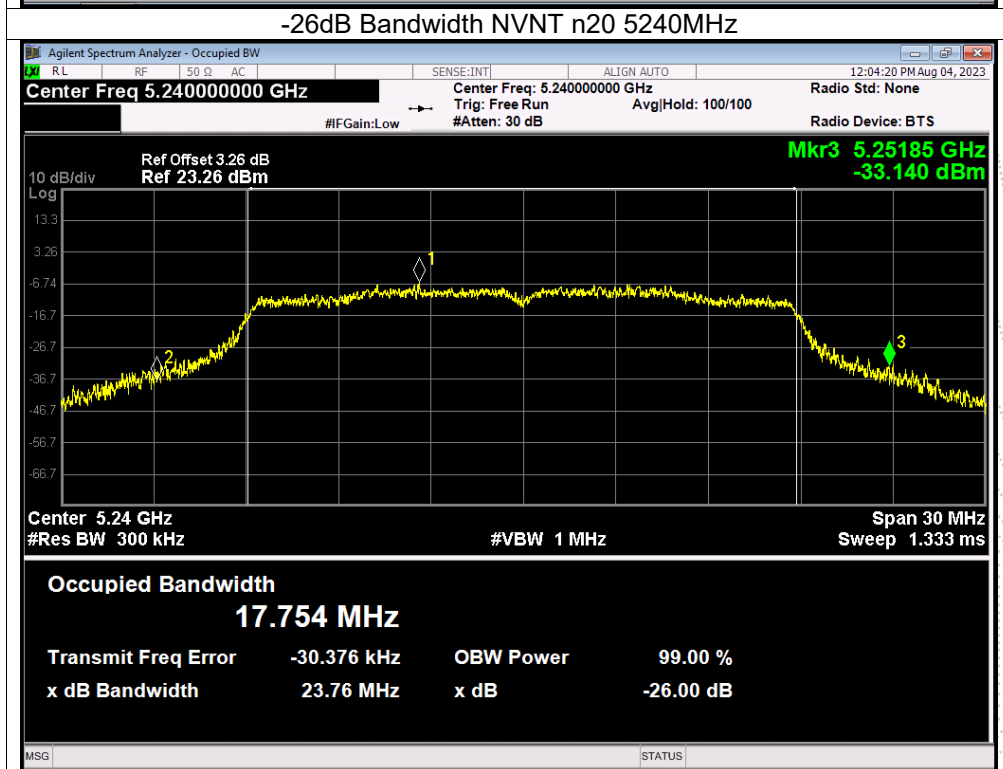
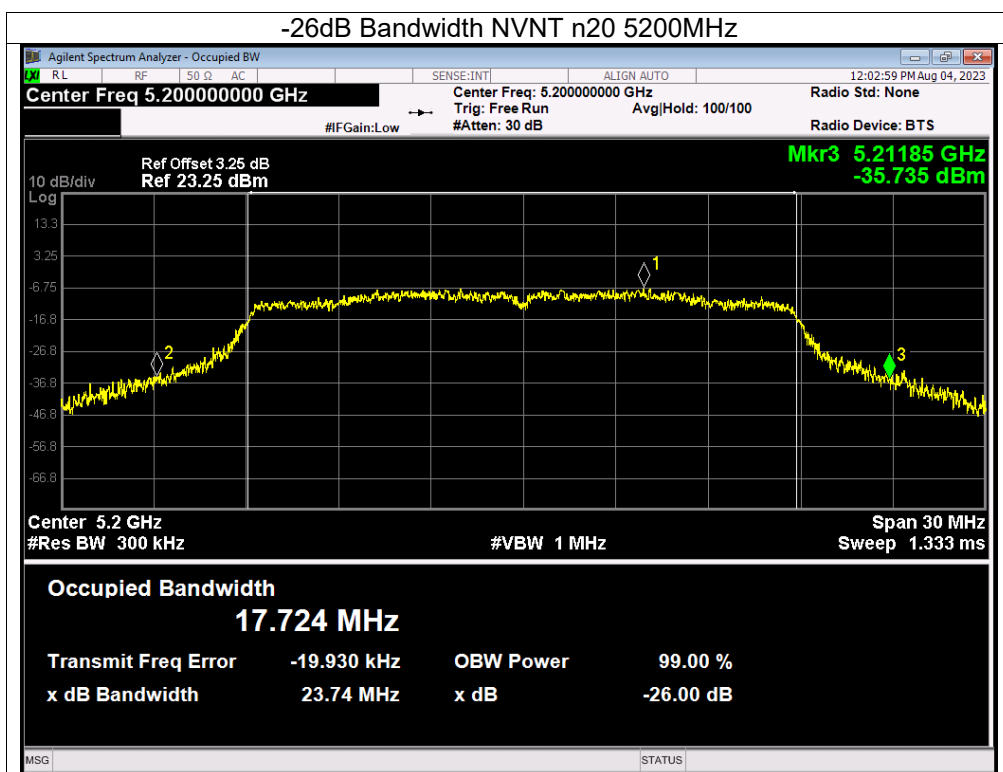
Note: A(B) Represent the value of antenna A and B. The worst data is Antenna B, only shown Antenna B Plot.

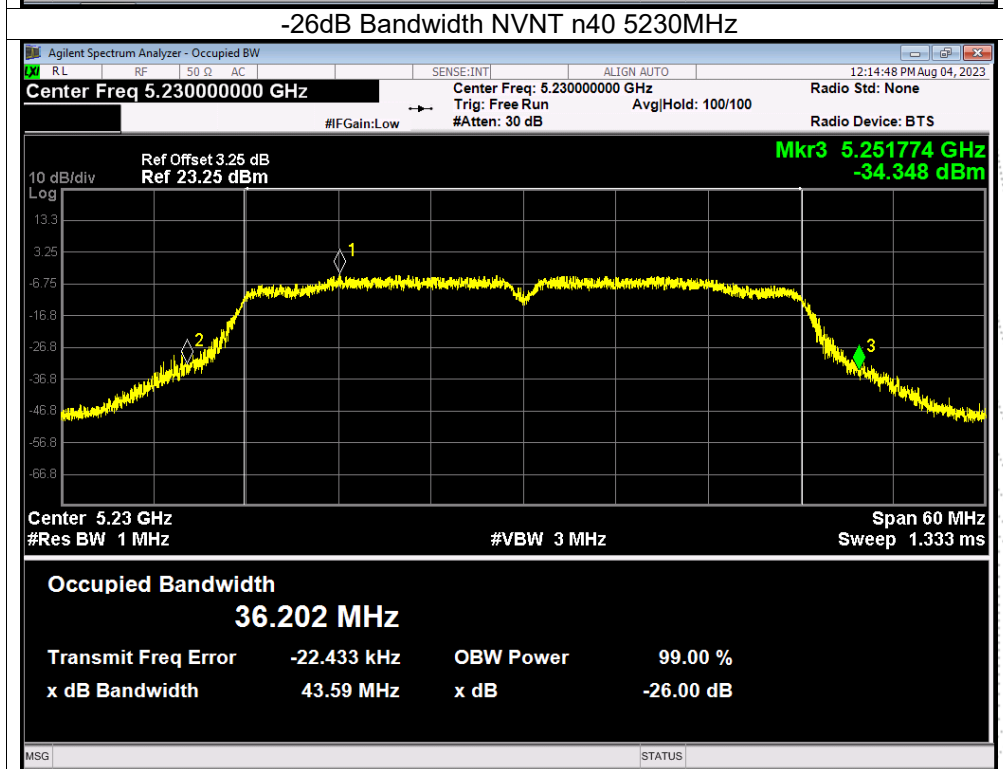
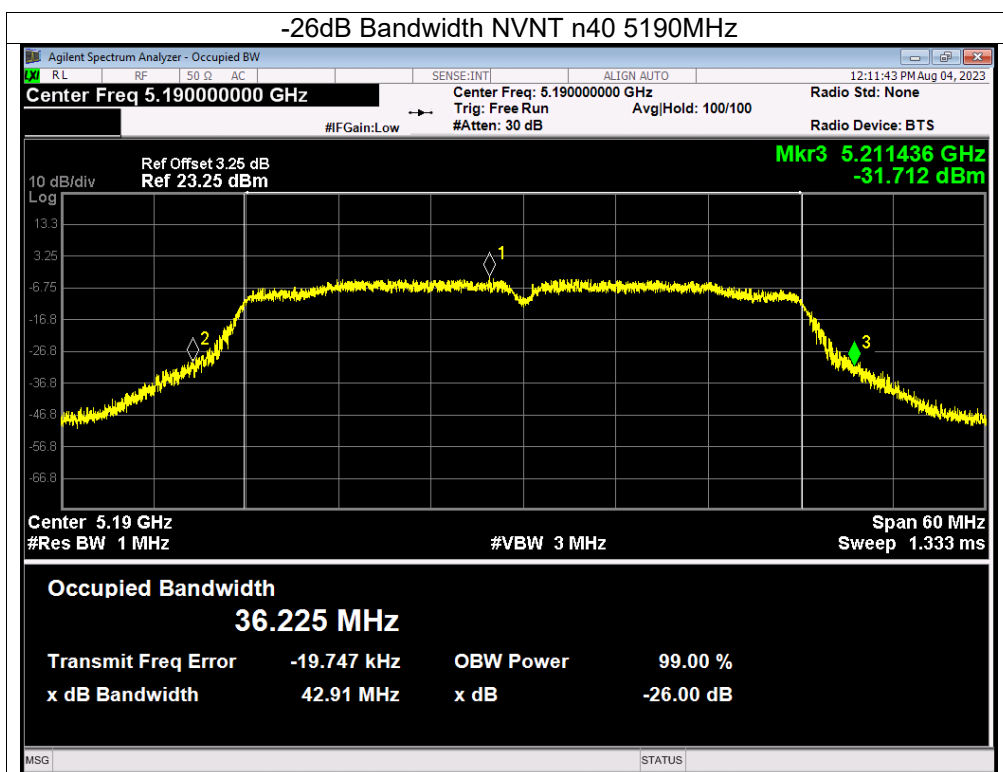
Condition	Mode	Frequency (MHz)	-26 dB Bandwidth (MHz)		Verdict
			Ant A	Ant B	
NVNT	a	5180	23.117	22.804	Pass
NVNT	a	5200	22.737	23.502	Pass
NVNT	a	5240	23.076	23.186	Pass
NVNT	n20	5180	24.136	23.998	Pass
NVNT	n20	5200	23.099	23.74	Pass
NVNT	n20	5240	22.912	23.76	Pass
NVNT	n40	5190	43.792	42.912	Pass
NVNT	n40	5230	42.648	43.593	Pass
NVNT	ac20	5180	23.486	22.952	Pass
NVNT	ac20	5200	23.912	23.477	Pass
NVNT	ac20	5240	24.013	23.635	Pass
NVNT	ac40	5190	42.876	44.022	Pass
NVNT	ac40	5230	43.683	42.745	Pass
NVNT	ac80	5210	80.962	81.364	Pass

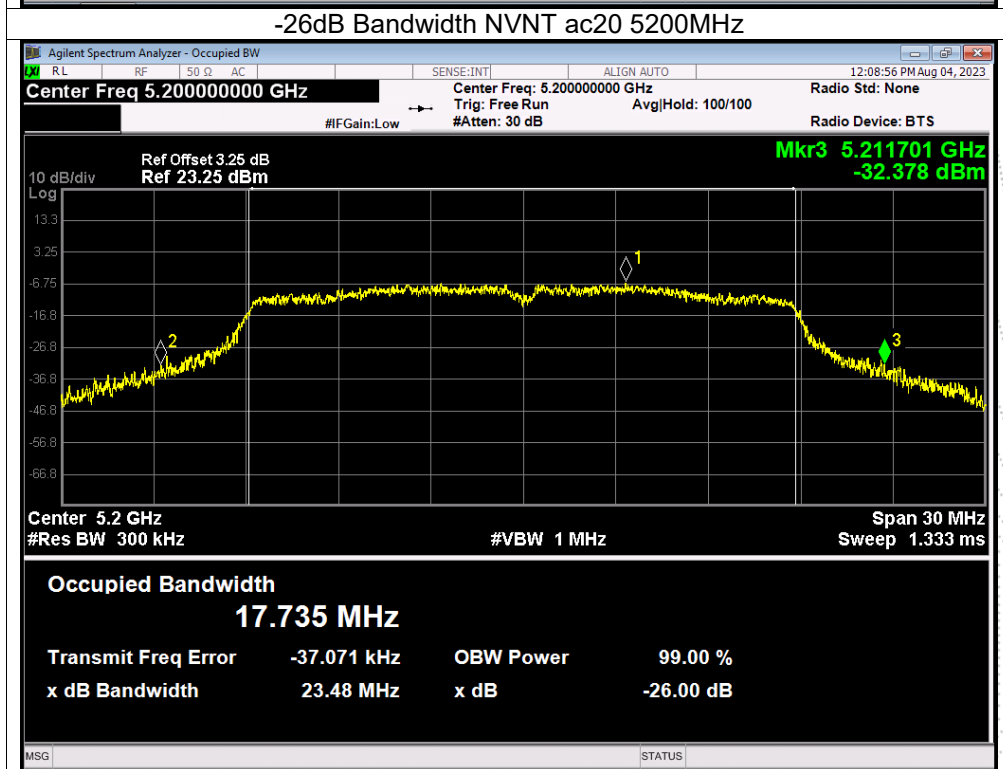
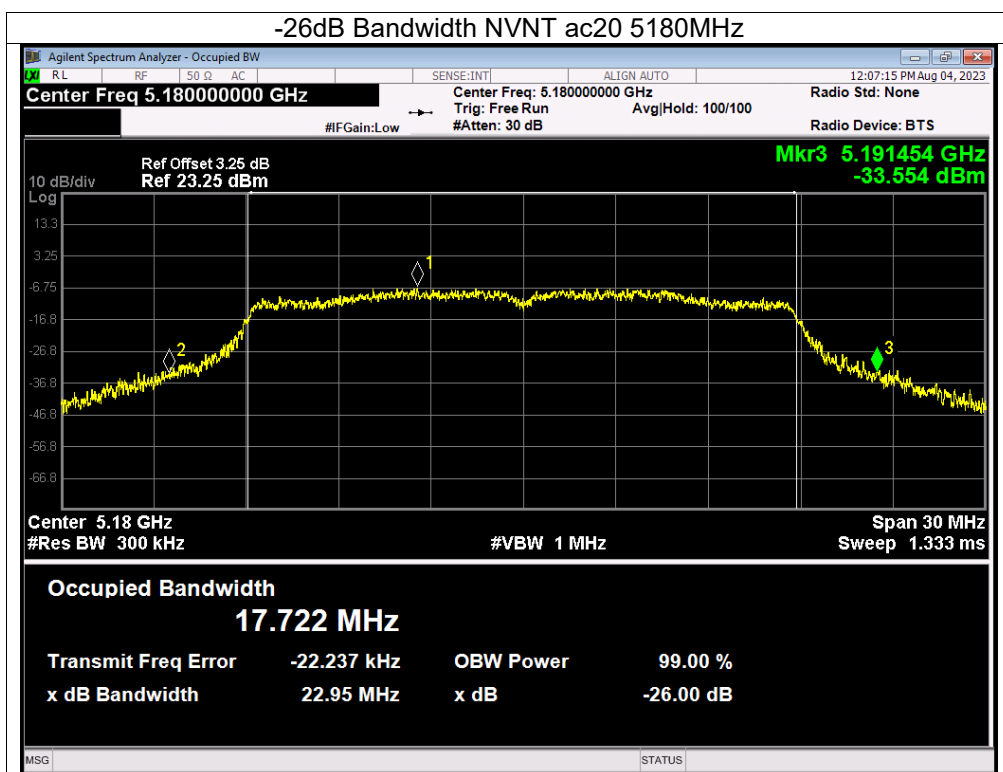
Condition	Mode	Frequency (MHz)	99% OBW (MHz)	
			Ant A	Ant B
NVNT	a	5180	16.406	16.418
NVNT	a	5200	16.432	16.45
NVNT	a	5240	16.41	16.448
NVNT	n20	5180	17.637	17.629
NVNT	n20	5200	17.62	17.623
NVNT	n20	5240	17.629	17.629
NVNT	n40	5190	36.025	36.047
NVNT	n40	5230	36.056	36.045
NVNT	ac20	5180	17.627	17.618
NVNT	ac20	5200	17.603	17.626
NVNT	ac20	5240	17.628	17.613
NVNT	ac40	5190	35.997	36.021
NVNT	ac40	5230	36.031	36.029
NVNT	ac80	5210	75.266	75.246

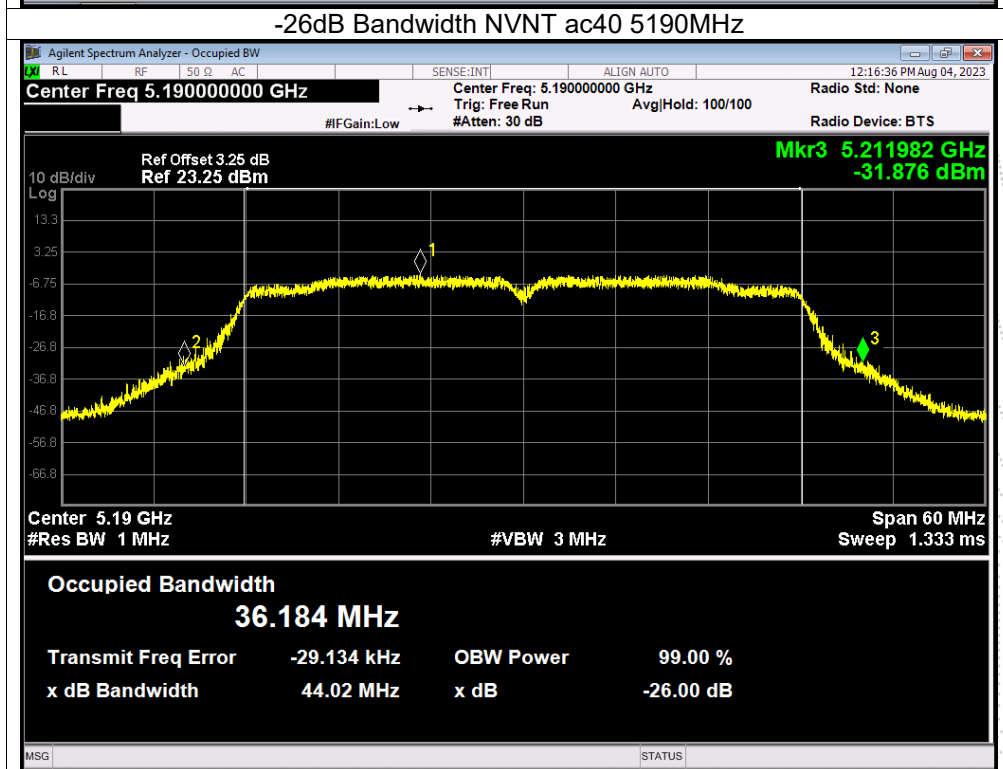
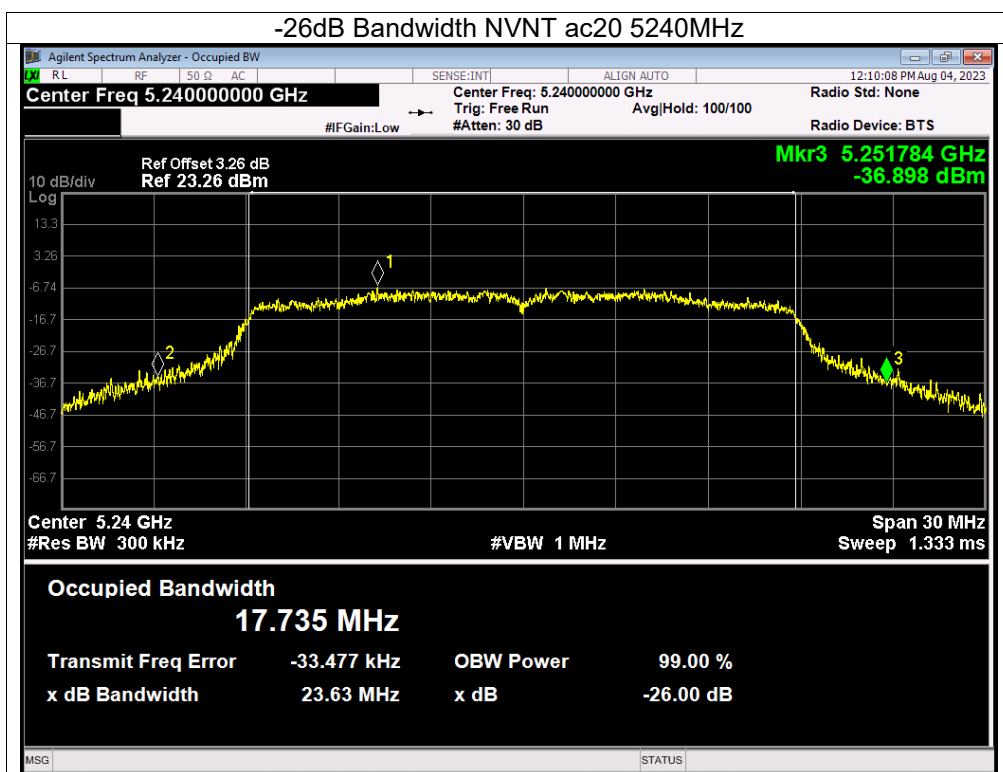


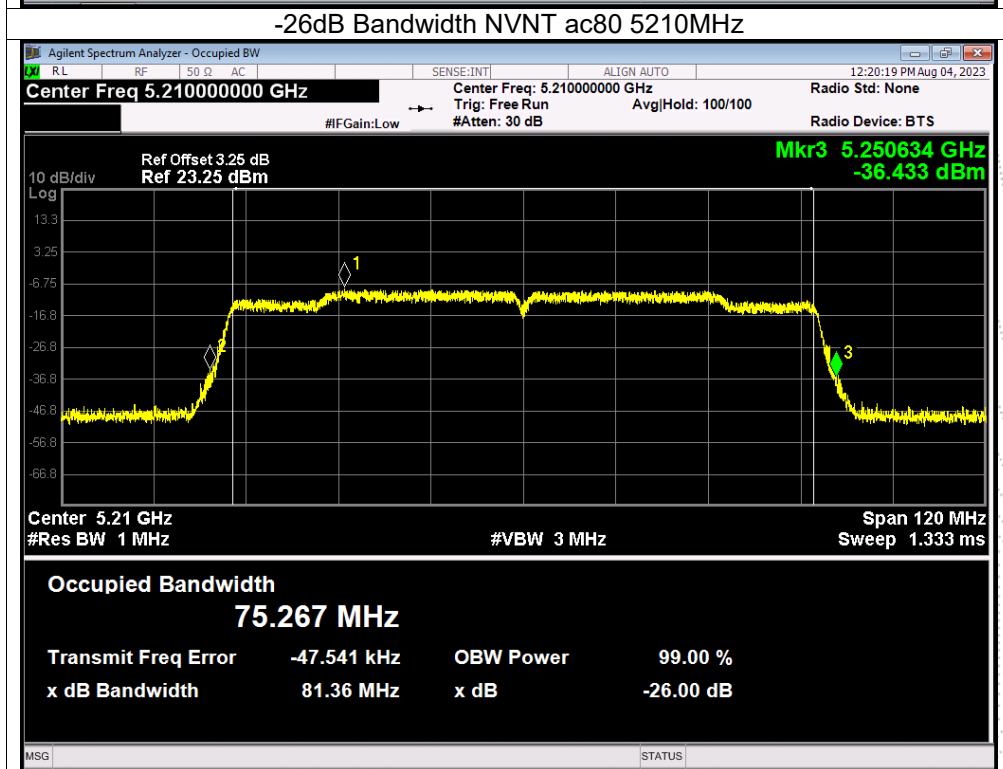
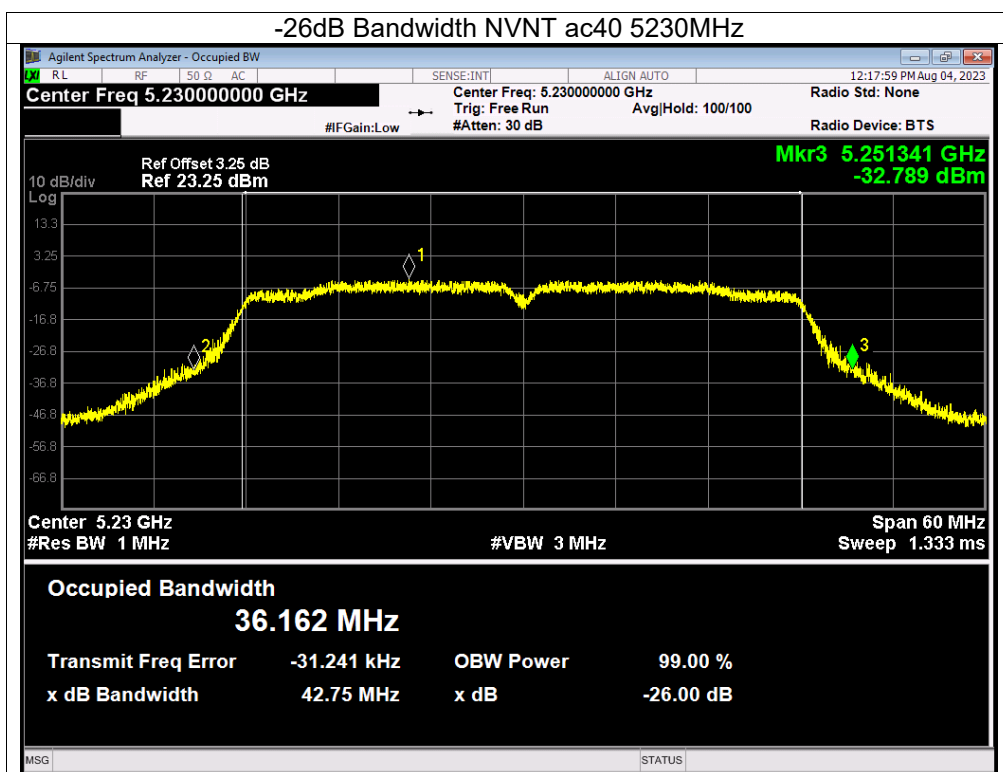


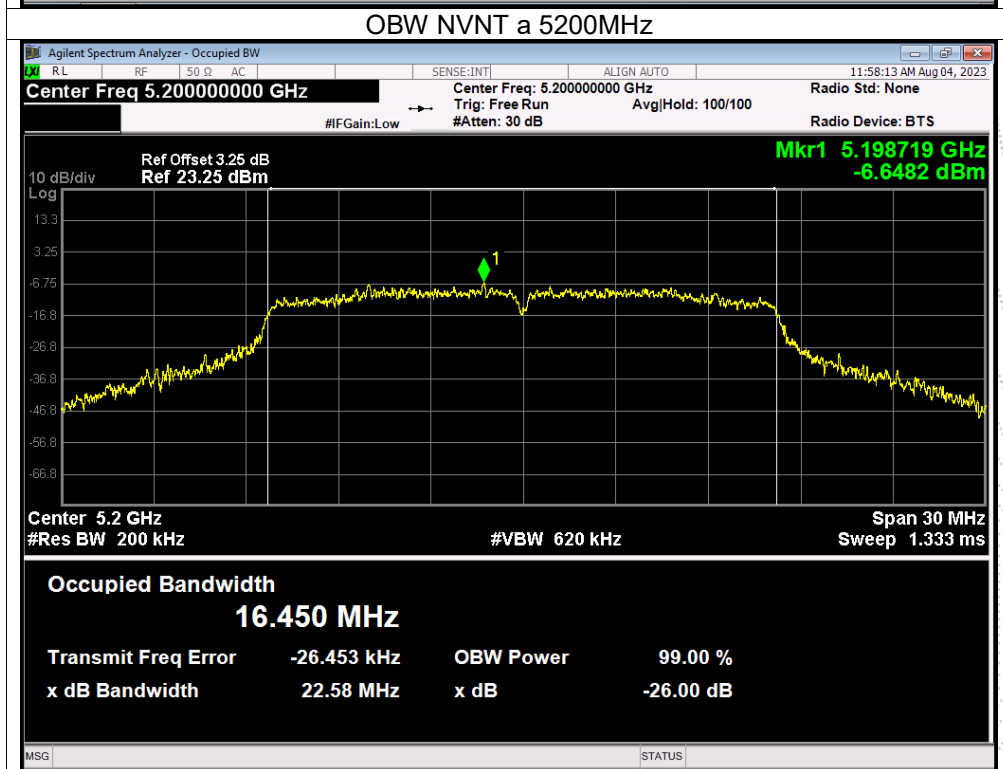
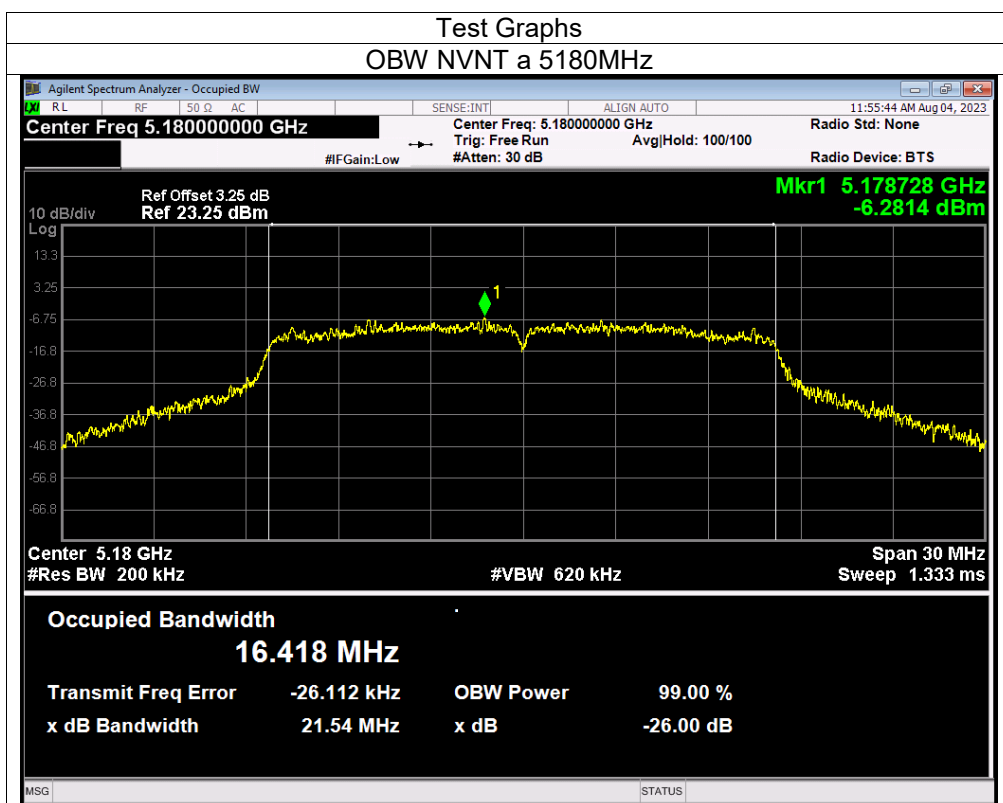


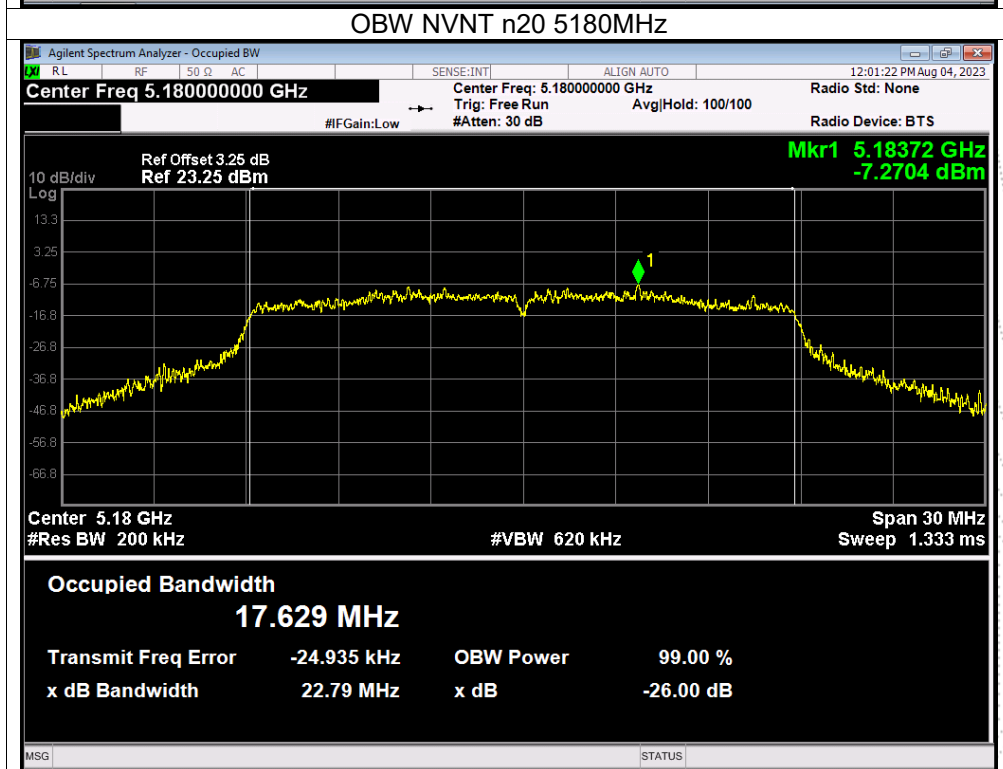
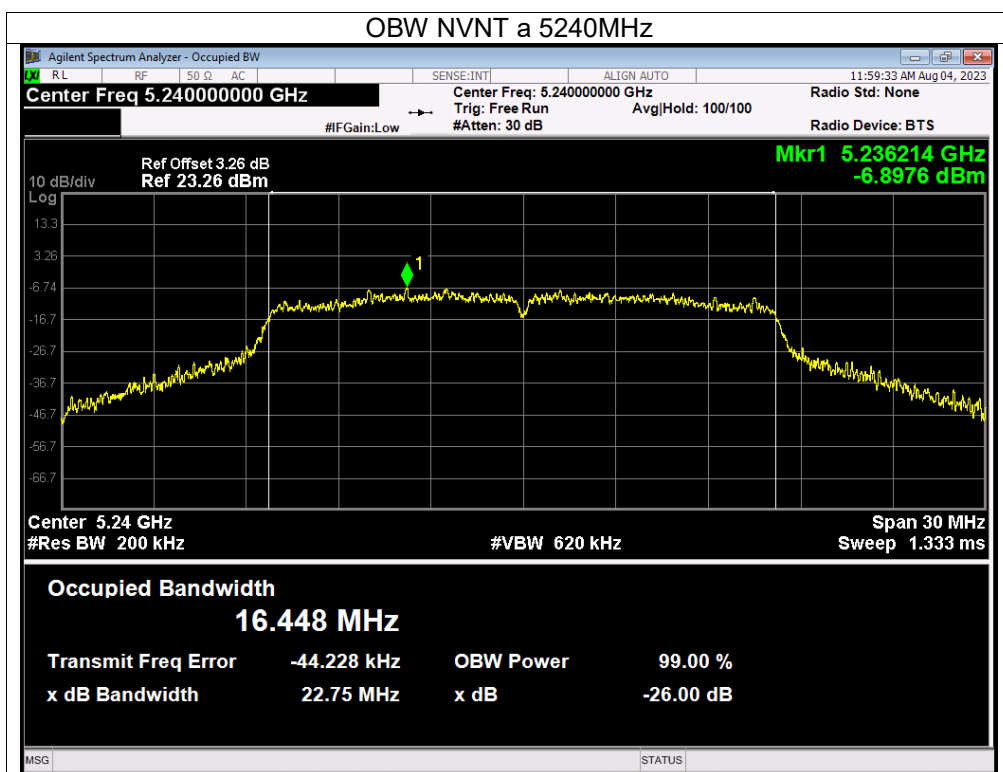


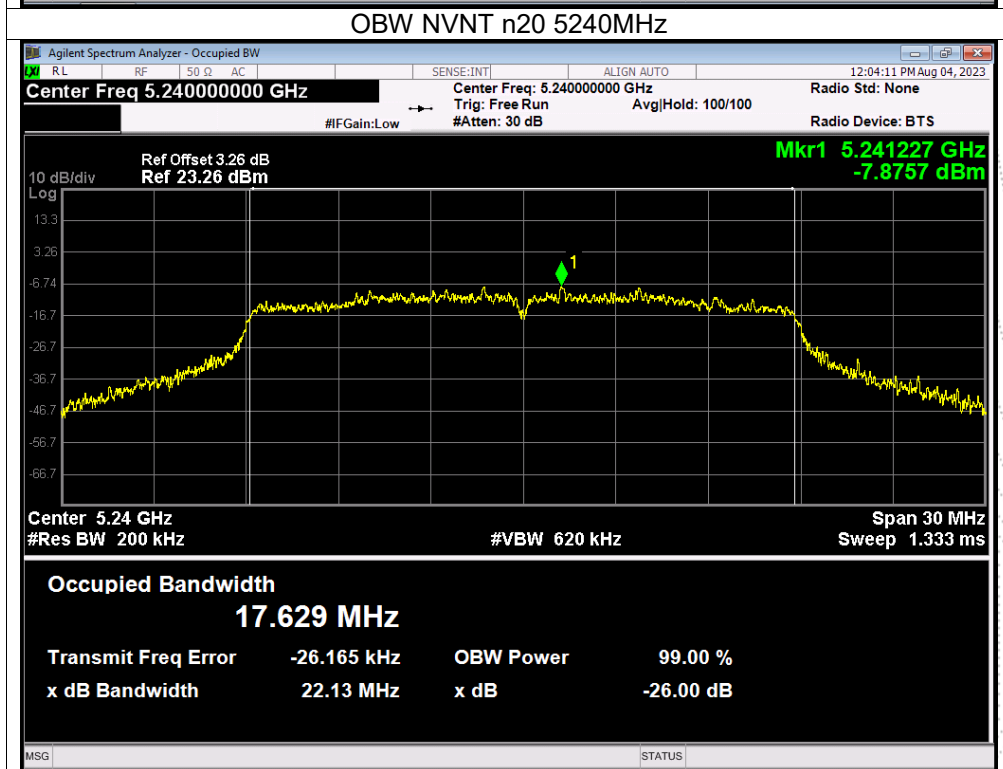
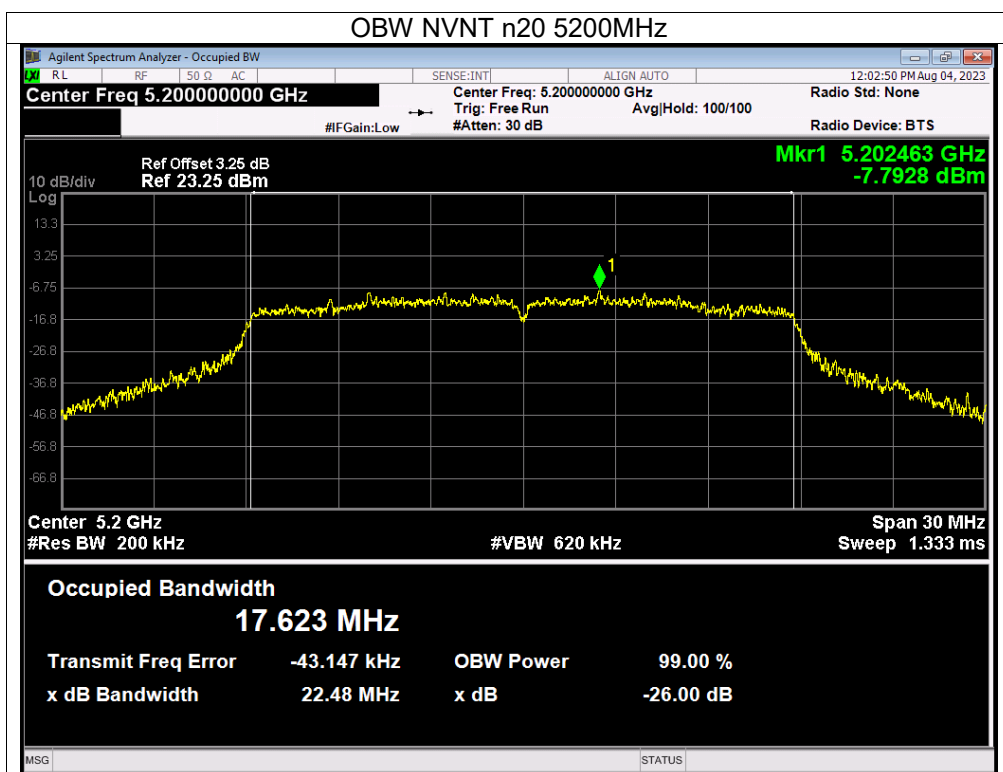


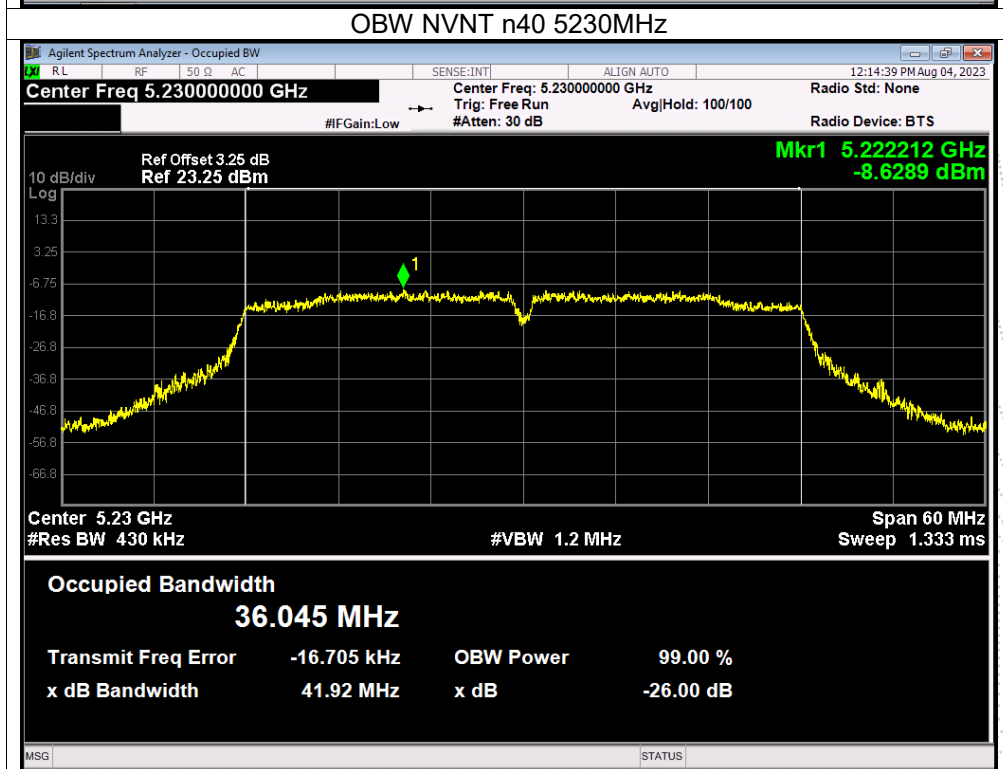
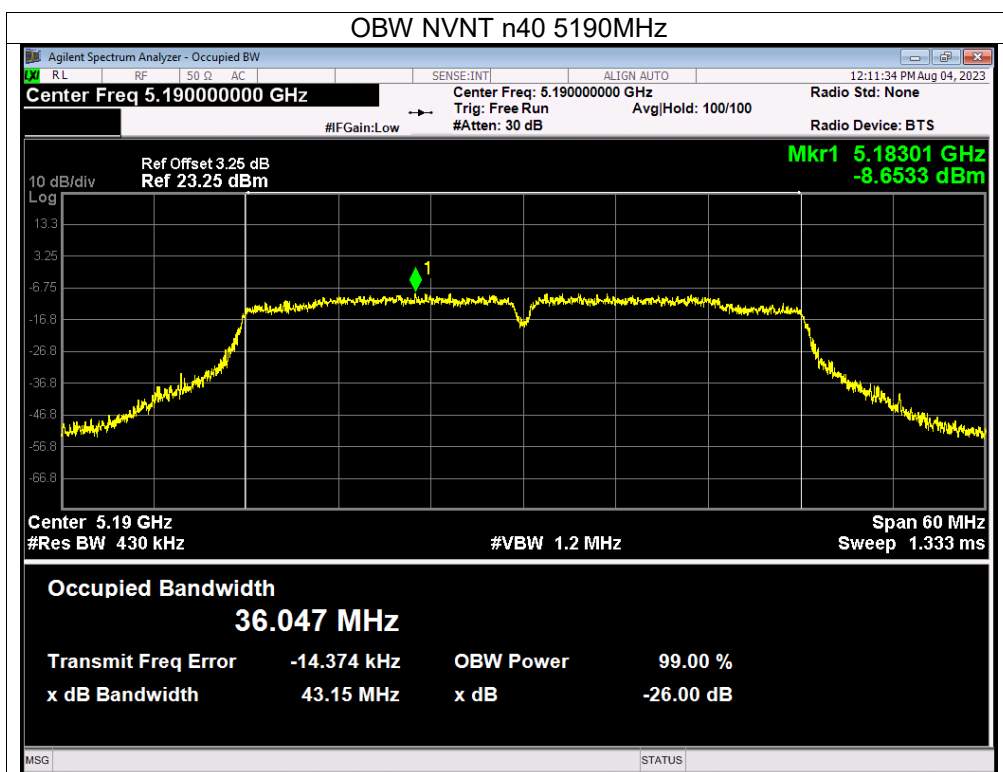


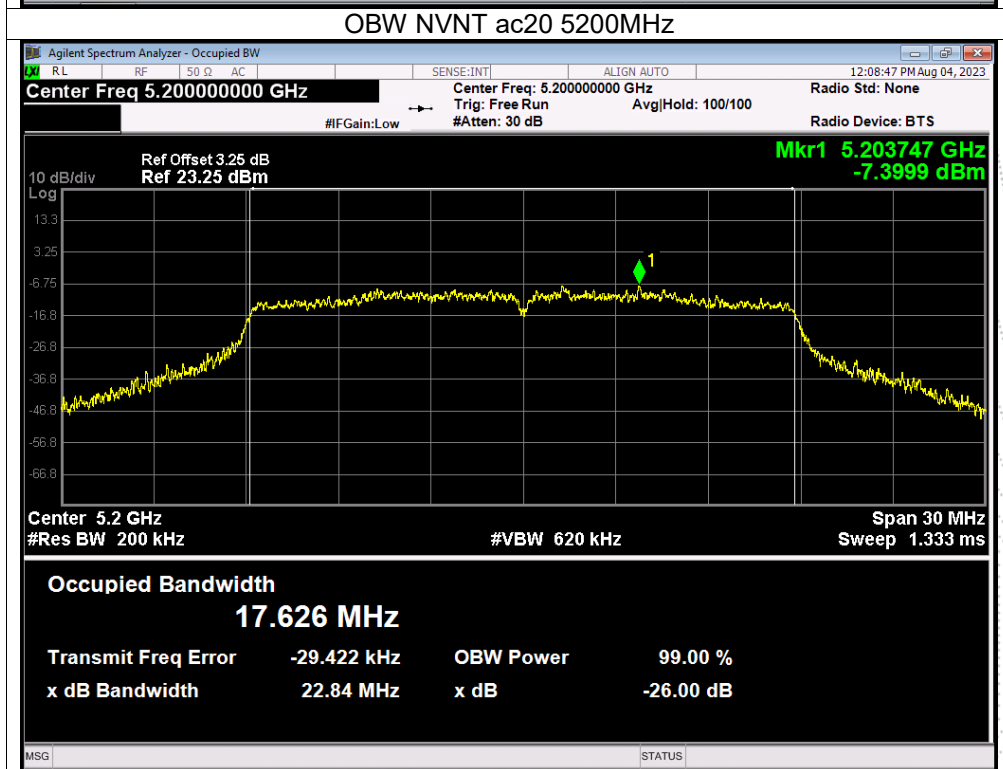
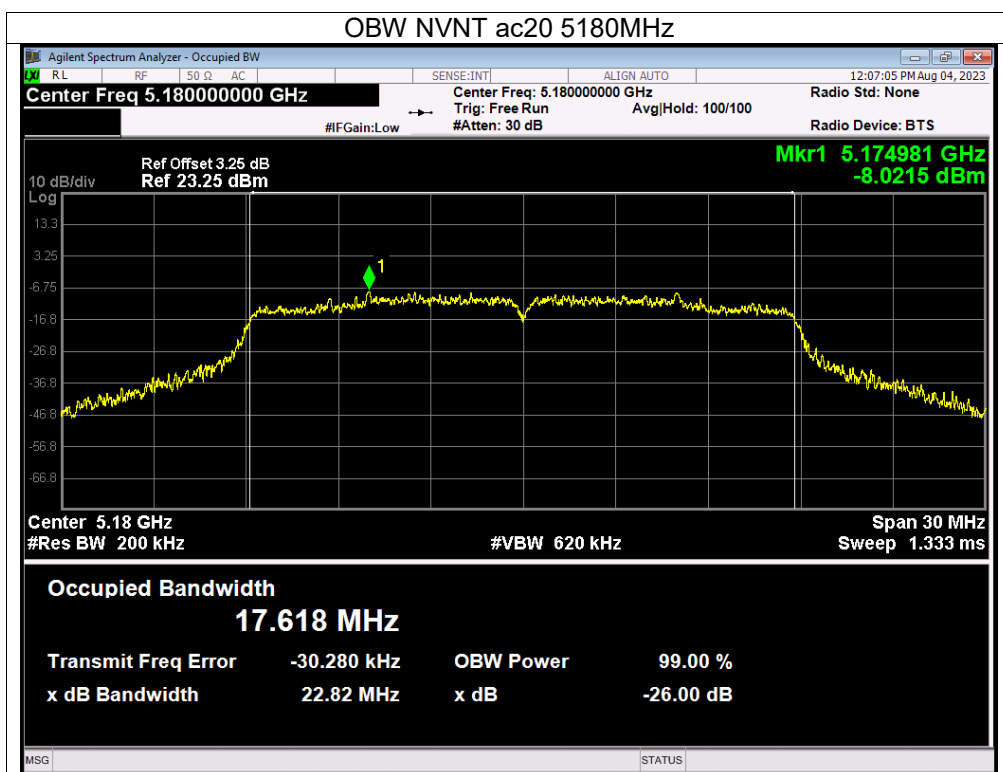


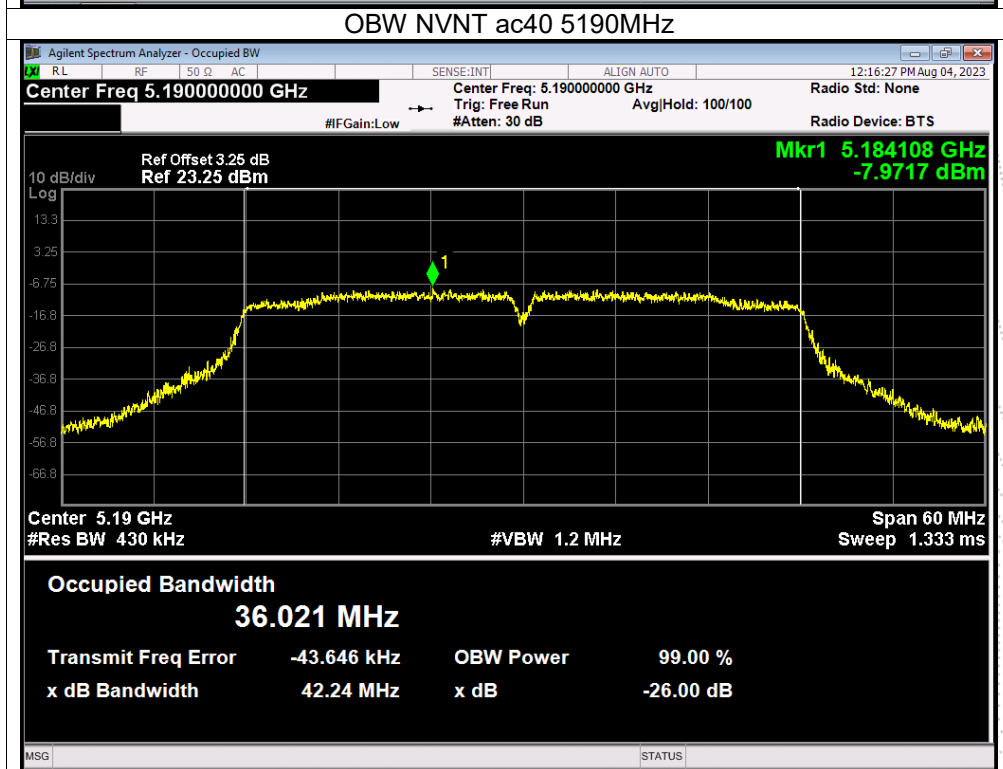
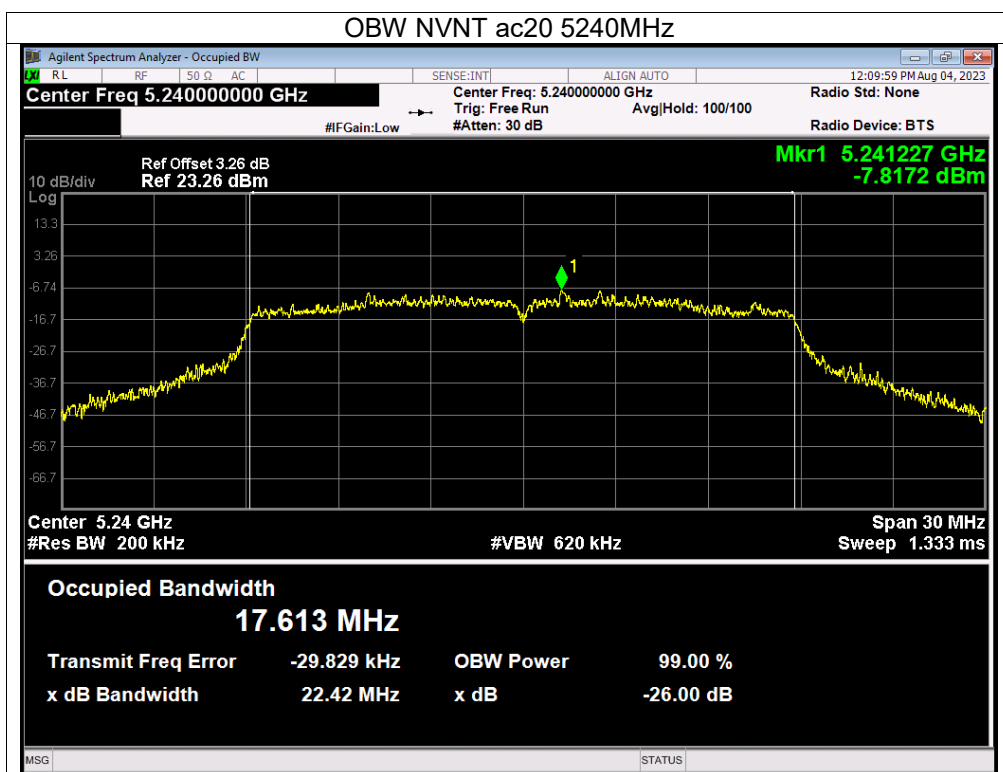


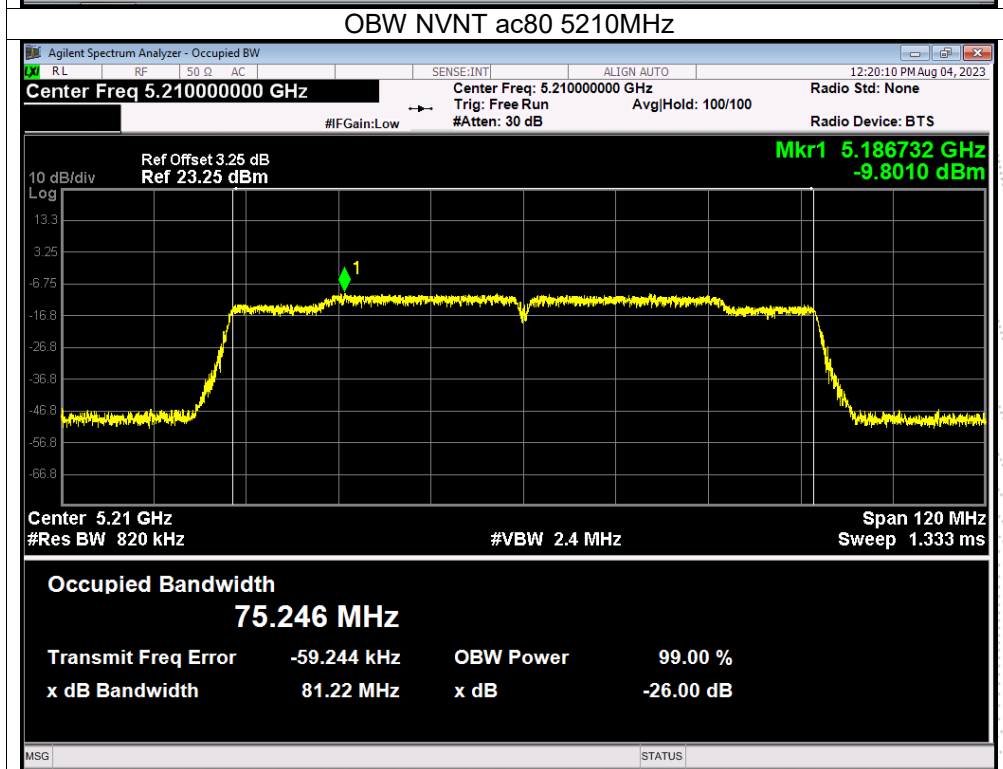
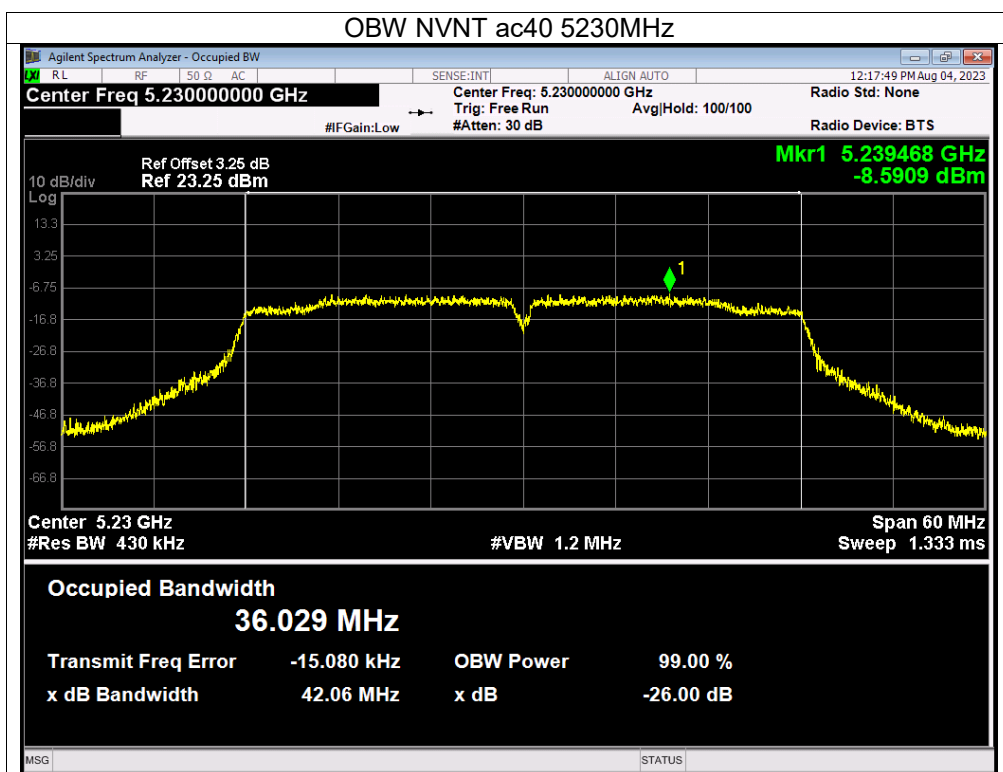












Temperature :	26 °C	Relative Humidity :	54%
Pressure :	101kPa	Test Voltage :	DC 12V
Test Mode :	TX Frequency U-NII-3(5745-5825MHz)		

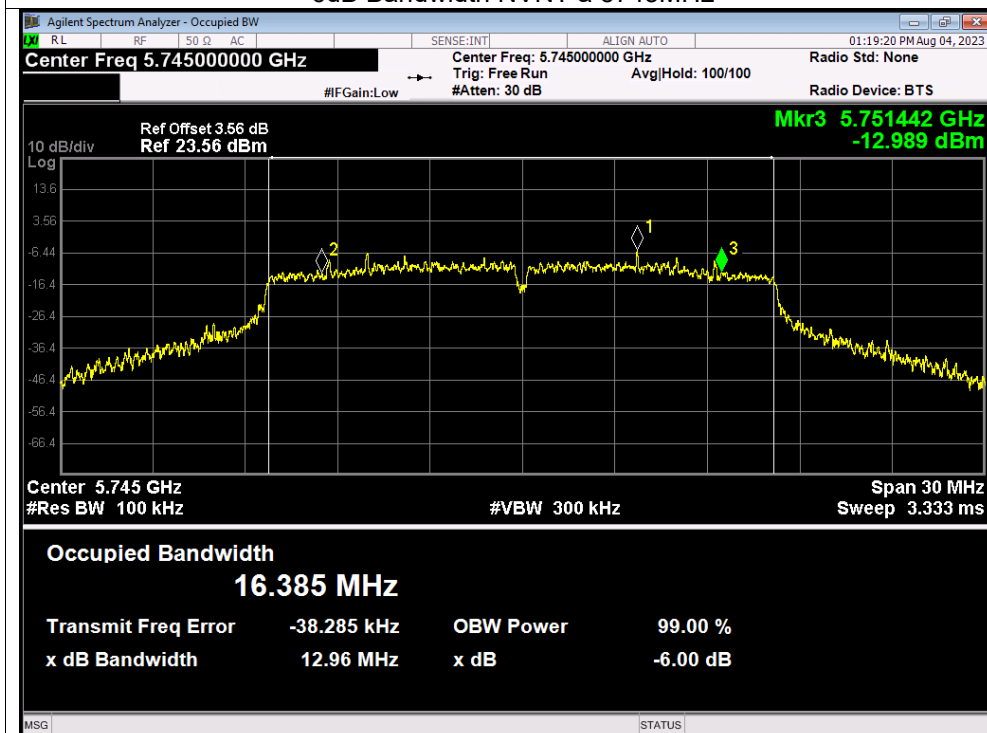
Note: A(B) Represent the value of antenna A and B, The worst data is Antenna B, only shown Antenna B Plot.

Condition	Mode	Frequency (MHz)	-6 dB Bandwidth (MHz)		Limit -6 dB Bandwidth (MHz)	Verdict
			Ant A	Ant B		
NVNT	a	5745	14.976	12.962	0.5	Pass
NVNT	a	5785	13.166	14.591	0.5	Pass
NVNT	a	5825	14.147	15.012	0.5	Pass
NVNT	n20	5745	15.1	13.835	0.5	Pass
NVNT	n20	5785	15.036	15.054	0.5	Pass
NVNT	n20	5825	15.019	13.992	0.5	Pass
NVNT	n40	5755	35.115	33.848	0.5	Pass
NVNT	n40	5795	35.062	35.1	0.5	Pass
NVNT	ac20	5745	14.041	15.034	0.5	Pass
NVNT	ac20	5785	15.082	12.792	0.5	Pass
NVNT	ac20	5825	15.445	13.773	0.5	Pass
NVNT	ac40	5755	35.097	33.865	0.5	Pass
NVNT	ac40	5795	34.973	35.086	0.5	Pass
NVNT	ac80	5775	75.108	75.097	0.5	Pass

Condition	Mode	Frequency (MHz)	99% OBW (MHz)	
			Ant A	Ant B
NVNT	a	5745	16.511	16.455
NVNT	a	5785	16.421	16.433
NVNT	a	5825	16.452	16.478
NVNT	n20	5745	17.633	17.602
NVNT	n20	5785	17.623	17.603
NVNT	n20	5825	17.635	17.649
NVNT	n40	5755	36.061	36.078
NVNT	n40	5795	36.068	36.088
NVNT	ac20	5745	17.629	17.616
NVNT	ac20	5785	17.641	17.619
NVNT	ac20	5825	17.65	17.629
NVNT	ac40	5755	35.977	36.015
NVNT	ac40	5795	36.028	36.04
NVNT	ac80	5775	75.152	75.159

Test Graphs

-6dB Bandwidth NVNT a 5745MHz



-6dB Bandwidth NVNT a 5785MHz

