TEST REPORT

Report No.:	BCTC2204961778-2E
Applicant:	HF.Radio Communication Technology Co., Ltd
Product Name:	DOCSIS3.0 Residential Gateway
Model/Type reference:	RTCD905_H6W4
Tested Date:	2022-04-27 to 2022-05-27
Issued Date:	2022-05-27

Shenzhen BCTC Testing Co., Ltd.

FCC ID: 2A6PE-RTCD905-H6W4

Product Name:	DOCSIS3.0 Residential Gateway
Trademark:	Radio
Model/Type reference:	RTCD905_H6W4
Prepared For:	HF.Radio Communication Technology Co., Ltd
Address:	No.108, YinXing Road, High-tech Development Zone, Hefei, Anhui Province, China
Manufacturer:	HF.Radio Communication Technology Co., Ltd
Address:	No.108, YinXing Road, High-tech Development Zone, Hefei, Anhui Province, 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:	2022-04-27
Sample tested Date:	2022-04-27 to 2022-05-27
Issue Date:	2022-05-27
Report No.:	BCTC2204961778-2E
Test Standards:	FCC Part15 15.407 ANSI C63.10-2013 KDB 662911 D01 v02r01 KDB 789033 D02 v02r01
Test Results:	PASS

Tested by:

Brave Zeng/ Project Handler

Approved by:

Zero Zhou/Reviewer

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.

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(Note: N/A Means Not Applicable)

1. Version

Report No.	Issue Date	Description	Approved
BCTC2204961778-2E	2022-05-27	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 mission(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℃

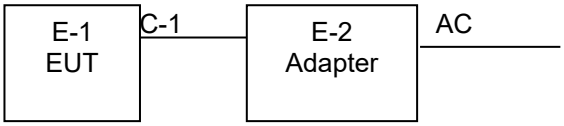
4. Product Information And Test Setup

4.1 Product Information

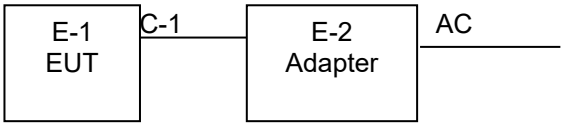
Model/Type reference:	RTCD905_H6W4
Model differences:	N/A
IEEE 802.11 WLAN Mode Supported	802.11a/n/ac(20MHz channel bandwidth) 802.11n/ac(40MHz channel bandwidth) 802.11ac(80MHz channel bandwidth)
Operation Frequency:	5180-5240MHz for 802.11a/n/ac(HT20); 5190-5230MHz for 802.11n/ac(HT40); 5210MHz for 802.11 ac80; 5745-5825 MHz for 802.11a/n/ac(HT20); 5755-5795 MHz for 802.11a/n/ac(HT40); 5775MHz for 802.11 ac80;
Data Rate	802.11a: 6,9,12,18,24,36,48,54Mbps; 802.11n/ac(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 *4
Antenna Gain:	Antenna A:2dBi Antenna B:2dBi Antenna C:2dBi Antenna D:2dBi
Ratings:	AC 120V/60Hz
Adapter:	MODEL: KA3601A-1203000US INPUT: 100-240V~50/60Hz 1.0A Max OUTPUT: DC 12 V 3000mA

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	KA3601A-1203000US	N/A	Auxiliary

Item	Shielded Type	Ferrite Core	Length	Note
C-1	NO	NO	1.2M	DC cable unshielded

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

4.4 Channel List

Frequency and Channel list for 802.11a/n/ac(20 MHz) band IV (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)
42	5210

Frequency and Channel list for 802.11a/n/ac(20 MHz) band IV (5745-5825MHz):

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

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

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

4.5 Test Mode

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

Pretest Mode	Description
Mode 1	802.11a / n/ ac 20 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.

4.6 Antenna

Antenna	Brand	Model Name	Antenna Type	Gain (dBi)	NOTE
A	N/A	N/A	Internal antenna	2	N/A
B	N/A	N/A	Internal antenna	2	N/A
C	N/A	N/A	Internal antenna	2	N/A
D	N/A	N/A	Internal antenna	2	N/A

EUT has four Internal antennas with Max gain 2dBi on every antenna, CDD device with one 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(4/1)=6.02dB,
So the directional gain for PSD is 8.02dBi
2)For power measurements,
The Array gain=0 dB for NANT≤4,

So the directional gain for Power measurements is 2dBi

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

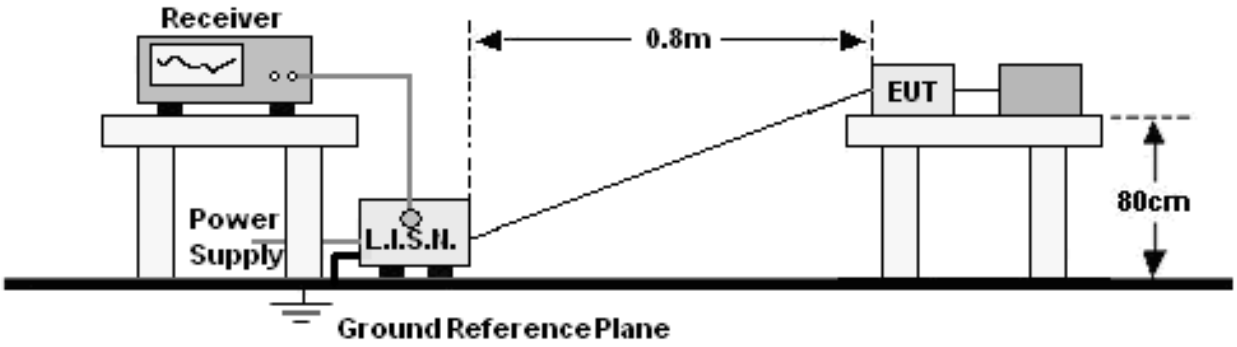
Conducted Emissions Test					
Equipment	**Manufacturer**	**Model#**	**Serial#**	**Last Cal.**	**Next Cal.**
Receiver	R&S	ESR3	102075	May 28, 2021	May 27, 2022
LISN	R&S	ENV216	101375	May 28, 2021	May 27, 2022
Software	Frad	EZ-EMC	EMC-CON 3A1	\	\
Attenuator	\	10dB DC-6GHz	1650	May 28, 2021	May 27, 2022

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 Analyzer20kHz-26.5GHz	Keysight	N9020A	MY49100060	May 28, 2021	May 27, 2022
Spectrum Analyzer9kHz-40GHz	R&S	FSP40	\	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_01G18G-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+Suhnar	9kHz-30MHz	B1702988-0008	May 28, 2021	May 27, 2022
RF cables2(30MHz-1GHz)	Huber+Suhnar	30MHz-1GHz	1486150	May 28, 2021	May 27, 2022
RF cables3(1GHz-40GHz)	Huber+Suhnar	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 Analyzer20kHz-26.5GHz	Keysight	N9020A	MY49100060	May 28, 2021	May 27, 2022
Spectrum Analyzer9kHz-40GHz	R&S	FSP40	\	May 28, 2021	May 27, 2022
Software	Frad	EZ-EMC	FA-03A2 RE	\	\

6. Conducted Emissions

6.1 Block Diagram Of Test Setup



6.2 Limit

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

Notes:
1. *Decreasing linearly with logarithm of frequency.
2. The lower limit shall apply at the transition frequencies.

6.3 Test procedure

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

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

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

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

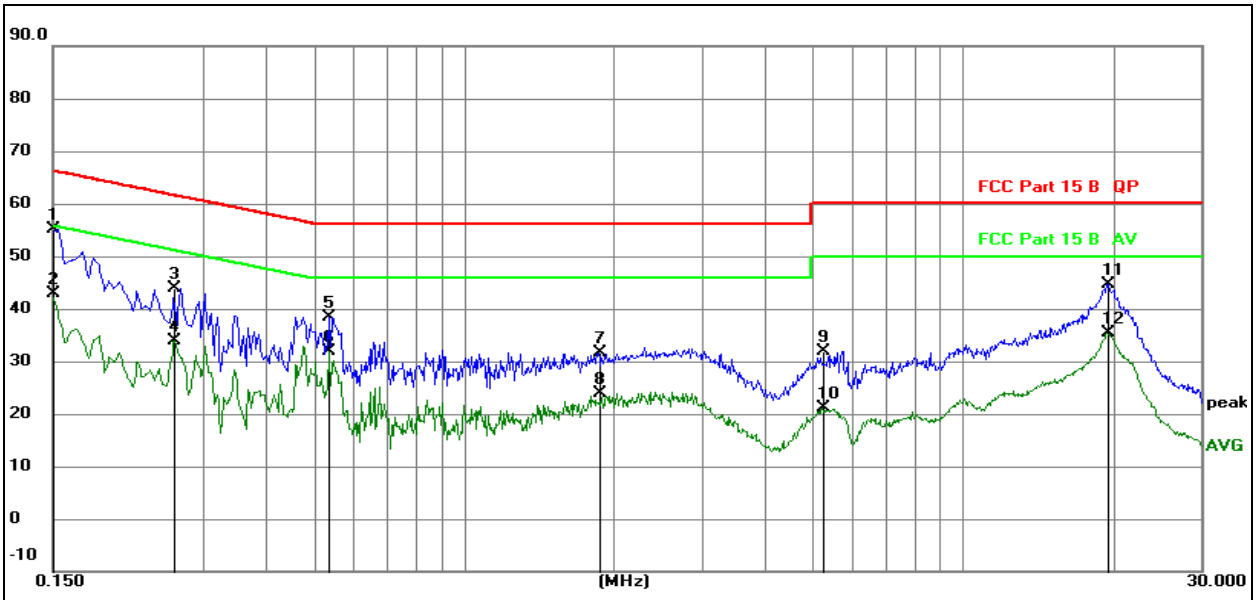
6.4 EUT operating Conditions

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

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

6.5 Test Result

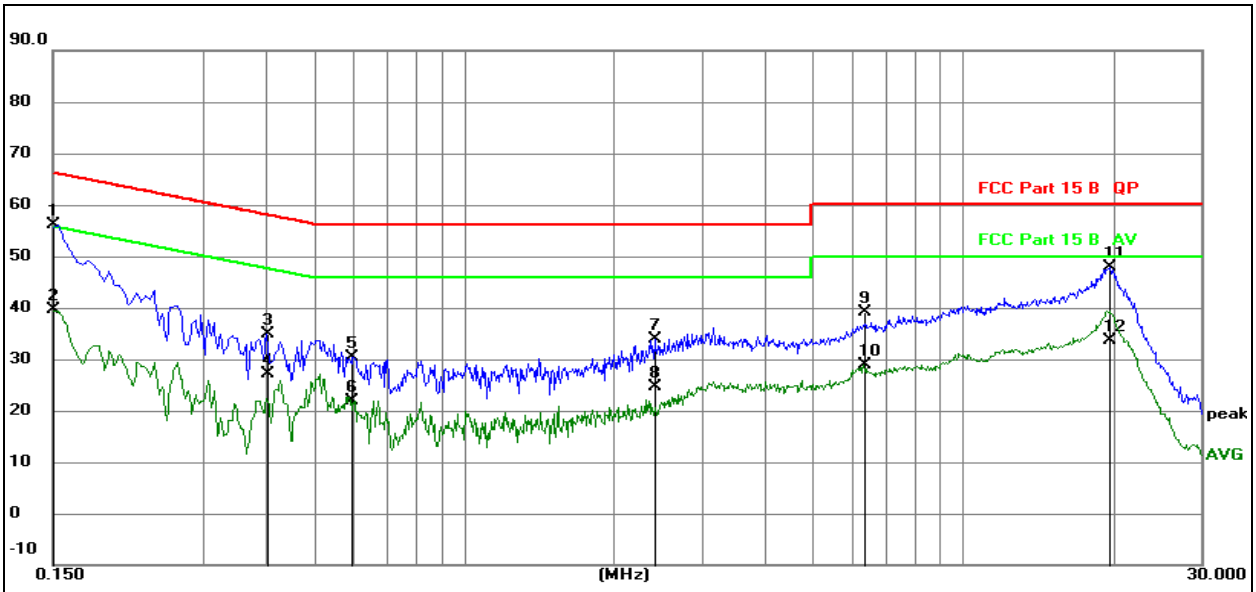
Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage ：	AC120V/60Hz
Test Mode:	Mode 1	Polarization :	L



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.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz		dB	dBuV	dBuV	dB	Detector
1	*	0.1500	35.60	19.60	55.20	66.00	-10.80	QP
2		0.1500	23.25	19.60	42.85	56.00	-13.15	AVG
3		0.2625	24.21	19.61	43.82	61.35	-17.53	QP
4		0.2625	14.39	19.61	34.00	51.35	-17.35	AVG
5		0.5370	18.84	19.61	38.45	56.00	-17.55	QP
6		0.5370	12.17	19.61	31.78	46.00	-14.22	AVG
7		1.8600	11.93	19.62	31.55	56.00	-24.45	QP
8		1.8600	4.33	19.62	23.95	46.00	-22.05	AVG
9		5.2260	12.26	19.70	31.96	60.00	-28.04	QP
10		5.2260	1.34	19.70	21.04	50.00	-28.96	AVG
11		19.4955	24.83	19.74	44.57	60.00	-15.43	QP
12		19.4955	15.61	19.74	35.35	50.00	-14.65	AVG

Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage ：	AC120V/60Hz
Test Mode:	Mode 1	Polarization :	N



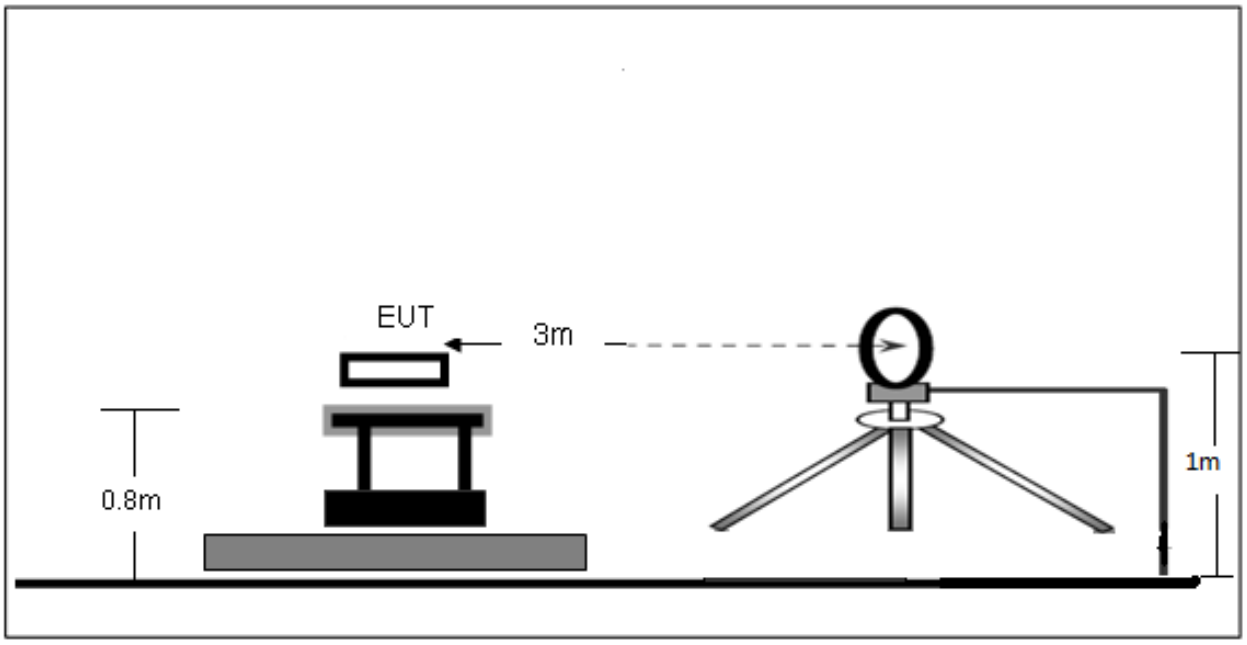
Remark:
1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.
3. Measurement=Reading Level+ Correct Factor
4. Over=Measurement-Limit

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz		dB	dBuV	dBuV	dB	Detector
1	*	0.1500	36.42	19.60	56.02	66.00	-9.98	QP
2		0.1500	19.94	19.60	39.54	56.00	-16.46	AVG
3		0.4019	15.33	19.61	34.94	57.81	-22.87	QP
4		0.4019	7.46	19.61	27.07	47.81	-20.74	AVG
5		0.5979	10.85	19.61	30.46	56.00	-25.54	QP
6		0.5979	2.34	19.61	21.95	46.00	-24.05	AVG
7		2.4090	14.23	19.63	33.86	56.00	-22.14	QP
8		2.4090	5.01	19.63	24.64	46.00	-21.36	AVG
9		6.3186	19.39	19.72	39.11	60.00	-20.89	QP
10		6.3186	9.17	19.72	28.89	50.00	-21.11	AVG
11		19.6354	28.24	19.74	47.98	60.00	-12.02	QP
12		19.6354	13.81	19.74	33.55	50.00	-16.45	AVG

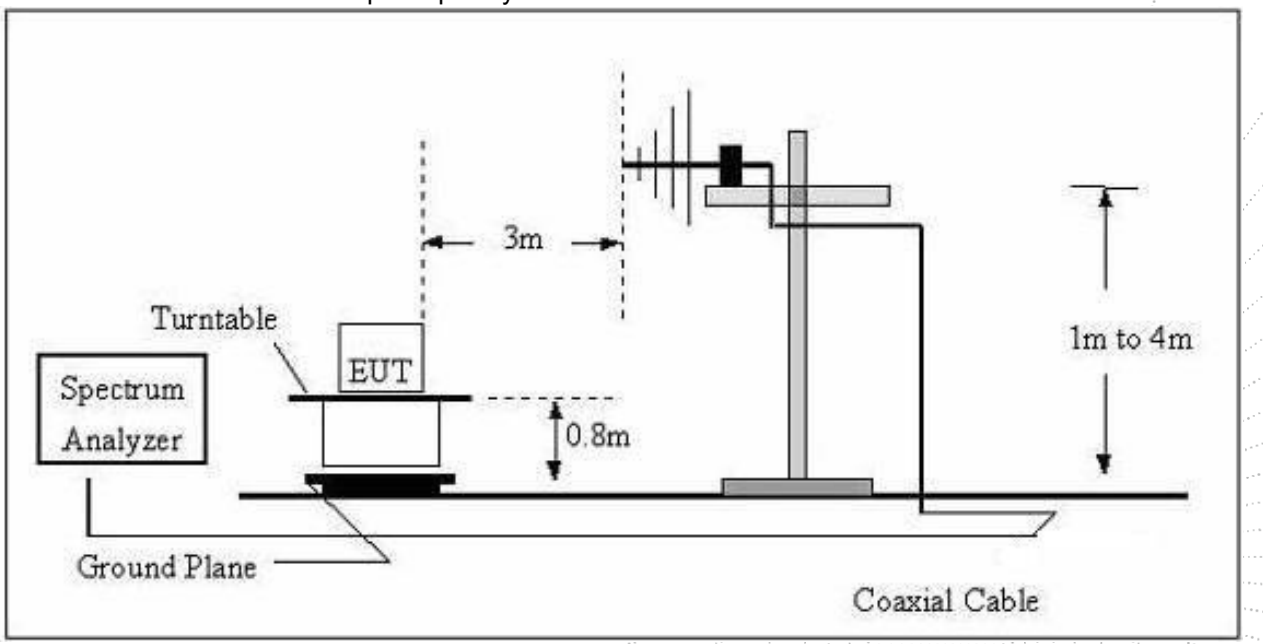
7. Radiated Emissions

7.1 Block Diagram Of Test Setup

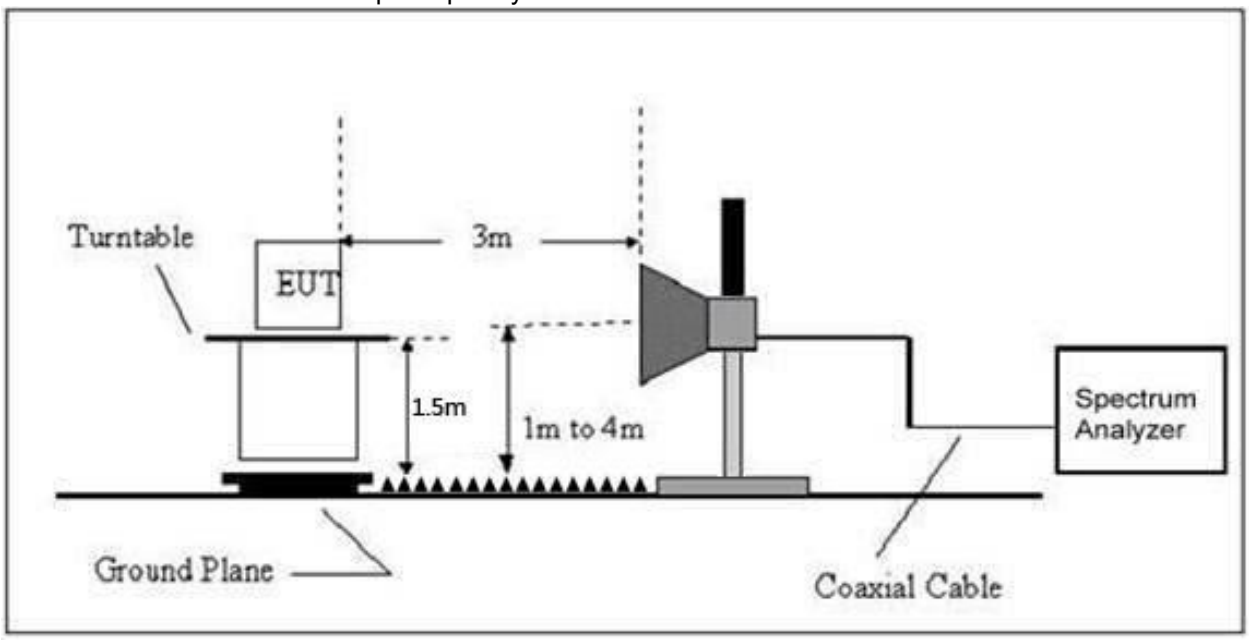
（A）Radiated Emission Test-Up Frequency Below 30MHz



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

LIMITS OF RADIATED EMISSION MEASUREMENT (Above 1000MHz)

FREQUENCY (MHz)	Limit (dBuV/m) (at 3M)	
	PEAK	AVERAGE
Above 1000	74 or 68.2	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).
(4)Restricted bands: 74.00 dBuV/m, Other frequencys: E[dBμV/m] = EIRP[dBm]+95.2=68.2 dBuV/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*lg(100 [kHz]/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

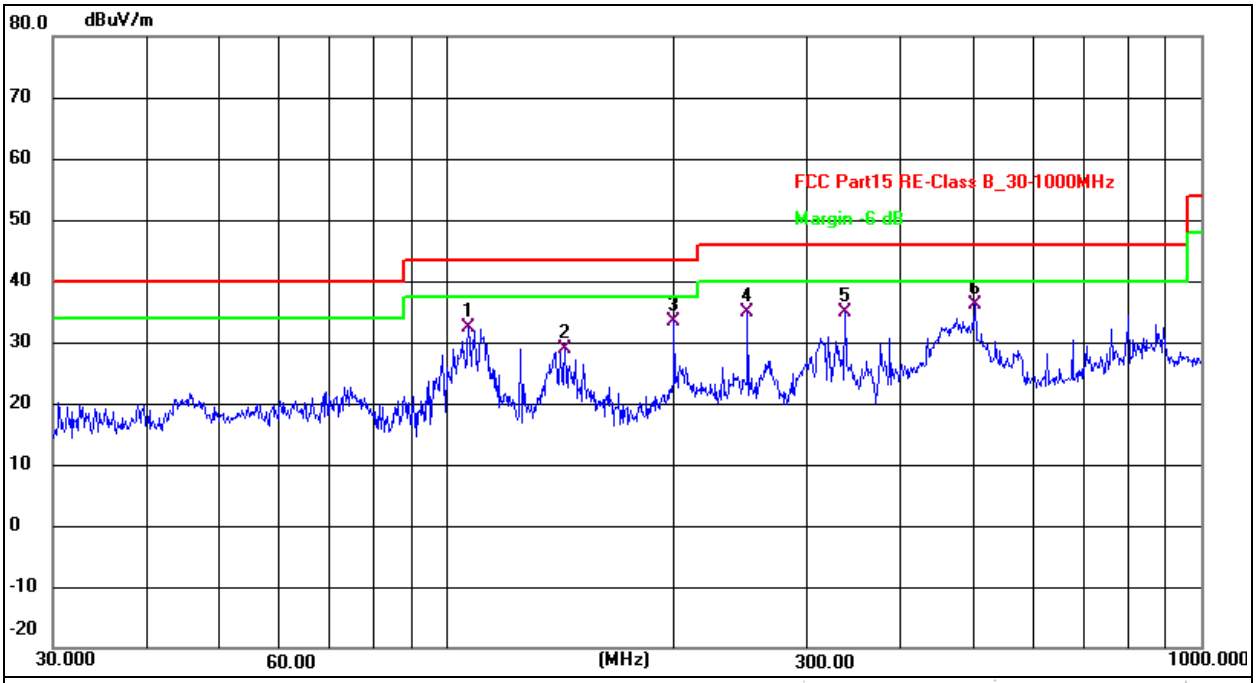
Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage ：	AC120V/60Hz
Test Mode:	Mode 1	Polarization :	---

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 (specific distance/test distance)(dB);
Limit line = specific limits(dBuv) + distance extrapolation factor.

Between 30MHz – 1GHz

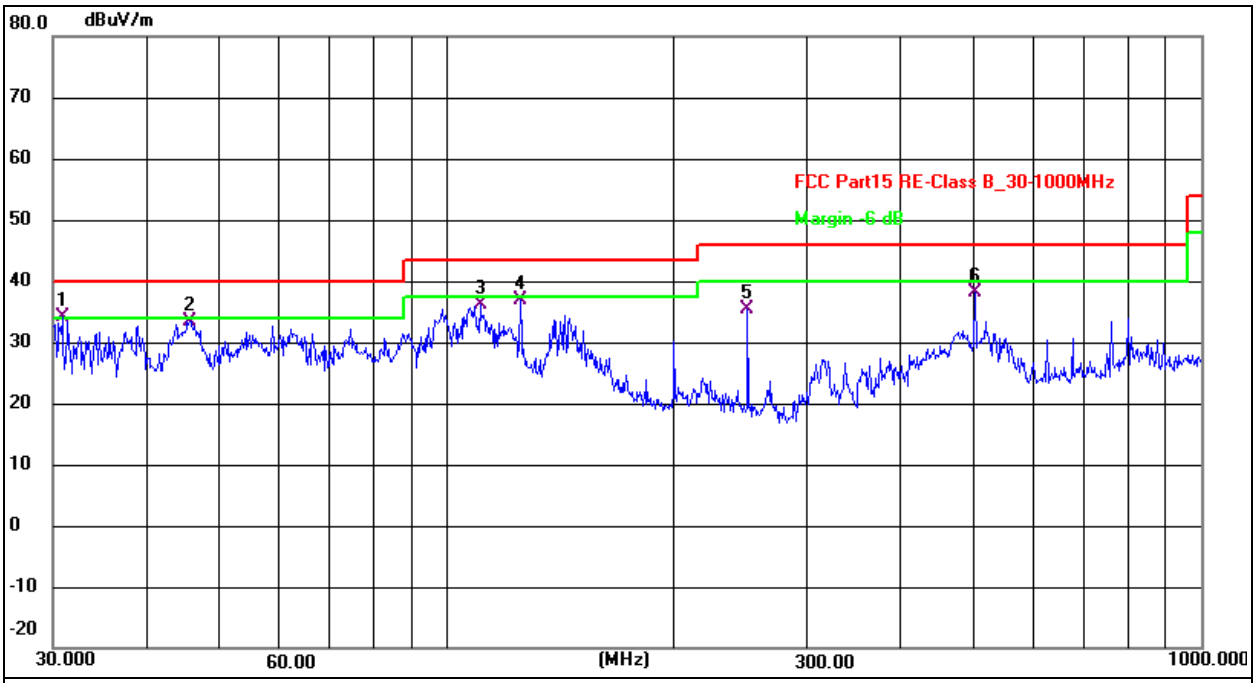
Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage ：	AC120V/60Hz
Test Mode:	Mode 1	Polarization :	Horizontal



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

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	106.7587	47.26	-14.99	32.27	43.50	-11.23	QP
2	143.3261	42.00	-13.01	28.99	43.50	-14.51	QP
3	199.9856	47.44	-14.17	33.27	43.50	-10.23	QP
4	250.3012	47.06	-12.22	34.84	46.00	-11.16	QP
5	337.2155	44.25	-9.28	34.97	46.00	-11.03	QP
6 *	501.1790	39.35	-3.15	36.20	46.00	-9.80	QP

Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage ：	AC120V/60Hz
Test Mode:	Mode 1	Polarization :	Vertical



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

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1 *	30.8535	46.41	-12.39	34.02	40.00	-5.98	QP
2	45.5348	44.66	-11.19	33.47	40.00	-6.53	QP
3	110.5687	50.82	-14.79	36.03	43.50	-7.47	QP
4	125.0066	50.89	-14.00	36.89	43.50	-6.61	QP
5	250.3012	47.59	-12.22	35.37	46.00	-10.63	QP
6	501.1790	41.25	-3.15	38.10	46.00	-7.90	QP

Between 1GHz – 40GHz

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	4434.149	61.34	5.94	35.40	44.00	58.68	68.2	-9.52	PK
V	4434.149	43.47	5.94	35.40	44.00	40.81	54	-13.19	AV
V	10360.162	61.40	8.46	39.75	44.50	65.11	68.2	-3.09	PK
V	10360.162	43.32	8.46	39.75	44.50	47.03	54	-6.97	AV
V	15540.020	62.67	10.12	38.80	44.10	67.49	74	-6.51	PK
V	15540.020	43.78	10.12	38.80	42.70	50.00	54	-4.00	AV
H	4434.085	63.56	5.94	35.18	44.00	60.68	68.2	-7.52	PK
H	4434.085	43.37	5.94	35.18	44.00	40.49	54	-13.51	AV
H	10360.117	51.13	8.46	38.71	44.50	53.80	68.2	-14.40	PK
H	10360.117	44.76	8.46	38.71	44.50	47.43	54	-6.57	AV
H	15540.007	50.93	10.12	38.38	44.10	55.33	74	-18.67	PK
H	15540.007	43.95	10.12	38.38	44.10	48.35	54	-5.65	AV
Middle Channel (5200 MHz)-Above 1G									
V	4592.155	60.77	6.48	36.35	44.05	59.55	74	-14.45	PK
V	4592.155	43.99	6.48	36.35	44.05	42.77	54	-11.23	AV
V	10400.006	63.31	8.47	37.88	44.51	65.15	68.2	-3.05	PK
V	10400.006	43.56	8.47	37.88	44.51	45.40	54	-8.60	AV
V	15600.153	63.99	10.12	38.80	44.10	68.81	74	-5.19	PK
V	15600.153	43.74	10.12	38.80	42.70	49.96	54	-4.04	AV
H	4592.115	64.10	6.48	36.37	44.05	62.90	74	-11.10	PK
H	4592.115	43.28	6.48	36.37	44.05	42.08	54	-11.92	AV
H	10400.036	52.10	8.47	38.64	44.50	54.71	68.2	-13.49	PK
H	10400.036	42.55	8.47	38.64	44.50	45.16	54	-8.84	AV
H	15600.132	52.18	10.12	38.38	44.10	56.58	74	-17.42	PK
H	15600.132	44.87	10.12	38.38	44.10	49.27	54	-4.73	AV
High Channel (5240 MHz)-Above 1G									
V	4739.109	61.71	7.10	37.24	43.50	62.55	74	-11.45	PK
V	4739.109	43.39	7.10	37.24	43.50	44.23	54	-9.77	AV
V	10480.060	63.47	8.46	37.68	44.50	65.11	68.2	-3.09	PK
V	10480.060	43.53	8.46	37.68	44.50	45.17	54	-8.83	AV
V	15720.091	62.01	10.12	38.80	44.10	66.83	74	-7.17	PK
V	15720.091	43.79	10.12	38.80	42.70	50.01	54	-3.99	AV
H	4739.095	60.14	7.10	37.24	43.50	60.98	74	-13.02	PK
H	4739.095	43.21	7.10	37.24	43.50	44.05	54	-9.95	AV
H	10480.137	50.96	8.46	38.57	44.50	53.49	68.2	-14.71	PK
H	10480.137	44.56	8.46	38.57	44.50	47.09	54	-6.91	AV
H	15720.167	53.16	10.12	38.38	44.10	57.56	74	-16.44	PK
H	15720.167	41.22	10.12	38.38	44.10	45.62	54	-8.38	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	4434.178	63.88	5.94	35.40	44.00	61.22	68.2	-6.98	PK
V	4434.178	43.37	5.94	35.40	44.00	40.71	54	-13.29	AV
V	10360.104	61.82	8.46	39.75	44.50	65.53	68.2	-2.67	PK
V	10360.104	43.19	8.46	39.75	44.50	46.90	54	-7.10	AV
V	15540.139	64.37	10.12	38.80	44.10	69.19	74	-4.81	PK
V	15540.139	43.89	10.12	38.80	42.70	50.11	54	-3.89	AV
H	4434.106	64.95	5.94	35.18	44.00	62.07	68.2	-6.13	PK
H	4434.106	43.28	5.94	35.18	44.00	40.40	54	-13.60	AV
H	10360.142	50.01	8.46	38.71	44.50	52.68	68.2	-15.52	PK
H	10360.142	42.09	8.46	38.71	44.50	44.76	54	-9.24	AV
H	15540.027	51.62	10.12	38.38	44.10	56.02	74	-17.98	PK
H	15540.027	41.02	10.12	38.38	44.10	45.42	54	-8.58	AV
Middle Channel (5200 MHz)-Above 1G									
V	4592.148	63.76	6.48	36.35	44.05	62.54	74	-11.46	PK
V	4592.148	43.66	6.48	36.35	44.05	42.44	54	-11.56	AV
V	10400.012	61.09	8.47	37.88	44.51	62.93	68.2	-5.27	PK
V	10400.012	43.75	8.47	37.88	44.51	45.59	54	-8.41	AV
V	15600.086	63.56	10.12	38.80	44.10	68.38	74	-5.62	PK
V	15600.086	43.47	10.12	38.80	42.70	49.69	54	-4.31	AV
H	4592.032	63.60	6.48	36.37	44.05	62.40	74	-11.60	PK
H	4592.032	43.39	6.48	36.37	44.05	42.19	54	-11.81	AV
H	10400.025	53.49	8.47	38.64	44.50	56.10	68.2	-12.10	PK
H	10400.025	44.77	8.47	38.64	44.50	47.38	54	-6.62	AV
H	15600.147	53.49	10.12	38.38	44.10	57.89	74	-16.11	PK
H	15600.147	43.86	10.12	38.38	44.10	48.26	54	-5.74	AV
High Channel (5240 MHz)-Above 1G									
V	4739.050	61.10	7.10	37.24	43.50	61.94	74	-12.06	PK
V	4739.050	43.58	7.10	37.24	43.50	44.42	54	-9.58	AV
V	10480.167	62.89	8.46	37.68	44.50	64.53	68.2	-3.67	PK
V	10480.167	43.10	8.46	37.68	44.50	44.74	54	-9.26	AV
V	15720.020	62.91	10.12	38.80	44.10	67.73	74	-6.27	PK
V	15720.020	43.82	10.12	38.80	42.70	50.04	54	-3.96	AV
H	4739.039	64.91	7.10	37.24	43.50	65.75	74	-8.25	PK
H	4739.039	43.43	7.10	37.24	43.50	44.27	54	-9.73	AV
H	10480.063	51.53	8.46	38.57	44.50	54.06	68.2	-14.14	PK
H	10480.063	40.89	8.46	38.57	44.50	43.42	54	-10.58	AV
H	15720.008	51.61	10.12	38.38	44.10	56.01	74	-17.99	PK
H	15720.008	40.19	10.12	38.38	44.10	44.59	54	-9.41	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	4434.055	61.27	5.94	35.40	44.00	58.61	68.2	-9.59	PK
V	4434.055	43.22	5.94	35.40	44.00	40.56	54	-13.44	AV
V	10380.200	60.09	8.46	39.75	44.50	63.80	68.2	-4.40	PK
V	10380.200	43.14	8.46	39.75	44.50	46.85	54	-7.15	AV
V	15570.073	60.30	10.12	38.80	44.10	65.12	74	-8.88	PK
V	15570.073	43.98	10.12	38.80	42.70	50.20	54	-3.80	AV
H	4434.002	63.80	5.94	35.18	44.00	60.92	74	-13.08	PK
H	4434.002	43.91	5.94	35.18	44.00	41.03	54	-12.97	AV
H	10380.147	53.36	8.46	38.71	44.50	56.03	68.2	-12.17	PK
H	10380.147	44.50	8.46	38.71	44.50	47.17	54	-6.83	AV
H	15570.135	52.18	10.12	38.38	44.10	56.58	74	-17.42	PK
H	15570.135	42.95	10.12	38.38	44.10	47.35	54	-6.65	AV
High Channel (5230 MHz)-Above 1G									
V	4739.064	63.15	6.48	36.35	44.05	61.93	68.2	-6.27	PK
V	4739.064	43.74	6.48	36.35	44.05	42.52	54	-11.48	AV
V	10460.189	64.23	8.47	37.88	44.51	66.07	68.2	-2.13	PK
V	10460.189	43.26	8.47	37.88	44.51	45.10	54	-8.90	AV
V	15690.175	63.68	10.12	38.80	44.10	68.50	74	-5.50	PK
V	15690.175	43.18	10.12	38.80	42.70	49.40	54	-4.60	AV
H	4739.141	62.92	6.48	36.37	44.05	61.72	68.2	-6.48	PK
H	4739.141	43.69	6.48	36.37	44.05	42.49	54	-11.51	AV
H	10460.019	50.12	8.47	38.64	44.50	52.73	68.2	-15.47	PK
H	10460.019	41.89	8.47	38.64	44.50	44.50	54	-9.50	AV
H	15690.075	53.83	10.12	38.38	44.10	58.23	74	-15.77	PK
H	15690.075	43.68	10.12	38.38	44.10	48.08	54	-5.92	AV

Note: PK value is lower than the Average value limit, So average didn't record.
The 26.5-40G amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value has no need to be reported.
Emission level (dBuV/m) = 20 log Emission level (uV/m).
Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.
Test Mode 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	4434.108	63.50	5.94	35.40	44.00	60.84	68.2	-7.36	PK
V	4434.108	43.78	5.94	35.40	44.00	41.12	54	-12.88	AV
V	10360.139	62.13	8.46	39.75	44.50	65.84	68.2	-2.36	PK
V	10360.139	43.31	8.46	39.75	44.50	47.02	54	-6.98	AV
V	15540.043	61.34	10.12	38.80	44.10	66.16	74	-7.84	PK
V	15540.043	43.90	10.12	38.80	42.70	50.12	54	-3.88	AV
H	4434.125	63.56	5.94	35.18	44.00	60.68	68.2	-7.52	PK
H	4434.125	43.43	5.94	35.18	44.00	40.55	54	-13.45	AV
H	10360.134	51.66	8.46	38.71	44.50	54.33	68.2	-13.87	PK
H	10360.134	41.48	8.46	38.71	44.50	44.15	54	-9.85	AV
H	15540.047	50.31	10.12	38.38	44.10	54.71	74	-19.29	PK
H	15540.047	41.84	10.12	38.38	44.10	46.24	54	-7.76	AV
Middle Channel (5200 MHz)-Above 1G									
V	4592.104	63.67	6.48	36.35	44.05	62.45	74	-11.55	PK
V	4592.104	43.25	6.48	36.35	44.05	42.03	54	-11.97	AV
V	10400.118	62.71	8.47	37.88	44.51	64.55	68.2	-3.65	PK
V	10400.118	43.53	8.47	37.88	44.51	45.37	54	-8.63	AV
V	15600.175	64.76	10.12	38.80	44.10	69.58	74	-4.42	PK
V	15600.175	43.16	10.12	38.80	42.70	49.38	54	-4.62	AV
H	4592.115	64.15	6.48	36.37	44.05	62.95	74	-11.05	PK
H	4592.115	43.03	6.48	36.37	44.05	41.83	54	-12.17	AV
H	10400.105	51.25	8.47	38.64	44.50	53.86	68.2	-14.34	PK
H	10400.105	43.32	8.47	38.64	44.50	45.93	54	-8.07	AV
H	15600.041	53.43	10.12	38.38	44.10	57.83	74	-16.17	PK
H	15600.041	43.77	10.12	38.38	44.10	48.17	54	-5.83	AV
High Channel (5240 MHz)-Above 1G									
V	4739.194	62.61	7.10	37.24	43.50	63.45	74	-10.55	PK
V	4739.194	43.59	7.10	37.24	43.50	44.43	54	-9.57	AV
V	10480.037	61.24	8.46	37.68	44.50	62.88	68.2	-5.32	PK
V	10480.037	43.20	8.46	37.68	44.50	44.84	54	-9.16	AV
V	15720.083	61.20	10.12	38.80	44.10	66.02	74	-7.98	PK
V	15720.083	43.95	10.12	38.80	42.70	50.17	54	-3.83	AV
H	4739.156	61.94	7.10	37.24	43.50	62.78	74	-11.22	PK
H	4739.156	43.61	7.10	37.24	43.50	44.45	54	-9.55	AV
H	10480.181	51.39	8.46	38.57	44.50	53.92	68.2	-14.28	PK
H	10480.181	43.37	8.46	38.57	44.50	45.90	54	-8.10	AV
H	15720.006	50.29	10.12	38.38	44.10	54.69	74	-19.31	PK
H	15720.006	44.49	10.12	38.38	44.10	48.89	54	-5.11	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	4434.076	62.92	5.94	35.40	44.00	60.26	68.2	-7.94	PK
V	4434.076	43.68	5.94	35.40	44.00	41.02	54	-12.98	AV
V	10380.172	62.02	8.46	39.75	44.50	65.73	68.2	-2.47	PK
V	10380.172	43.31	8.46	39.75	44.50	47.02	54	-6.98	AV
V	15570.102	61.27	10.12	38.80	44.10	66.09	74	-7.91	PK
V	15570.102	44.00	10.12	38.80	42.70	50.22	54	-3.78	AV
H	4434.182	64.69	5.94	35.18	44.00	61.81	74	-12.19	PK
H	4434.182	43.88	5.94	35.18	44.00	41.00	54	-13.00	AV
H	10380.085	53.28	8.46	38.71	44.50	55.95	68.2	-12.25	PK
H	10380.085	43.86	8.46	38.71	44.50	46.53	54	-7.47	AV
H	15570.007	50.18	10.12	38.38	44.10	54.58	74	-19.42	PK
H	15570.007	44.46	10.12	38.38	44.10	48.86	54	-5.14	AV
High Channel (5230 MHz)-Above 1G									
V	4739.081	62.21	6.48	36.35	44.05	60.99	68.2	-7.21	PK
V	4739.081	43.38	6.48	36.35	44.05	42.16	54	-11.84	AV
V	10460.122	61.04	8.47	37.88	44.51	62.88	68.2	-5.32	PK
V	10460.122	43.69	8.47	37.88	44.51	45.53	54	-8.47	AV
V	15690.126	63.05	10.12	38.80	44.10	67.87	74	-6.13	PK
V	15690.126	43.41	10.12	38.80	42.70	49.63	54	-4.37	AV
H	4739.110	63.73	6.48	36.37	44.05	62.53	68.2	-5.67	PK
H	4739.110	43.85	6.48	36.37	44.05	42.65	54	-11.35	AV
H	10460.170	52.29	8.47	38.64	44.50	54.90	68.2	-13.30	PK
H	10460.170	41.52	8.47	38.64	44.50	44.13	54	-9.87	AV
H	15690.135	50.33	10.12	38.38	44.10	54.73	74	-19.27	PK
H	15690.135	43.34	10.12	38.38	44.10	47.74	54	-6.26	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	4434.127	63.62	5.94	35.40	44.00	60.96	68.2	-7.24	PK
V	4434.127	43.75	5.94	35.40	44.00	41.09	54	-12.91	AV
V	10420.183	63.53	8.46	39.75	44.50	67.24	68.2	-0.96	PK
V	10420.183	43.24	8.46	39.75	44.50	46.95	54	-7.05	AV
V	15630.151	61.57	10.12	38.80	44.10	66.39	74	-7.61	PK
V	15630.151	43.44	10.12	38.80	42.70	49.66	54	-4.34	AV
H	4434.190	62.82	5.94	35.18	44.00	59.94	68.2	-8.26	PK
H	4434.190	43.60	5.94	35.18	44.00	40.72	54	-13.28	AV
H	10420.066	52.32	8.46	38.71	44.50	54.99	68.2	-13.21	PK
H	10420.066	42.77	8.46	38.71	44.50	45.44	54	-8.56	AV
H	15630.127	54.35	10.12	38.38	44.10	58.75	74	-15.25	PK
H	15630.127	42.42	10.12	38.38	44.10	46.82	54	-7.18	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	4679.031	56.28	5.94	35.40	44.00	53.62	74	-20.38	PK
V	4679.031	43.96	5.94	35.40	44.00	41.30	54	-12.70	AV
V	11490.077	54.76	8.46	39.75	44.50	58.47	68.2	-9.73	PK
V	11490.077	43.78	8.46	39.75	44.50	47.49	54	-6.51	AV
V	17235.180	59.66	10.12	38.80	44.10	64.48	68.2	-3.72	PK
V	17235.180	43.36	10.12	38.80	42.70	49.58	54	-4.42	AV
H	4679.088	55.46	5.94	35.18	44.00	52.58	74	-21.42	PK
H	4679.088	43.76	5.94	35.18	44.00	40.88	54	-13.12	AV
H	11490.064	50.16	8.46	38.71	44.50	52.83	68.2	-15.37	PK
H	11490.064	43.45	8.46	38.71	44.50	46.12	54	-7.88	AV
H	17235.046	52.34	10.12	38.38	44.10	56.74	68.2	-11.46	PK
H	17235.046	43.82	10.12	38.38	44.10	48.22	54	-5.78	AV
Middle Channel (5785 MHz)-Above 1G									
V	4592.041	58.57	6.48	36.35	44.05	57.35	74	-16.65	PK
V	4592.041	43.74	6.48	36.35	44.05	42.52	54	-11.48	AV
V	11570.140	57.95	8.47	37.88	44.51	59.79	68.2	-8.41	PK
V	11570.140	43.03	8.47	37.88	44.51	44.87	54	-9.13	AV
V	17355.131	56.50	10.12	38.80	44.10	61.32	68.2	-6.88	PK
V	17355.131	39.28	10.12	38.80	42.70	45.50	54	-8.50	AV
H	4592.122	56.50	6.48	36.37	44.05	55.30	74	-18.70	PK
H	4592.122	43.80	6.48	36.37	44.05	42.60	54	-11.40	AV
H	11570.191	52.23	8.47	38.64	44.50	54.84	68.2	-13.36	PK
H	11570.191	40.62	8.47	38.64	44.50	43.23	54	-10.77	AV
H	17355.058	54.52	10.12	38.38	44.10	58.92	68.2	-9.28	PK
H	17355.058	42.82	10.12	38.38	44.10	47.22	54	-6.78	AV
High Channel (5825 MHz)-Above 1G									
V	6039.183	59.71	7.10	37.24	43.50	60.55	68.2	-7.65	PK
V	6039.183	43.32	7.10	37.24	43.50	44.16	54	-9.84	AV
V	11650.132	60.59	8.46	37.68	44.50	62.23	74	-11.77	PK
V	11650.132	43.73	8.46	37.68	44.50	45.37	54	-8.63	AV
V	17475.151	53.94	10.12	38.80	44.10	58.76	68.2	-9.44	PK
V	17475.151	43.97	10.12	38.80	42.70	50.19	54	-3.81	AV
H	6039.035	55.73	7.10	37.24	43.50	56.57	68.2	-11.63	PK
H	6039.035	43.73	7.10	37.24	43.50	44.57	54	-9.43	AV
H	11650.011	52.95	8.46	38.57	44.50	55.48	74	-18.52	PK
H	11650.011	42.97	8.46	38.57	44.50	45.50	54	-8.50	AV
H	17475.133	50.36	10.12	38.38	44.10	54.76	68.2	-13.44	PK
H	17475.133	42.60	10.12	38.38	44.10	47.00	54	-7.00	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.
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	4679.193	58.35	5.94	35.40	44.00	55.69	74	-18.31	PK
V	4679.193	43.54	5.94	35.40	44.00	40.88	54	-13.12	AV
V	11490.177	53.57	8.46	39.75	44.50	57.28	68.2	-10.92	PK
V	11490.177	43.71	8.46	39.75	44.50	47.42	54	-6.58	AV
V	17235.181	61.80	10.12	38.80	44.10	66.62	68.2	-1.58	PK
V	17235.181	43.38	10.12	38.80	42.70	49.60	54	-4.40	AV
H	4679.086	60.64	5.94	35.18	44.00	57.76	74	-16.24	PK
H	4679.086	43.40	5.94	35.18	44.00	40.52	54	-13.48	AV
H	11490.167	49.29	8.46	38.71	44.50	51.96	68.2	-16.24	PK
H	11490.167	43.44	8.46	38.71	44.50	46.11	54	-7.89	AV
H	17235.162	54.46	10.12	38.38	44.10	58.86	68.2	-9.34	PK
H	17235.162	42.41	10.12	38.38	44.10	46.81	54	-7.19	AV
Middle Channel (5785 MHz)-Above 1G									
V	4592.038	58.16	6.48	36.35	44.05	56.94	74	-17.06	PK
V	4592.038	43.24	6.48	36.35	44.05	42.02	54	-11.98	AV
V	11570.077	57.94	8.47	37.88	44.51	59.78	68.2	-8.42	PK
V	11570.077	43.75	8.47	37.88	44.51	45.59	54	-8.41	AV
V	17355.188	59.74	10.12	38.80	44.10	64.56	68.2	-3.64	PK
V	17355.188	43.95	10.12	38.80	42.70	50.17	54	-3.83	AV
H	4592.176	58.43	6.48	36.37	44.05	57.23	74	-16.77	PK
H	4592.176	43.51	6.48	36.37	44.05	42.31	54	-11.69	AV
H	11570.185	52.38	8.47	38.64	44.50	54.99	68.2	-13.21	PK
H	11570.185	43.62	8.47	38.64	44.50	46.23	54	-7.77	AV
H	17355.138	50.15	10.12	38.38	44.10	54.55	68.2	-13.65	PK
H	17355.138	43.67	10.12	38.38	44.10	48.07	54	-5.93	AV
High Channel (5825 MHz)-Above 1G									
V	6039.036	59.61	7.10	37.24	43.50	60.45	68.2	-7.75	PK
V	6039.036	43.60	7.10	37.24	43.50	44.44	54	-9.56	AV
V	11650.100	56.97	8.46	37.68	44.50	58.61	74	-15.39	PK
V	11650.100	43.70	8.46	37.68	44.50	45.34	54	-8.66	AV
V	17475.099	56.13	10.12	38.80	44.10	60.95	68.2	-7.25	PK
V	17475.099	43.94	10.12	38.80	42.70	50.16	54	-3.84	AV
H	6039.189	59.33	7.10	37.24	43.50	60.17	68.2	-8.03	PK
H	6039.189	43.90	7.10	37.24	43.50	44.74	54	-9.26	AV
H	11650.039	54.42	8.46	38.57	44.50	56.95	74	-17.05	PK
H	11650.039	42.10	8.46	38.57	44.50	44.63	54	-9.37	AV
H	17475.097	54.71	10.12	38.38	44.10	59.11	68.2	-9.09	PK
H	17475.097	40.17	10.12	38.38	44.10	44.57	54	-9.43	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	4679.088	58.51	5.94	35.40	44.00	55.85	74	-18.15	PK
V	4679.088	43.76	5.94	35.40	44.00	41.10	54	-12.90	AV
V	11510.096	55.78	8.46	39.75	44.50	59.49	74	-14.51	PK
V	11510.096	43.05	8.46	39.75	44.50	46.76	54	-7.24	AV
V	17265.146	57.31	10.12	38.80	44.10	62.13	68.2	-6.07	PK
V	17265.146	2.00	10.12	38.80	42.70	8.22	54	-45.78	AV
H	4679.077	57.61	5.94	35.18	44.00	54.73	74	-19.27	PK
H	4679.077	43.74	5.94	35.18	44.00	40.86	54	-13.14	AV
H	11510.174	51.20	8.46	38.71	44.50	53.87	74	-20.13	PK
H	11510.174	41.98	8.46	38.71	44.50	44.65	54	-9.35	AV
H	17265.155	54.35	10.12	38.38	44.10	58.75	68.2	-9.45	PK
H	17265.155	43.50	10.12	38.38	44.10	47.90	54	-6.10	AV
High Channel (5795 MHz)-Above 1G									
V	6039.198	56.43	6.48	36.35	44.05	55.21	68.2	-12.99	PK
V	6039.198	43.77	6.48	36.35	44.05	42.55	54	-11.45	AV
V	11590.092	55.11	8.47	37.88	44.51	56.95	74	-17.05	PK
V	11590.092	43.43	8.47	37.88	44.51	45.27	54	-8.73	AV
V	17385.136	55.36	10.12	38.80	44.10	60.18	68.2	-8.02	PK
V	17385.136	41.07	10.12	38.80	42.70	47.29	54	-6.71	AV
H	6039.009	58.80	6.48	36.37	44.05	57.60	68.2	-10.60	PK
H	6039.009	43.25	6.48	36.37	44.05	42.05	54	-11.95	AV
H	11590.132	53.35	8.47	38.64	44.50	55.96	74	-18.04	PK
H	11590.132	44.11	8.47	38.64	44.50	46.72	54	-7.28	AV
H	17385.080	54.65	10.12	38.38	44.10	59.05	68.2	-9.15	PK
H	17385.080	41.31	10.12	38.38	44.10	45.71	54	-8.29	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(5.8G) - 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	4679.087	59.66	5.94	35.40	44.00	57.00	74	-17.00	PK
V	4679.087	43.73	5.94	35.40	44.00	41.07	54	-12.93	AV
V	11490.050	55.67	8.46	39.75	44.50	59.38	68.2	-8.82	PK
V	11490.050	43.27	8.46	39.75	44.50	46.98	54	-7.02	AV
V	17235.198	58.71	10.12	38.80	44.10	63.53	68.2	-4.67	PK
V	17235.198	43.60	10.12	38.80	42.70	49.82	54	-4.18	AV
H	4679.118	58.56	5.94	35.18	44.00	55.68	74	-18.32	PK
H	4679.118	43.43	5.94	35.18	44.00	40.55	54	-13.45	AV
H	11490.112	47.67	8.46	38.71	44.50	50.34	68.2	-17.86	PK
H	11490.112	41.80	8.46	38.71	44.50	44.47	54	-9.53	AV
H	17235.194	53.89	10.12	38.38	44.10	58.29	68.2	-9.91	PK
H	17235.194	40.03	10.12	38.38	44.10	44.43	54	-9.57	AV
Middle Channel (5785 MHz)-Above 1G									
V	4592.067	62.96	6.48	36.35	44.05	61.74	74	-12.26	PK
V	4592.067	43.21	6.48	36.35	44.05	41.99	54	-12.01	AV
V	11570.030	56.98	8.47	37.88	44.51	58.82	68.2	-9.38	PK
V	11570.030	43.95	8.47	37.88	44.51	45.79	54	-8.21	AV
V	17355.195	60.18	10.12	38.80	44.10	65.00	68.2	-3.20	PK
V	17355.195	43.48	10.12	38.80	42.70	49.70	54	-4.30	AV
H	4592.060	58.97	6.48	36.37	44.05	57.77	74	-16.23	PK
H	4592.060	43.07	6.48	36.37	44.05	41.87	54	-12.13	AV
H	11570.088	54.28	8.47	38.64	44.50	56.89	68.2	-11.31	PK
H	11570.088	43.00	8.47	38.64	44.50	45.61	54	-8.39	AV
H	17355.049	54.62	10.12	38.38	44.10	59.02	68.2	-9.18	PK
H	17355.049	43.97	10.12	38.38	44.10	48.37	54	-5.63	AV
High Channel (5825 MHz)-Above 1G									
V	6039.062	59.17	7.10	37.24	43.50	60.01	68.2	-8.19	PK
V	6039.062	43.65	7.10	37.24	43.50	44.49	54	-9.51	AV
V	11650.105	57.01	8.46	37.68	44.50	58.65	74	-15.35	PK
V	11650.105	43.94	8.46	37.68	44.50	45.58	54	-8.42	AV
V	17475.151	59.22	10.12	38.80	44.10	64.04	68.2	-4.16	PK
V	17475.151	43.60	10.12	38.80	42.70	49.82	54	-4.18	AV
H	6039.118	56.57	7.10	37.24	43.50	57.41	68.2	-10.79	PK
H	6039.118	43.62	7.10	37.24	43.50	44.46	54	-9.54	AV
H	11650.151	51.21	8.46	38.57	44.50	53.74	74	-20.26	PK
H	11650.151	40.32	8.46	38.57	44.50	42.85	54	-11.15	AV
H	17475.169	51.26	10.12	38.38	44.10	55.66	68.2	-12.54	PK
H	17475.169	42.23	10.12	38.38	44.10	46.63	54	-7.37	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	4679.112	57.16	5.94	35.40	44.00	54.50	74	-19.50	PK
V	4679.112	43.40	5.94	35.40	44.00	40.74	54	-13.26	AV
V	11510.041	55.63	8.46	39.75	44.50	59.34	74	-14.66	PK
V	11510.041	43.08	8.46	39.75	44.50	46.79	54	-7.21	AV
V	17265.188	55.74	10.12	38.80	44.10	60.56	68.2	-7.64	PK
V	17265.188	2.00	10.12	38.80	42.70	8.22	54	-45.78	AV
H	4679.154	59.85	5.94	35.18	44.00	56.97	74	-17.03	PK
H	4679.154	43.31	5.94	35.18	44.00	40.43	54	-13.57	AV
H	11510.103	51.95	8.46	38.71	44.50	54.62	74	-19.38	PK
H	11510.103	41.27	8.46	38.71	44.50	43.94	54	-10.06	AV
H	17265.005	53.53	10.12	38.38	44.10	57.93	68.2	-10.27	PK
H	17265.005	40.05	10.12	38.38	44.10	44.45	54	-9.55	AV
High Channel (5795 MHz)-Above 1G									
V	6039.132	56.86	6.48	36.35	44.05	55.64	68.2	-12.56	PK
V	6039.132	43.71	6.48	36.35	44.05	42.49	54	-11.51	AV
V	11590.122	56.15	8.47	37.88	44.51	57.99	74	-16.01	PK
V	11590.122	43.31	8.47	37.88	44.51	45.15	54	-8.85	AV
V	17385.078	55.95	10.12	38.80	44.10	60.77	68.2	-7.43	PK
V	17385.078	41.08	10.12	38.80	42.70	47.30	54	-6.70	AV
H	6039.028	57.93	6.48	36.37	44.05	56.73	68.2	-11.47	PK
H	6039.028	43.90	6.48	36.37	44.05	42.70	54	-11.30	AV
H	11590.117	53.83	8.47	38.64	44.50	56.44	74	-17.56	PK
H	11590.117	44.51	8.47	38.64	44.50	47.12	54	-6.88	AV
H	17385.061	51.00	10.12	38.38	44.10	55.40	68.2	-12.80	PK
H	17385.061	40.04	10.12	38.38	44.10	44.44	54	-9.56	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.

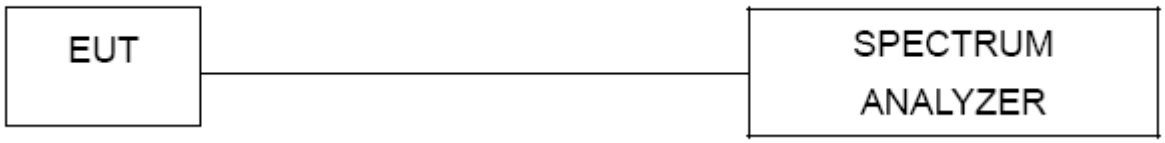
Test Mode:	TX(5.8G) - 802.11ac-HT80

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	4679.002	55.11	5.94	35.40	44.00	52.45	74	-21.55	PK
V	4679.002	43.04	5.94	35.40	44.00	40.38	54	-13.62	AV
V	11550.109	59.96	8.46	39.75	44.50	63.67	74	-10.33	PK
V	11550.109	43.74	8.46	39.75	44.50	47.45	54	-6.55	AV
V	17325.194	60.61	10.12	38.80	44.10	65.43	68.2	-2.77	PK
V	17325.194	41.64	10.12	38.80	42.70	47.86	54	-6.14	AV
H	4679.163	56.61	5.94	35.18	44.00	53.73	74	-20.27	PK
H	4679.163	43.70	5.94	35.18	44.00	40.82	54	-13.18	AV
H	11550.026	54.80	8.46	38.71	44.50	57.47	74	-16.53	PK
H	11550.026	42.11	8.46	38.71	44.50	44.78	54	-9.22	AV
H	17325.109	53.40	10.12	38.38	44.10	57.80	68.2	-10.40	PK
H	17325.109	42.19	10.12	38.38	44.10	46.59	54	-7.41	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 ≥ 1/T, where T is defined in section II.B.I.a).

b) Set VBW ≥ 3 RBW.

c) If measurement bandwidth of Maximum PSD is specified in 500 kHz, add 10log(500kHz/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 10log(1MHz/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

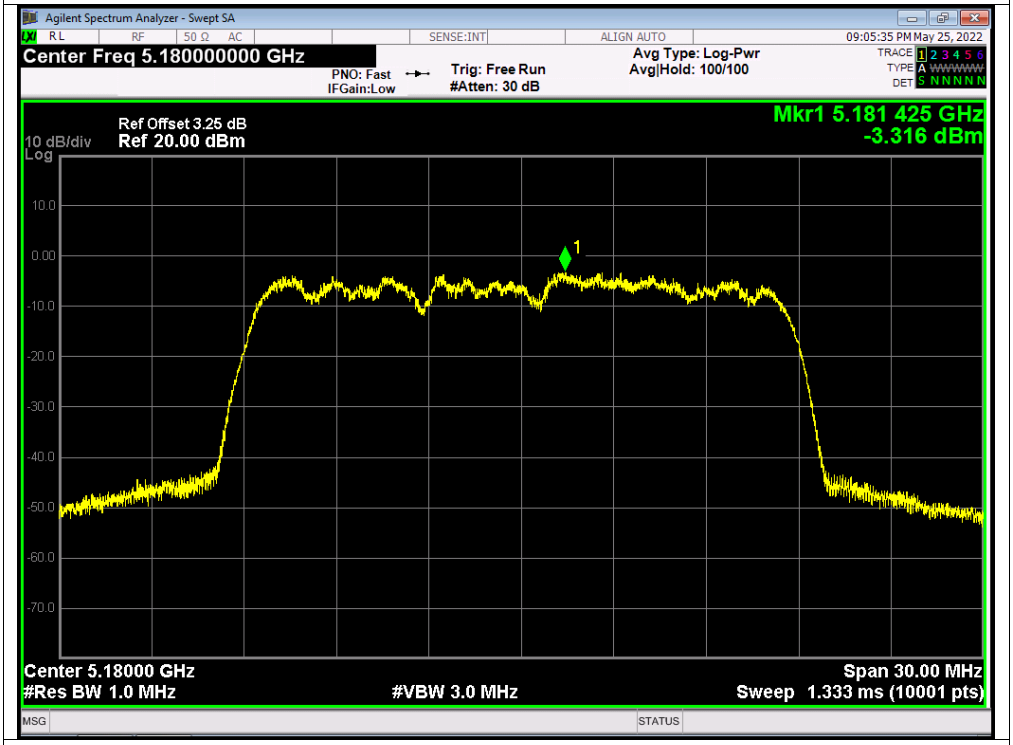
Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage ：	AC120V/60Hz
Test Mode:	TX Frequency U-NII-1 (5180-5240MHz)		

Note: A\B\C\D Represent the value of antenna A\B\C\D, The worst data is Antenna C, only shown Antenna C Plot.

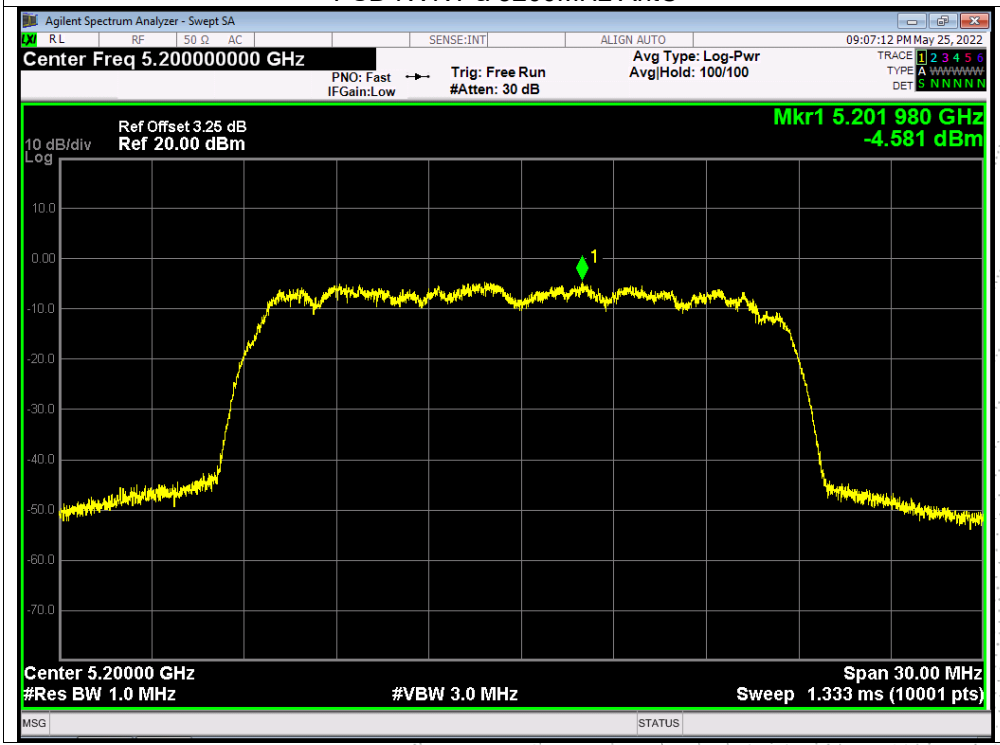
Mode	Frequency	Measured Power Density (dBm/MHz)					Limit (dBm/MHz)	Result
		ANT A	ANT B	ANT C	ANT D	Total		
802.11 a	5180 MHz	-3.98	-4.32	**-3.32**	-4.36	2.05	17	PASS
	5200 MHz	-4.38	-4.36	-4.58	-4.72	1.51	17	PASS
	5240 MHz	-3.77	-3.41	-5.13	-6.02	1.56	17	PASS
802.11 n20	5180 MHz	-5.5	-5.79	-5.26	-5.79	0.44	14.98	PASS
	5200 MHz	-6.52	-5.52	-5.74	-6.9	-0.11	14.98	PASS
	5240 MHz	-5.52	-6.54	-5.04	-7.39	-0.01	14.98	PASS
802.11 n40	5190 MHz	-10.33	-10.38	-10.72	-10.67	-4.50	14.98	PASS
	5230 MHz	-9.6	-10.8	-10.61	-10.91	-4.43	14.98	PASS
802.11 ac20	5180 MHz	-5.83	-5.56	-6.01	-5.12	0.40	14.98	PASS
	5200 MHz	-5.91	-5.3	-6.26	-6.49	0.05	14.98	PASS
	5240 MHz	-5.05	-5.33	-5.52	-5.57	0.66	14.98	PASS
802.11 ac40	5190 MHz	-10.7	-10.7	-11.62	-10.48	-4.83	14.98	PASS
	5230 MHz	-9.68	-10.78	-10.13	-9.88	-4.08	14.98	PASS
802.11 ac80	5210 MHz	-16.16	-16.05	-16.82	-16.07	-10.24	14.98	PASS
For MIMO mode: Directional gain=GANT+10 log(NANT/NSS) dBi=8.02dBi 8.02dbi>6.0 dbi so PSD limit=17-(8.02-6.0)=14.98								

Test Graphs

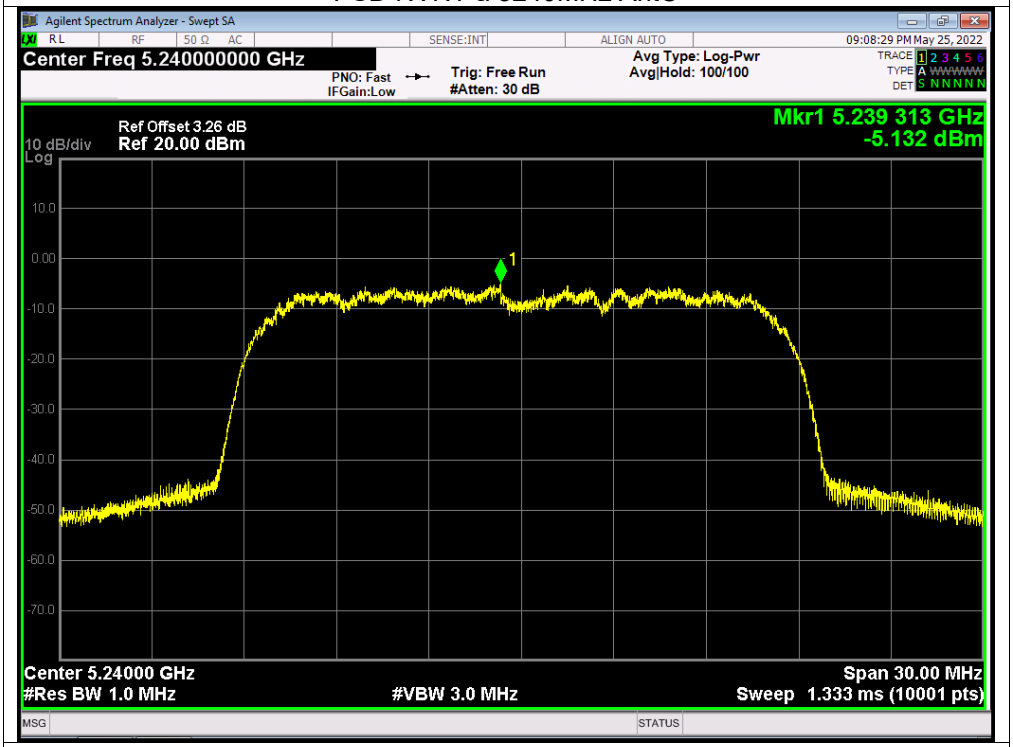
PSD NVNT a 5180MHz AntC



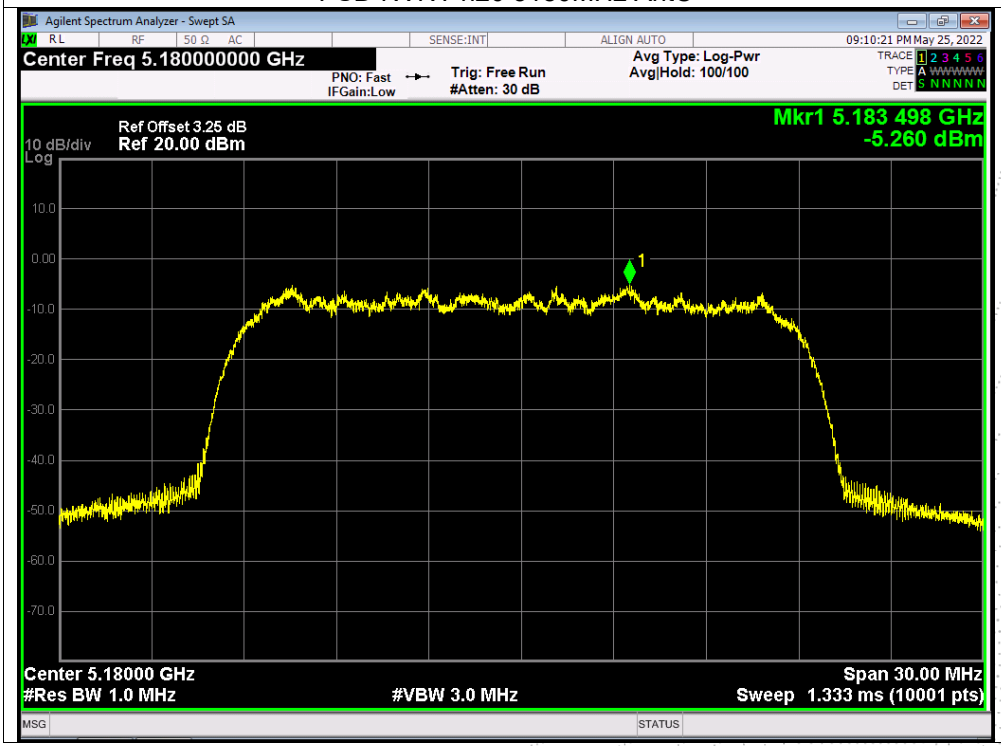
PSD NVNT a 5200MHz AntC



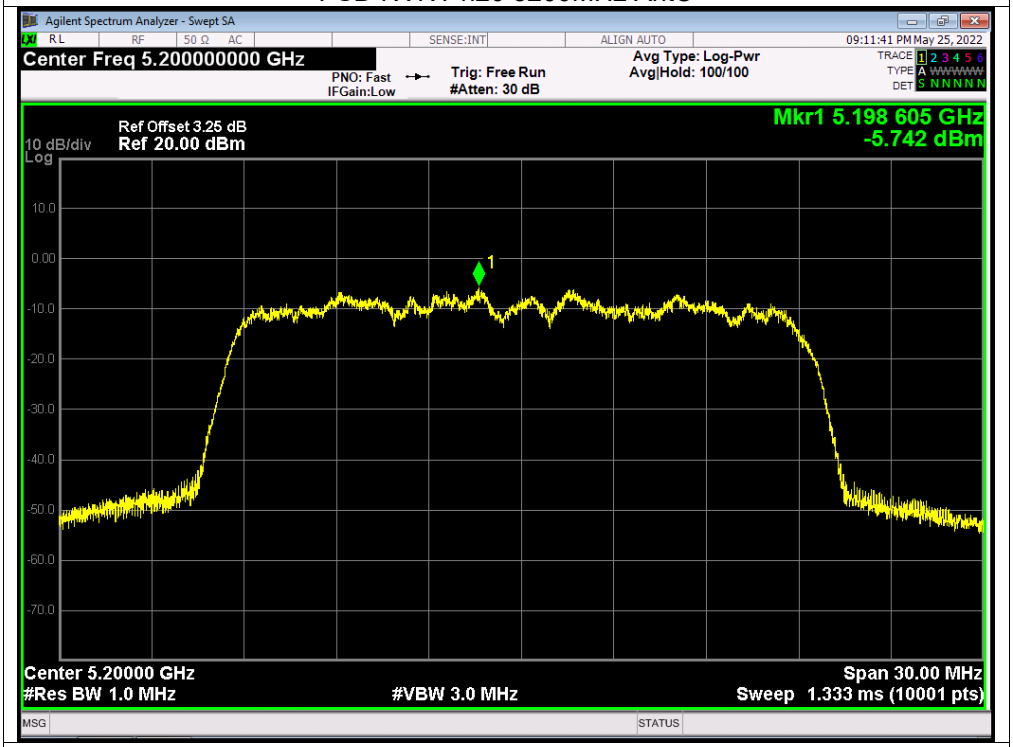
PSD NVNT a 5240MHz AntC



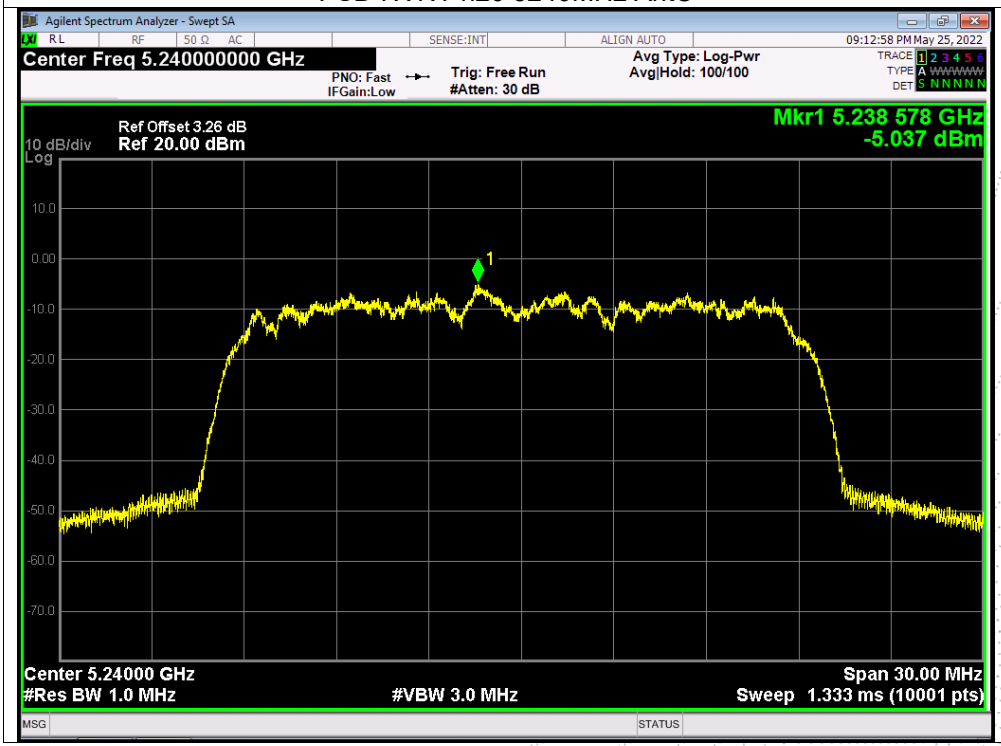
PSD NVNT n20 5180MHz AntC



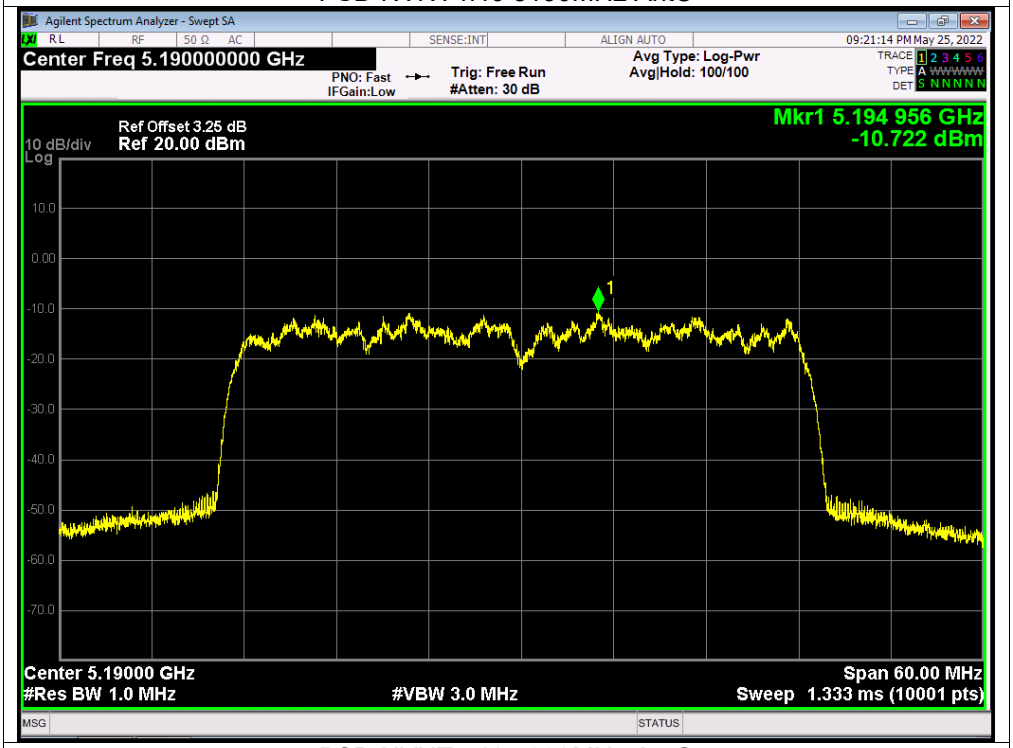
PSD NVNT n20 5200MHz AntC



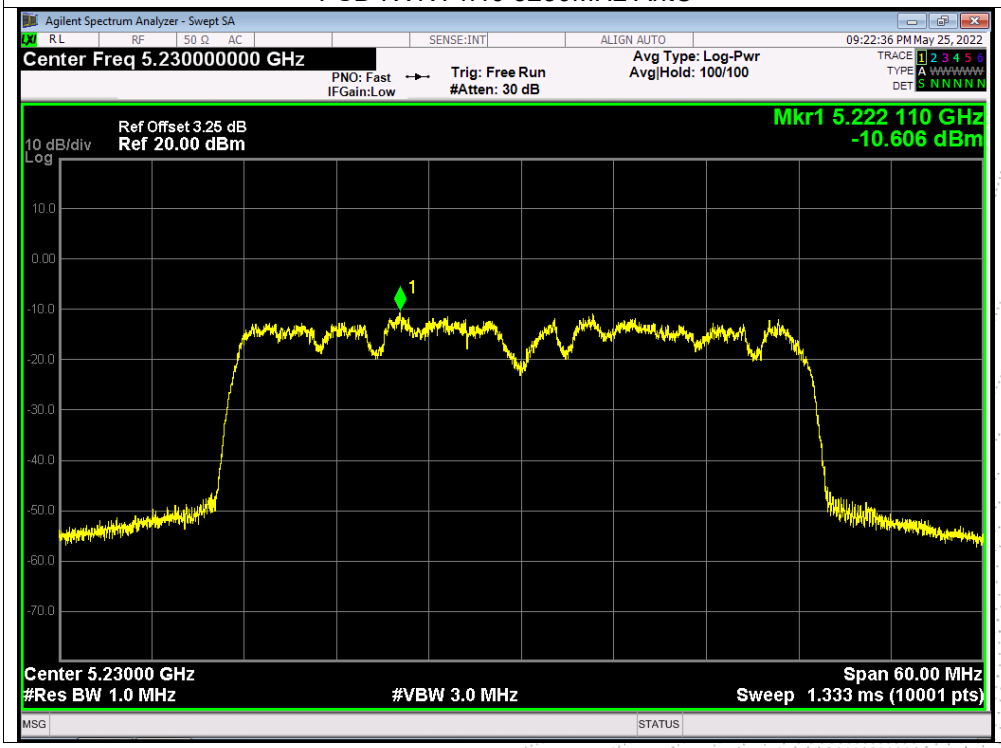
PSD NVNT n20 5240MHz AntC



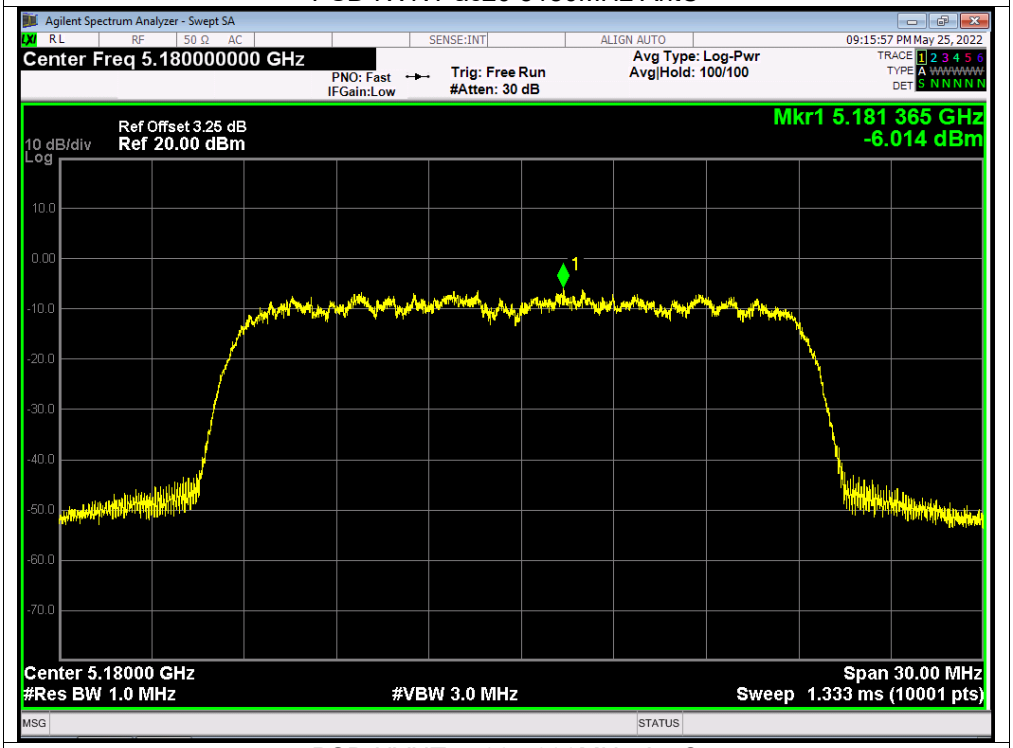
PSD NVNT n40 5190MHz AntC



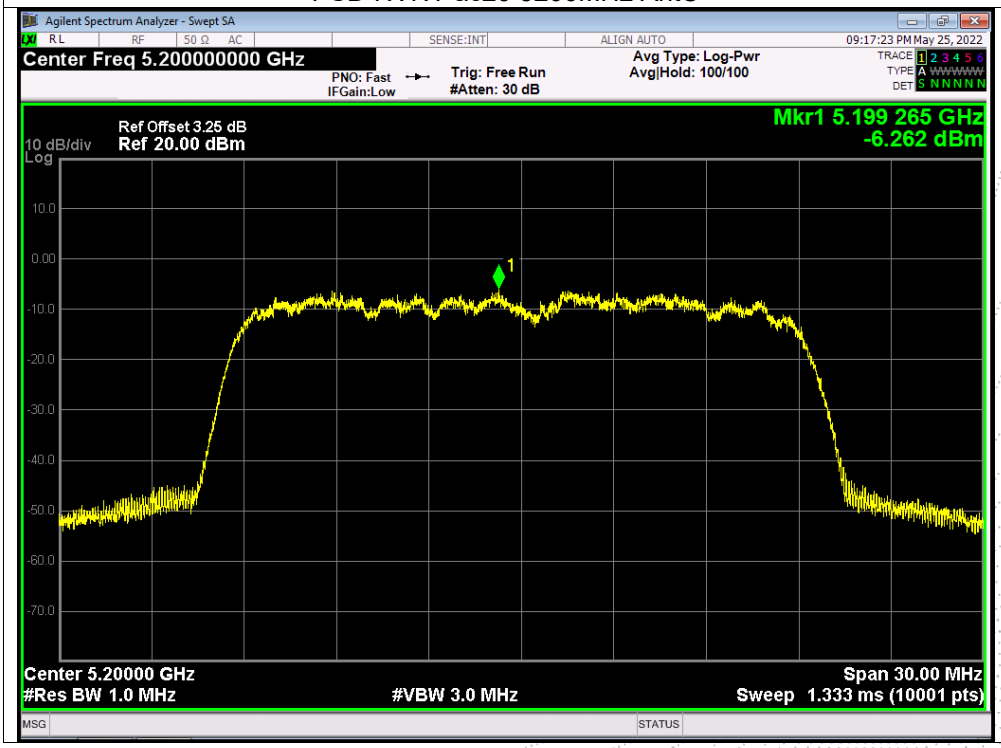
PSD NVNT n40 5230MHz AntC



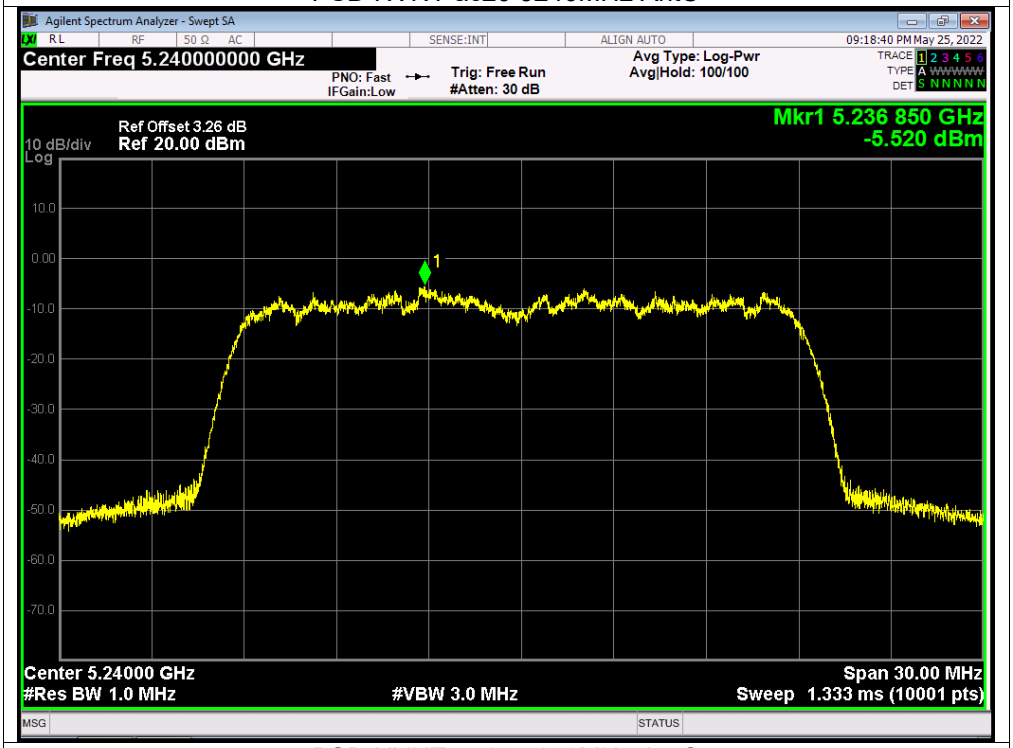
PSD NVNT ac20 5180MHz AntC



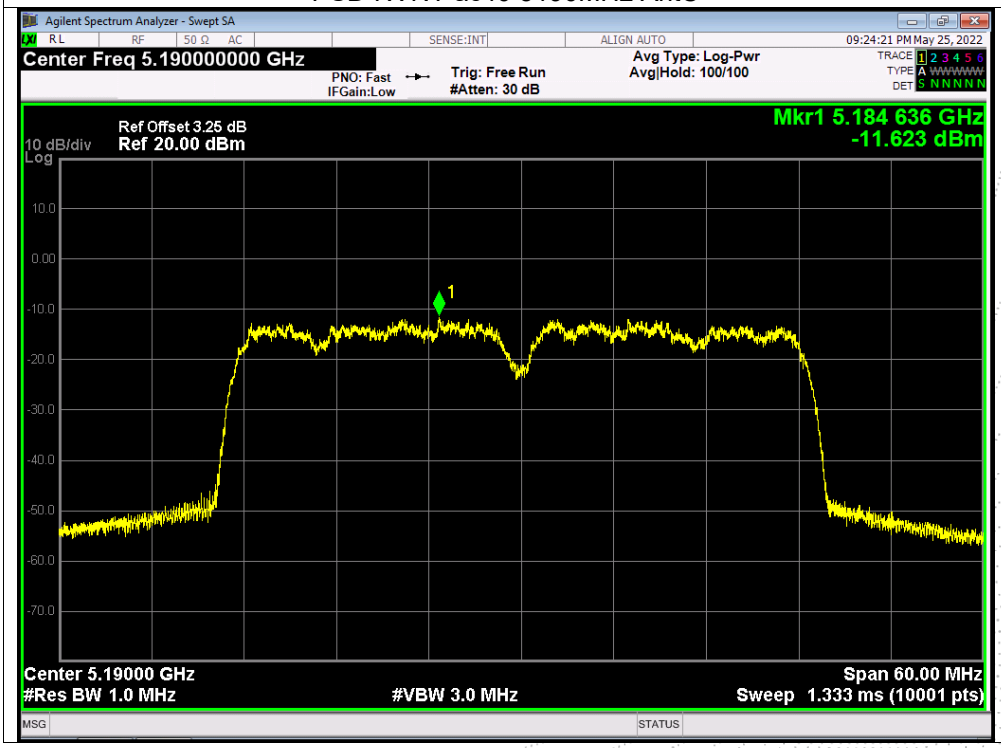
PSD NVNT ac20 5200MHz AntC



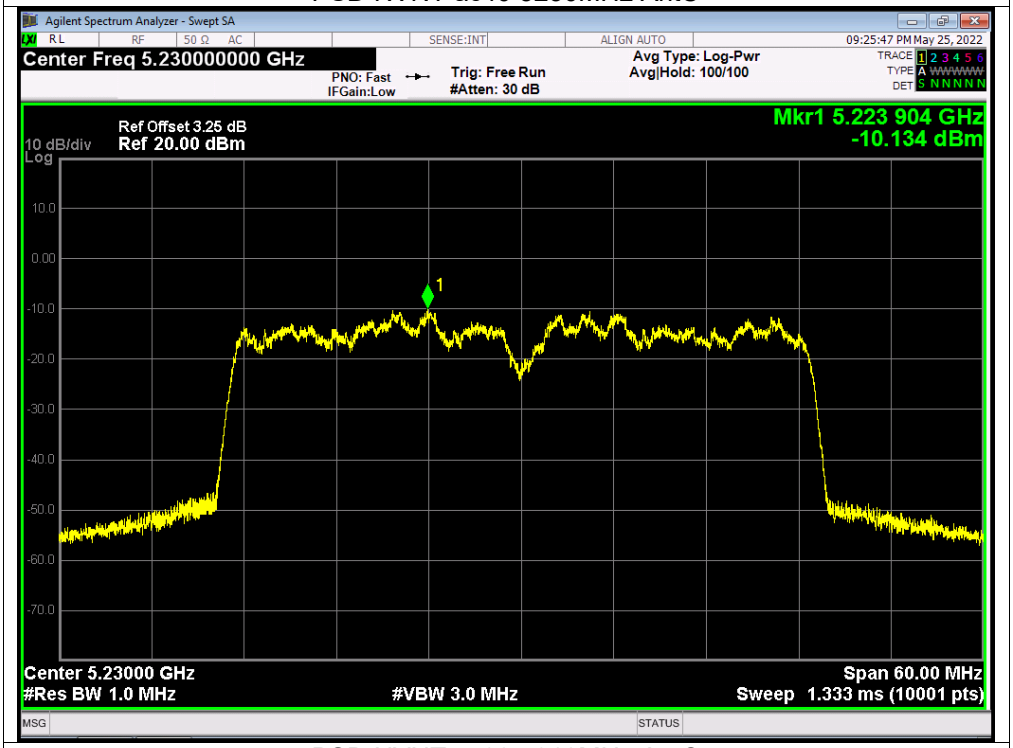
PSD NVNT ac20 5240MHz AntC



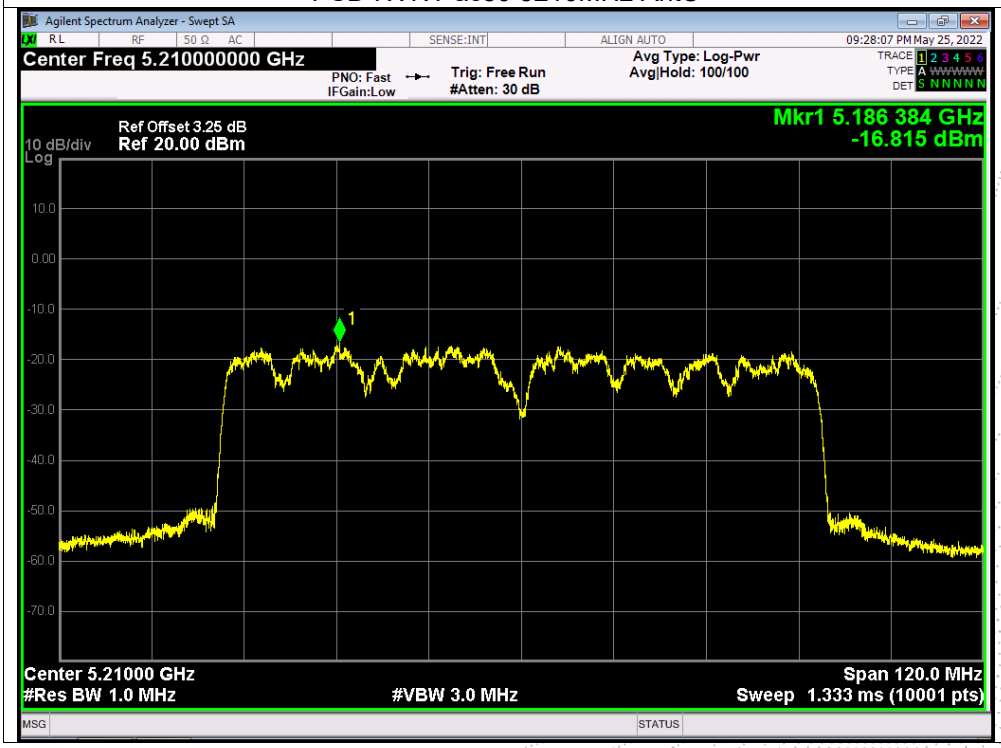
PSD NVNT ac40 5190MHz AntC



PSD NVNT ac40 5230MHz AntC



PSD NVNT ac80 5210MHz AntC



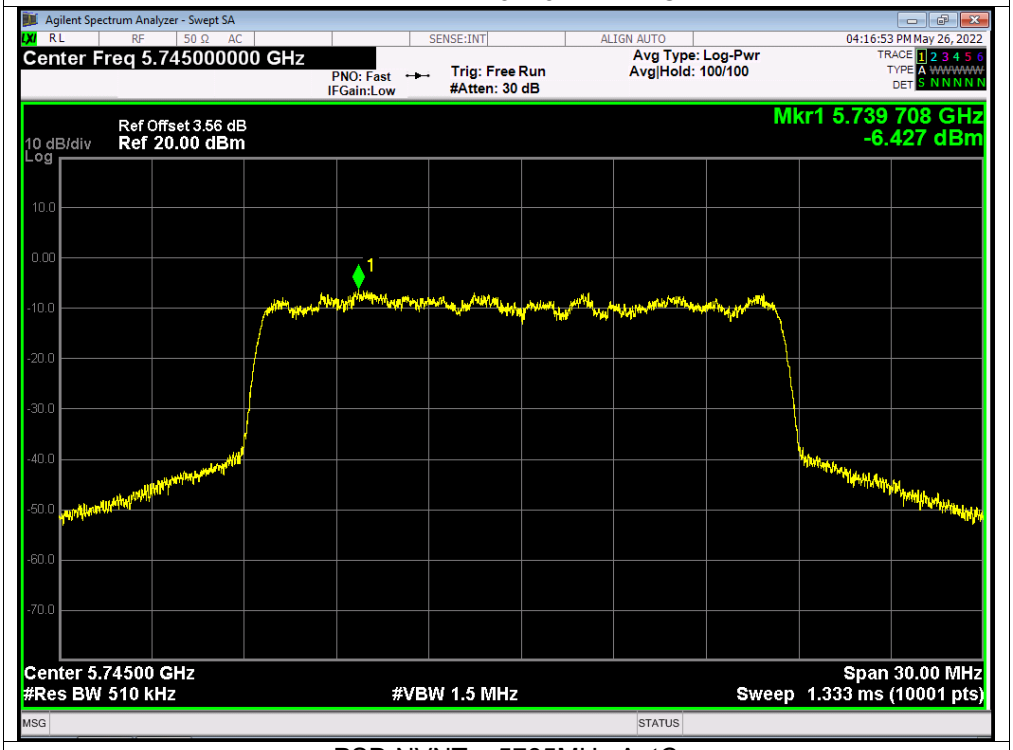
Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage ：	AC120V/60Hz
Test Mode:	TX Frequency U-NII-3 (5745-5825MHz)		

Note: A\B\C\D Represent the value of antenna A\B\C\D, The worst data is Antenna C, only shown Antenna C Plot.

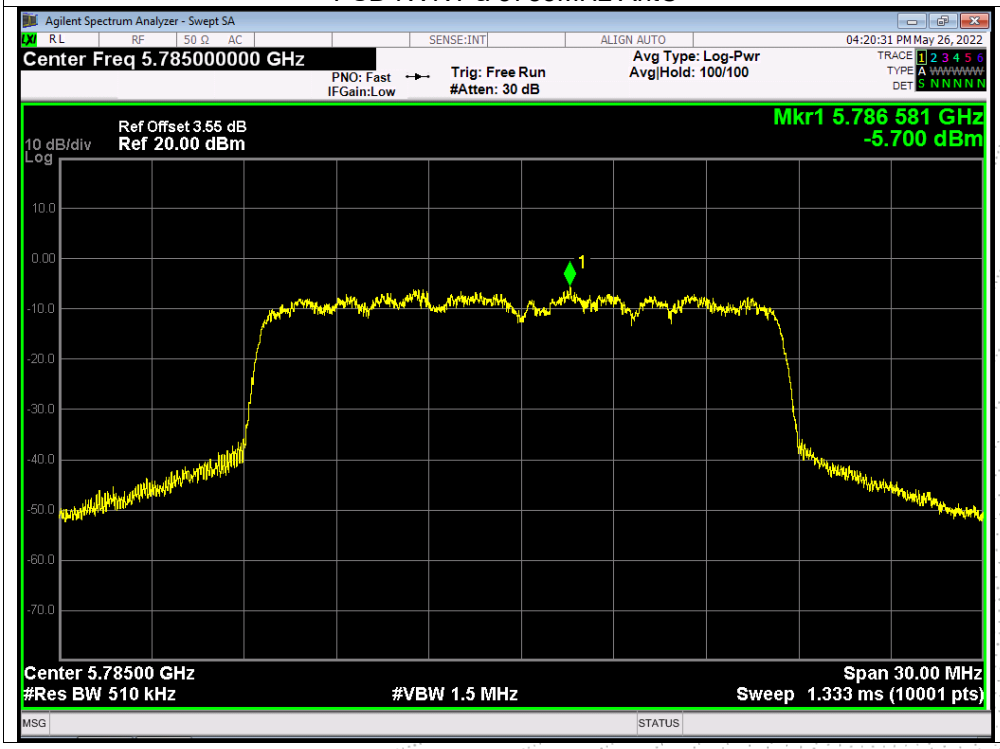
Mode	Frequency	Measured Power Density (dBm/500KHz)					Limit (dBm/500kHz)	Result
		ANT A	ANT B	ANT C	ANT D	Total		
802.11 a	5745 MHz	-6.62	-6.05	-6.43	-6.76	-0.44	30	PASS
	5785 MHz	-6.66	-7.21	**-5.7**	-7.72	-0.74	30	PASS
	5825 MHz	-5.94	-7.03	-6.94	-7.33	-0.76	30	PASS
802.11 n20	5745 MHz	-8.5	-7.08	-7.03	-8.81	-1.76	27.98	PASS
	5785 MHz	-9.49	-7.84	-7.68	-9.72	-2.56	27.98	PASS
	5825 MHz	-8.01	-8.65	-8.17	-8.34	-2.27	27.98	PASS
802.11 n40	5755 MHz	-12.42	-13.54	-13.66	-13.12	-7.14	27.98	PASS
	5795 MHz	-13.76	-14.34	-13.04	-14.5	-7.85	27.98	PASS
802.11 ac20	5745 MHz	-7.84	-7.03	-7.51	-9	-1.77	27.98	PASS
	5785 MHz	-7.95	-7.94	-7.55	-10.11	-2.26	27.98	PASS
	5825 MHz	-6.74	-8.96	-8.29	-8.97	-2.12	27.98	PASS
802.11 ac40	5755 MHz	-12.15	-12.26	-12.24	-12.96	-6.37	27.98	PASS
	5795 MHz	-14.15	-12.08	-12.68	-13.67	-7.05	27.98	PASS
802.11 ac80	5775 MHz	-17.74	-18.42	-19.43	-18.47	-12.45	27.98	PASS
For MIMO mode: Directional gain=GANT+10 log(NANT/NSS) dBi=8.02dBi 8.02dbi>6.0 dbi so PSD limit=30-(8.02-6.0)=27.98								

Test Graphs

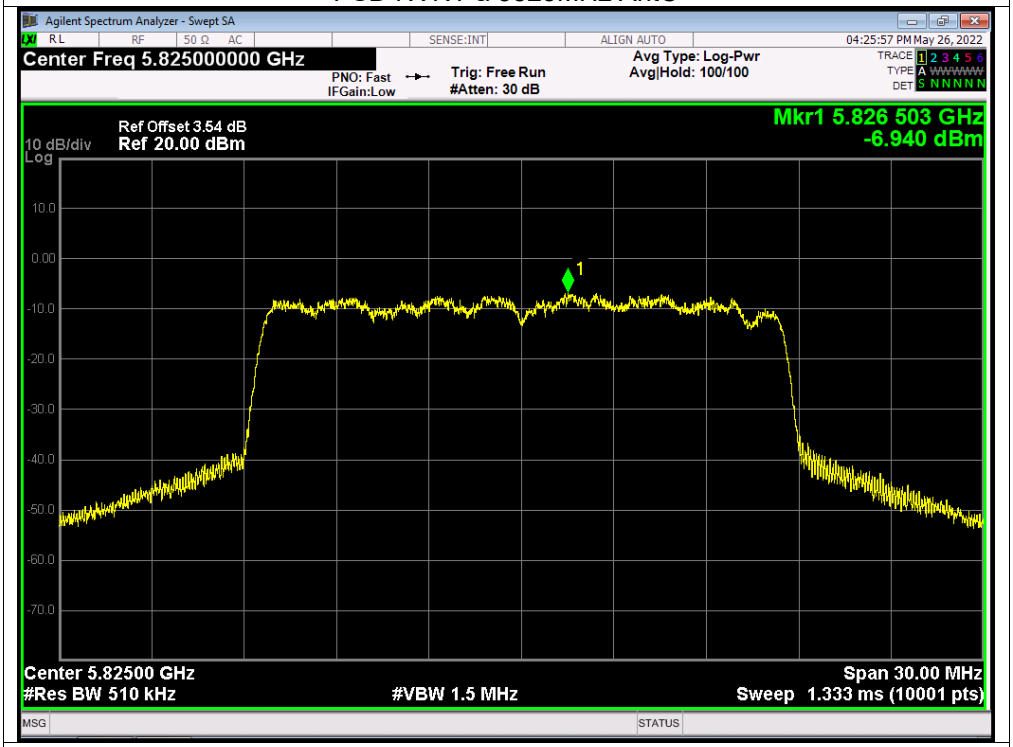
PSD NVNT a 5745MHz AntC



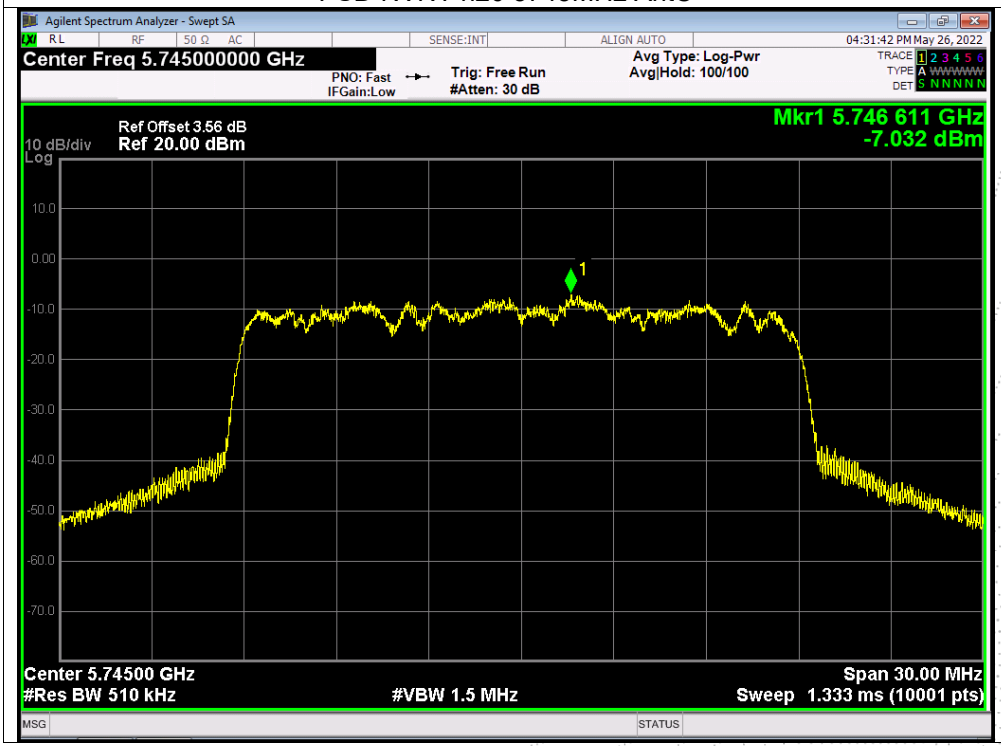
PSD NVNT a 5785MHz AntC



PSD NVNT a 5825MHz AntC



PSD NVNT n20 5745MHz AntC



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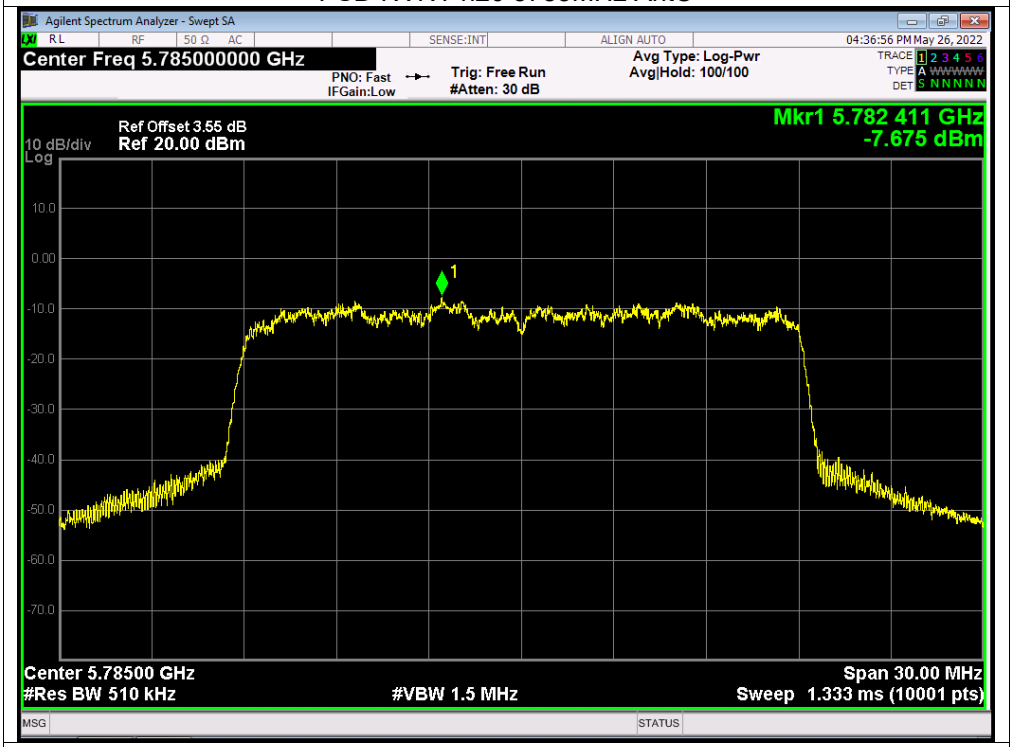
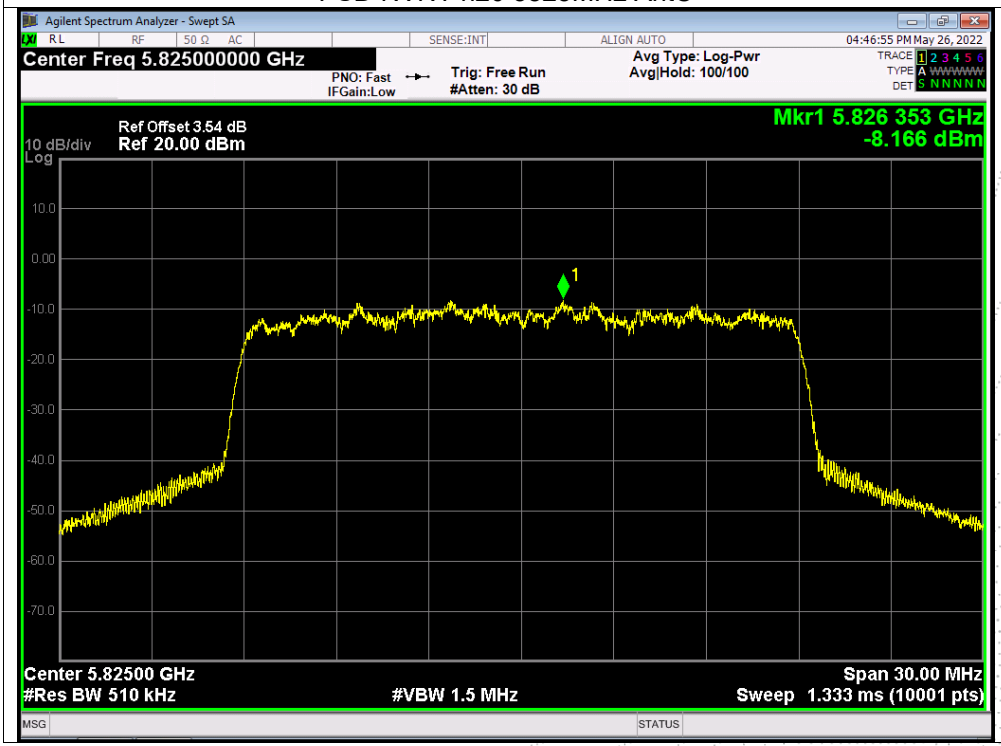
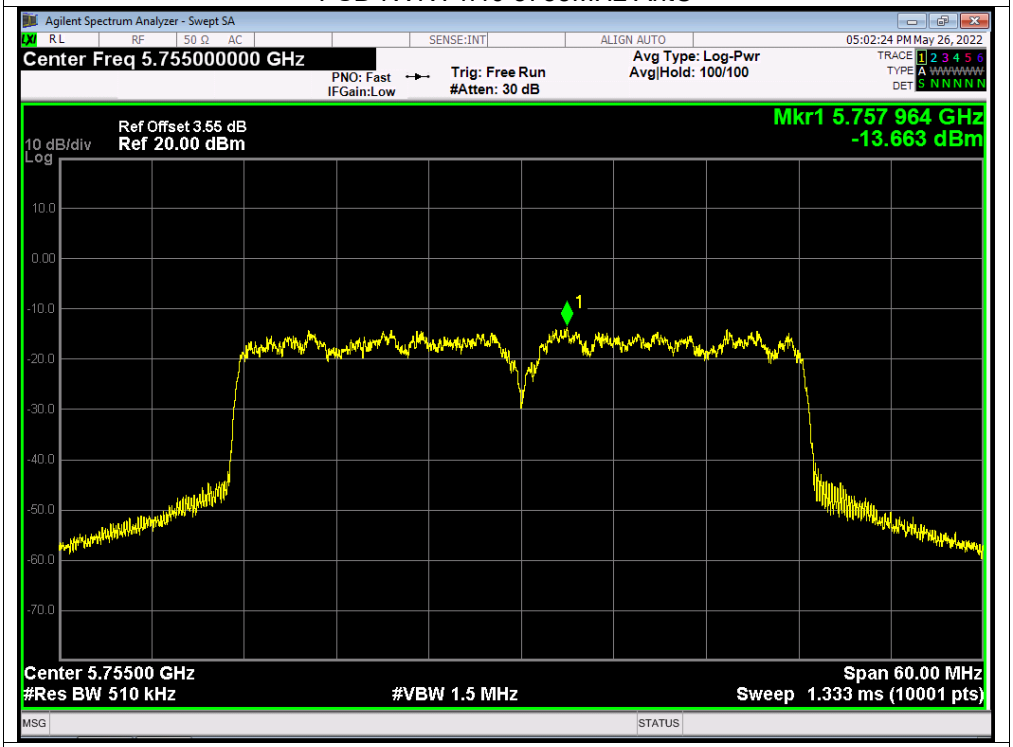


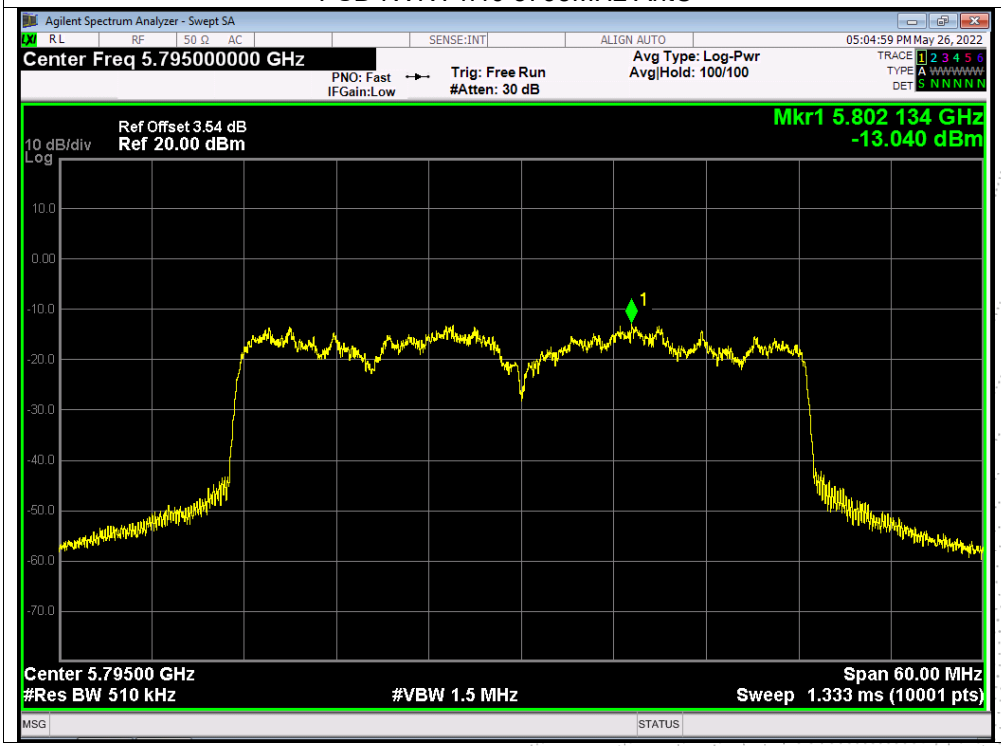
PSD NVNT n20 5825MHz AntC



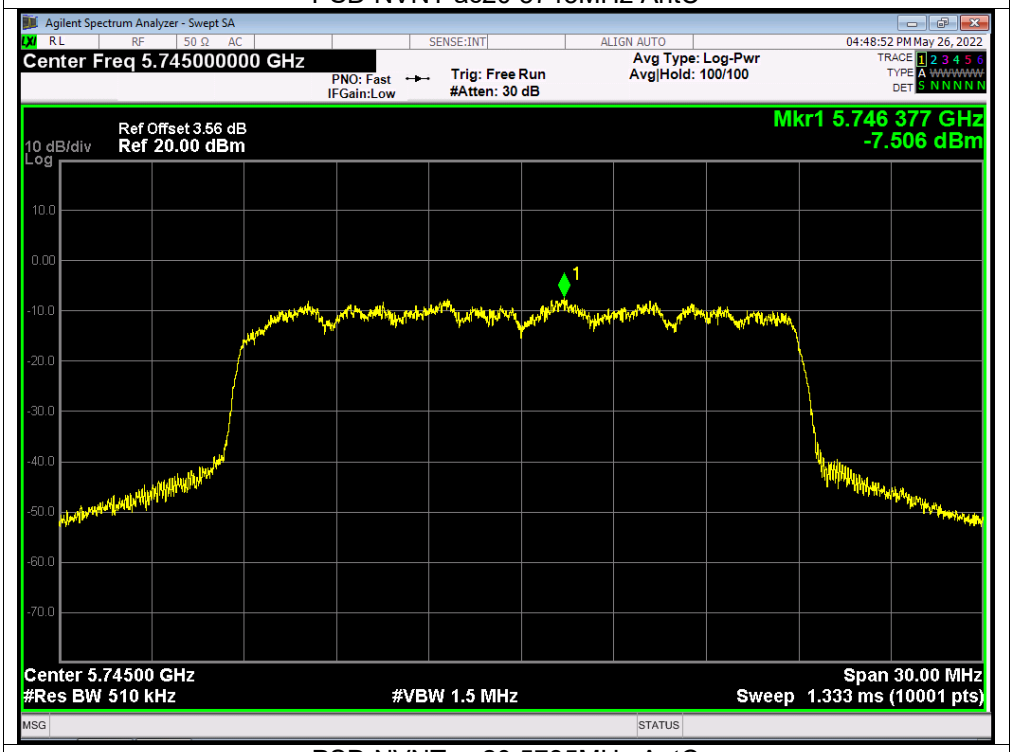
PSD NVNT n40 5755MHz AntC



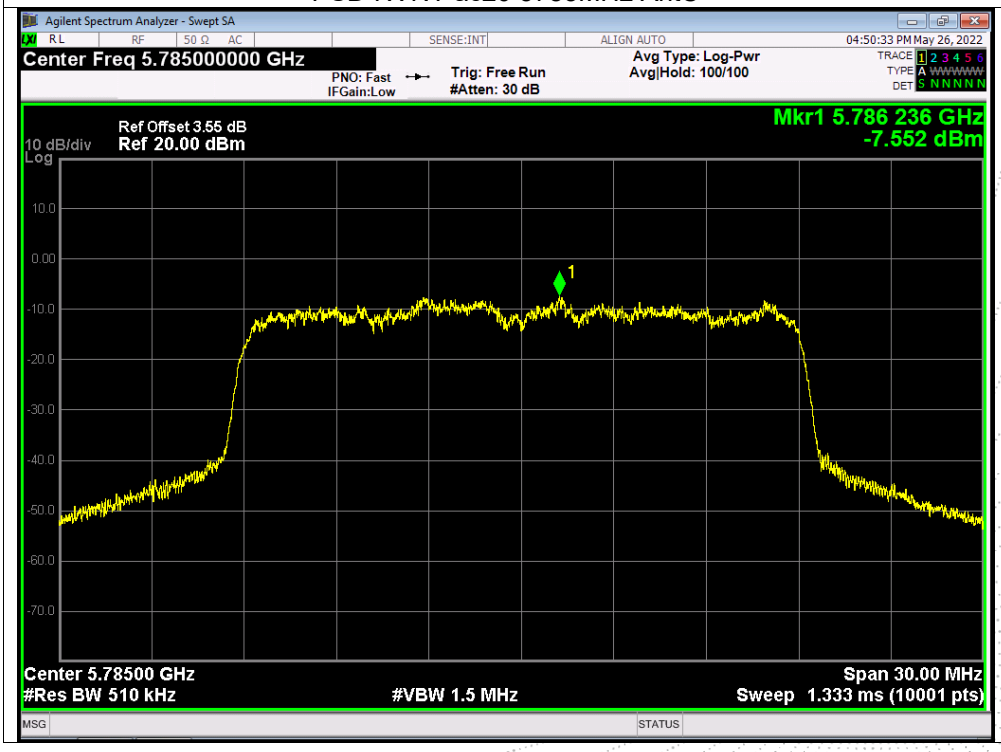
PSD NVNT n40 5795MHz AntC



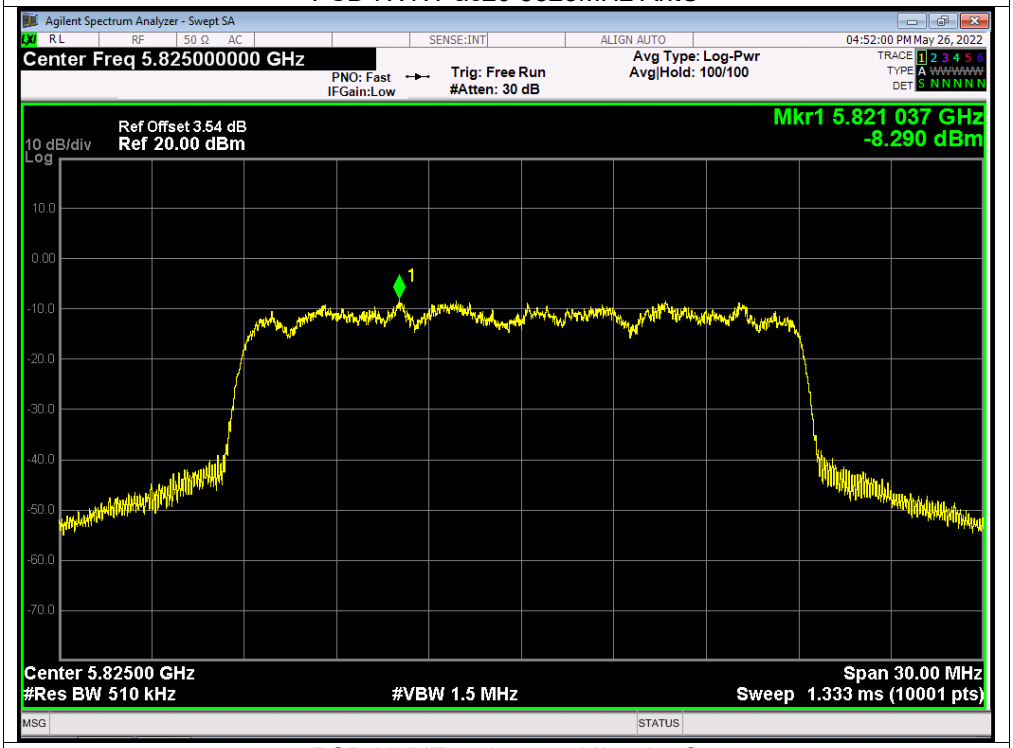
PSD NVNT ac20 5745MHz AntC



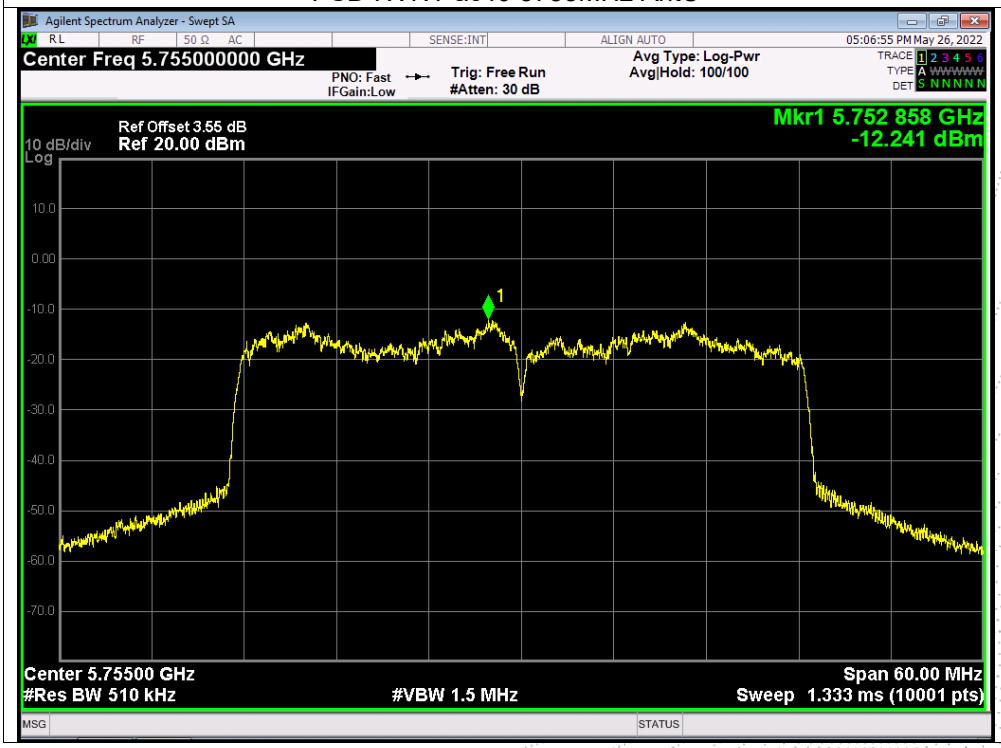
PSD NVNT ac20 5785MHz AntC



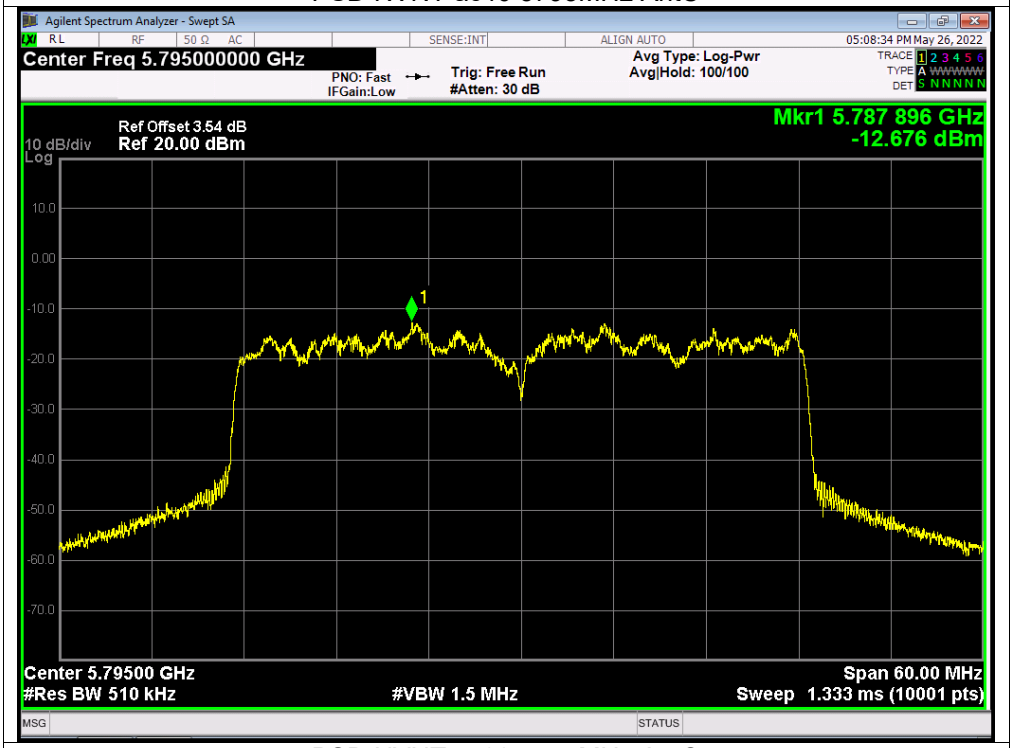
PSD NVNT ac20 5825MHz AntC



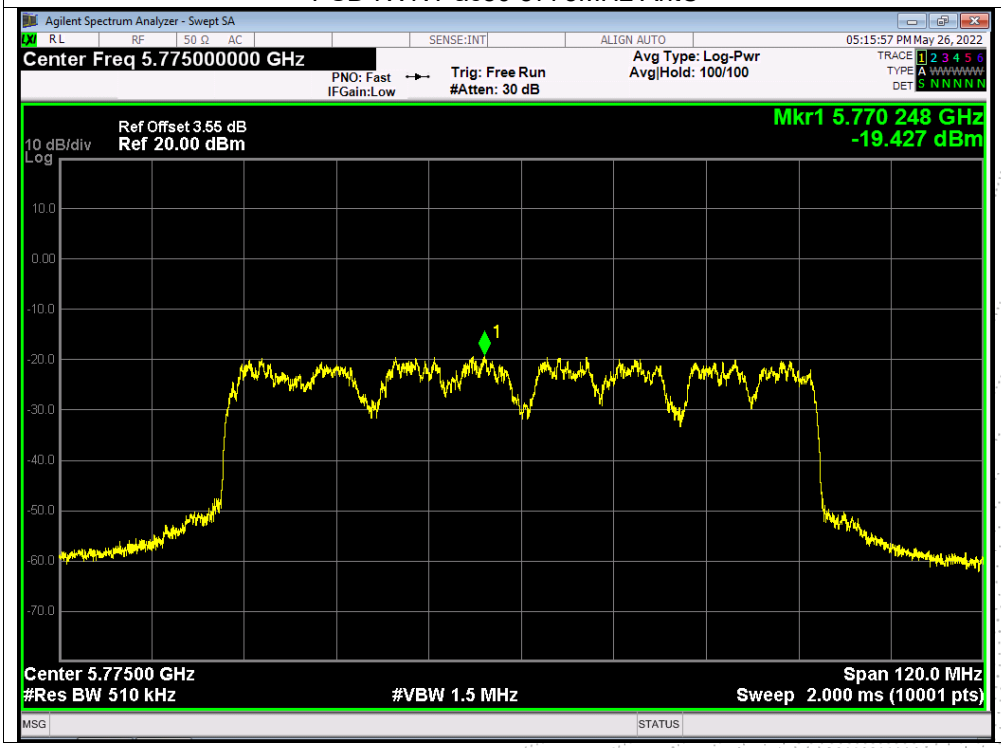
PSD NVNT ac40 5755MHz AntC



PSD NVNT ac40 5795MHz AntC

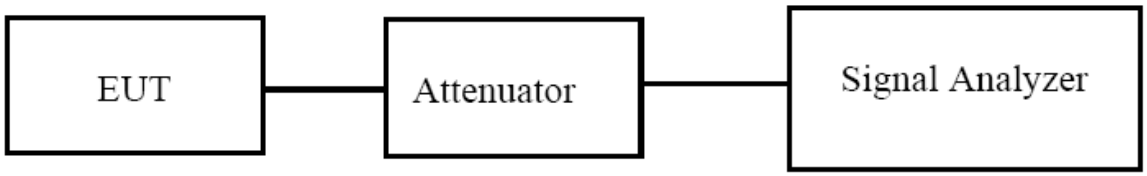


PSD NVNT ac80 5775MHz AntC



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 ≥ 3 · 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 ℃	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage ：	AC120V/60Hz
Test Mode:	TX Frequency U-NII-1 (5180-5240MHz)		

Note: A\B\C\D Represent the value of antenna A\B\C\D, The worst data is Antenna D, only shown Antenna D Plot.

Mode	Channel	Frequency (MHz)	99% bandwidth (MHz)	26dB bandwidth (MHz)	Limit MHz	Result
			ANT A	ANT A		
802.11a	CH36	5180	16.505	21.537	N/A	Pass
	CH40	5200	16.566	22.132	N/A	Pass
	CH48	5240	16.558	21.693	N/A	Pass
802.11 n20	CH36	5180	17.704	23.928	N/A	Pass
	CH40	5200	17.721	23.763	N/A	Pass
	CH48	5240	17.744	23.585	N/A	Pass
802.11 n40	CH 38	5190	36.213	45.53	N/A	Pass
	CH 46	5230	36.239	46.06	N/A	Pass
802.11 ac20	CH36	5180	17.73	22.929	N/A	Pass
	CH40	5200	17.729	24.048	N/A	Pass
	CH48	5240	17.733	23.374	N/A	Pass
802.11 ac40	CH 38	5190	36.281	45.697	N/A	Pass
	CH 46	5230	36.272	45.286	N/A	Pass
802.11 ac80	CH 42	5210	75.224	86.005	N/A	Pass

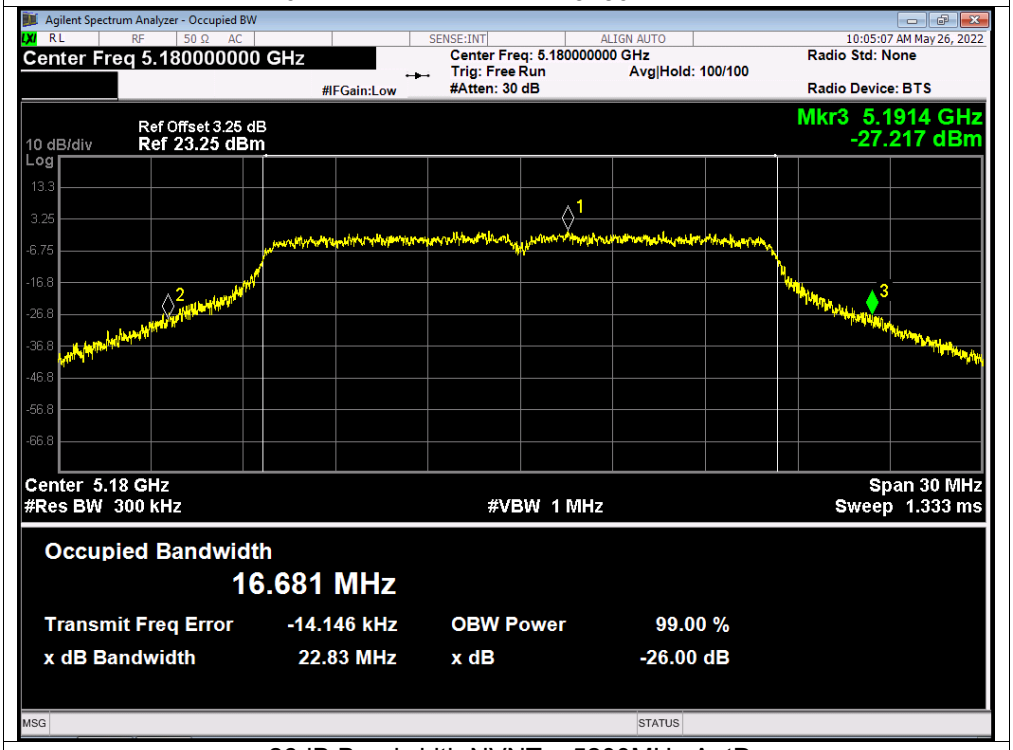
Mode	Channel	Frequency (MHz)	99% bandwidth(MHz)	26dB bandwidth MHz)	Limit MHz	Result
			ANT B	ANT B		
802.11a	CH36	5180	16.527	22.124	N/A	Pass
	CH40	5200	16.493	22.661	N/A	Pass
	CH48	5240	16.517	22.429	N/A	Pass
802.11 n20	CH36	5180	17.716	23.694	N/A	Pass
	CH40	5200	17.716	23.629	N/A	Pass
	CH48	5240	17.702	23.255	N/A	Pass
802.11 n40	CH 38	5190	59.42	47.696	N/A	Pass
	CH 46	5230	36.175	47.001	N/A	Pass
802.11 ac20	CH36	5180	17.699	23.292	N/A	Pass
	CH40	5200	17.719	23.708	N/A	Pass
	CH48	5240	17.726	23.216	N/A	Pass
802.11 ac40	CH 38	5190	36.203	47.02	N/A	Pass
	CH 46	5230	36.233	46.27	N/A	Pass
802.11 ac80	CH 42	5210	75.05	86.822	N/A	Pass

Mode	Channel	Frequency (MHz)	99% bandwidth(MHz)	26dB bandwidth (MHz)	Limit MHz	Result
			ANT C	ANT C		
802.11a	CH36	5180	16.497	21.654	N/A	Pass
	CH40	5200	16.548	22.254	N/A	Pass
	CH48	5240	16.523	22.403	N/A	Pass
802.11 n20	CH36	5180	17.721	23.996	N/A	Pass
	CH40	5200	17.708	23.416	N/A	Pass
	CH48	5240	17.707	23.442	N/A	Pass
802.11 n40	CH 38	5190	36.177	46.418	N/A	Pass
	CH 46	5230	36.251	46.655	N/A	Pass
802.11 ac20	CH36	5180	17.761	24.337	N/A	Pass
	CH40	5200	17.712	23.639	N/A	Pass
	CH48	5240	17.72	23.453	N/A	Pass
802.11 ac40	CH 38	5190	36.216	46.288	N/A	Pass
	CH 46	5230	36.238	44.82	N/A	Pass
802.11 ac80	CH 42	5210	75.166	86.536	N/A	Pass

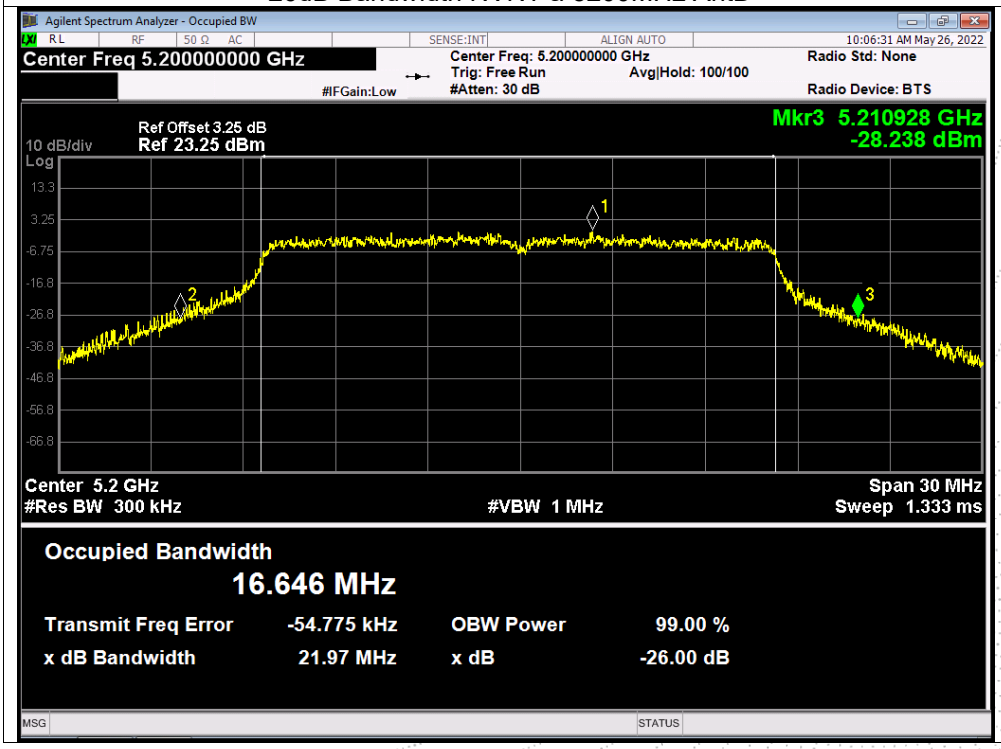
Mode	Channel	Frequency (MHz)	99% bandwidth(MHz)	26dB bandwidth (MHz)	Limit MHz	Result
			ANT D	ANT D		
802.11a	CH36	5180	16.501	22.828	N/A	Pass
	CH40	5200	16.494	21.965	N/A	Pass
	CH48	5240	16.526	22.202	N/A	Pass
802.11 n20	CH36	5180	17.688	23.14	N/A	Pass
	CH40	5200	17.706	23.897	N/A	Pass
	CH48	5240	17.7	23.305	N/A	Pass
802.11 n40	CH 38	5190	36.197	45.98	N/A	Pass
	CH 46	5230	36.217	45.485	N/A	Pass
802.11 ac20	CH36	5180	17.727	23.474	N/A	Pass
	CH40	5200	17.74	23.88	N/A	Pass
	CH48	5240	17.726	23.545	N/A	Pass
802.11 ac40	CH 38	5190	36.313	45.903	N/A	Pass
	CH 46	5230	36.259	46.249	N/A	Pass
802.11 ac80	CH 42	5210	75.215	**87.017**	N/A	Pass

Test Graphs

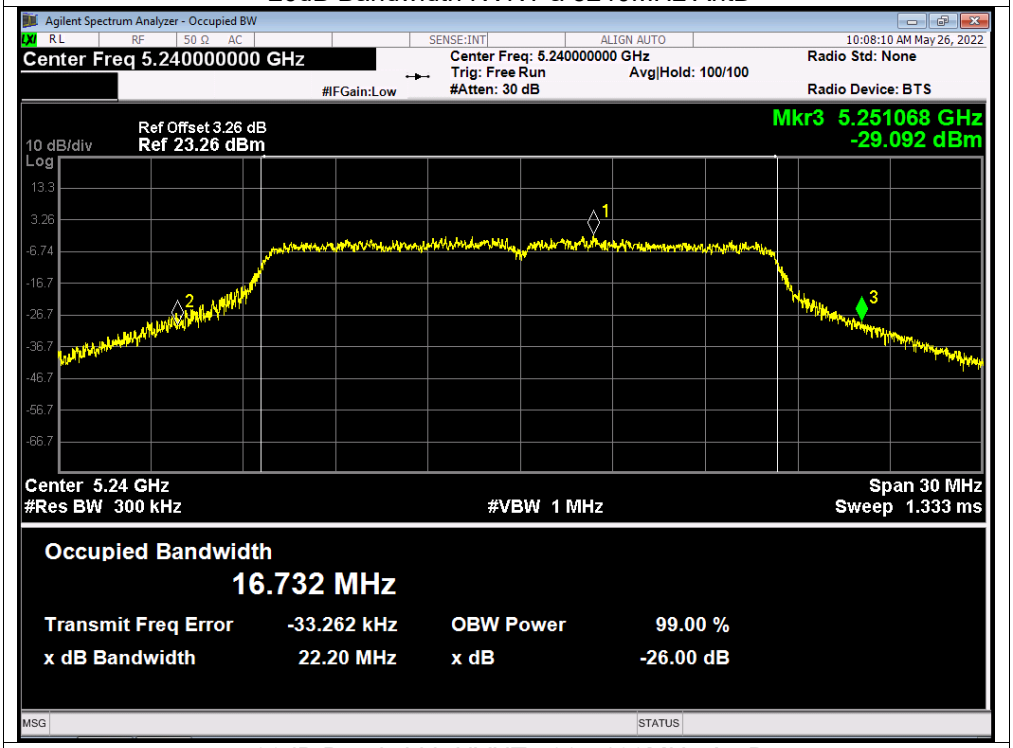
-26dB Bandwidth NVNT a 5180MHz AntD



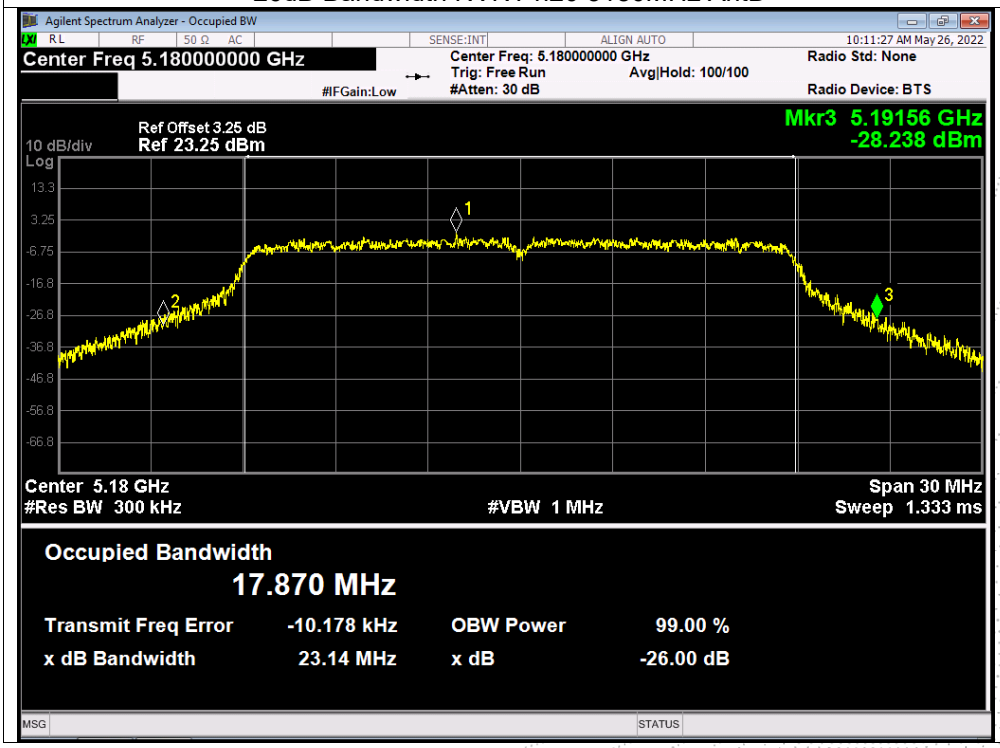
-26dB Bandwidth NVNT a 5200MHz AntD



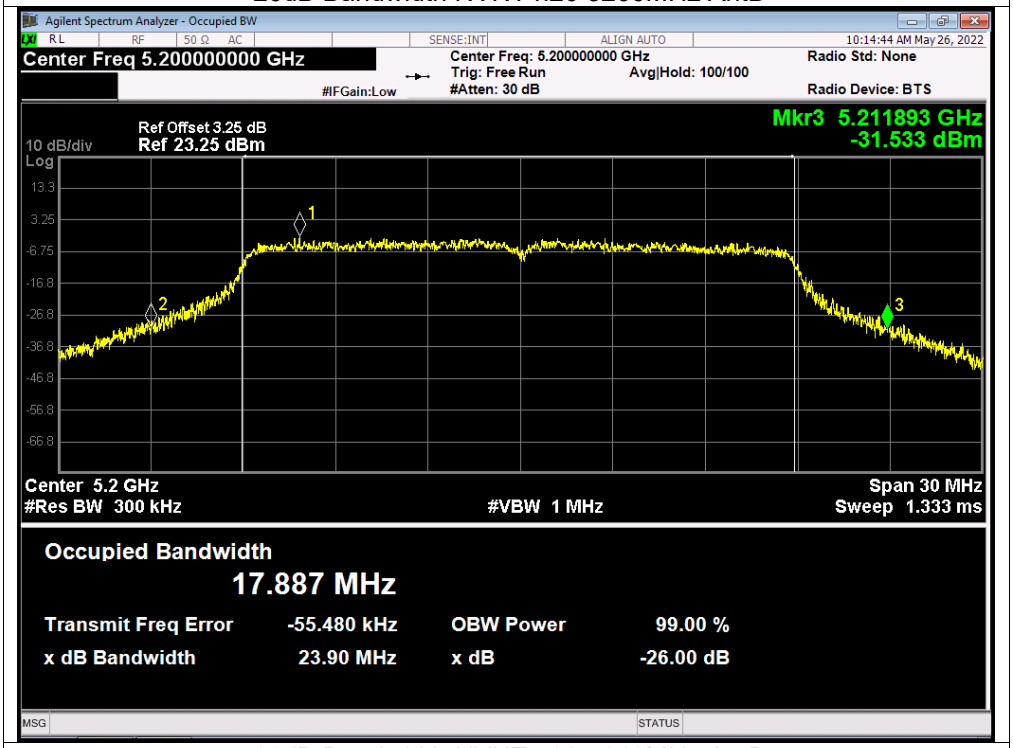
-26dB Bandwidth NVNT a 5240MHz AntD



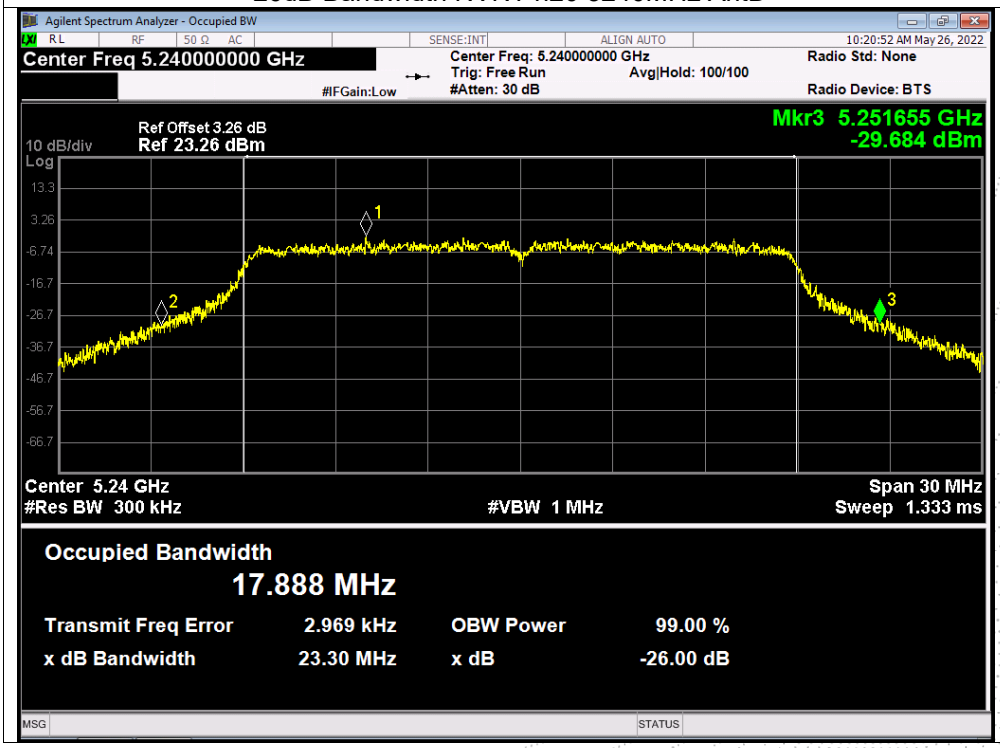
-26dB Bandwidth NVNT n20 5180MHz AntD



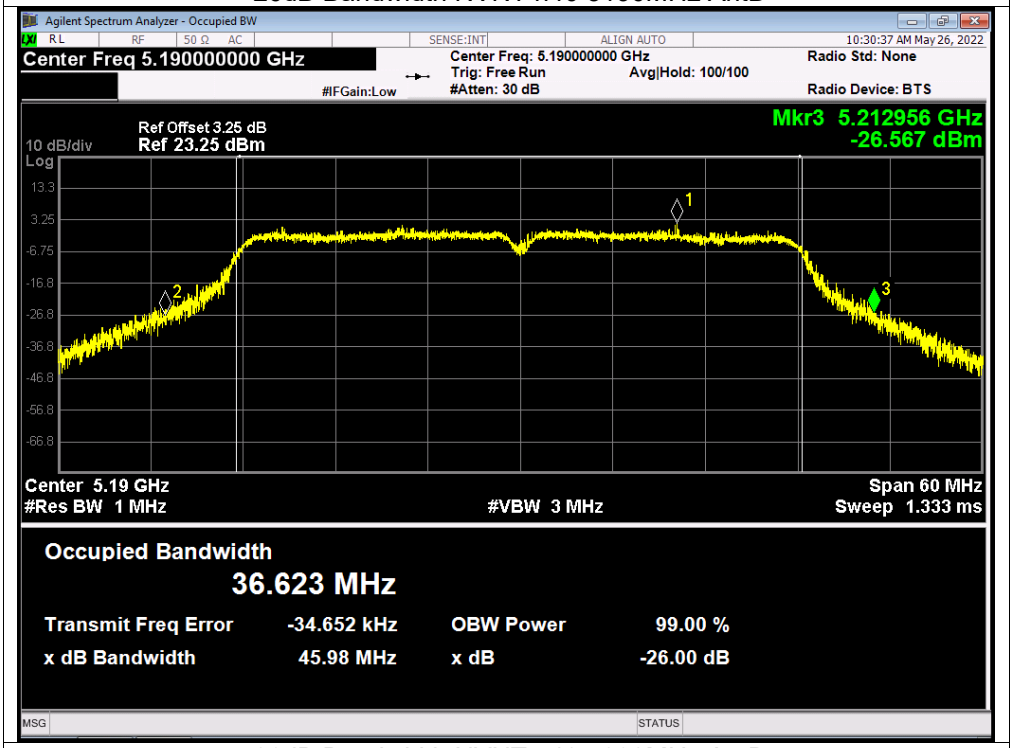
-26dB Bandwidth NVNT n20 5200MHz AntD



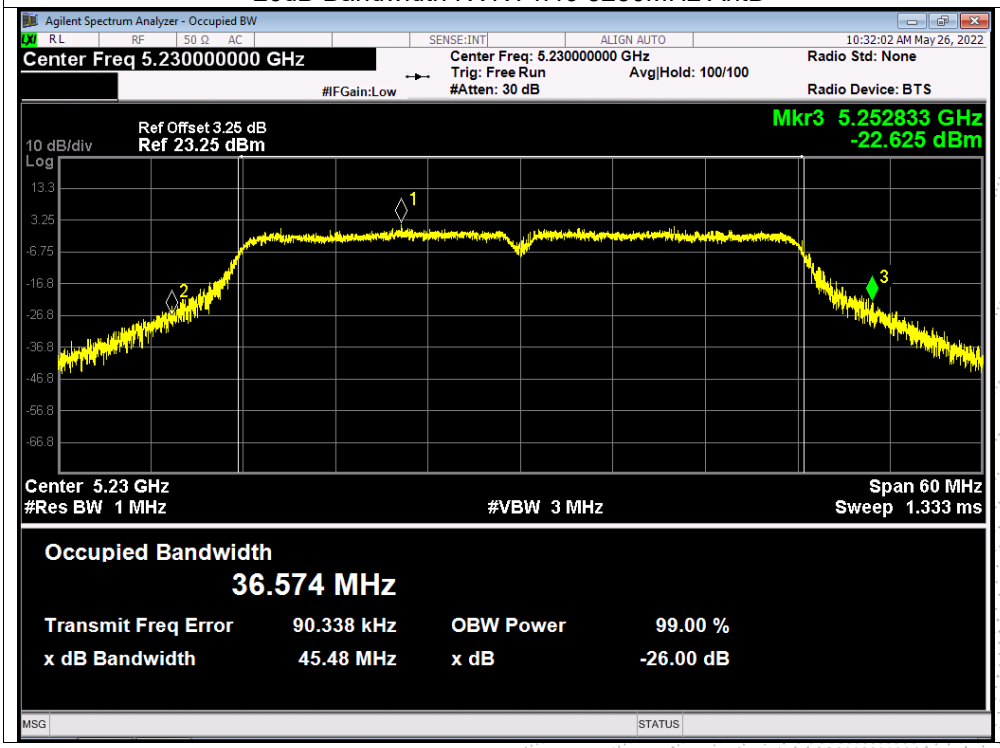
-26dB Bandwidth NVNT n20 5240MHz AntD



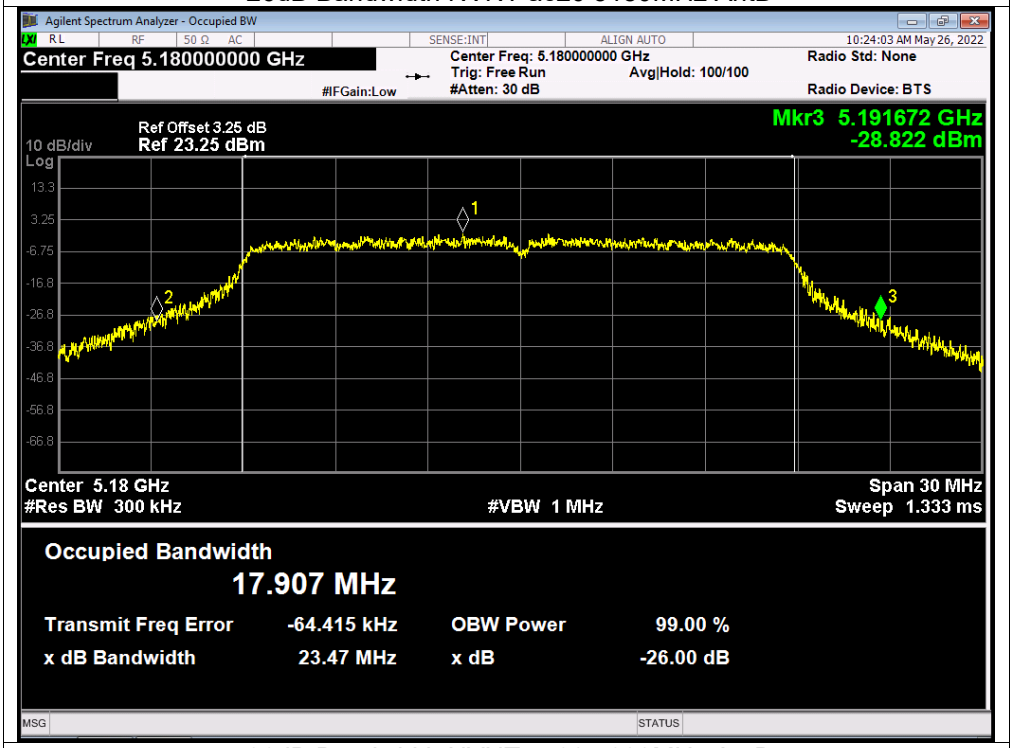
-26dB Bandwidth NVNT n40 5190MHz AntD



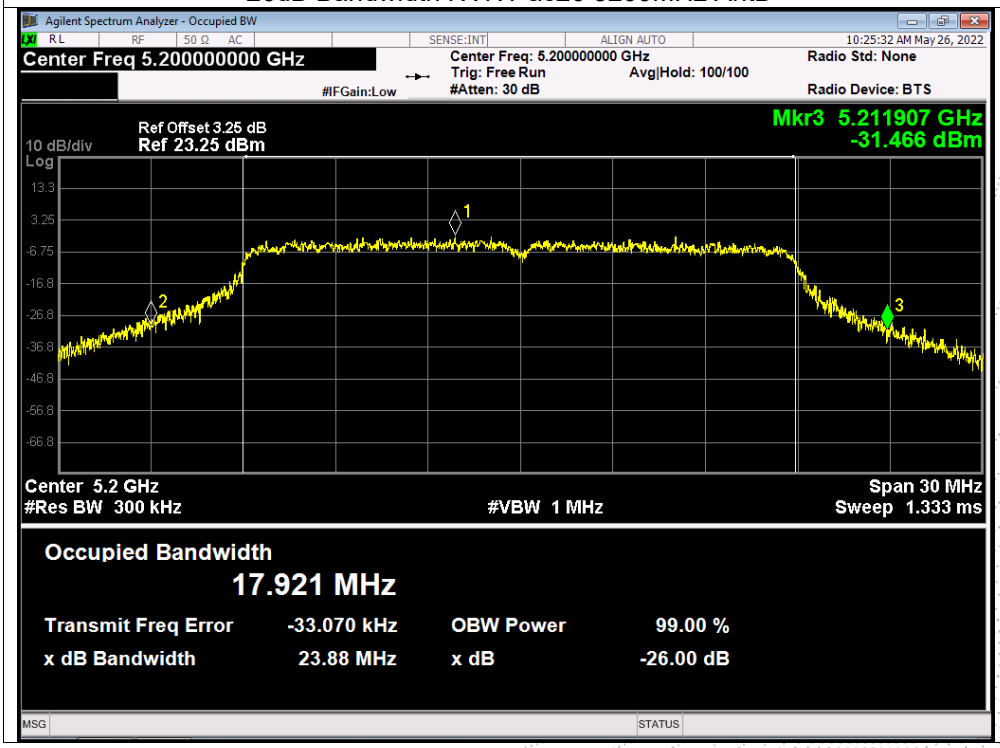
-26dB Bandwidth NVNT n40 5230MHz AntD



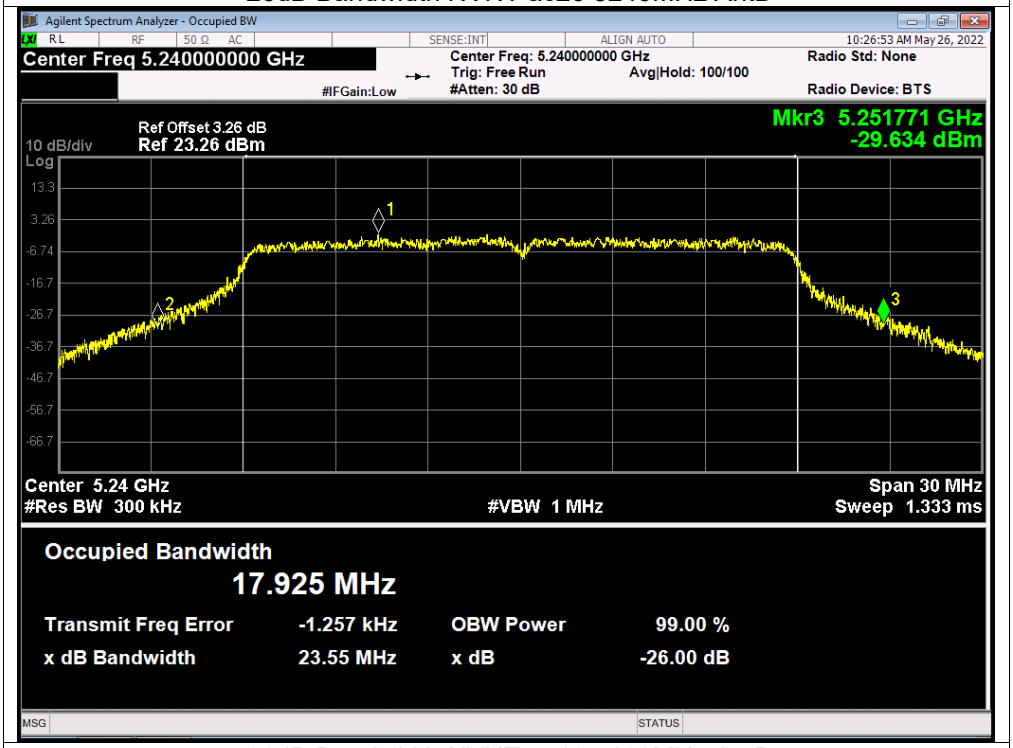
-26dB Bandwidth NVNT ac20 5180MHz AntD



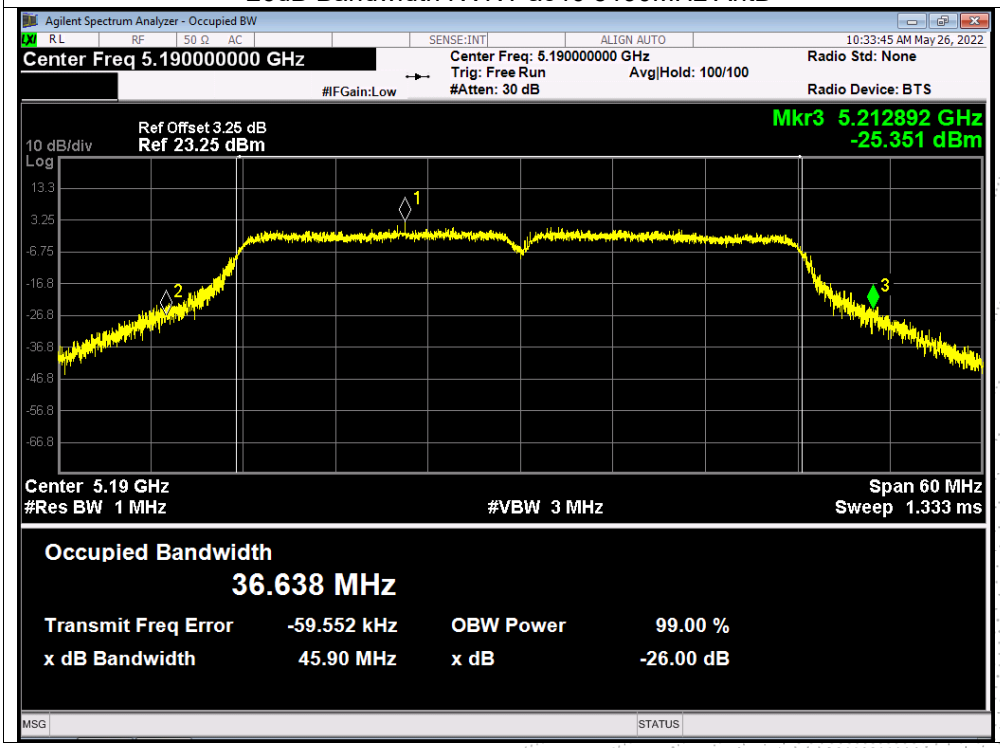
-26dB Bandwidth NVNT ac20 5200MHz AntD



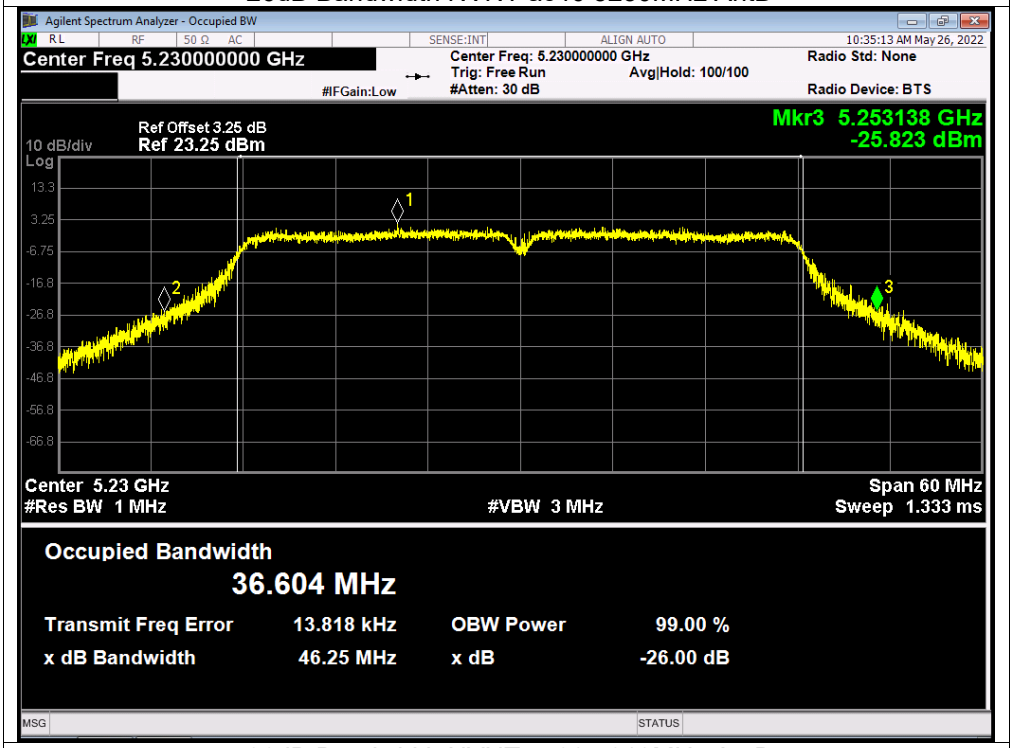
-26dB Bandwidth NVNT ac20 5240MHz AntD



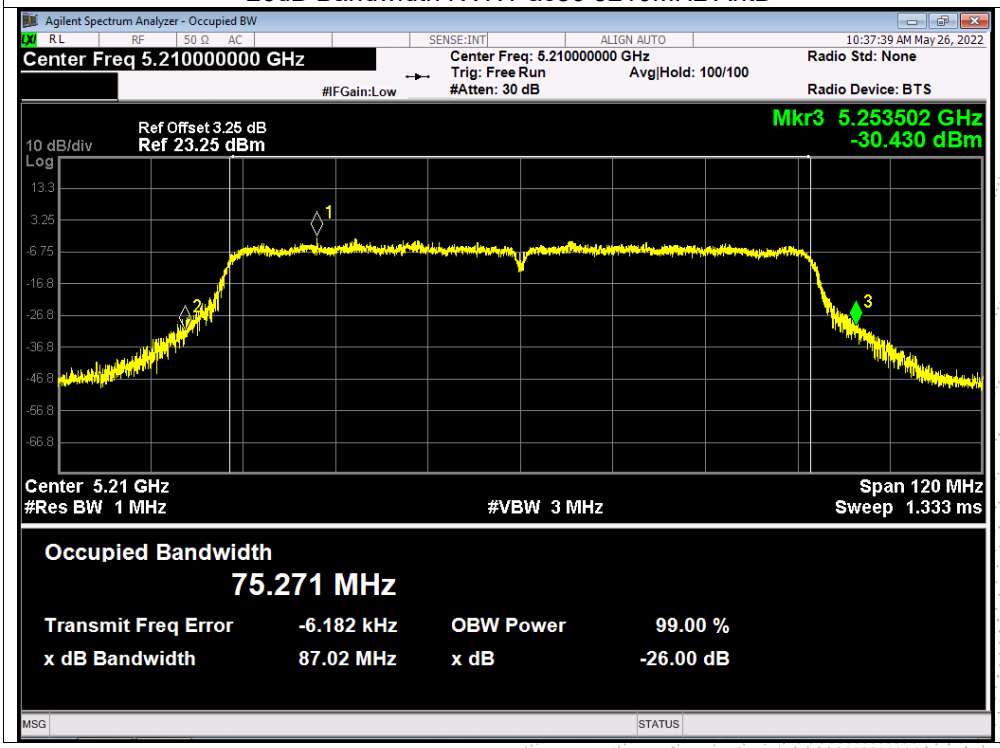
-26dB Bandwidth NVNT ac40 5190MHz AntD



-26dB Bandwidth NVNT ac40 5230MHz AntD

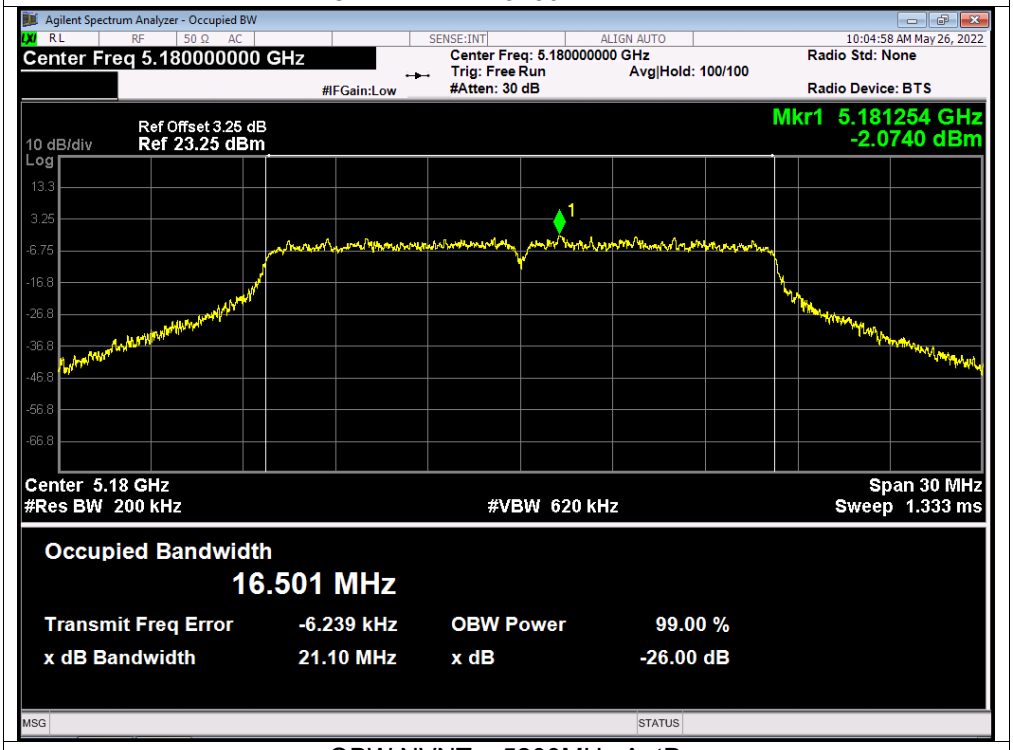


-26dB Bandwidth NVNT ac80 5210MHz AntD

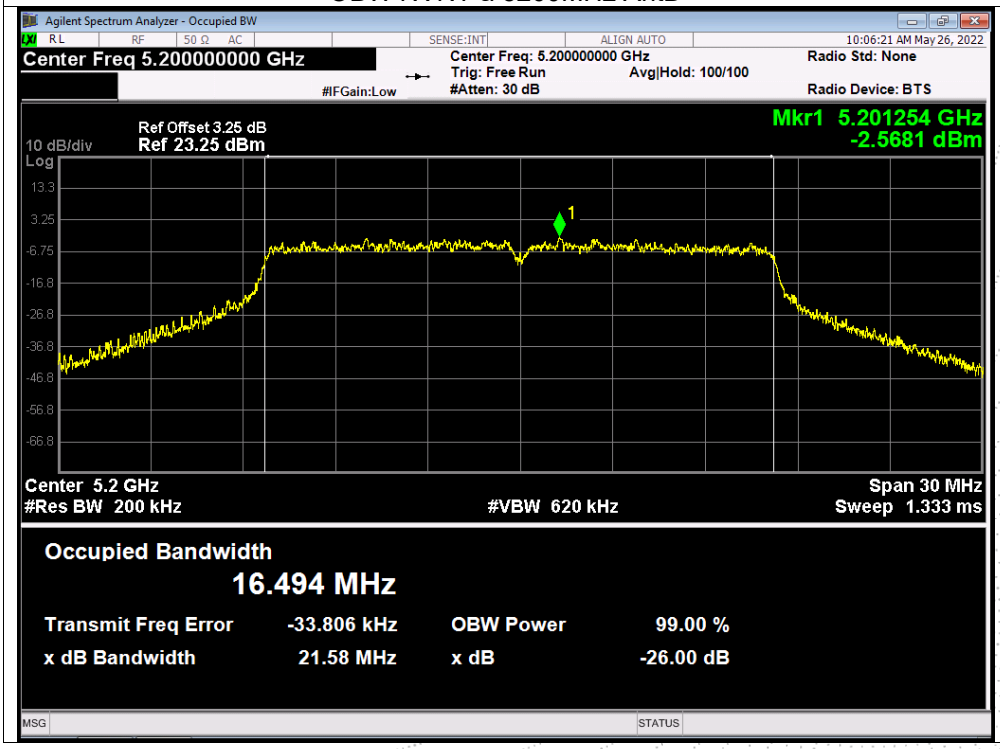


Test Graphs

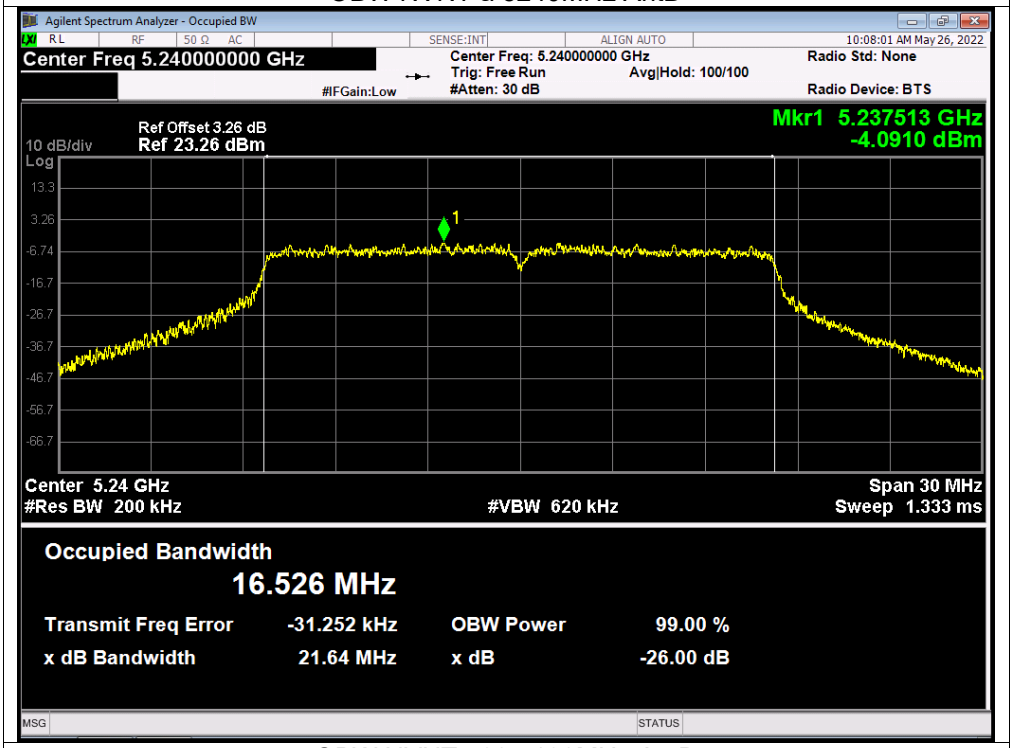
OBW NVNT a 5180MHz AntD



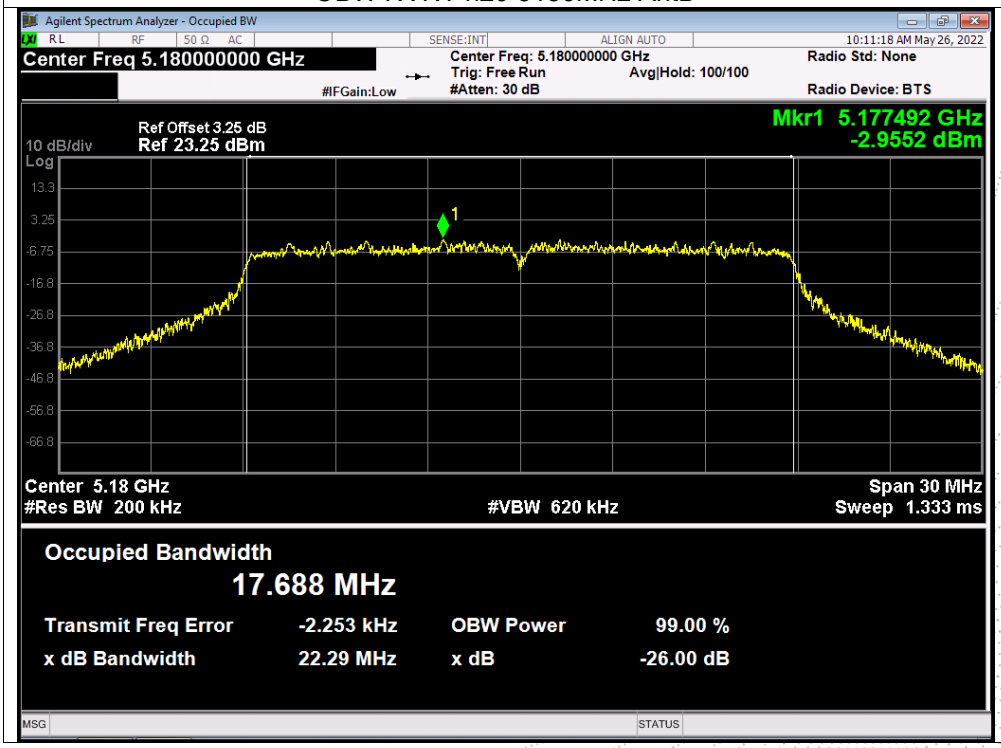
OBW NVNT a 5200MHz AntD



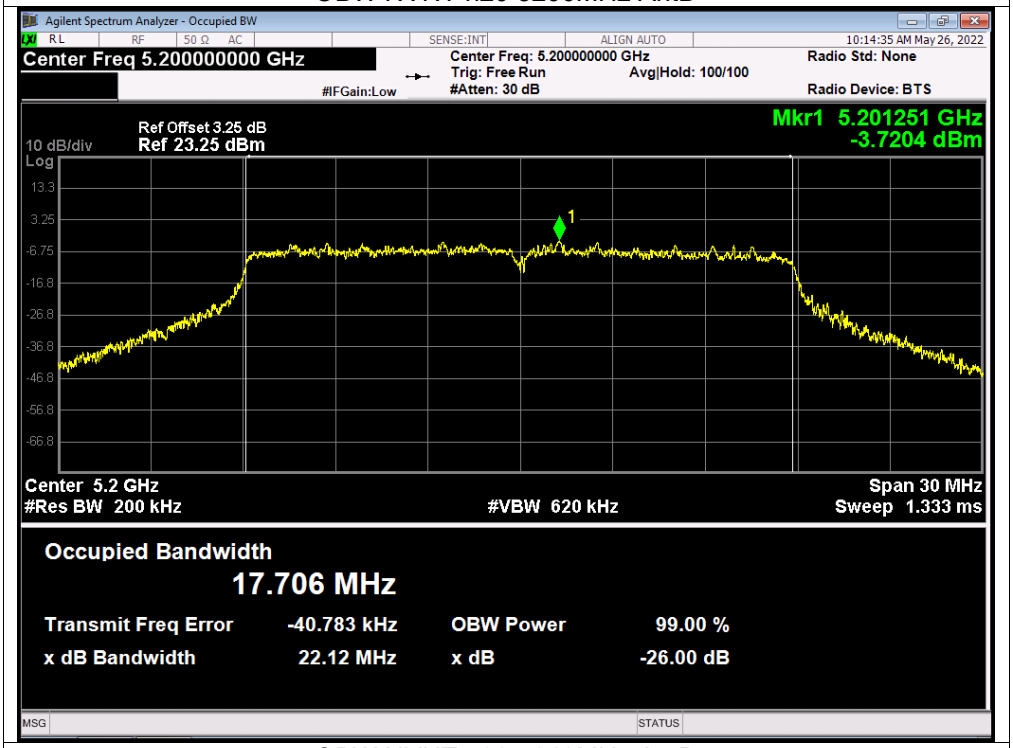
OBW NVNT a 5240MHz AntD



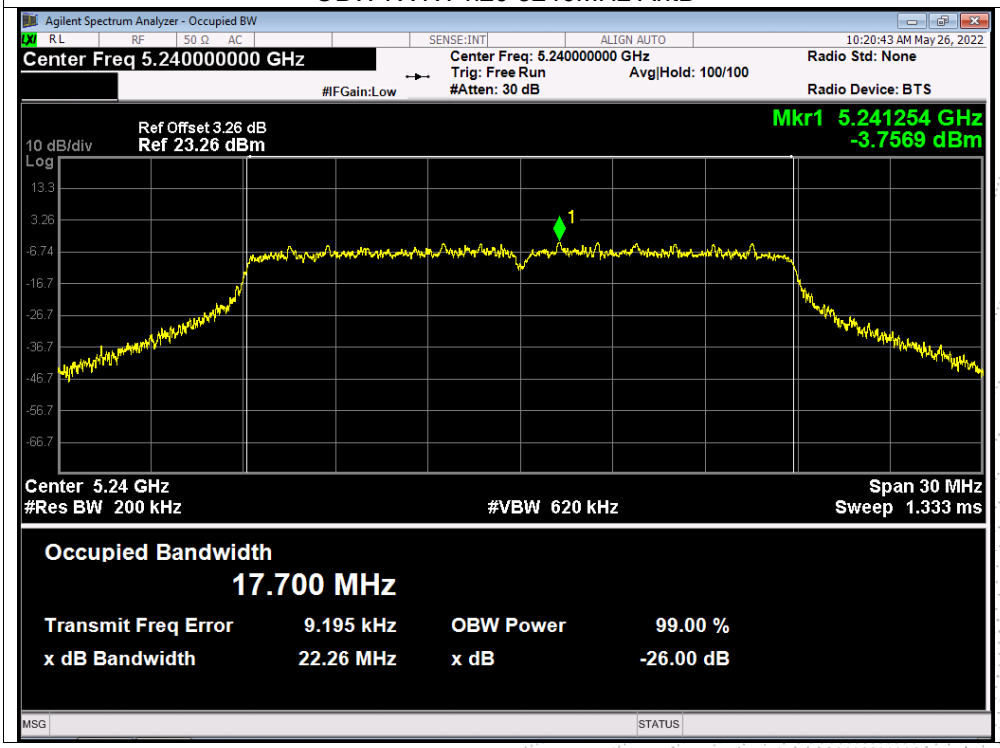
OBW NVNT n20 5180MHz AntD



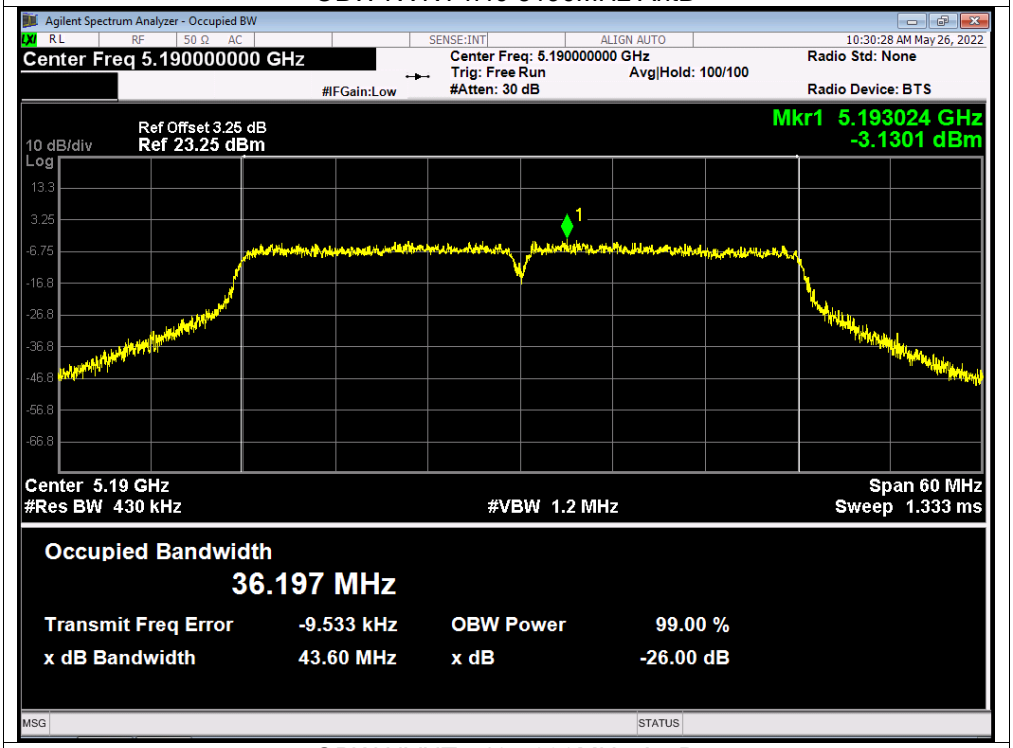
OBW NVNT n20 5200MHz AntD



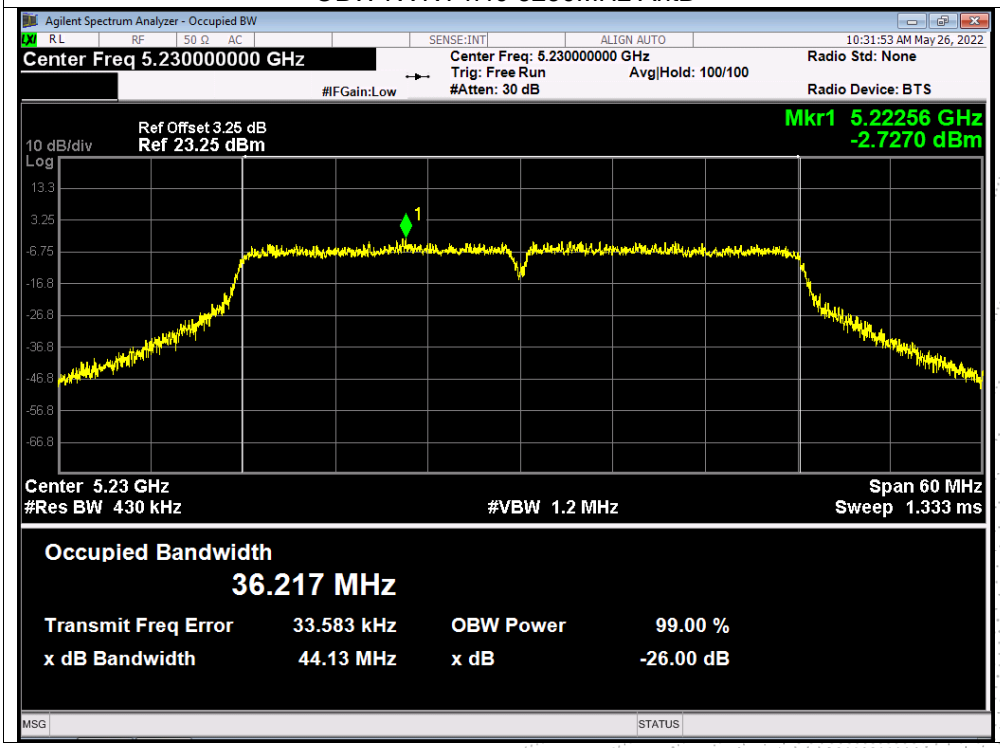
OBW NVNT n20 5240MHz AntD



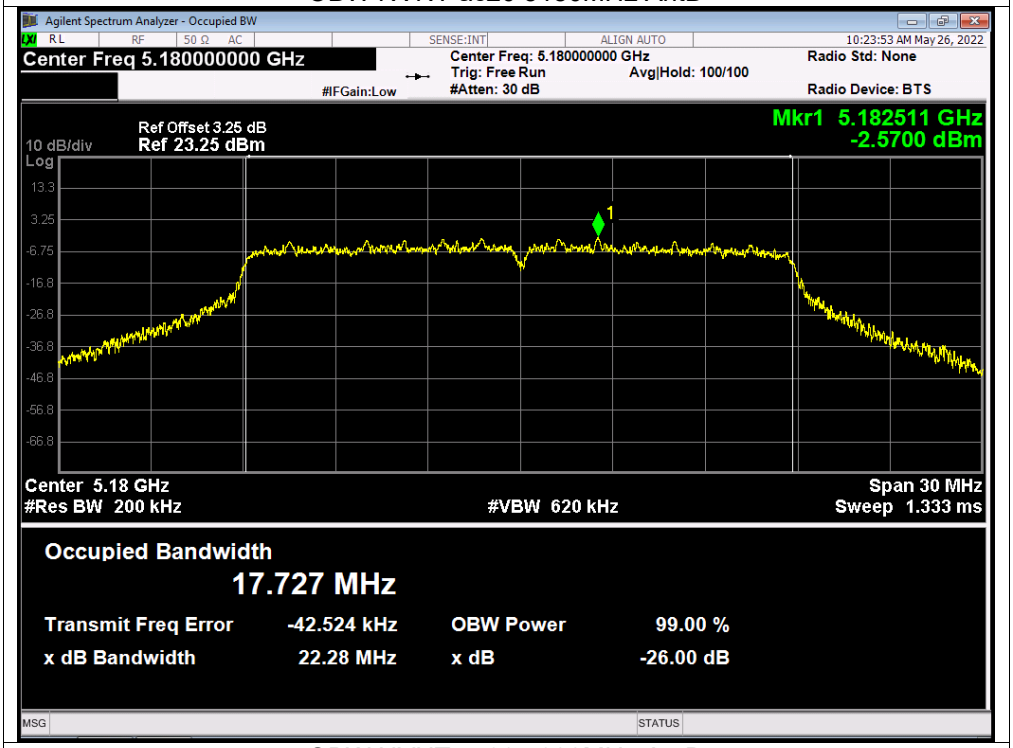
OBW NVNT n40 5190MHz AntD



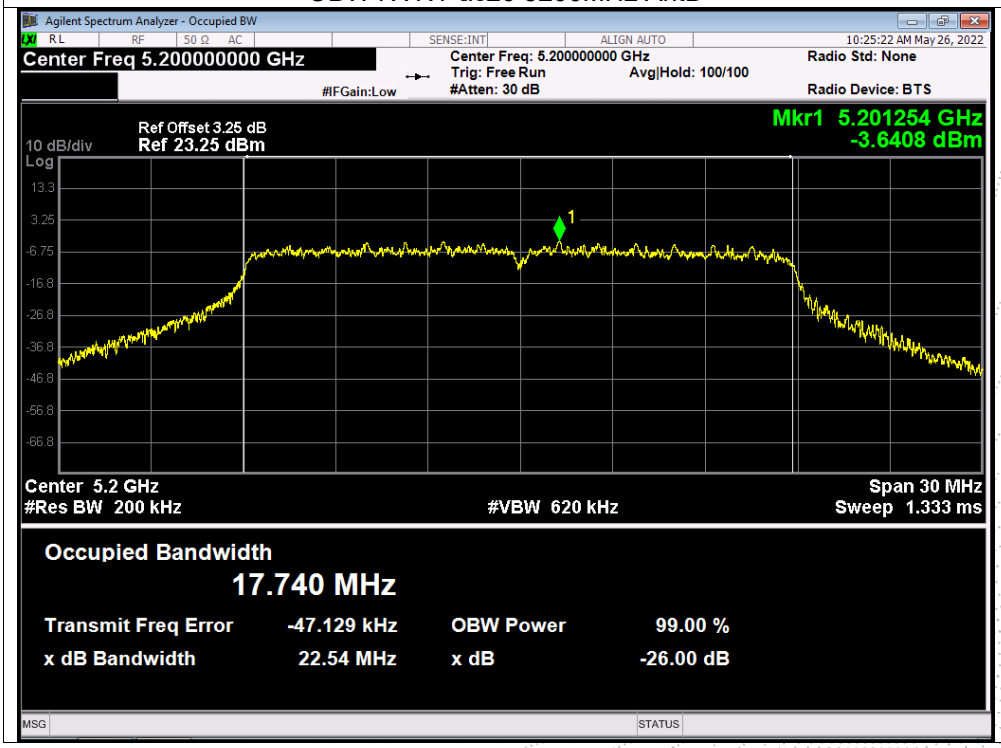
OBW NVNT n40 5230MHz AntD



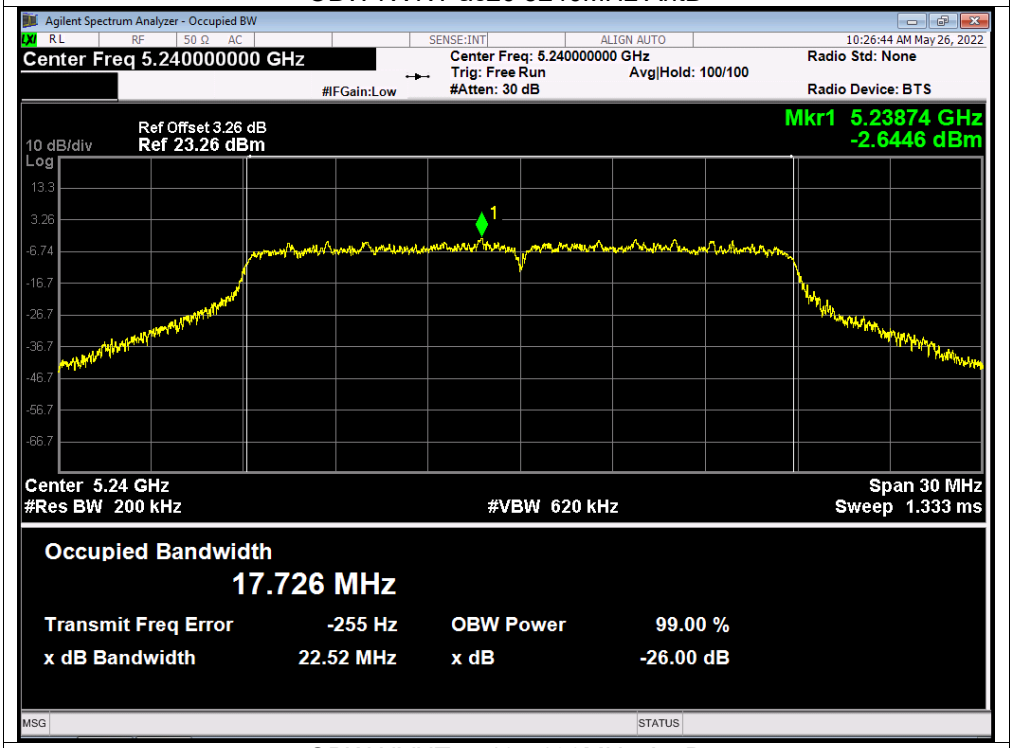
OBW NVNT ac20 5180MHz AntD



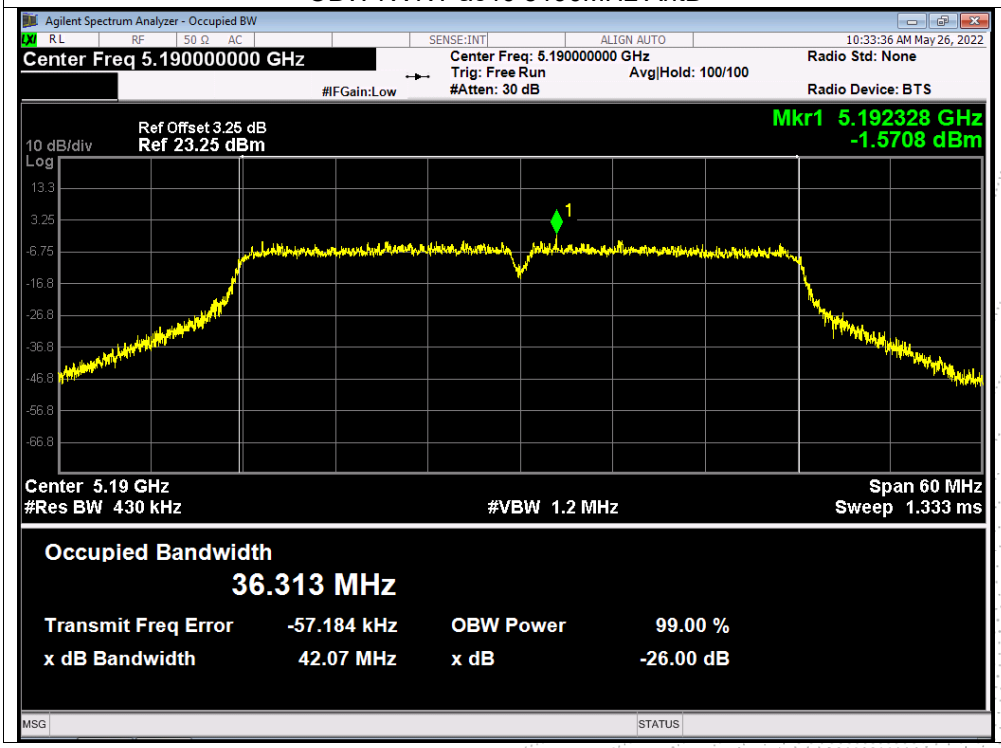
OBW NVNT ac20 5200MHz AntD



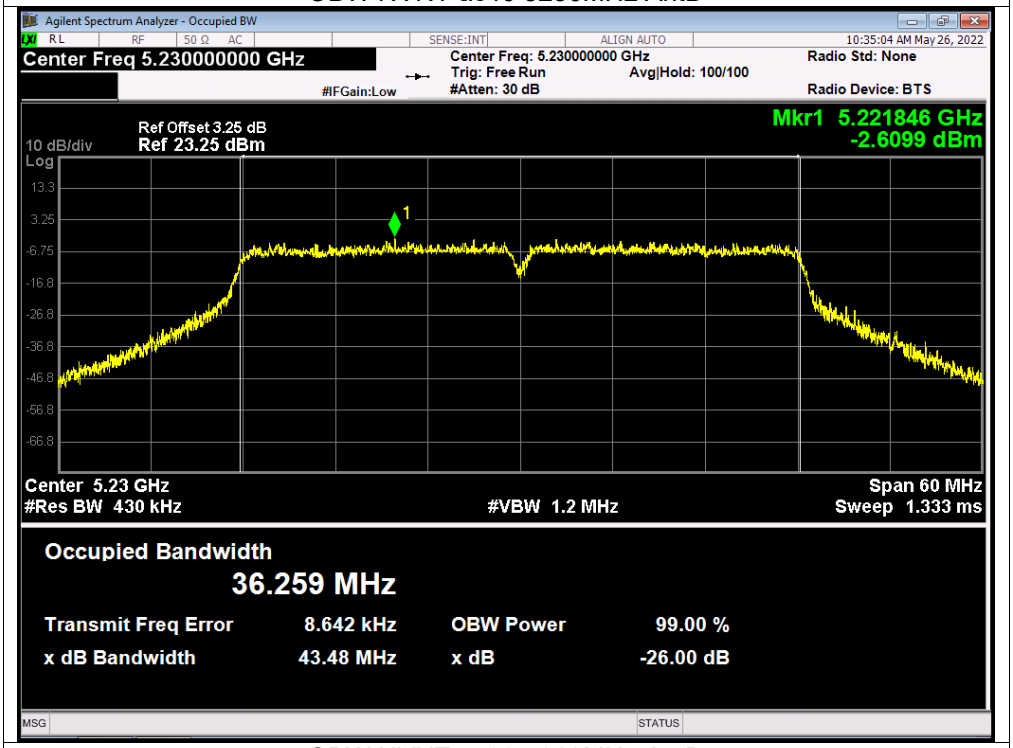
OBW NVNT ac20 5240MHz AntD



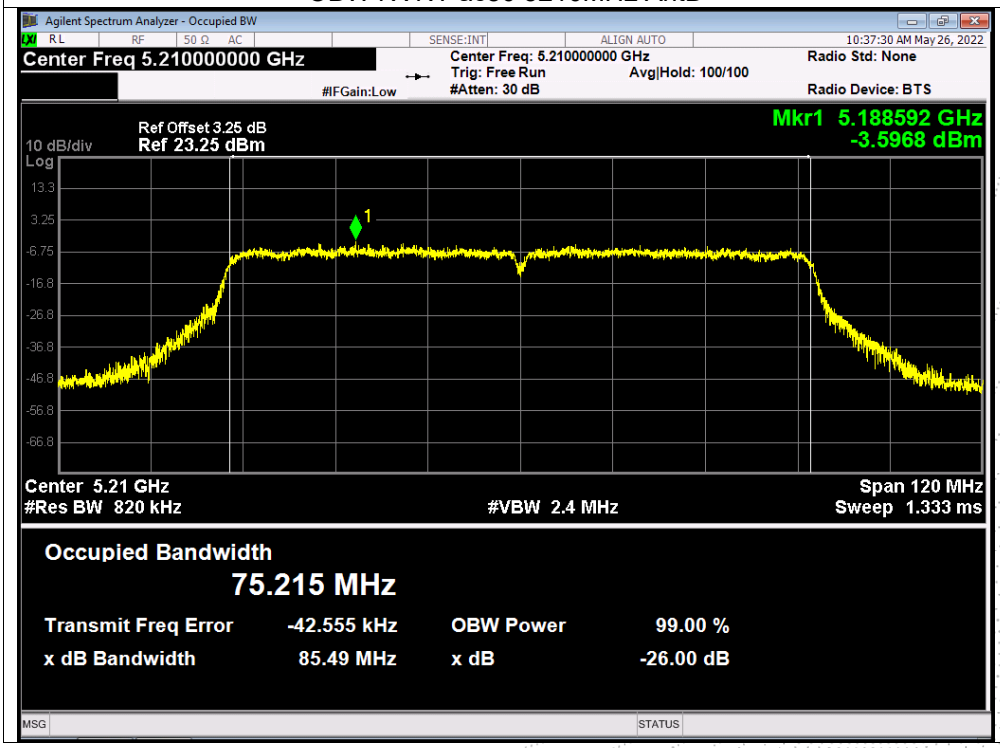
OBW NVNT ac40 5190MHz AntD



OBW NVNT ac40 5230MHz AntD



OBW NVNT ac80 5210MHz AntD



Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage ：	AC120V/60Hz
Test Mode:	TX Frequency U-NII-3(5745-5825MHz)		

Note: A\B\C\D Represent the value of antenna A\B\C\D, The worst data is Antenna C, only shown Antenna C Plot.

Mode	Channel	Frequency (MHz)	99% bandwidth(MHz)	6dB bandwidth (MHz)	Limit MHz	Result
			ANT A	ANT A		
802.11a	CH149	5745	16.567	16.365	≥500	Pass
	CH157	5785	16.506	16.385	≥500	Pass
	CH165	5825	16.466	16.371	≥500	Pass
802.11 n20	CH149	5745	17.72	17.635	≥500	Pass
	CH157	5785	17.714	17.12	≥500	Pass
	CH165	5825	17.71	16.834	≥500	Pass
802.11 n40	CH151	5755	36.186	35.59	≥500	Pass
	CH159	5795	36.241	35.414	≥500	Pass
802.11 ac20	CH149	5745	17.743	17.512	≥500	Pass
	CH157	5785	17.767	16.996	≥500	Pass
	CH165	5825	17.722	17.213	≥500	Pass
802.11 ac40	CH151	5755	36.243	35.436	≥500	Pass
	CH159	5795	36.241	35.612	≥500	Pass
802.11 ac80	CH155	5775	75.137	75.117	≥500	Pass

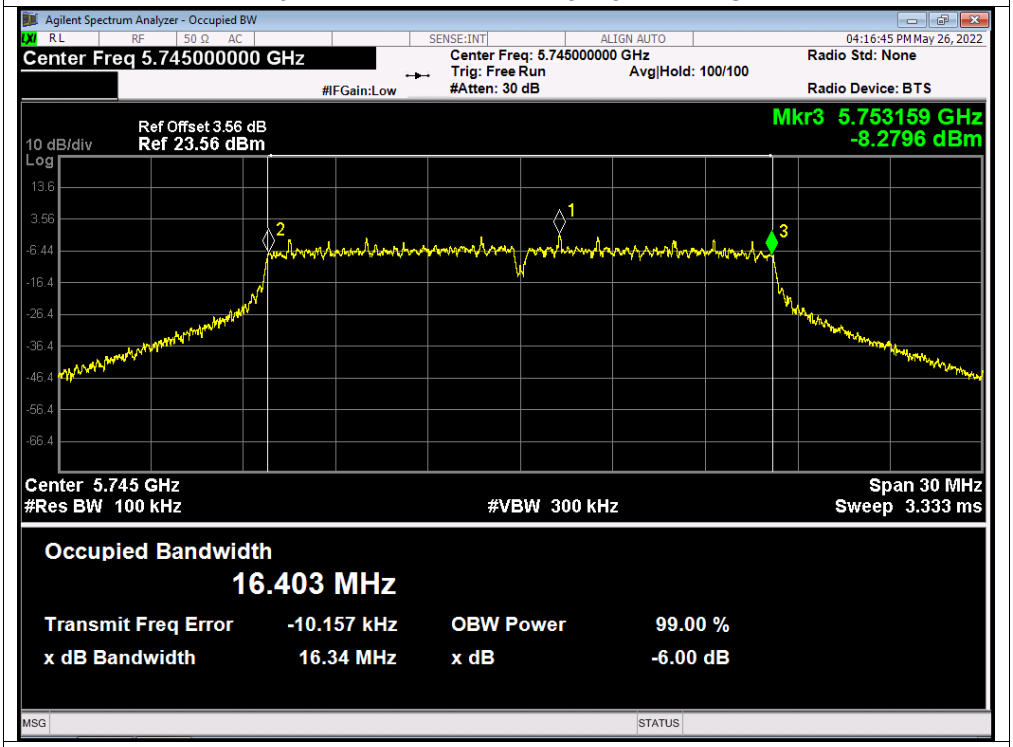
Mode	Channel	Frequency (MHz)	99% bandwidth(MHz)	6dB bandwidth (MHz)	Limit MHz	Result
			ANT B	ANT B		
802.11a	CH149	5745	16.527	16.381	≥500	Pass
	CH157	5785	16.56	16.284	≥500	Pass
	CH165	5825	16.533	16.374	≥500	Pass
802.11 n20	CH149	5745	17.714	16.911	≥500	Pass
	CH157	5785	17.72	17.098	≥500	Pass
	CH165	5825	17.71	17.578	≥500	Pass
802.11 n40	CH151	5755	36.249	35.569	≥500	Pass
	CH159	5795	36.206	35.434	≥500	Pass
802.11 ac20	CH149	5745	17.725	17.57	≥500	Pass
	CH157	5785	17.706	17.48	≥500	Pass
	CH165	5825	17.676	17.527	≥500	Pass
802.11 ac40	CH151	5755	36.267	35.604	≥500	Pass
	CH159	5795	36.227	35.312	≥500	Pass
802.11 ac80	CH155	5775	75.079	75.109	≥500	Pass

Mode	Channel	Frequency (MHz)	99% bandwidth(MHz)	6dB bandwidth (MHz)	Limit MHz	Result
			ANT C	ANT C		
802.11a	CH149	5745	16.499	16.338	≥500	Pass
	CH157	5785	16.567	16.42	≥500	Pass
	CH165	5825	16.456	16.326	≥500	Pass
802.11 n20	CH149	5745	17.714	17.557	≥500	Pass
	CH157	5785	17.727	16.93	≥500	Pass
	CH165	5825	17.701	16.688	≥500	Pass
802.11 n40	CH151	5755	36.27	35.577	≥500	Pass
	CH159	5795	36.269	35.575	≥500	Pass
802.11 ac20	CH149	5745	17.719	17.499	≥500	Pass
	CH157	5785	17.734	17.094	≥500	Pass
	CH165	5825	17.721	16.749	≥500	Pass
802.11 ac40	CH151	5755	36.283	35.586	≥500	Pass
	CH159	5795	36.244	35.356	≥500	Pass
802.11 ac80	CH155	5775	**75.206**	75.126	≥500	Pass

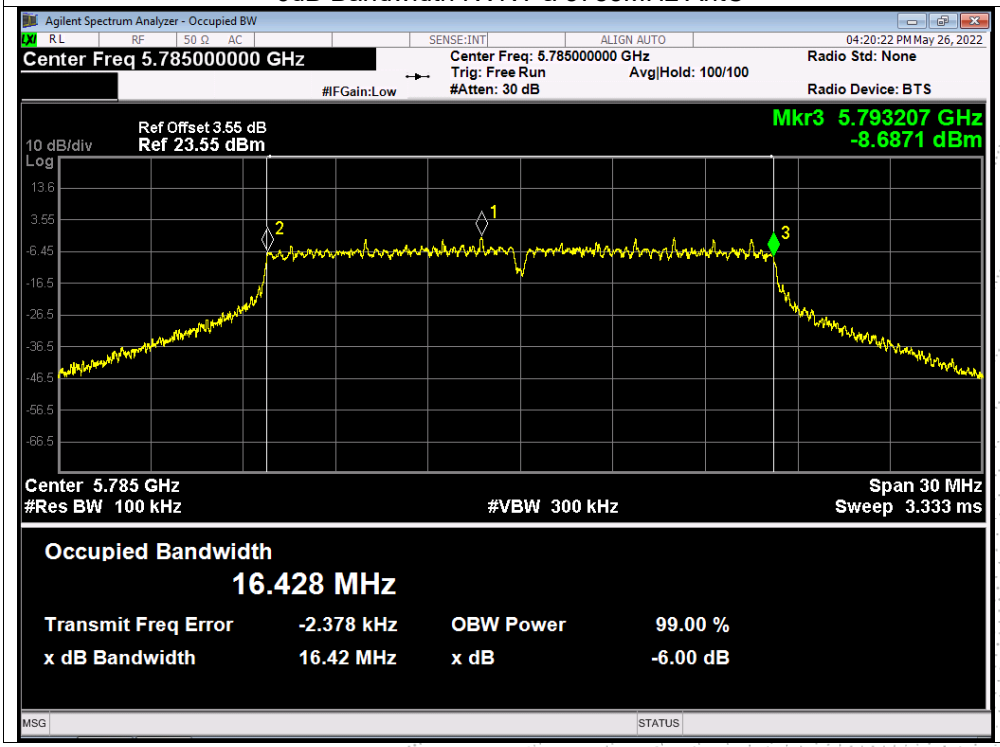
Mode	Channel	Frequency (MHz)	99% bandwidth(MHz)	6dB bandwidth (MHz)	Limit MHz	Result
			ANT D	ANT D		
802.11a	CH149	5745	16.524	16.314	≥500	Pass
	CH157	5785	16.5	16.345	≥500	Pass
	CH165	5825	16.496	16.356	≥500	Pass
802.11 n20	CH149	5745	17.737	17.094	≥500	Pass
	CH157	5785	17.724	17.144	≥500	Pass
	CH165	5825	17.719	17.518	≥500	Pass
802.11 n40	CH151	5755	36.221	35.714	≥500	Pass
	CH159	5795	36.245	35.406	≥500	Pass
802.11 ac20	CH149	5745	17.751	17.422	≥500	Pass
	CH157	5785	17.749	17.036	≥500	Pass
	CH165	5825	17.745	17.419	≥500	Pass
802.11 ac40	CH151	5755	36.242	35.388	≥500	Pass
	CH159	5795	36.29	35.436	≥500	Pass
802.11 ac80	CH155	5775	75.146	75.128	≥500	Pass

Test Graphs

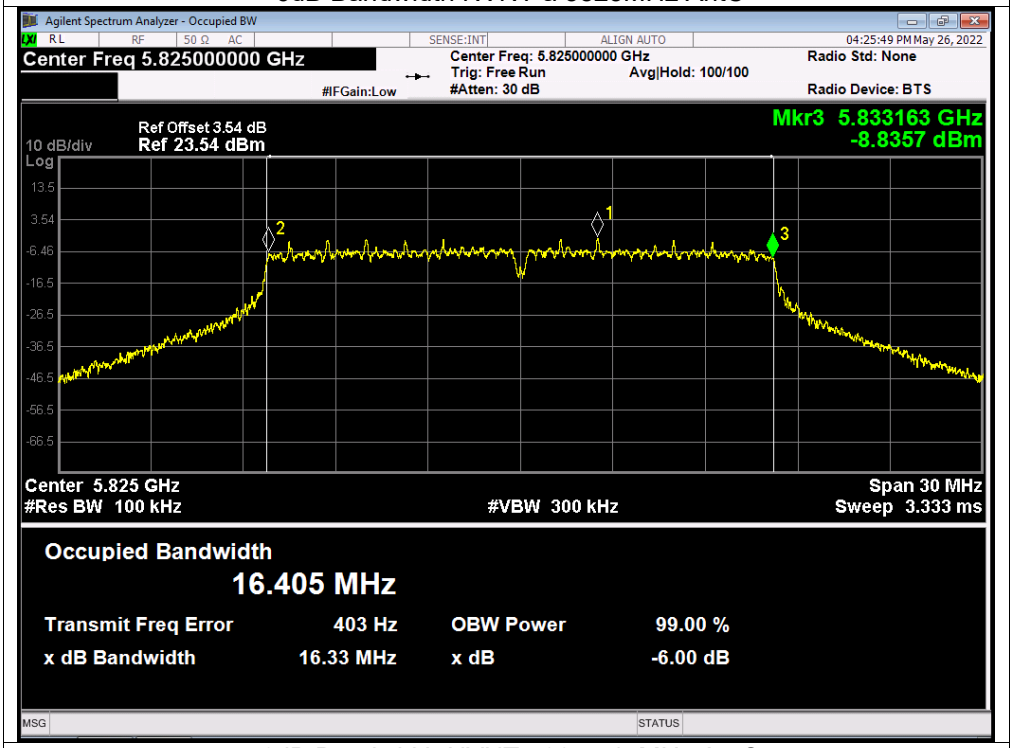
-6dB Bandwidth NVNT a 5745MHz AntC



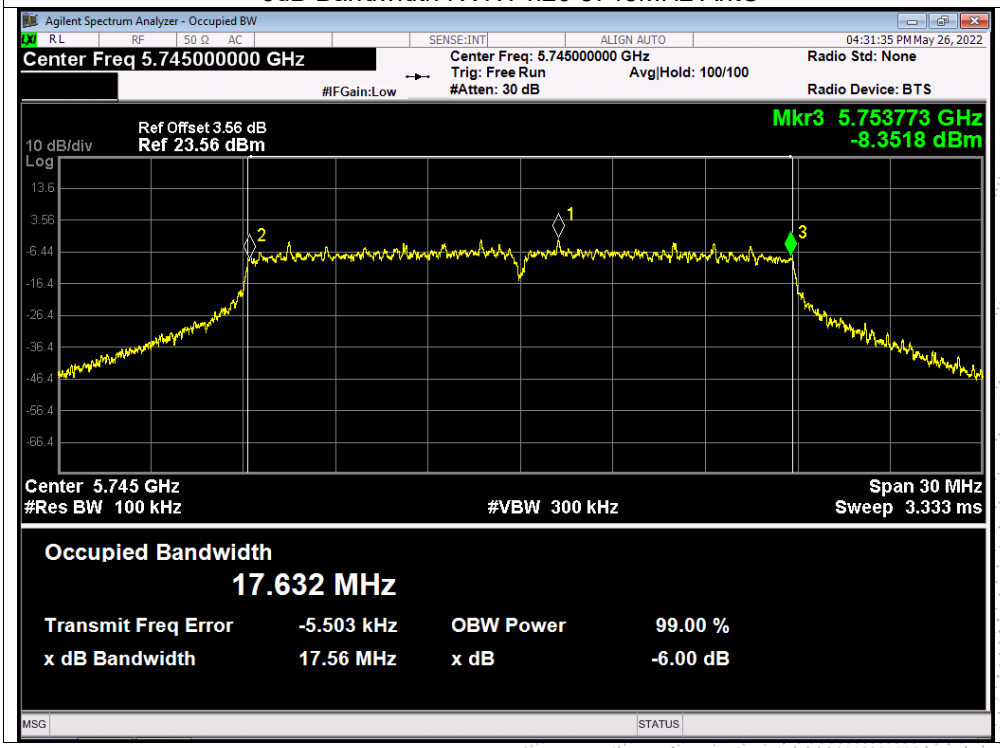
-6dB Bandwidth NVNT a 5785MHz AntC



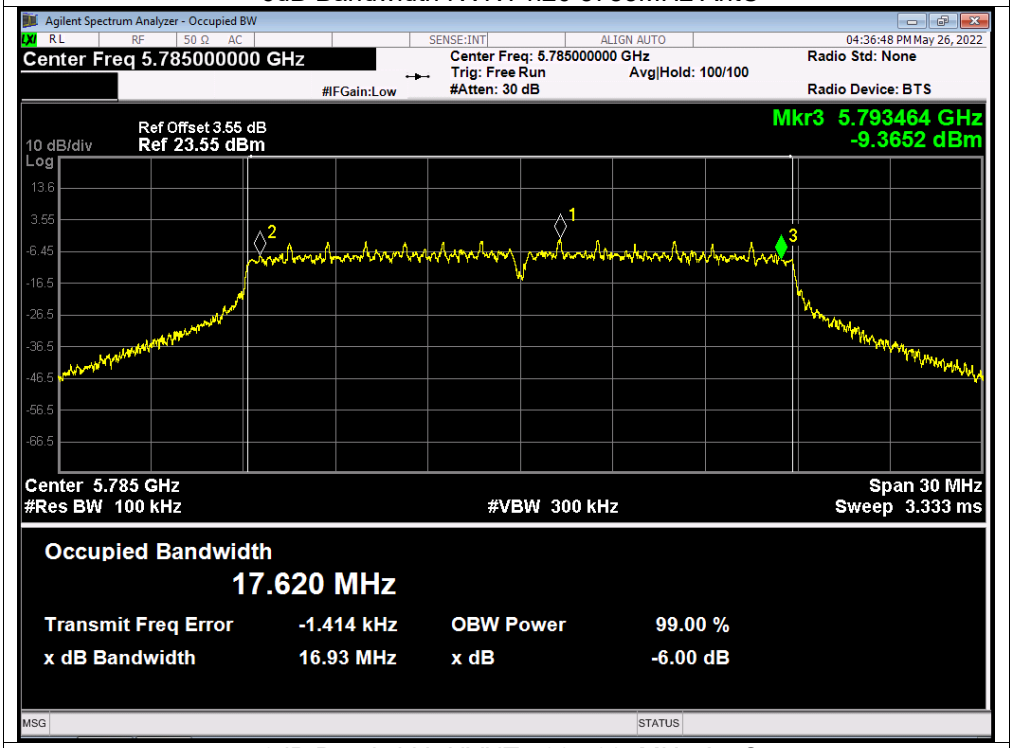
-6dB Bandwidth NVNT a 5825MHz AntC



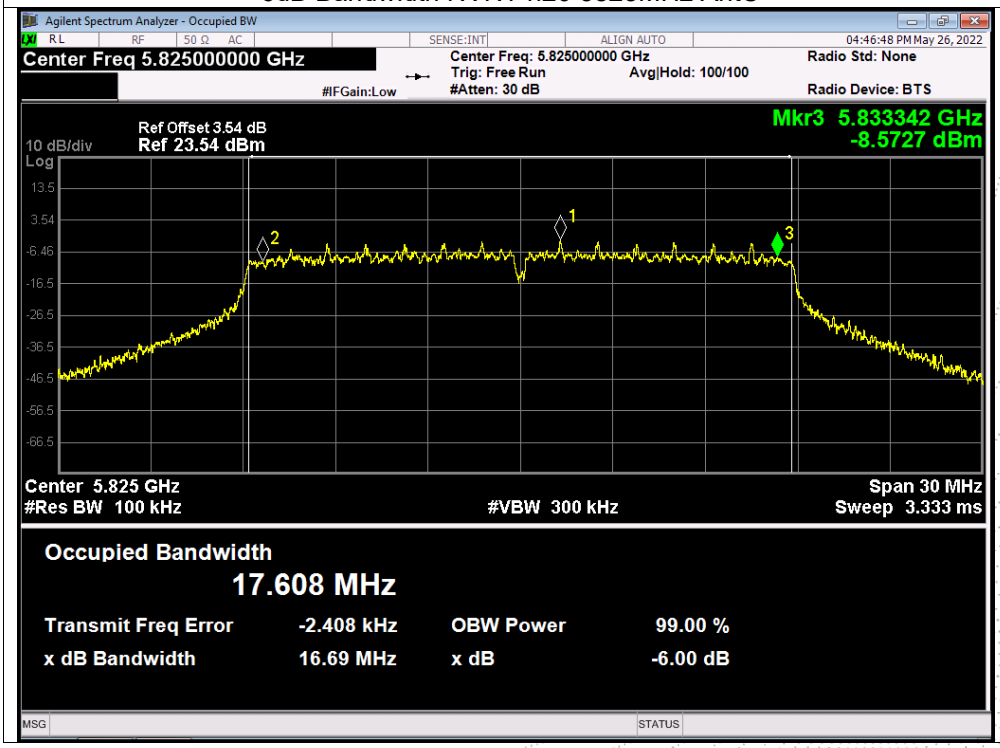
-6dB Bandwidth NVNT n20 5745MHz AntC



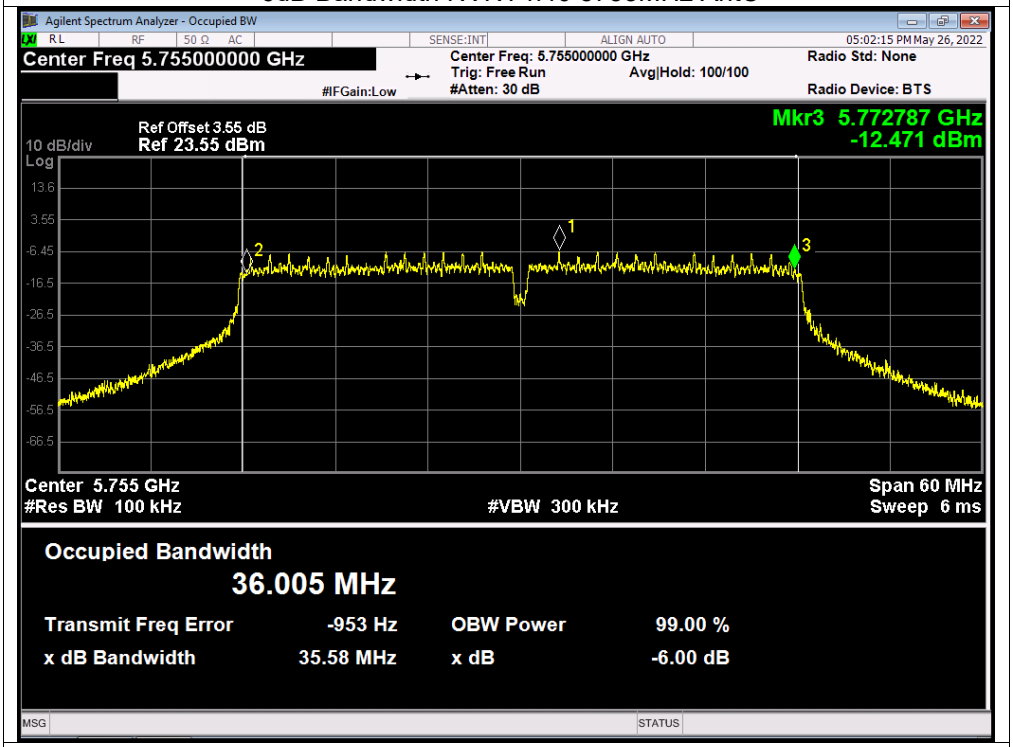
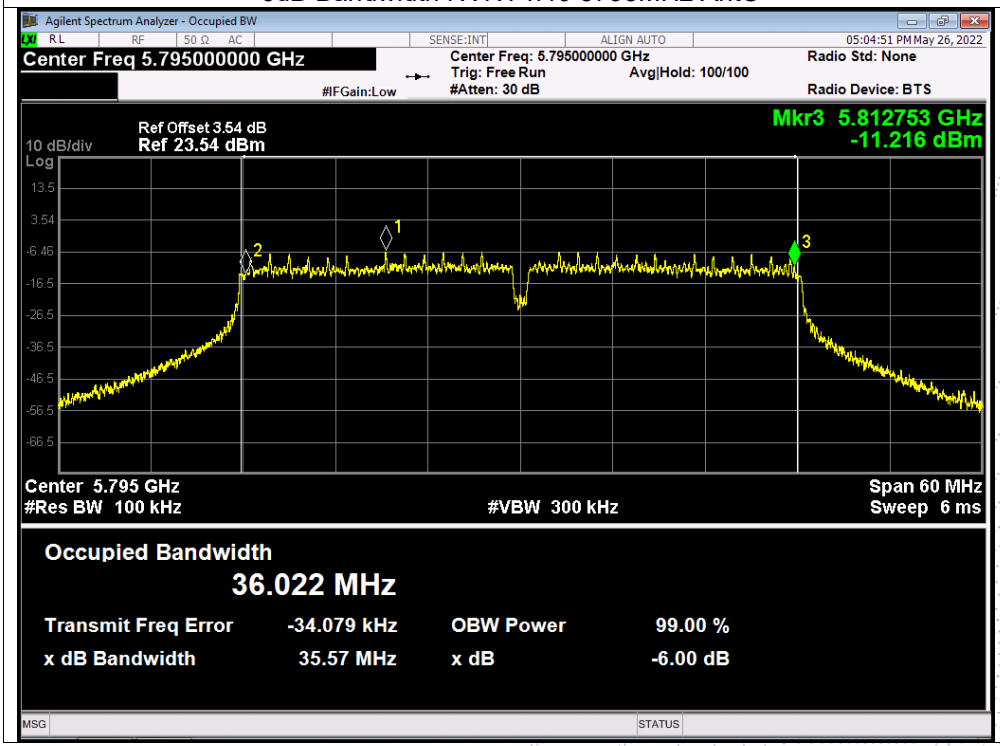
-6dB Bandwidth NVNT n20 5785MHz AntC



-6dB Bandwidth NVNT n20 5825MHz AntC



-6dB Bandwidth NVNT n40 5755MHz AntC



-6dB Bandwidth NVNT n40 5795MHz AntC