TEST REPORT

Report No.:	BCTC2505461729-3E
Applicant:	DP AUDIO VIDEO LLC
Product Name:	65″ 4K SMART LED TV
Test Model:	NVTV650SM
Tested Date:	2025-05-26 to 2025-06-04
Issued Date:	2025-06-04

Shenzhen BCTC Testing Co., Ltd.

FCC ID: 2AVRVNVTV650SM

Product Name:	65” 4K SMART LED TV
Trademark:	NAVATV, DuraPro, OrcaTV, Core Innovations
Model/Type reference:	NVTV650SM DRPTV650SM, CRTV650SM, ORTV650SM
Prepared For:	DP AUDIO VIDEO LLC
Address:	1001 Gayley Avenue P.O. Box 24857, Los Angeles, California, United States 90024
Manufacturer:	GANZHOU CITY MOSWS ELECTRONICS LTD
Address:	SOUTH OF JINLINGXI ROAD, EAST OF QIFENGSHAN ROAD, GANZHOU DEVELOPMENT AREA GANZHOU CITY, JIANGXI PROVINCE, CHINA
Prepared By:	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
Sample Received Date:	2025-05-26
Sample tested Date:	2025-05-26 to 2025-06-04
Issue Date:	2025-06-04
Report No.:	BCTC2505461729-3E
Test Standards:	FCC Part15 15.407 ANSI C63.10-2013 KDB 662911 D01 v02r01 KDB 789033 D02 v02r01
Test Results:	PASS

Tested by:

Lei Chen

Lei Chen/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
BCTC2505461729-3E	2025-06-04	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

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℃

4. Product Information And Test Setup

4.1 Product Information

Model/Type reference:	NVTV650SM DRPTV650SM, CRTV650SM, ORTV650SM
Model differences:	All the model are the same circuit and RF module, except model names and brand.
Hardware Version:	N/A
Software Version:	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 ac(HT80);
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-MCS9
Type of Modulation:	OFDM with BPSK/QPSK/16QAM/64QAM/256QAM for 802.11a/n/ac;
Number Of Channel	4 channels for 802.11a/n20/ac20 in the 5180-5240MHz band ; 2 channels for 802.11 n40/ac40 in the 5190-5230MHz band ; 1 channels for 802.11 ac80 in the 5210MHz band ;
Antenna installation:	Internal antenna*2
Antenna Gain:	Antenna A&B: 2.52 dBi Remark: ☒ The antenna gain of the product comes from the antenna report provided by the customer, and the test data is affected by the customer information. ☐ The antenna gain of the product is provided by the customer, and the test data is affected by the customer information.
Ratings:	AC 100-240V 50/60Hz

4.2 Test Setup Configuration

See test photographs attached in *EUT TEST SETUP PHOTOGRAPHS* for the actual connections between Product and support equipment.

4.3 Support Equipment

No.	Device Type	Brand	Model	Series No.	Note
E-1	65" 4K SMART LED TV	NAVATV, DuraPro, OrcaTV	NVTV650SM	N/A	EUT
E-2	PC	Lenovo	ThinkPad E15 Gen2	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

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	WIFI Linking (Conducted emission & Radiated emission)

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

4.6 Table Of Parameters Of Text Software Setting

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

Test software Version	MPTool		
Parameters	DEF	DEF	DEF

4.7 Antenna

5G
1)For power spectral density(PSD) measurements,
Array Gain=10log(NANT/NSS)dB=10log(2/1)=3.01dB,
So the directional gain for PSD is 5.53 dBi
2)For power measurements,
The Array gain=0 dB for NANT≤4,
So the directional gain for Power measurements is 2.52 dBi

Antenna	Brand	Model Name	Antenna Type	Gain (dBi)	NOTE
A	N/A	N/A	Internal antenna	2.52	N/A
B	N/A	N/A	Internal antenna	2.52	N/A

Directional gain may be calculated by using the formulas applicable to equal gain antennas with GANT set equal to the gain of the antenna having the highest gain.

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

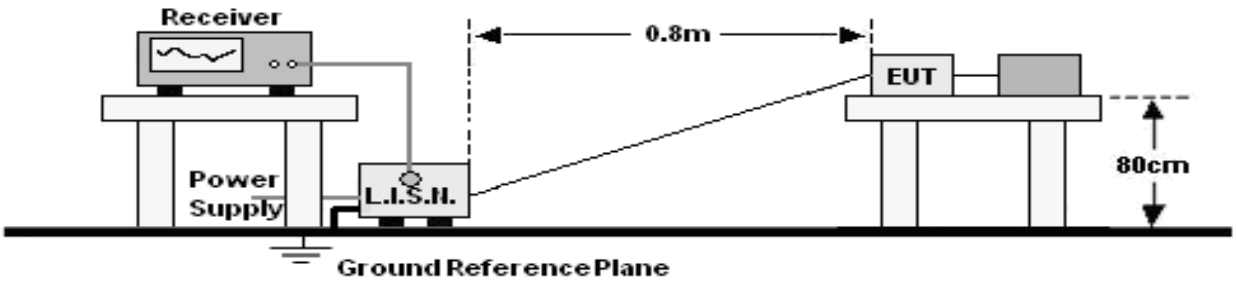
Conducted Emissions Test					
Equipment	**Manufacturer**	**Model#**	**Serial#**	**Last Cal.**	**Next Cal.**
Receiver	R&S	ESR	102075	May 08, 2025	May 07, 2026
LISN	R&S	ENV216	101375	May 14, 2025	May 13, 2026
Software	Frad	EZ-EMC	EMC-CON 3A1	\	\
Pulse limiter	Schwarzbeck	VTSD9561-F	01323	May 14, 2025	May 13, 2026

RF Conducted Test					
Equipment	**Manufacturer**	**Model#**	**Serial#**	**Last Cal.**	**Next Cal.**
Power metter	Keysight	E4419	\	May 14, 2025	May 13, 2026
Power Sensor (AV)	Keysight	E9300A	\	May 14, 2025	May 13, 2026
Signal Analyzer20kHz-26.5GHz	Keysight	N9020A	MY49100060	May 14, 2025	May 13, 2026
Spectrum Analyzer9kHz-40GHz	R&S	FSP40	100363	May 14, 2025	May 13, 2026
Radio frequency control box	MAIWEI	MW100-RFCB	\	\	\
Software	MAIWEI	MTS 8310	\	\	\

Radiated Emissions Test (966 Chamber01)					
Equipment	**Manufacturer**	**Model#**	**Serial#**	**Last Cal.**	**Next Cal.**
966 chamber	ChengYu	966 Room	966	May 15, 2023	May 14, 2026
Receiver	R&S	ESR	102075	May 08, 2025	May 07, 2026
Receiver	R&S	ESRP	101154	May 14, 2025	May 13, 2026
Amplifier	Schwarzbeck	BBV9744	9744-0037	May 14, 2025	May 13, 2026
TRILOG Broadband Antenna	Schwarzbeck	VULB9163	942	May 24, 2025	May 23, 2026
Loop Antenna(9KHz -30MHz)	Schwarzbeck	FMZB1519B	00014	May 24, 2025	May 23, 2026
Amplifier	SKET	LAPA_01G18G-45dB	SK2021040901	May 14, 2025	May 13, 2026
Horn Antenna	Schwarzbeck	BBHA9120D	1541	May 24, 2025	May 23, 2026
Amplifier(18GHz-40GHz)	MITEQ	TTA1840-35-HG	2034381	May 24, 2025	May 23, 2026
Horn Antenna(18GHz-40GHz)	Schwarzbeck	BBHA9170	00822	May 24, 2025	May 23, 2026
Spectrum Analyzer9kHz-40GHz	R&S	FSP40	100363	May 14, 2025	May 13, 2026
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

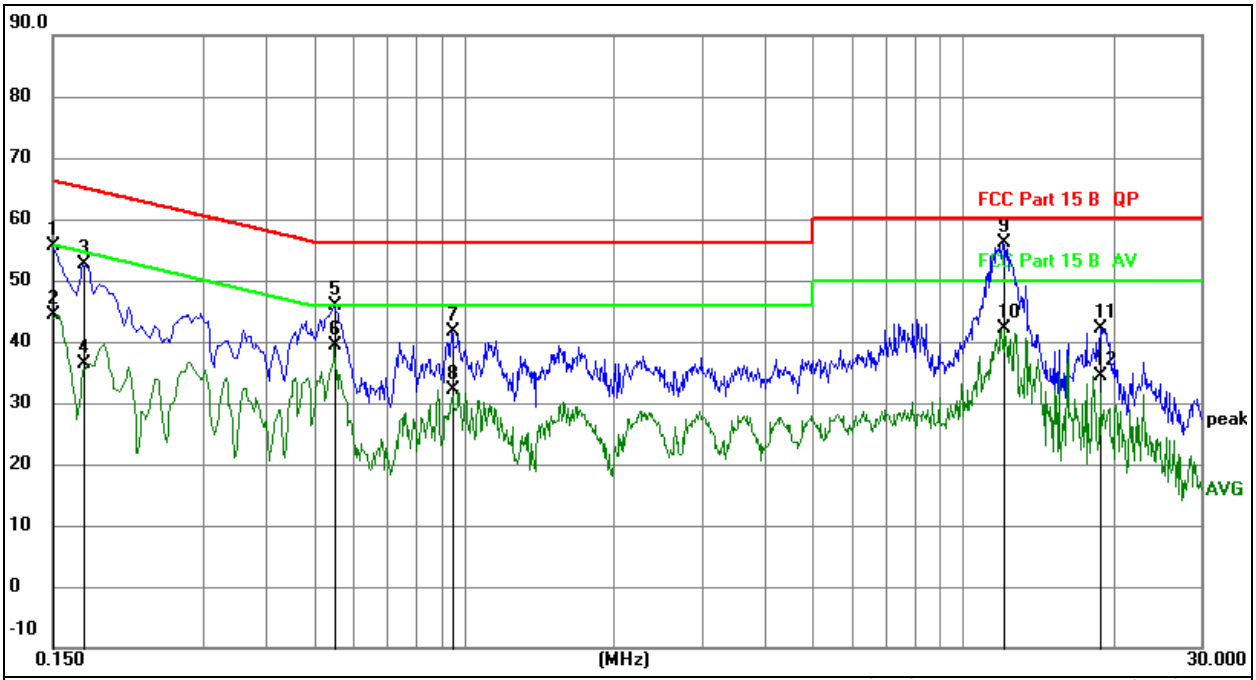
a. The Product was placed on a nonconductive table 0.8 m above the horizontal ground reference plane, and 0.4 m from the vertical ground reference plane, and connected to the main through Line Impedance Stability Network (L.I.S.N).
b. The RBW of the receiver was set at 9 kHz in 150 kHz ~ 30MHz with Peak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

6.5 Test Result

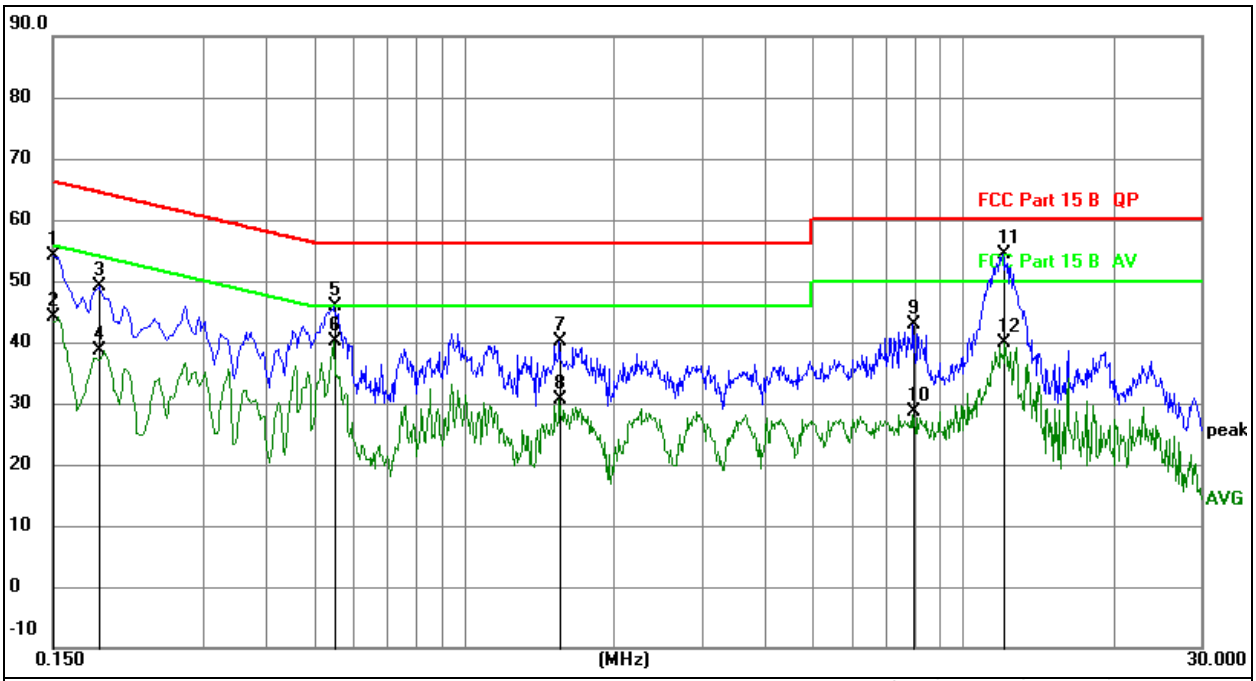
Temperature:	24 ℃	Relative Humidity:	54%
Pressure:	101KPa	Phase :	L
Test Mode:	Mode 4	Test Voltage :	AC 120V/60Hz



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.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz		dB	dBuV	dBuV	dB	Detector
1		0.1500	35.67	20.07	55.74	66.00	-10.26	QP
2		0.1500	24.30	20.07	44.37	56.00	-11.63	AVG
3		0.1722	32.44	20.07	52.51	64.85	-12.34	QP
4		0.1722	16.38	20.07	36.45	54.85	-18.40	AVG
5		0.5505	25.78	20.08	45.86	56.00	-10.14	QP
6		0.5505	19.26	20.08	39.34	46.00	-6.66	AVG
7		0.9431	21.60	20.09	41.69	56.00	-14.31	QP
8		0.9431	12.12	20.09	32.21	46.00	-13.79	AVG
9	*	12.0165	35.83	20.23	56.06	60.00	-3.94	QP
10		12.0165	21.78	20.23	42.01	50.00	-7.99	AVG
11		18.8205	21.82	20.33	42.15	60.00	-17.85	QP
12		18.8205	13.99	20.33	34.32	50.00	-15.68	AVG

Temperature:	24 ℃	Relative Humidity:	54%
Pressure:	101KPa	Phase :	N
Test Mode:	Mode 4	Test Voltage :	AC 120V/60Hz



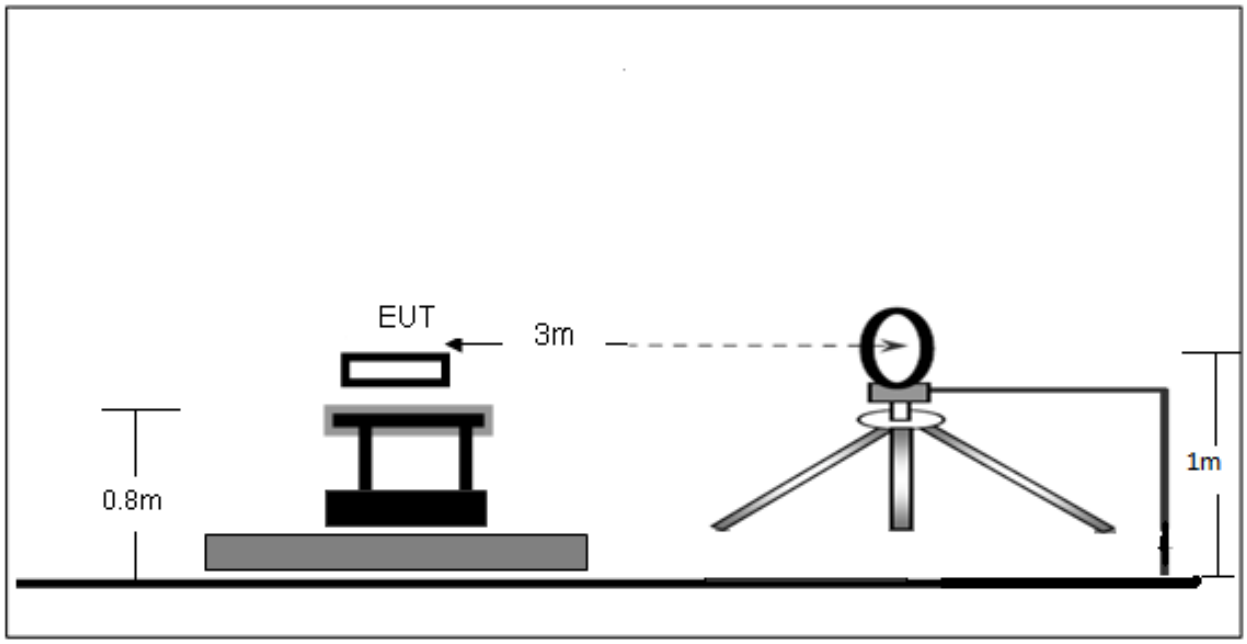
Remark:
1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.
3. Measurement = Reading Level + Correct Factor
4. Over = Measurement - Limit

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz		dB	dBuV	dBuV	dB	Detector
1		0.1500	33.98	20.07	54.05	66.00	-11.95	QP
2		0.1500	24.02	20.07	44.09	56.00	-11.91	AVG
3		0.1860	29.02	20.07	49.09	64.21	-15.12	QP
4		0.1860	18.52	20.07	38.59	54.21	-15.62	AVG
5		0.5503	25.85	20.08	45.93	56.00	-10.07	QP
6		0.5503	20.13	20.08	40.21	46.00	-5.79	AVG
7		1.5584	19.96	20.10	40.06	56.00	-15.94	QP
8		1.5584	10.52	20.10	30.62	46.00	-15.38	AVG
9		7.9575	22.61	20.16	42.77	60.00	-17.23	QP
10		7.9575	8.37	20.16	28.53	50.00	-21.47	AVG
11	*	12.0120	34.14	20.23	54.37	60.00	-5.63	QP
12		12.0120	19.73	20.23	39.96	50.00	-10.04	AVG

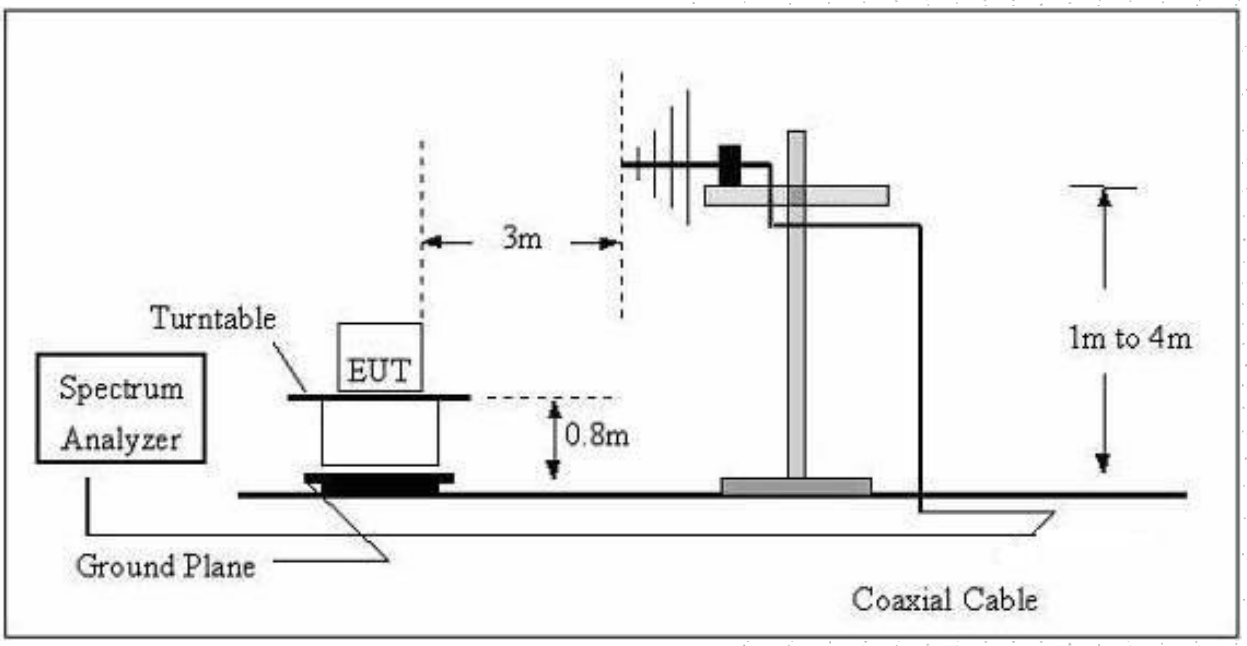
7. Radiated Emissions

7.1 Block Diagram Of Test Setup

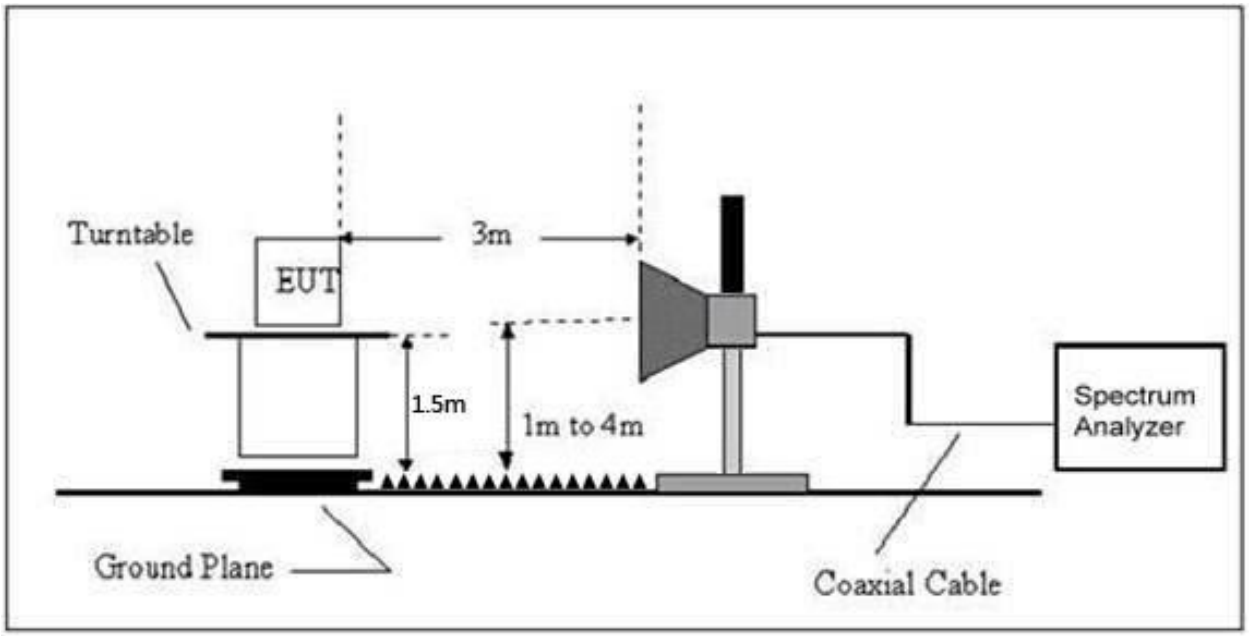
（A）Radiated Emission Test-Up Frequency Below 30MHz



（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	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*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

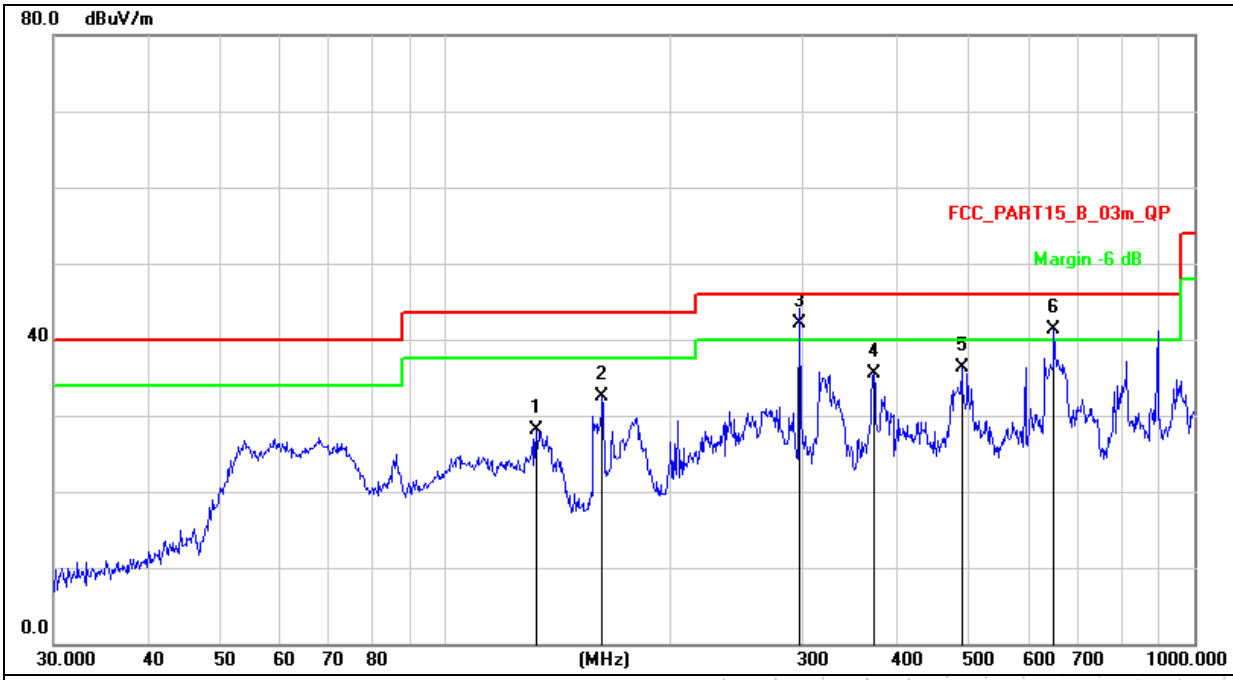
Temperature:	24 ℃	Relative Humidity:	65%
Pressure:	101KPa	Test Voltage :	AC 120V/60Hz
Test Mode:	Mode 4	Polarization :	--

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

Between 30MHz – 1GHz

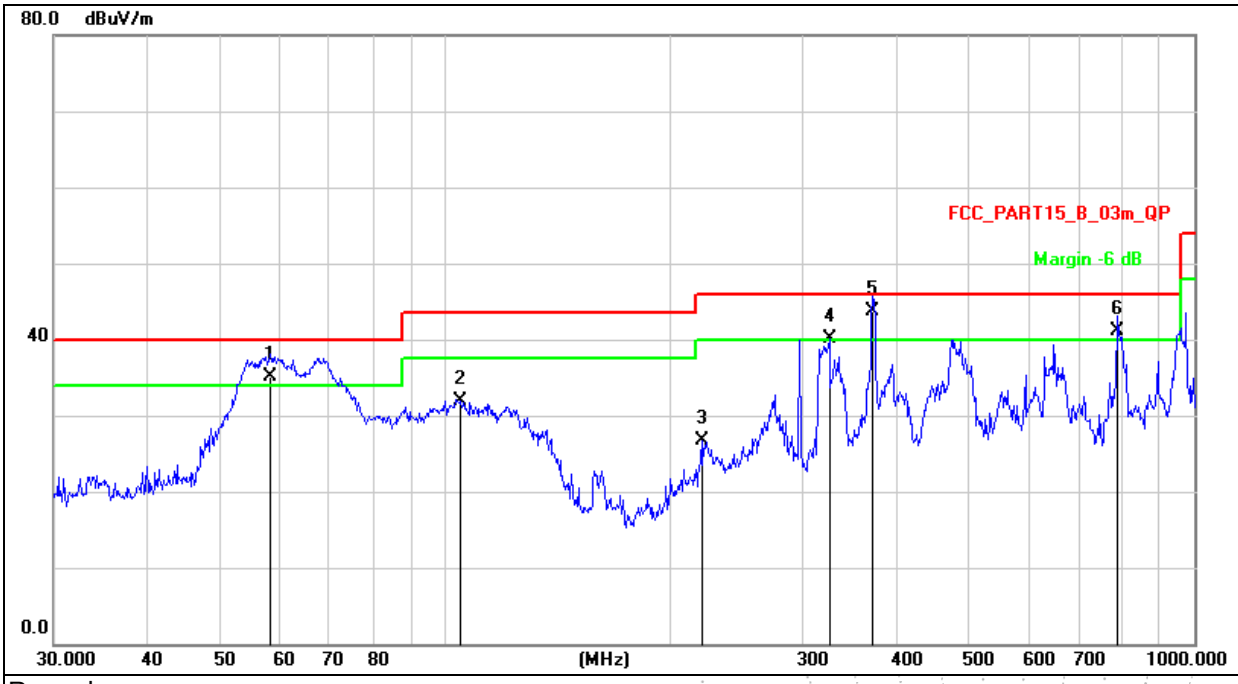
Temperature:	24 ℃	Relative Humidity:	65%
Pressure:	101KPa	Phase :	Horizontal
Test Mode:	Mode 4	Test Voltage :	AC 120V/60Hz



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

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector
1		132.2206	46.38	-18.19	28.19	43.50	-15.31	QP
2		162.0414	51.00	-18.54	32.46	43.50	-11.04	QP
3	*	297.2241	55.33	-13.30	42.03	46.00	-3.97	QP
4		373.3112	46.71	-11.18	35.53	46.00	-10.47	QP
5		489.0269	45.16	-8.88	36.28	46.00	-9.72	QP
6	!	649.6597	47.45	-6.17	41.28	46.00	-4.72	QP

Temperature:	24 ℃	Relative Humidity:	65%
Pressure:	101KPa	Phase :	Vertical
Test Mode:	Mode 4	Test Voltage :	AC 120V/60Hz



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

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector
1	!	58.4074	50.12	-15.03	35.09	40.00	-4.91	QP
2		104.9033	48.18	-16.27	31.91	43.50	-11.59	QP
3		219.8449	41.90	-15.15	26.75	46.00	-19.25	QP
4	!	325.5958	52.39	-12.34	40.05	46.00	-5.95	QP
5	*	372.0045	54.95	-11.20	43.75	46.00	-2.25	QP
6	!	790.6188	45.65	-4.51	41.14	46.00	-4.86	QP

Between 1GHz – 40GHz

Test Mode:	TX(5.1G) - 802.11a

Polar	Frequency	Reading Level	Correct Factor	Measure-ment	Limits	Over	Detector Type
(H/V)	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
Low Channel (5180 MHz)-Above 1G							
Vertical	4434.192	74.21	-20.73	53.48	68.20	-14.72	PK
Vertical	4434.192	59.77	-20.73	39.04	54.00	-14.96	AV
Vertical	10360.015	63.96	-9.36	54.60	68.20	-13.60	PK
Vertical	10360.015	49.24	-9.36	39.88	54.00	-14.12	AV
Vertical	15540.044	61.67	-7.84	53.83	74.00	-20.17	PK
Vertical	15540.044	49.53	-7.84	41.69	54.00	-12.31	AV
Horizontal	4434.069	70.63	-20.73	49.90	68.20	-18.30	PK
Horizontal	4434.069	59.84	-20.73	39.11	54.00	-14.89	AV
Horizontal	10360.124	60.55	-9.36	51.19	68.20	-17.01	PK
Horizontal	10360.124	49.42	-9.36	40.06	54.00	-13.94	AV
Horizontal	15540.024	61.97	-7.84	54.13	74.00	-19.87	PK
Horizontal	15540.024	49.83	-7.84	41.99	54.00	-12.01	AV
Middle Channel (5200 MHz)-Above 1G							
Vertical	4592.085	70.39	-20.42	49.98	74.00	-24.02	PK
Vertical	4592.085	59.52	-20.42	39.11	54.00	-14.89	AV
Vertical	10400.141	60.98	-9.30	51.68	68.20	-16.52	PK
Vertical	10400.141	49.95	-9.30	40.65	54.00	-13.35	AV
Vertical	15600.158	60.44	-7.82	52.62	74.00	-21.38	PK
Vertical	15600.158	49.50	-7.82	41.68	54.00	-12.32	AV
Horizontal	4592.190	73.99	-20.42	53.57	74.00	-20.43	PK
Horizontal	4592.190	59.36	-20.42	38.95	54.00	-15.05	AV
Horizontal	10400.026	60.33	-9.30	51.03	68.20	-17.17	PK
Horizontal	10400.026	49.01	-9.30	39.71	54.00	-14.29	AV
Horizontal	15600.019	64.00	-7.82	56.18	74.00	-17.82	PK
Horizontal	15600.019	49.94	-7.82	42.12	54.00	-11.88	AV
High Channel (5240 MHz)-Above 1G							
Vertical	4739.006	70.48	-20.12	50.36	74.00	-23.64	PK
Vertical	4739.006	59.68	-20.12	39.56	54.00	-14.44	AV
Vertical	10480.128	64.78	-9.18	55.60	68.20	-12.60	PK
Vertical	10480.128	49.20	-9.18	40.02	54.00	-13.98	AV
Vertical	15720.051	62.78	-7.78	55.00	74.00	-19.00	PK
Vertical	15720.051	49.74	-7.78	41.96	54.00	-12.04	AV
Horizontal	4739.029	74.39	-20.12	54.27	74.00	-19.73	PK
Horizontal	4739.029	59.26	-20.12	39.14	54.00	-14.86	AV
Horizontal	10480.067	63.96	-9.18	54.78	68.20	-13.42	PK
Horizontal	10480.067	49.44	-9.18	40.26	54.00	-13.74	AV
Horizontal	15720.007	60.69	-7.78	52.91	74.00	-21.09	PK
Horizontal	15720.007	49.95	-7.78	42.17	54.00	-11.83	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	Frequency	Reading Level	Correct Factor	Measure-ment	Limits	Over	Detector Type
(H/V)	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
Low Channel (5180 MHz)-Above 1G							
Vertical	4434.020	72.43	-20.73	51.70	68.20	-16.50	PK
Vertical	4434.020	59.44	-20.73	38.71	54.00	-15.29	AV
Vertical	10360.123	62.73	-9.36	53.37	68.20	-14.83	PK
Vertical	10360.123	49.35	-9.36	39.99	54.00	-14.01	AV
Vertical	15540.003	61.04	-7.84	53.20	74.00	-20.80	PK
Vertical	15540.003	49.95	-7.84	42.11	54.00	-11.89	AV
Horizontal	4434.091	70.01	-20.73	49.28	68.20	-18.92	PK
Horizontal	4434.091	59.59	-20.73	38.85	54.00	-15.15	AV
Horizontal	10360.184	64.27	-9.36	54.91	68.20	-13.29	PK
Horizontal	10360.184	49.11	-9.36	39.75	54.00	-14.25	AV
Horizontal	15540.164	64.89	-7.84	57.05	74.00	-16.95	PK
Horizontal	15540.164	49.32	-7.84	41.48	54.00	-12.52	AV
Middle Channel (5200 MHz)-Above 1G							
Vertical	4592.184	74.73	-20.42	54.31	74.00	-19.69	PK
Vertical	4592.184	59.11	-20.42	38.69	54.00	-15.31	AV
Vertical	10400.124	62.38	-9.30	53.08	68.20	-15.12	PK
Vertical	10400.124	49.76	-9.30	40.46	54.00	-13.54	AV
Vertical	15600.011	64.76	-7.82	56.94	74.00	-17.06	PK
Vertical	15600.011	49.85	-7.82	42.03	54.00	-11.97	AV
Horizontal	4592.188	72.10	-20.42	51.69	74.00	-22.31	PK
Horizontal	4592.188	59.90	-20.42	39.48	54.00	-14.52	AV
Horizontal	10400.044	65.00	-9.30	55.70	68.20	-12.50	PK
Horizontal	10400.044	49.39	-9.30	40.09	54.00	-13.91	AV
Horizontal	15600.117	60.99	-7.82	53.17	74.00	-20.83	PK
Horizontal	15600.117	49.28	-7.82	41.46	54.00	-12.54	AV
High Channel (5240 MHz)-Above 1G							
Vertical	4739.141	73.32	-20.12	53.20	74.00	-20.80	PK
Vertical	4739.141	59.62	-20.12	39.49	54.00	-14.51	AV
Vertical	10480.064	60.14	-9.18	50.96	68.20	-17.24	PK
Vertical	10480.064	49.60	-9.18	40.42	54.00	-13.58	AV
Vertical	15720.118	64.67	-7.78	56.89	74.00	-17.11	PK
Vertical	15720.118	49.72	-7.78	41.94	54.00	-12.06	AV
Horizontal	4739.106	70.67	-20.12	50.55	74.00	-23.45	PK
Horizontal	4739.106	59.04	-20.12	38.92	54.00	-15.08	AV
Horizontal	10480.101	62.16	-9.18	52.98	68.20	-15.22	PK
Horizontal	10480.101	49.56	-9.18	40.38	54.00	-13.62	AV
Horizontal	15720.020	60.98	-7.78	53.20	74.00	-20.80	PK
Horizontal	15720.020	49.57	-7.78	41.79	54.00	-12.21	AV

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

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

Polar	Frequency	Reading Level	Correct Factor	Measure-ment	Limits	Over	Detector Type
(H/V)	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
Low Channel (5190 MHz)-Above 1G							
Vertical	4434.080	70.78	-20.73	50.05	68.20	-18.15	PK
Vertical	4434.080	59.04	-20.73	38.31	54.00	-15.69	AV
Vertical	10380.042	60.78	-9.33	51.45	68.20	-16.75	PK
Vertical	10380.042	49.73	-9.33	40.40	54.00	-13.60	AV
Vertical	15570.076	64.47	-7.83	56.64	74.00	-17.36	PK
Vertical	15570.076	49.97	-7.83	42.14	54.00	-11.86	AV
Horizontal	4434.086	71.63	-20.73	50.90	74.00	-23.10	PK
Horizontal	4434.086	59.67	-20.73	38.94	54.00	-15.06	AV
Horizontal	10380.022	63.86	-9.33	54.53	68.20	-13.67	PK
Horizontal	10380.022	49.02	-9.33	39.69	54.00	-14.31	AV
Horizontal	15570.063	60.60	-7.83	52.77	74.00	-21.23	PK
Horizontal	15570.063	49.78	-7.83	41.95	54.00	-12.05	AV
Middle Channel (5230 MHz)-Above 1G							
Vertical	4739.183	74.13	-20.12	54.01	68.20	-14.19	PK
Vertical	4739.183	59.23	-20.12	39.11	54.00	-14.89	AV
Vertical	10460.132	62.29	-9.21	53.08	68.20	-15.12	PK
Vertical	10460.132	49.29	-9.21	40.08	54.00	-13.92	AV
Vertical	15690.129	60.35	-7.79	52.56	74.00	-21.44	PK
Vertical	15690.129	49.37	-7.79	41.58	54.00	-12.42	AV
Horizontal	4739.167	73.16	-20.12	53.04	68.20	-15.16	PK
Horizontal	4739.167	59.16	-20.12	39.03	54.00	-14.97	AV
Horizontal	10460.100	60.24	-9.21	51.03	68.20	-17.17	PK
Horizontal	10460.100	49.91	-9.21	40.70	54.00	-13.30	AV
Horizontal	15690.159	64.10	-7.79	56.31	74.00	-17.69	PK
Horizontal	15690.159	49.81	-7.79	42.02	54.00	-11.98	AV

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

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

Polar	Frequency	Reading Level	Correct Factor	Measure-ment	Limits	Over	Detector Type
(H/V)	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
Low Channel (5180 MHz)-Above 1G							
Vertical	4434.107	70.97	-20.73	50.23	68.20	-17.97	PK
Vertical	4434.107	59.19	-20.73	38.46	54.00	-15.54	AV
Vertical	10360.130	63.03	-9.36	53.67	68.20	-14.53	PK
Vertical	10360.130	49.81	-9.36	40.45	54.00	-13.55	AV
Vertical	15540.022	63.67	-7.84	55.83	74.00	-18.17	PK
Vertical	15540.022	49.46	-7.84	41.62	54.00	-12.38	AV
Horizontal	4434.093	70.10	-20.73	49.37	68.20	-18.83	PK
Horizontal	4434.093	59.20	-20.73	38.47	54.00	-15.53	AV
Horizontal	10360.134	64.29	-9.36	54.93	68.20	-13.27	PK
Horizontal	10360.134	49.46	-9.36	40.10	54.00	-13.90	AV
Horizontal	15540.120	62.71	-7.84	54.87	74.00	-19.13	PK
Horizontal	15540.120	49.00	-7.84	41.16	54.00	-12.84	AV
Middle Channel (5200 MHz)-Above 1G							
Vertical	4592.073	71.15	-20.42	50.73	74.00	-23.27	PK
Vertical	4592.073	59.43	-20.42	39.01	54.00	-14.99	AV
Vertical	10400.111	64.02	-9.30	54.72	68.20	-13.48	PK
Vertical	10400.111	49.54	-9.30	40.24	54.00	-13.76	AV
Vertical	15600.105	63.59	-7.82	55.77	74.00	-18.23	PK
Vertical	15600.105	49.84	-7.82	42.02	54.00	-11.98	AV
Horizontal	4592.119	70.78	-20.42	50.36	74.00	-23.64	PK
Horizontal	4592.119	59.34	-20.42	38.92	54.00	-15.08	AV
Horizontal	10400.148	61.82	-9.30	52.52	68.20	-15.68	PK
Horizontal	10400.148	49.21	-9.30	39.91	54.00	-14.09	AV
Horizontal	15600.071	64.34	-7.82	56.52	74.00	-17.48	PK
Horizontal	15600.071	49.22	-7.82	41.40	54.00	-12.60	AV
High Channel (5240 MHz)-Above 1G							
Vertical	4739.013	71.06	-20.12	50.94	74.00	-23.06	PK
Vertical	4739.013	59.40	-20.12	39.28	54.00	-14.72	AV
Vertical	10480.098	62.71	-9.18	53.53	68.20	-14.67	PK
Vertical	10480.098	49.96	-9.18	40.78	54.00	-13.22	AV
Vertical	15720.140	62.79	-7.78	55.01	74.00	-18.99	PK
Vertical	15720.140	49.34	-7.78	41.56	54.00	-12.44	AV
Horizontal	4739.090	71.25	-20.12	51.13	74.00	-22.87	PK
Horizontal	4739.090	59.93	-20.12	39.81	54.00	-14.19	AV
Horizontal	10480.142	61.61	-9.18	52.43	68.20	-15.77	PK
Horizontal	10480.142	49.46	-9.18	40.28	54.00	-13.72	AV
Horizontal	15720.003	61.17	-7.78	53.39	74.00	-20.61	PK
Horizontal	15720.003	49.28	-7.78	41.50	54.00	-12.50	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	Frequency	Reading Level	Correct Factor	Measure-ment	Limits	Over	Detector Type
(H/V)	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
Low Channel (5190 MHz)-Above 1G							
Vertical	4434.066	72.40	-20.73	51.67	68.20	-16.53	PK
Vertical	4434.066	59.38	-20.73	38.65	54.00	-15.35	AV
Vertical	10380.085	61.57	-9.33	52.24	68.20	-15.96	PK
Vertical	10380.085	49.40	-9.33	40.07	54.00	-13.93	AV
Vertical	15570.005	64.89	-7.83	57.06	74.00	-16.94	PK
Vertical	15570.005	49.28	-7.83	41.45	54.00	-12.55	AV
Horizontal	4434.186	70.72	-20.73	49.99	74.00	-24.01	PK
Horizontal	4434.186	59.54	-20.73	38.81	54.00	-15.19	AV
Horizontal	10380.153	63.73	-9.33	54.40	68.20	-13.80	PK
Horizontal	10380.153	49.01	-9.33	39.68	54.00	-14.32	AV
Horizontal	15570.186	62.17	-7.83	54.34	74.00	-19.66	PK
Horizontal	15570.186	49.18	-7.83	41.35	54.00	-12.65	AV
Middle Channel (5230 MHz)-Above 1G							
Vertical	4739.013	73.14	-20.12	53.02	68.20	-15.18	PK
Vertical	4739.013	59.06	-20.12	38.94	54.00	-15.06	AV
Vertical	10460.179	60.61	-9.21	51.40	68.20	-16.80	PK
Vertical	10460.179	49.97	-9.21	40.76	54.00	-13.24	AV
Vertical	15690.131	60.25	-7.79	52.46	74.00	-21.54	PK
Vertical	15690.131	49.87	-7.79	42.08	54.00	-11.92	AV
Horizontal	4739.113	74.58	-20.12	54.46	68.20	-13.74	PK
Horizontal	4739.113	59.76	-20.12	39.64	54.00	-14.36	AV
Horizontal	10460.080	64.88	-9.21	55.67	68.20	-12.53	PK
Horizontal	10460.080	49.02	-9.21	39.81	54.00	-14.19	AV
Horizontal	15690.130	64.36	-7.79	56.57	74.00	-17.43	PK
Horizontal	15690.130	49.66	-7.79	41.87	54.00	-12.13	AV

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

Test Mode:	TX(5.1G) - 802.11ac 80

Polar	Frequency	Reading Level	Correct Factor	Measure-ment	Limits	Over	Detector Type
(H/V)	(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
Low Channel (5210 MHz)-Above 1G							
Vertical	4434.038	70.06	-20.73	49.32	68.20	-18.88	PK
Vertical	4434.038	59.82	-20.73	39.09	54.00	-14.91	AV
Vertical	10420.039	63.73	-9.27	54.46	68.20	-13.74	PK
Vertical	10420.039	49.54	-9.27	40.27	54.00	-13.73	AV
Vertical	15630.027	64.55	-7.81	56.74	74.00	-17.26	PK
Vertical	15630.027	49.34	-7.81	41.53	54.00	-12.47	AV
Horizontal	4434.014	71.53	-20.73	50.79	68.20	-17.41	PK
Horizontal	4434.014	59.49	-20.73	38.76	54.00	-15.24	AV
Horizontal	10420.076	41.30	9.27	50.57	68.20	-17.63	PK
Horizontal	10420.076	29.85	9.27	39.12	54.00	-14.88	AV
Horizontal	15630.169	64.24	-7.81	56.43	74.00	-17.57	PK
Horizontal	15630.169	49.45	-7.81	41.64	54.00	-12.36	AV

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

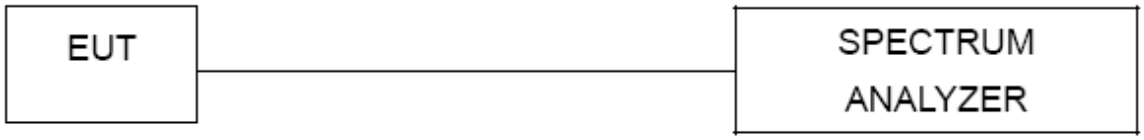
- ☒Undesirable radiated Undesirable radiated Spurious Emission in Band Edge
- All the modes has been tested and the worst result 802.11a (antenna a) recorded as below:

Test mode: 802.11a (antenna a) Frequency(MHz): 5180

Frequency (MHz)	Polarity	PK(dBuV/m) (VBW=3MHz)	Limit 3m (dBuV/m)	AV(dBuV/m) (VBW=10Hz)	Limit 3m (dBuV/m)
5150.04	H	58.49	74	44.51	54
5149.39	V	55.62	74	40.93	54

8. Power Spectral Density Test

8.1 Block Diagram Of Test Setup



8.2 Limit

For the band 5.15-5.25 GHz,
(i) For an outdoor access point operating in the band 5.15-5.25 GHz, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. The maximum e.i.r.p. at any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm).
(ii) For an indoor access point operating in the band 5.15-5.25 GHz, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.
(iii) For fixed point-to-point access points operating in the band 5.15-5.25 GHz, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. Fixed point-to-point U-NII devices may employ antennas with directional gain up to 23 dBi without any corresponding reduction in the maximum conducted output power or maximum power spectral density. For fixed point-to-point transmitters that employ a directional antenna gain greater than 23 dBi, a 1 dB reduction in maximum conducted output power and maximum power spectral density is required for each 1 dB of antenna gain in excess of 23 dBi. Fixed, point-to-point operations exclude the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.
(iv) For client devices in the 5.15-5.25 GHz band, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.
For the band 5.725-5.85 GHz
(3)For the band 5.725-5.85 GHz, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

8.3 Test Procedure

For devices operating in the bands 5.15-5.25 GHz, 5.25-5.35 GHz, and 5.47-5.725 GHz, the above procedures make use of 1 MHz RBW to satisfy directly the 1 MHz reference bandwidth specified in § 15.407(a)(5). For devices operating in the band 5.725-5.85 GHz, the rules specify a measurement bandwidth of 500 kHz. Many spectrum analyzers do not have 500 kHz RBW, thus a narrower RBW may need to be used. The rules permit the use of a RBWs less than 1 MHz, or 500 kHz, “provided that the measured power is integrated over the full reference bandwidth” to show the total power over the specified measurement bandwidth (i.e., 1 MHz, or 500 kHz). If measurements are performed using a reduced resolution bandwidth (< 1 MHz, or < 500 kHz) and integrated over 1 MHz, or 500 KHz bandwidth, the following adjustments to the procedures apply:
a) Set RBW ≥ 1/T, where T is defined in section II.B.l.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:	AC 120V/60Hz
Test Mode:	TX Frequency U-NII-1 (5180-5240MHz)		

Condition	Mode	Frequency (MHz)	Measured Power Density (dBm/MHz)			Limit (dBm/MHz)	Result
			ANT A	ANT B	Total		
NVNT	a	5180	-2.28	-2.54	/	11	PASS
NVNT	a	5200	**-2.09**	-2.38	/	11	PASS
NVNT	a	5240	-2.66	-3.23	/	11	PASS
NVNT	n20	5180	-3.5	-4.03	-0.75	11	PASS
NVNT	n20	5200	-3.67	-4.22	-0.93	11	PASS
NVNT	n20	5240	-4.49	-5.33	-1.88	11	PASS
NVNT	n40	5190	-7.08	-7.52	-4.28	11	PASS
NVNT	n40	5230	-8.05	-8.44	-5.23	11	PASS
NVNT	ac20	5180	-3.19	-5.12	-1.04	11	PASS
NVNT	ac20	5200	-3.65	-4	-0.81	11	PASS
NVNT	ac20	5240	-4.56	-5	-1.76	11	PASS
NVNT	ac40	5190	-6.98	-7.49	-4.22	11	PASS
NVNT	ac40	5230	-7.99	-8.74	-5.34	11	PASS
NVNT	ac80	5210	-11.63	-12.12	-8.86	11	PASS

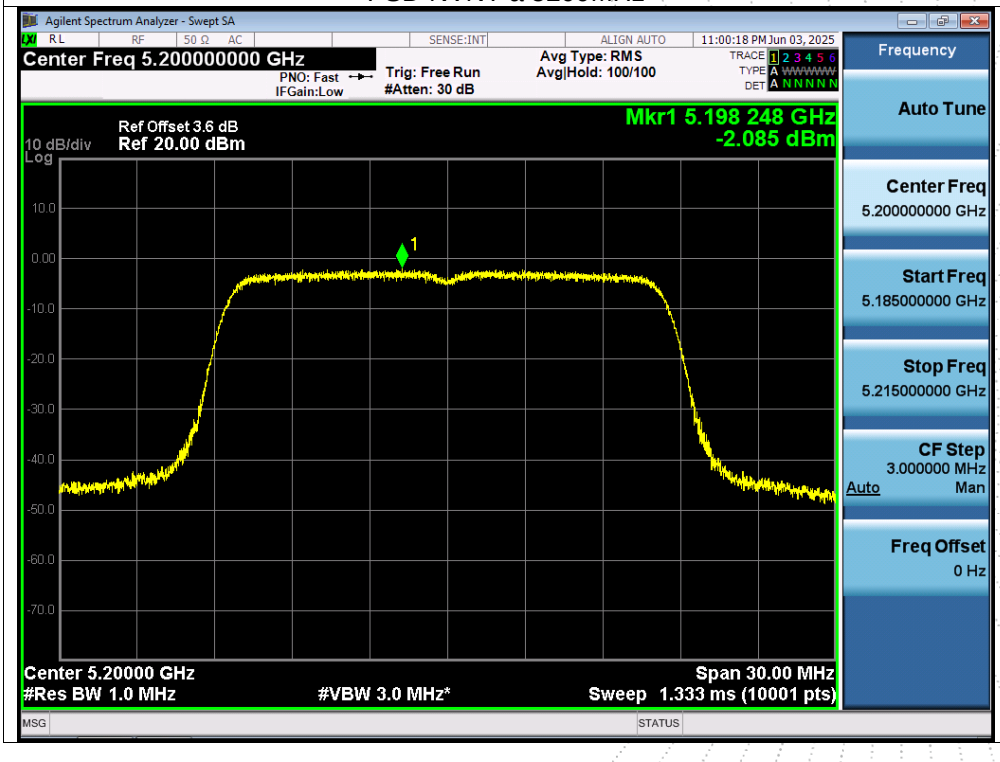
Note:
Antenna A gain: 2.52 dBi, Antenna B gain: 2.52 dBi, Directional gain=[GainANT + 10 log(NANT) dBi] =5.53 dbi<6dbi
Limit=11 dBm

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

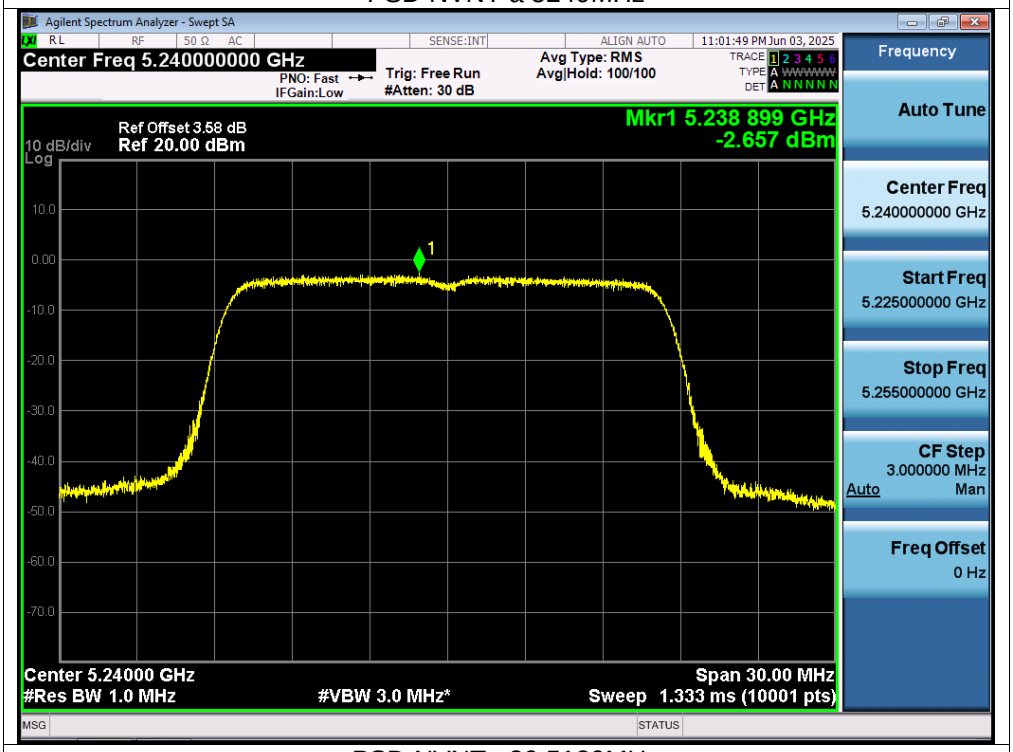
Test Graphs

PSD NVNT a 5180MHz

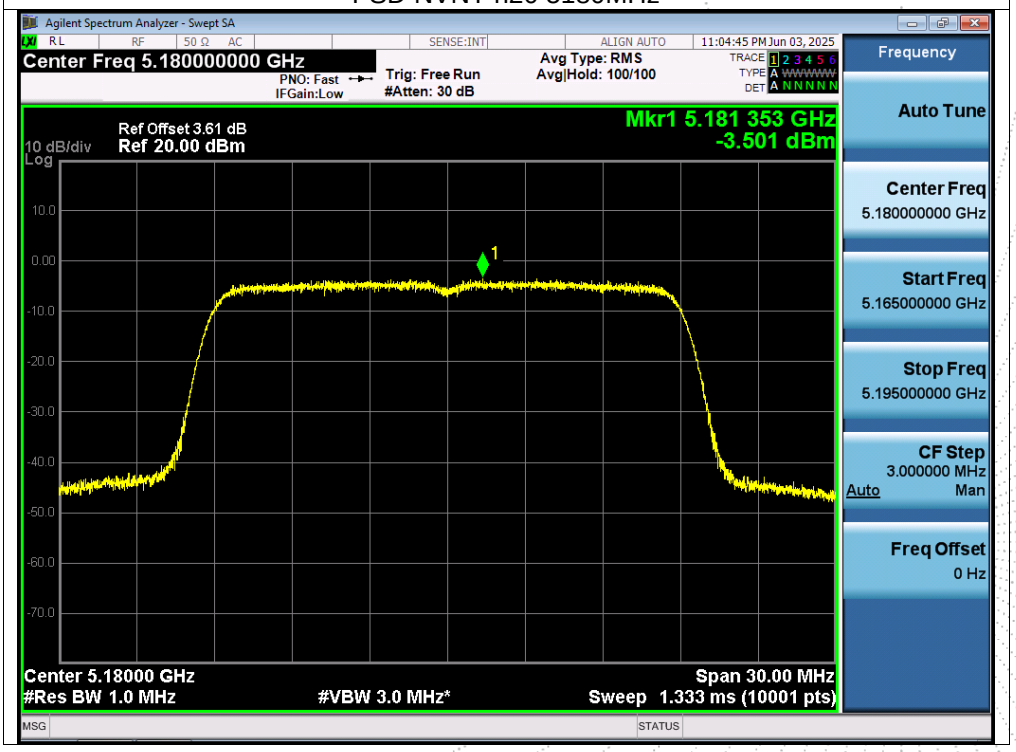
PSD NVNT a 5200MHz



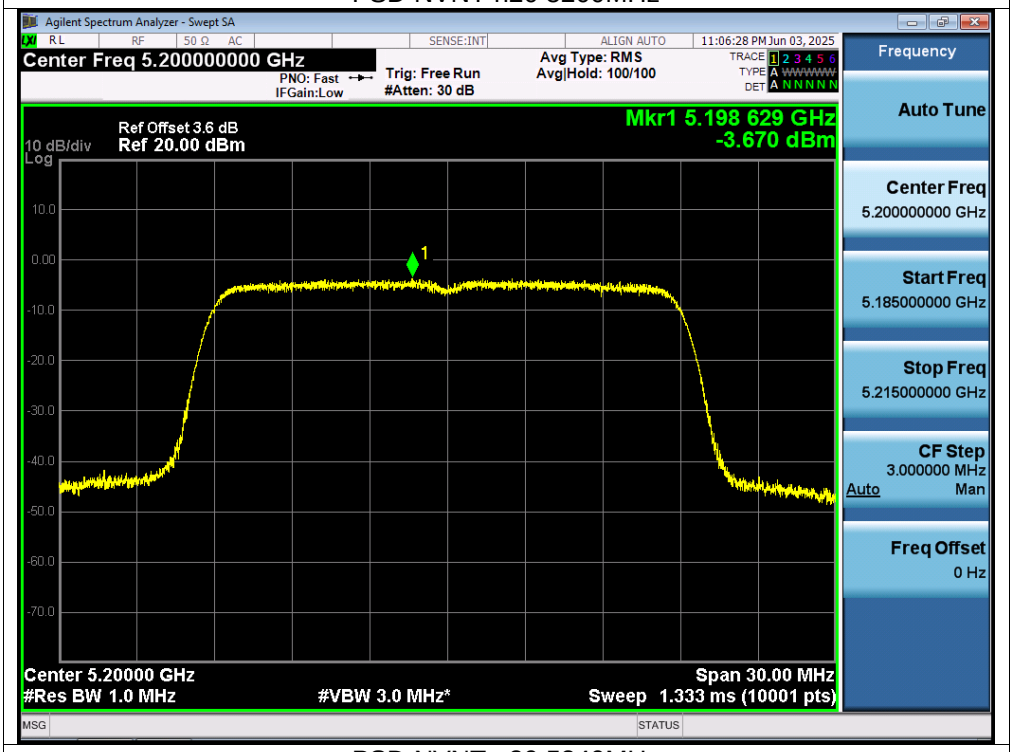
PSD NVNT a 5240MHz



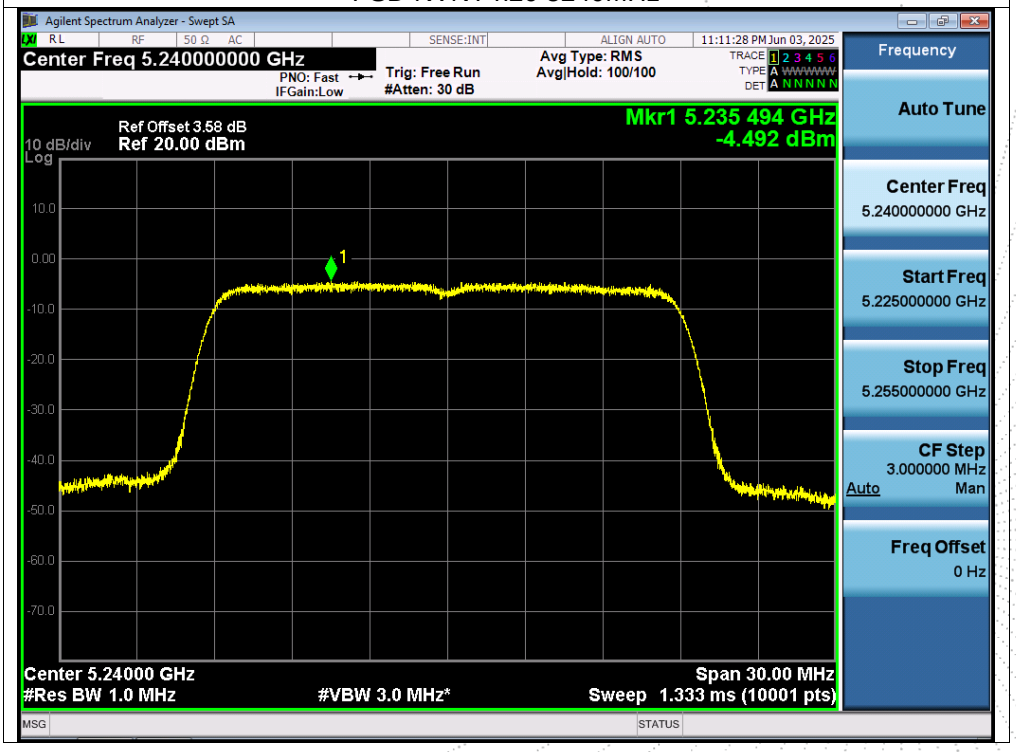
PSD NVNT n20 5180MHz



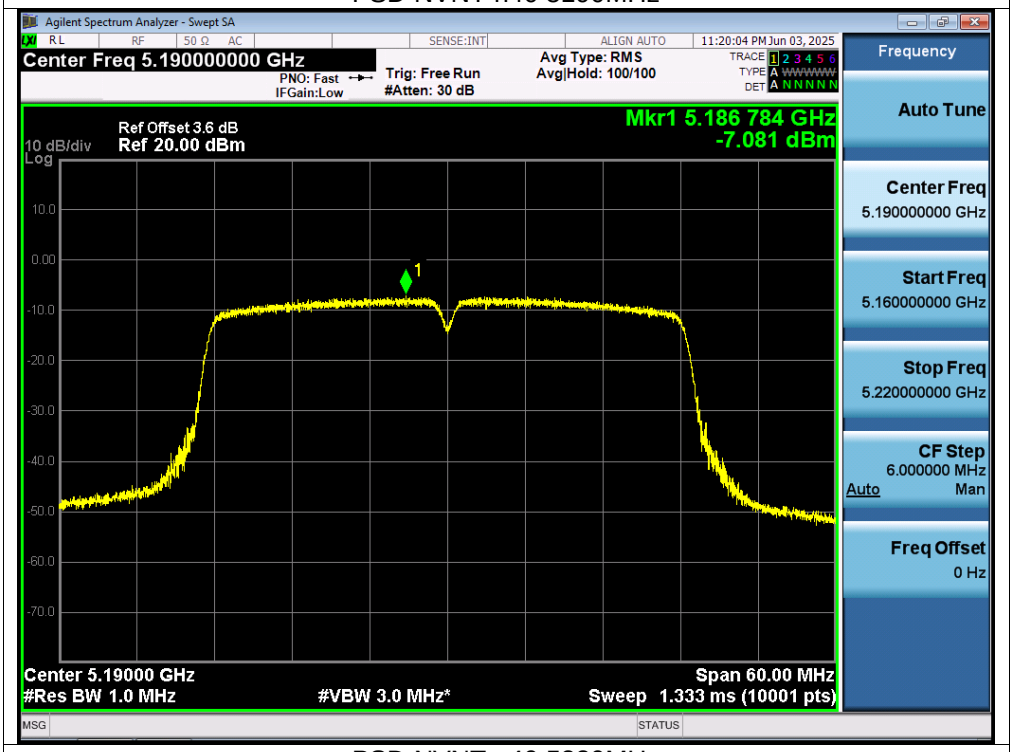
PSD NVNT n20 5200MHz



PSD NVNT n20 5240MHz

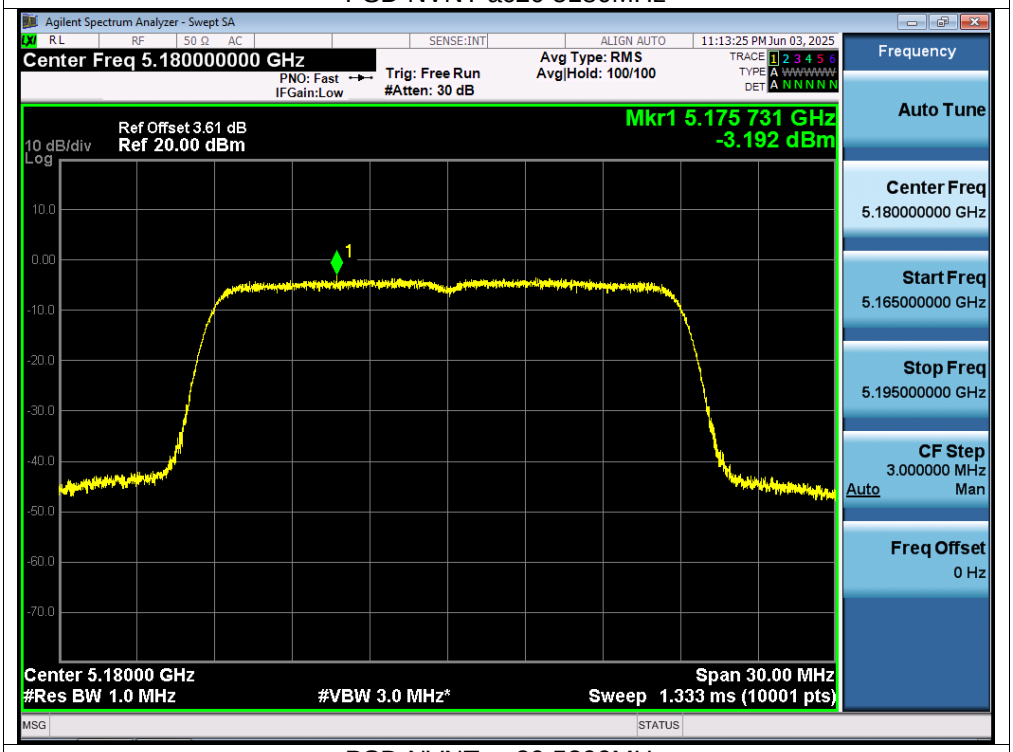


PSD NVNT n40 5190MHz



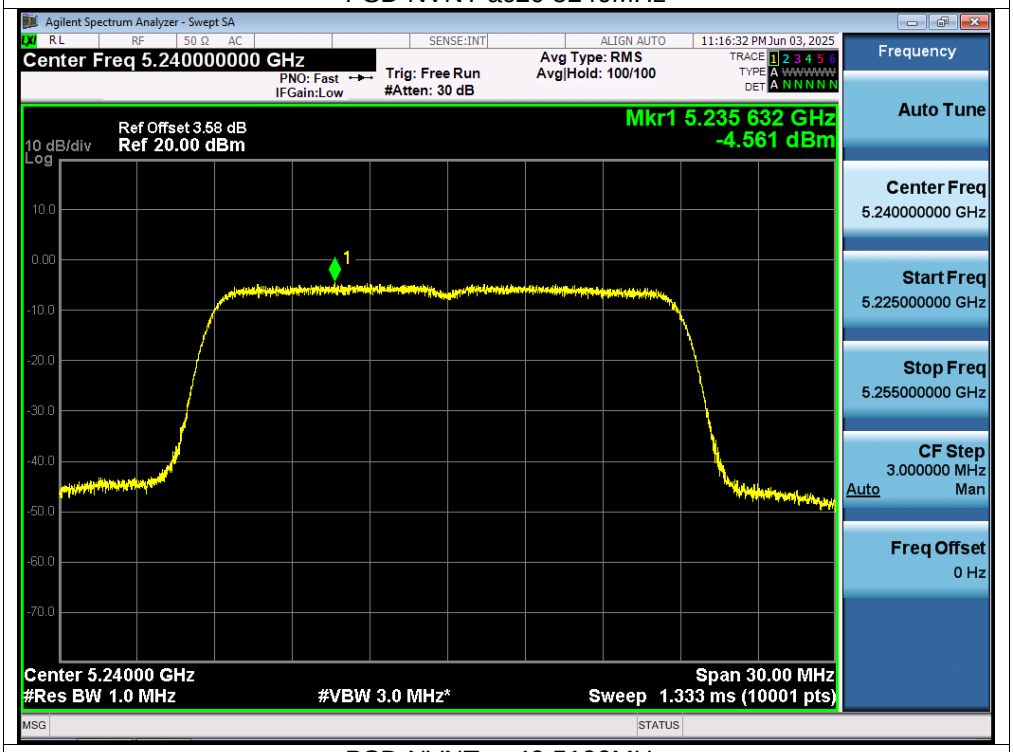
PSD NVNT n40 5230MHz

PSD NVNT ac20 5180MHz

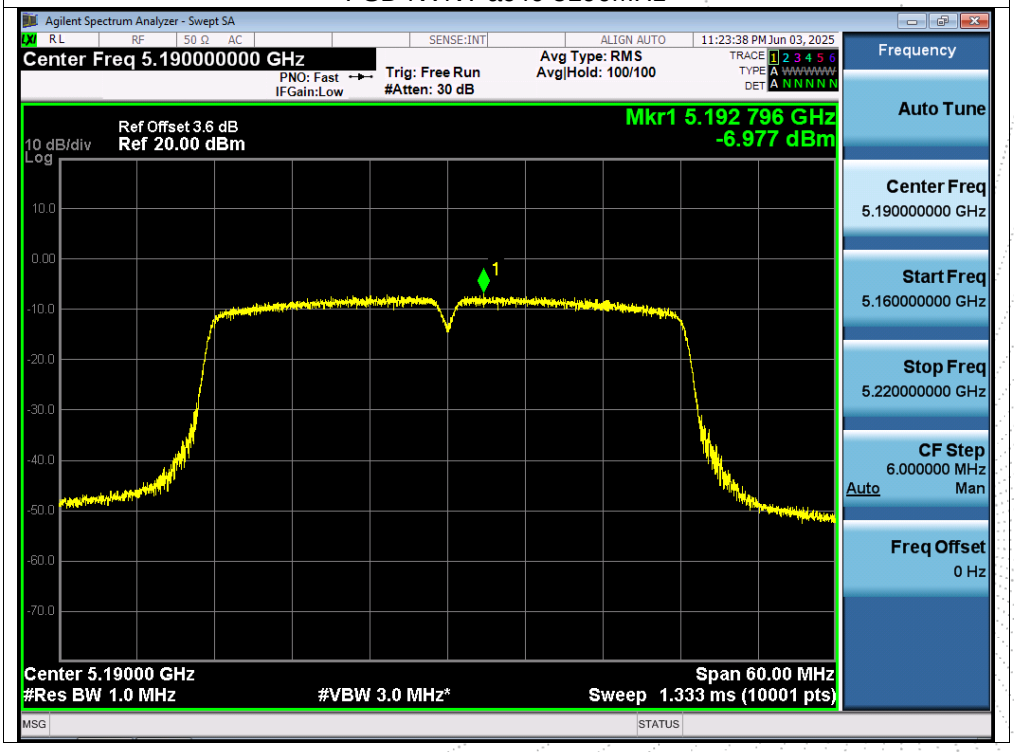


PSD NVNT ac20 5200MHz

PSD NVNT ac20 5240MHz

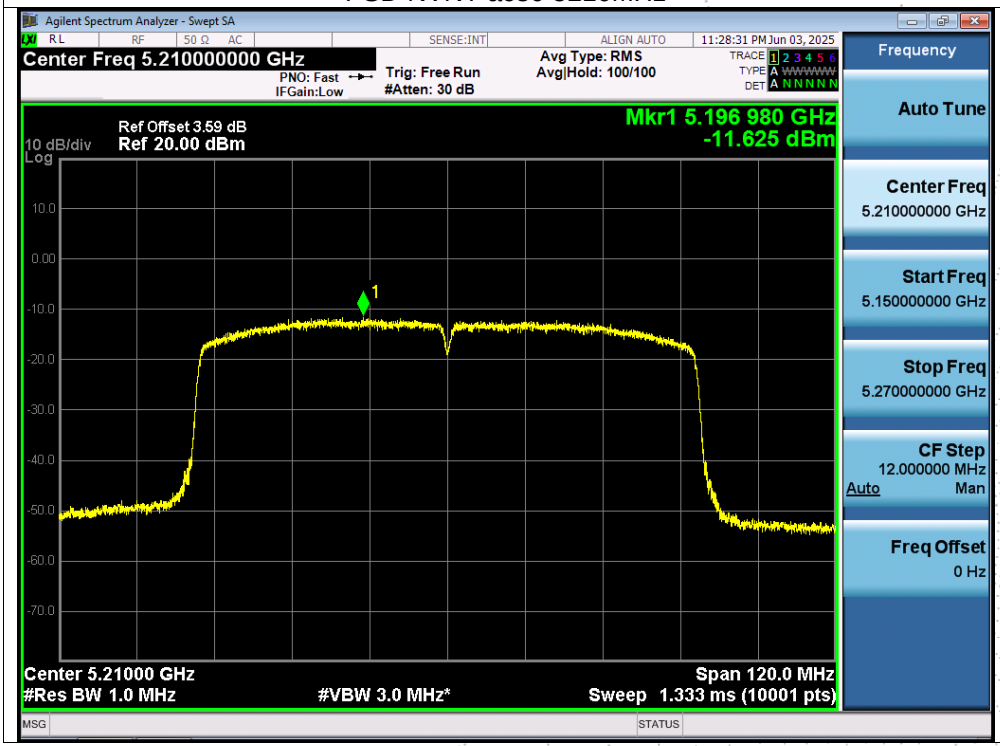


PSD NVNT ac40 5190MHz



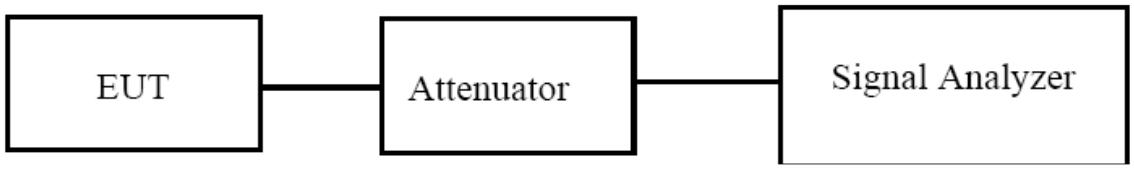
PSD NVNT ac40 5230MHz

PSD NVNT ac80 5210MHz



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

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.

6dB
1. Set RBW = 100 kHz.
2. Set the video bandwidth (VBW) ≥ 3 x RBW.
3. Detector = Peak.
4. Trace mode = max hold.
5. 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

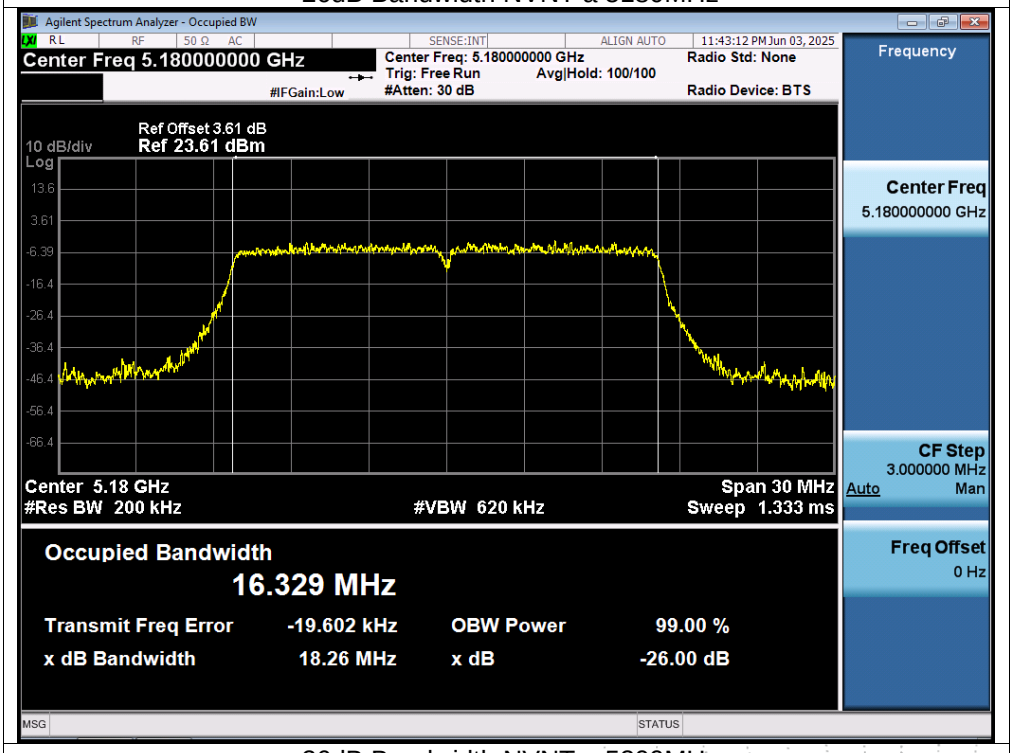
Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage:	AC 120V/60Hz
Test Mode:	TX Frequency U-NII-1 (5180-5240MHz)		

Condition	Mode	Frequency (MHz)	99% bandwidth (MHz)		-26dB bandwidth (MHz)		Result
			ANT A	ANT B	ANT A	ANT B	
NVNT	a	5180	16.333	16.325	18.386	18.263	Pass
NVNT	a	5200	16.329	16.325	18.422	18.23	Pass
NVNT	a	5240	16.334	16.336	18.326	18.35	Pass
NVNT	n20	5180	17.534	17.531	19.387	19.318	Pass
NVNT	n20	5200	17.54	17.537	19.283	19.306	Pass
NVNT	n20	5240	17.544	17.539	19.413	19.365	Pass
NVNT	n40	5190	36.014	36.009	40.69	41.129	Pass
NVNT	n40	5230	36.06	36.038	40.82	40.896	Pass
NVNT	ac20	5180	17.541	17.542	19.41	19.426	Pass
NVNT	ac20	5200	17.537	17.54	19.392	19.378	Pass
NVNT	ac20	5240	17.545	17.546	19.373	19.382	Pass
NVNT	ac40	5190	35.979	35.997	40.524	41.065	Pass
NVNT	ac40	5230	36.02	36.032	41.116	41.018	Pass
NVNT	ac80	5210	**74.741**	74.701	80.196	**80.333**	Pass

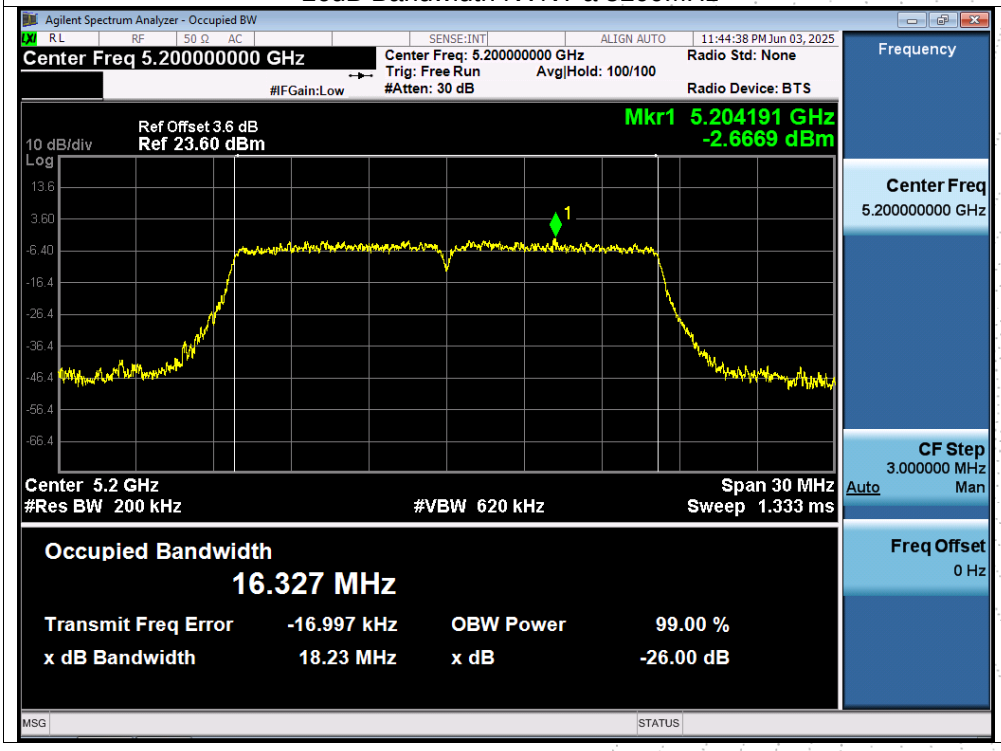
Note: A(B) Represent the value of antenna A and B, The worst data is Antenna B, only shown Antenna B Plot.

Test Graphs

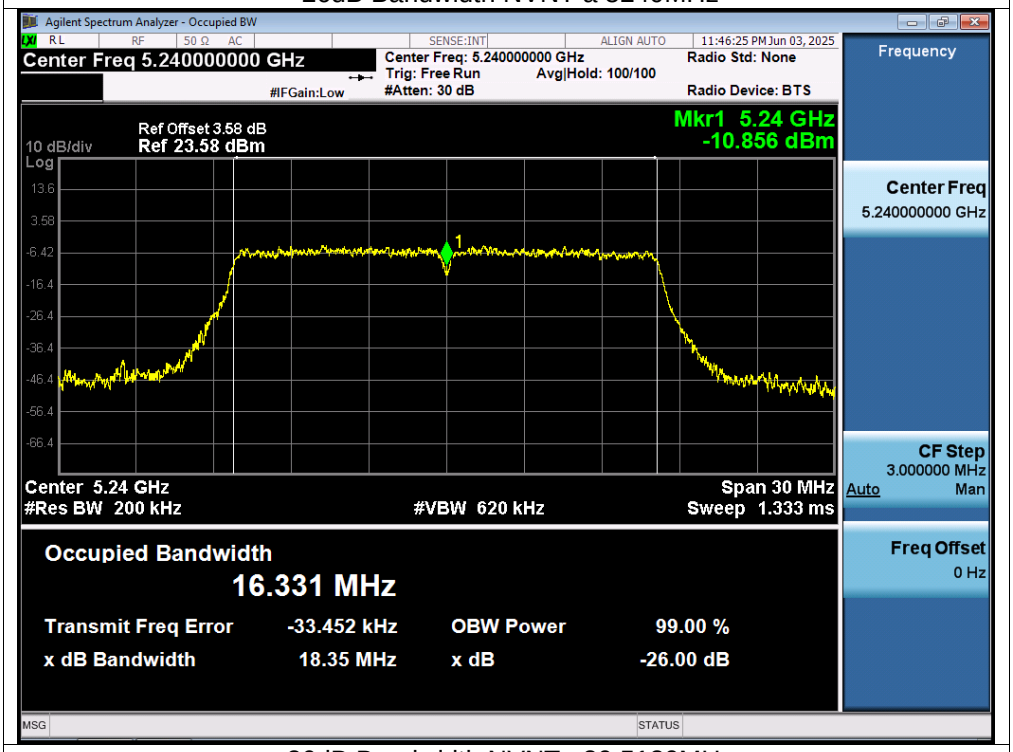
-26dB Bandwidth NVNT a 5180MHz



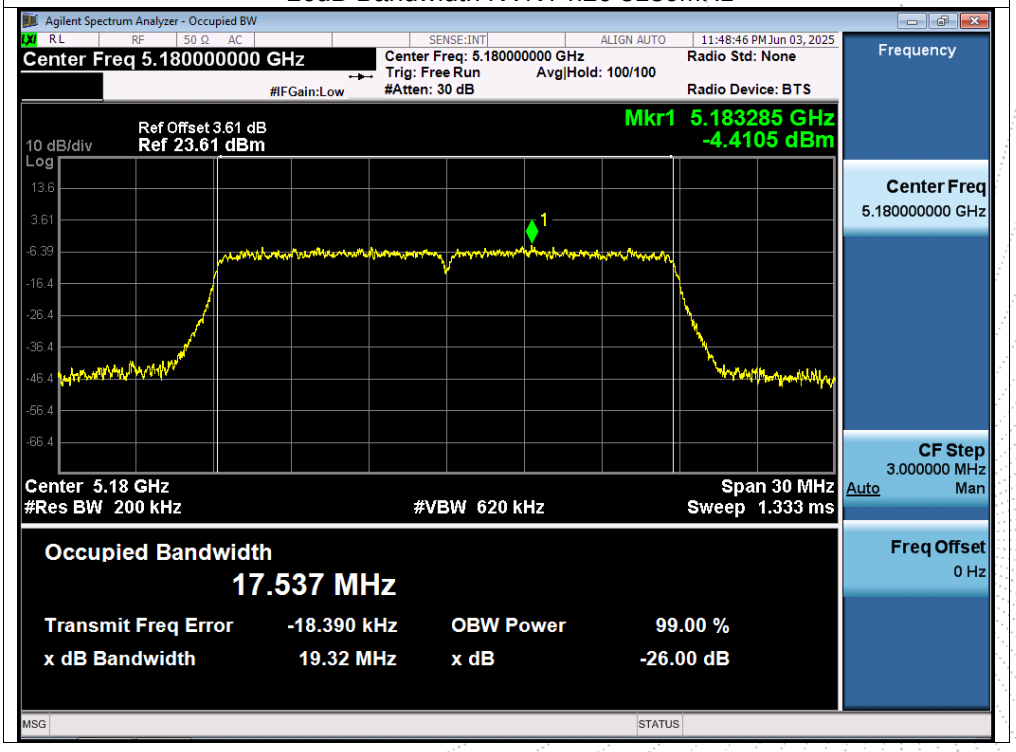
-26dB Bandwidth NVNT a 5200MHz



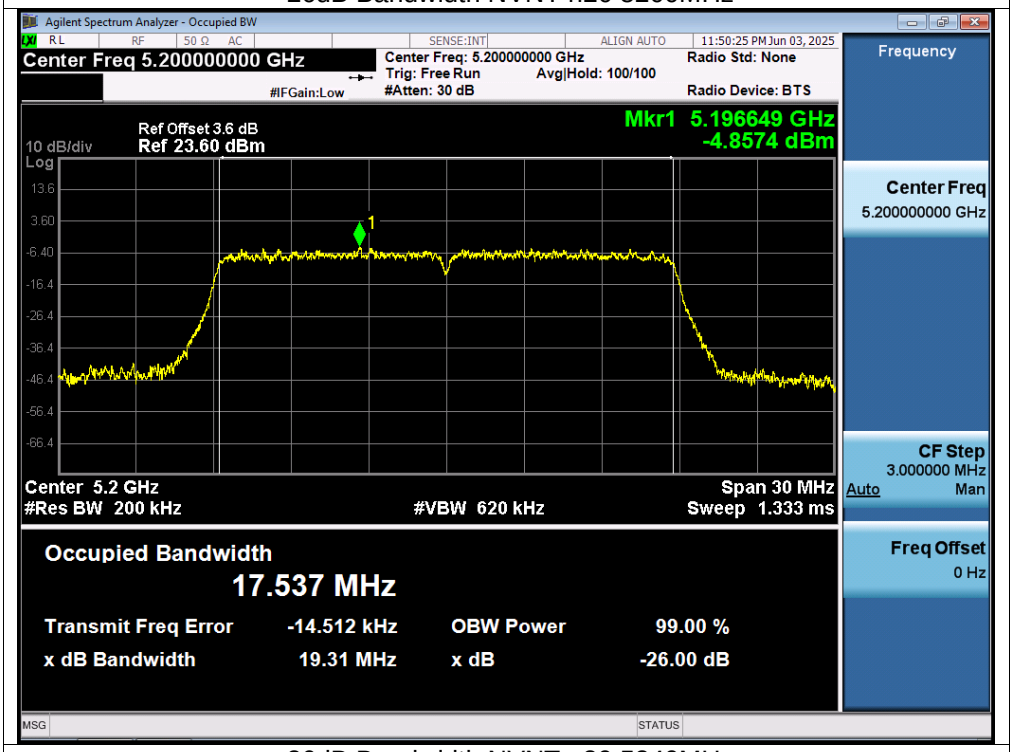
-26dB Bandwidth NVNT a 5240MHz



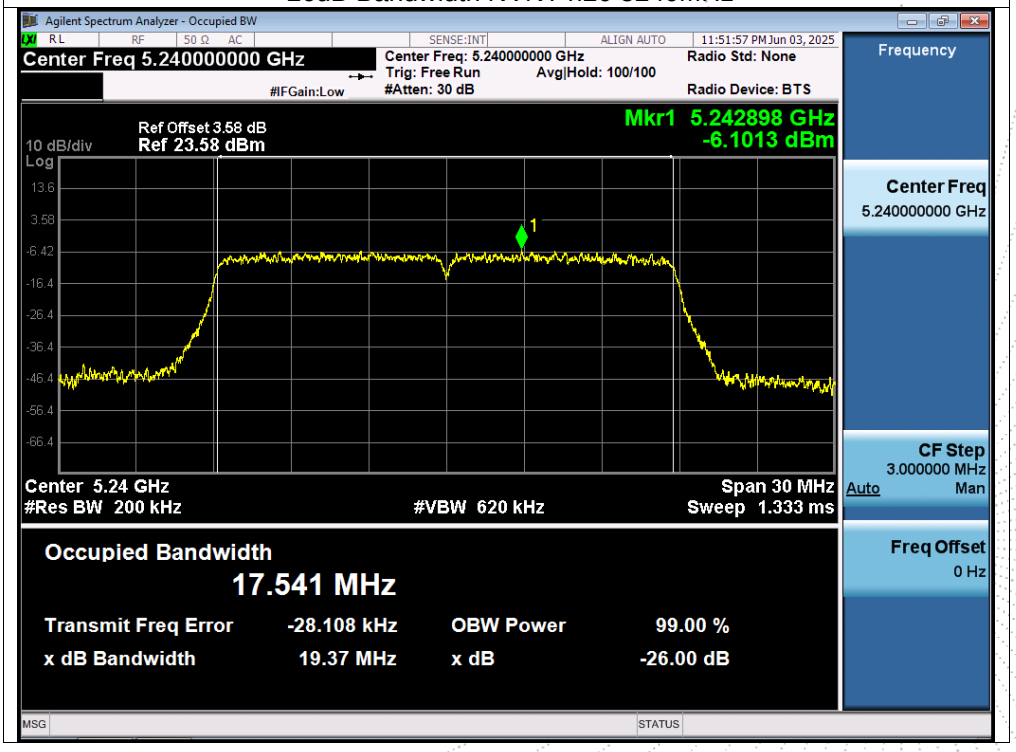
-26dB Bandwidth NVNT n20 5180MHz



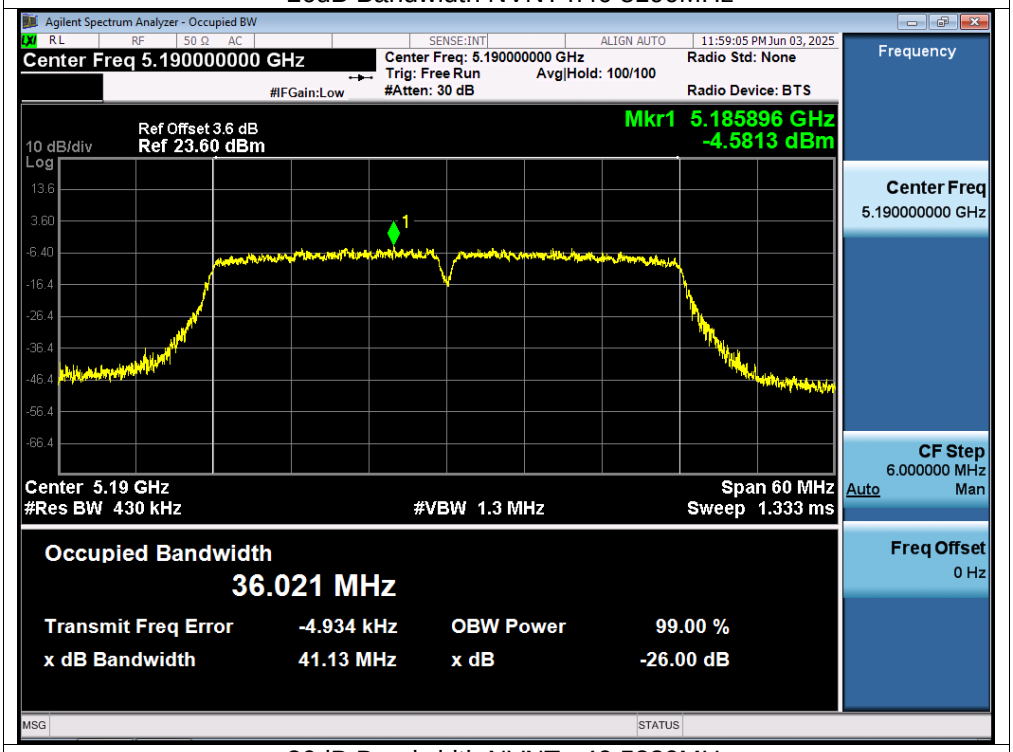
-26dB Bandwidth NVNT n20 5200MHz



-26dB Bandwidth NVNT n20 5240MHz

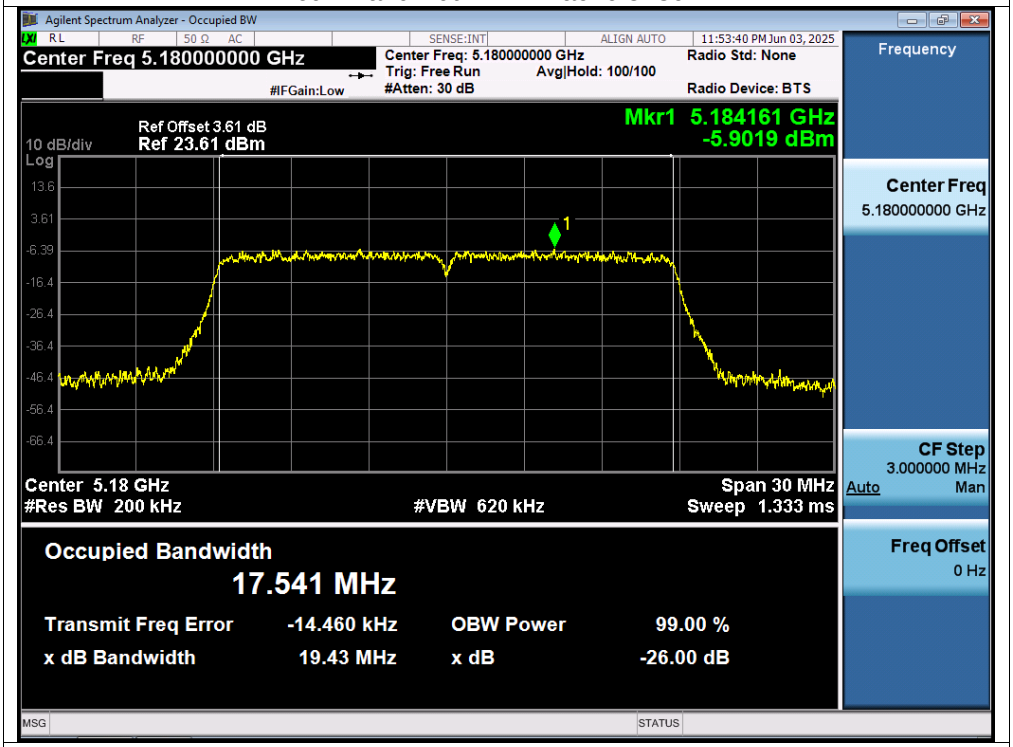


-26dB Bandwidth NVNT n40 5190MHz

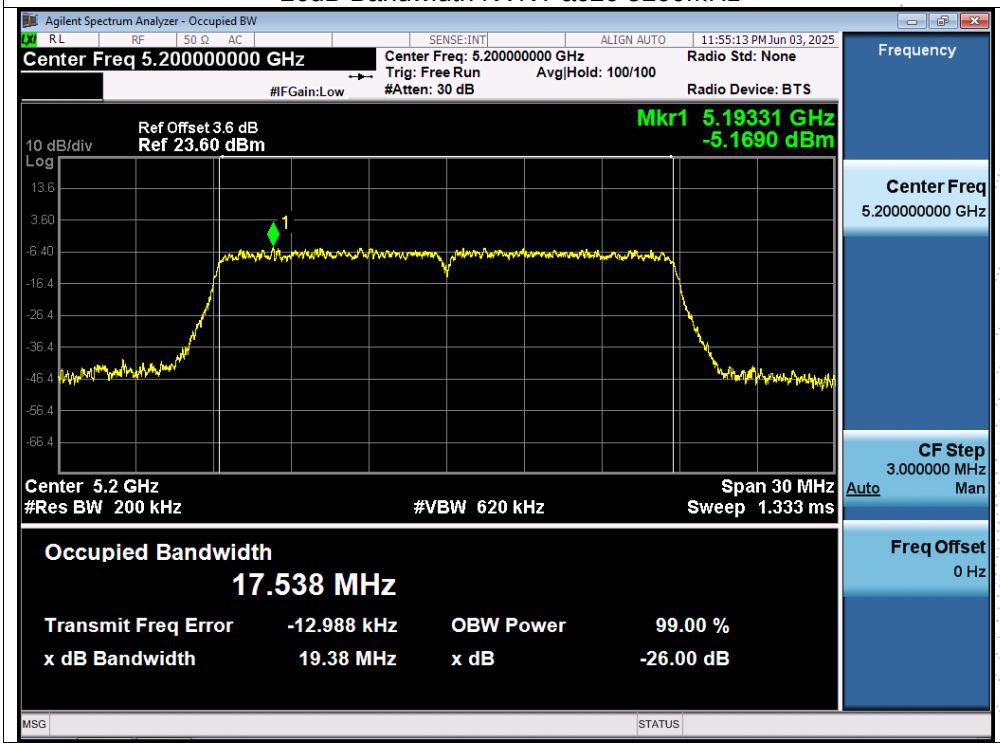


-26dB Bandwidth NVNT n40 5230MHz

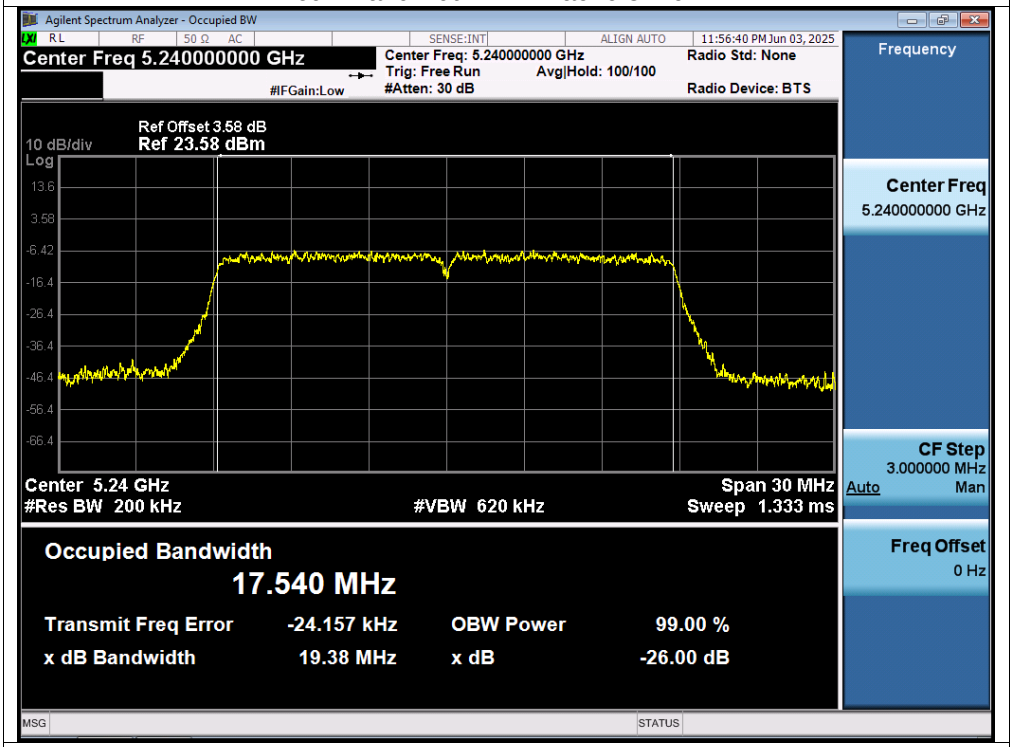
-26dB Bandwidth NVNT ac20 5180MHz



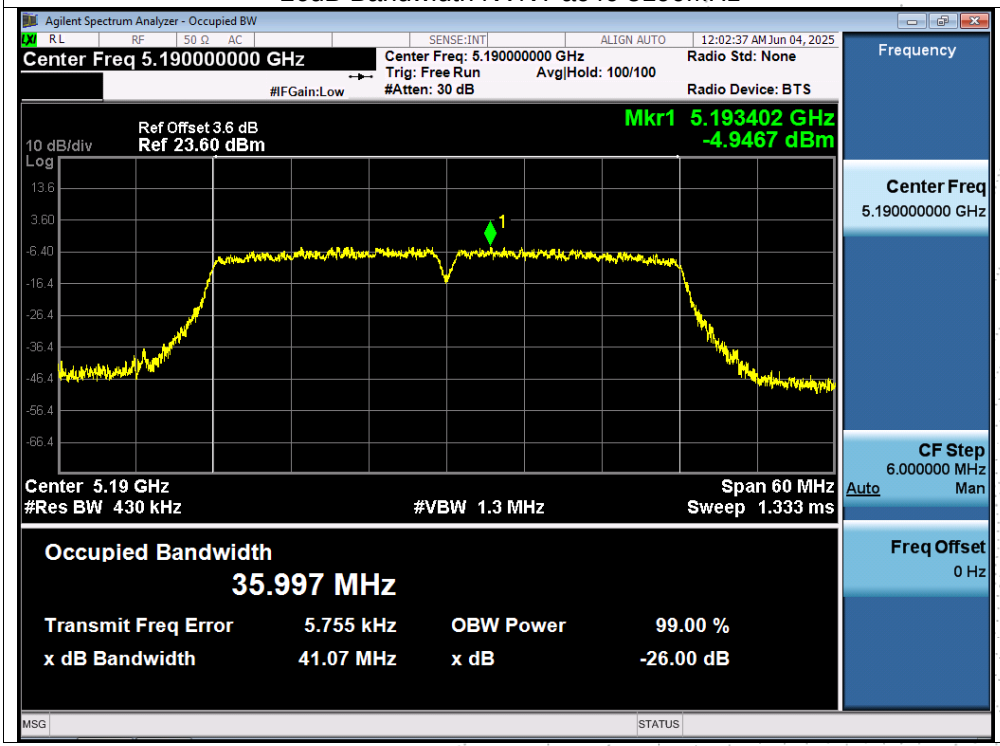
-26dB Bandwidth NVNT ac20 5200MHz



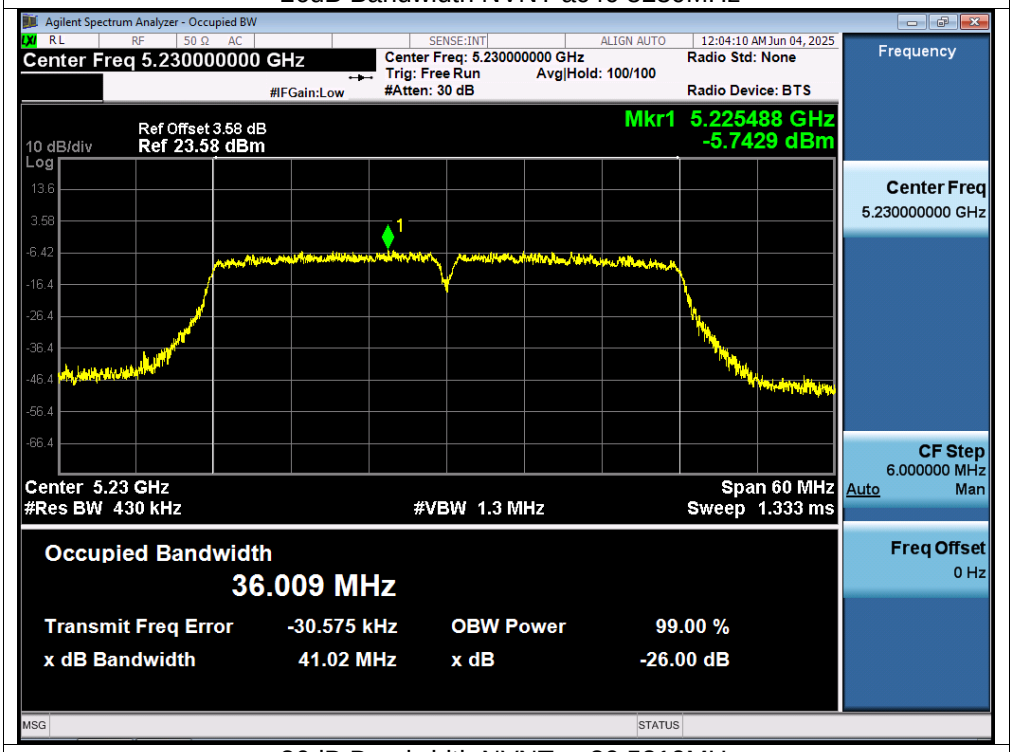
-26dB Bandwidth NVNT ac20 5240MHz



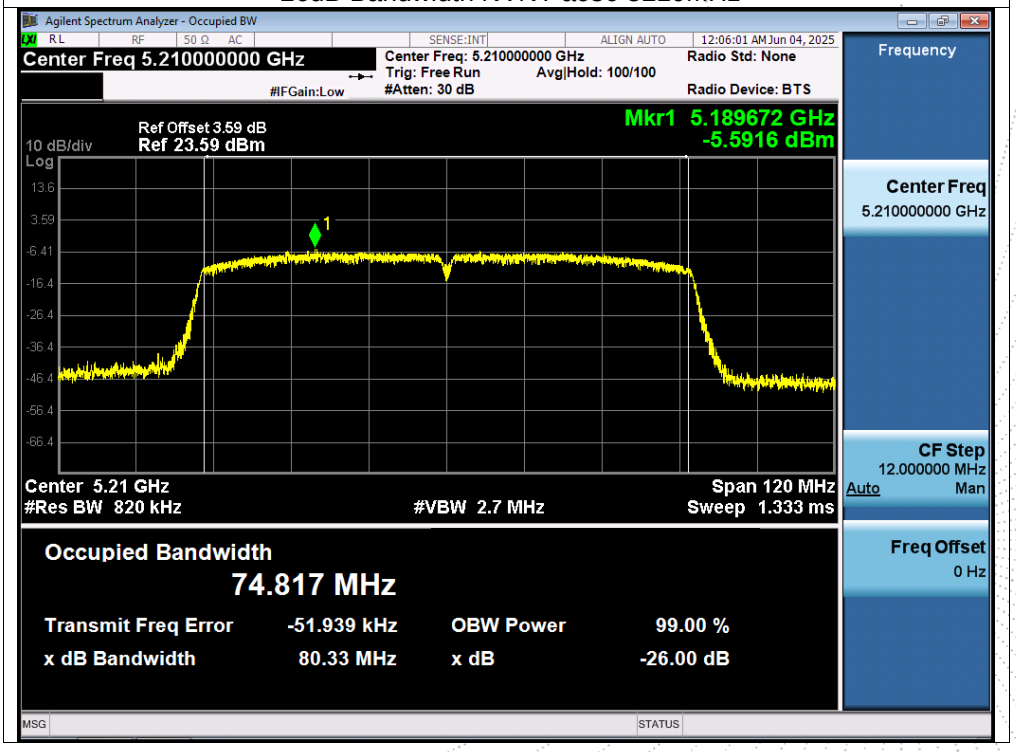
-26dB Bandwidth NVNT ac40 5190MHz



-26dB Bandwidth NVNT ac40 5230MHz



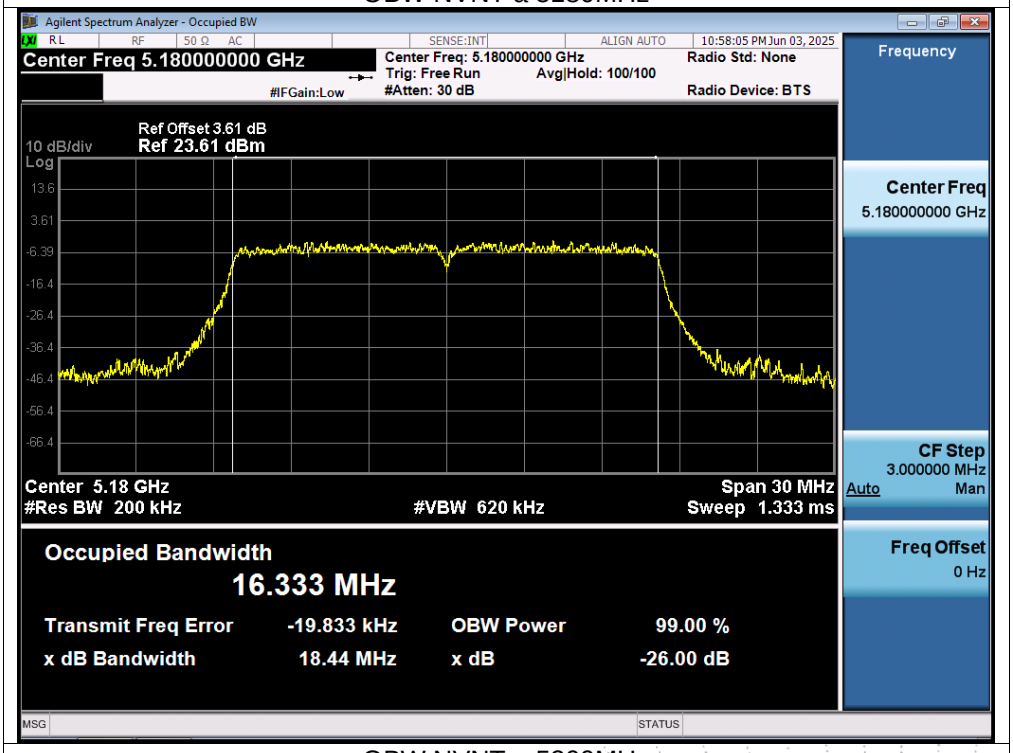
-26dB Bandwidth NVNT ac80 5210MHz



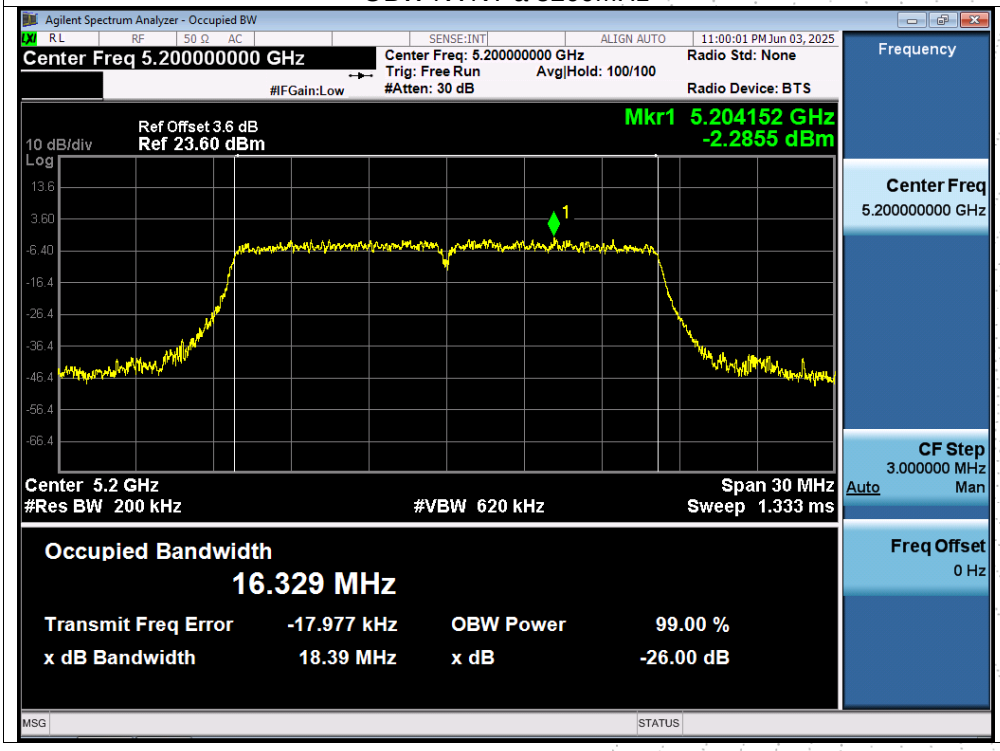
Note: A(B) Represent the value of antenna A and B, The worst data is Antenna A, only shown Antenna A Plot.

Test Graphs

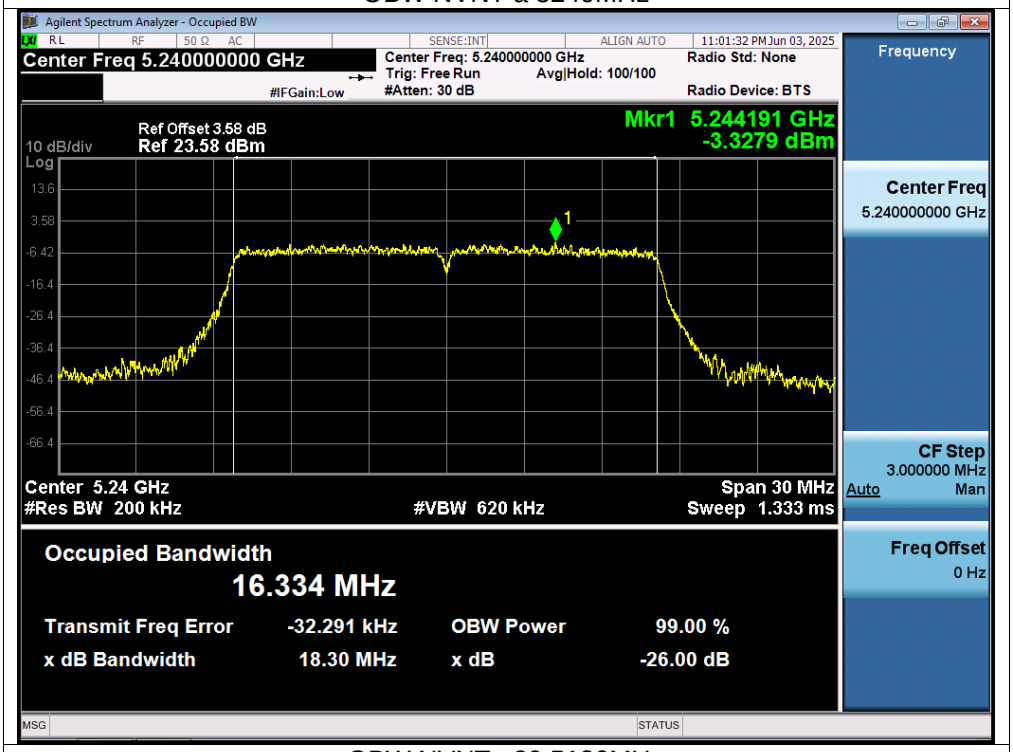
OBW NVNT a 5180MHz



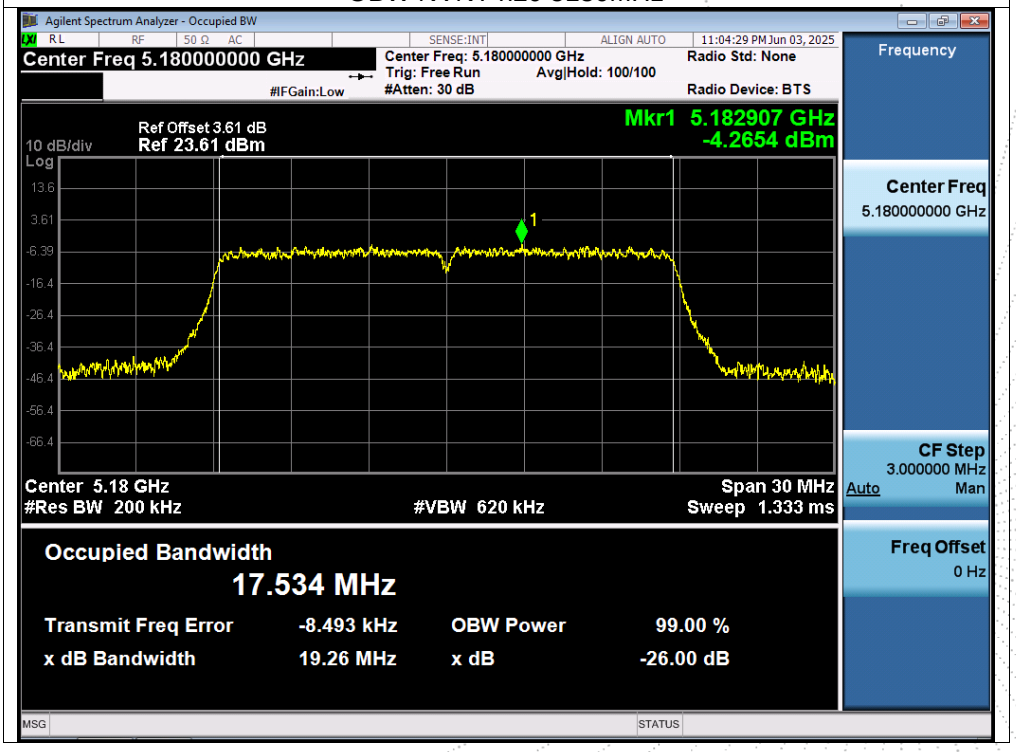
OBW NVNT a 5200MHz



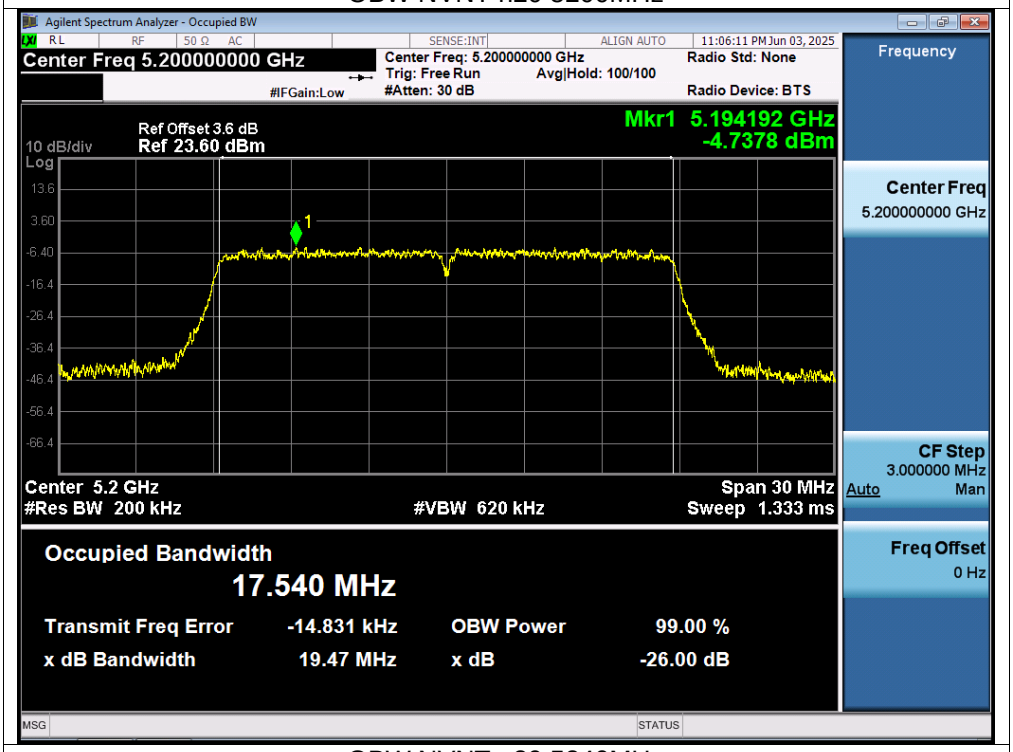
OBW NVNT a 5240MHz



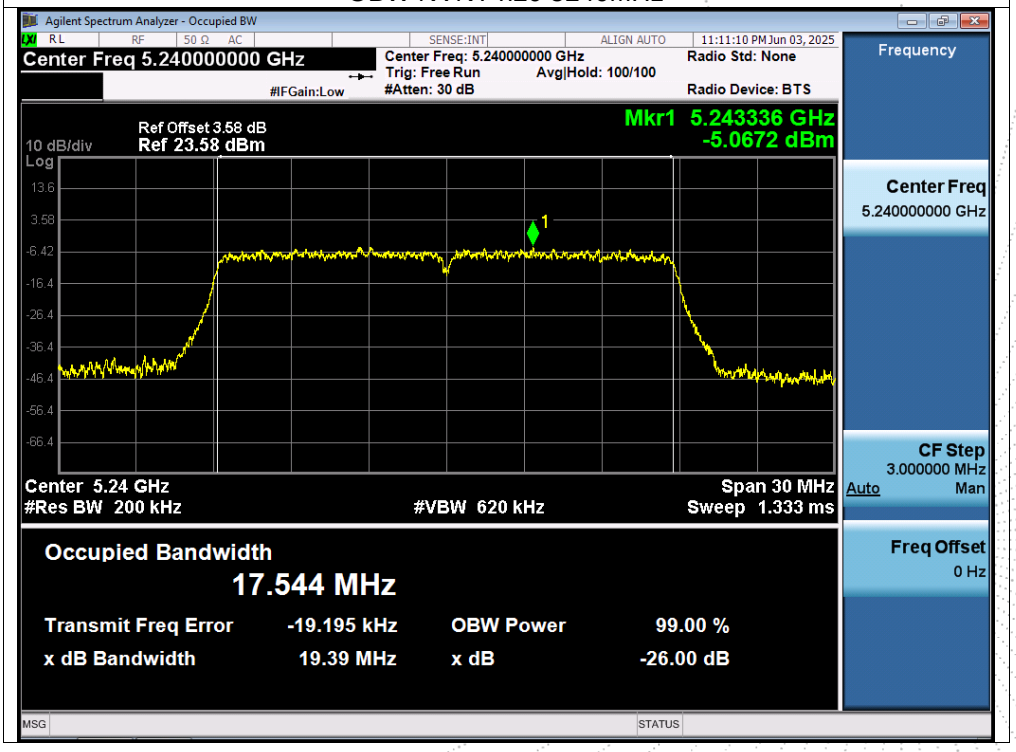
OBW NVNT n20 5180MHz



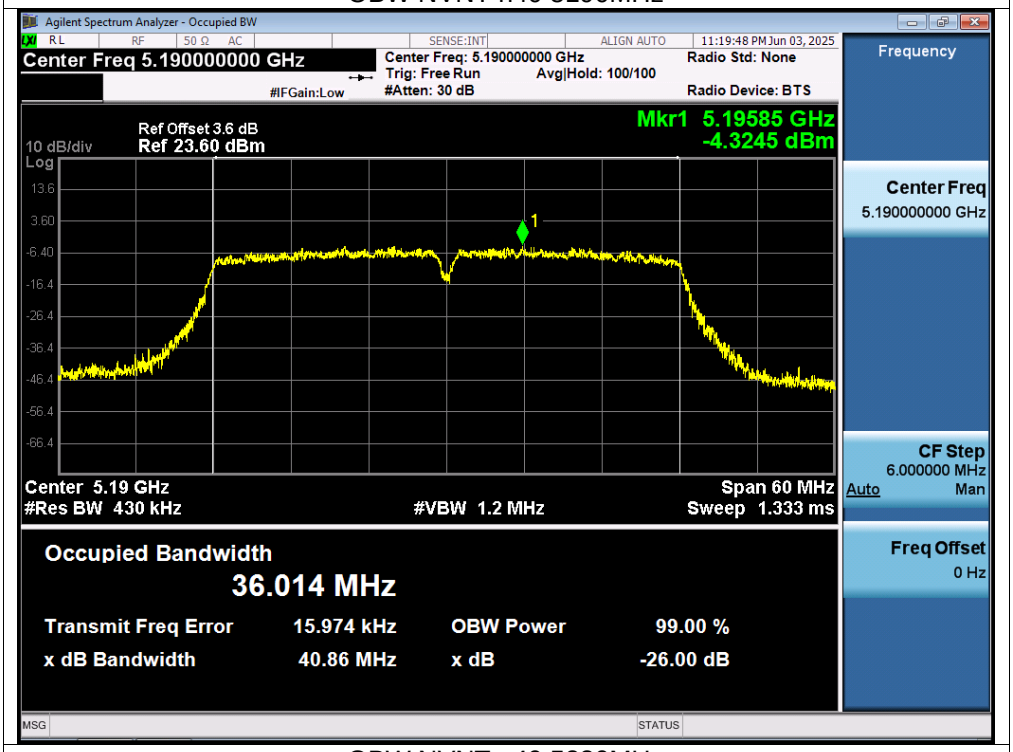
OBW NVNT n20 5200MHz



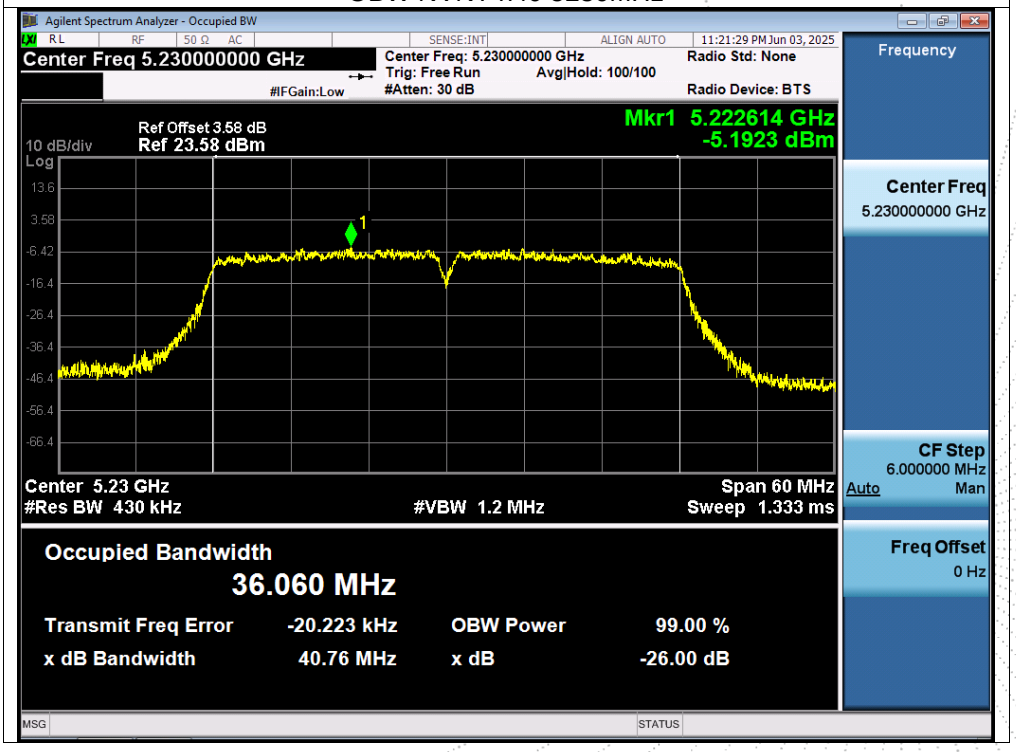
OBW NVNT n20 5240MHz



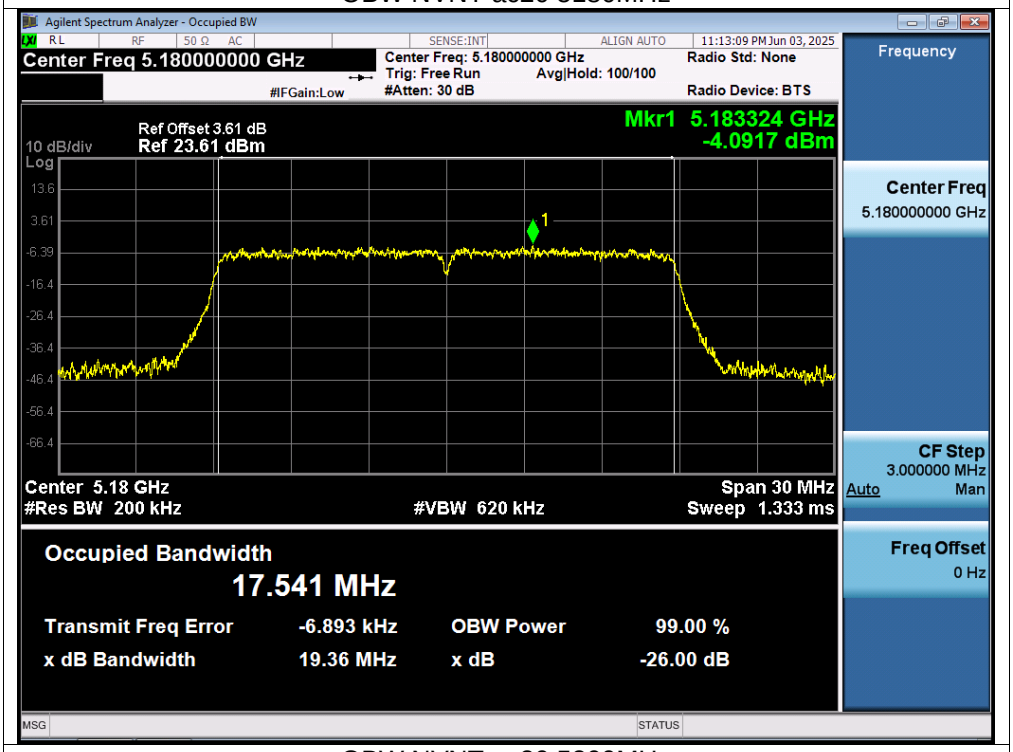
OBW NVNT n40 5190MHz



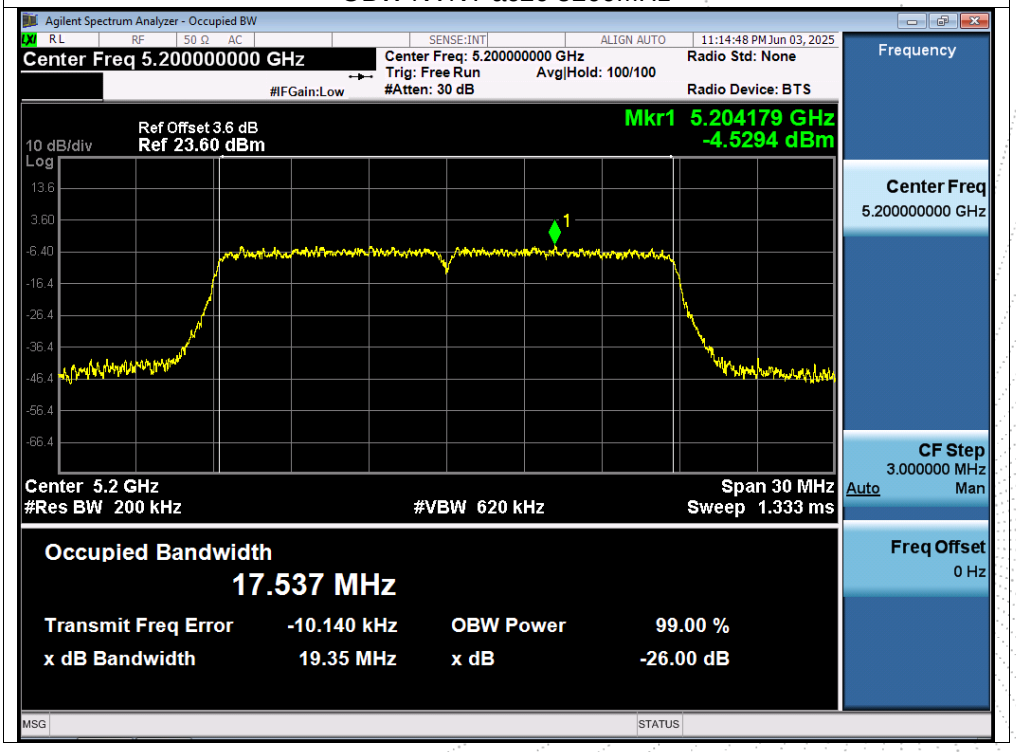
OBW NVNT n40 5230MHz



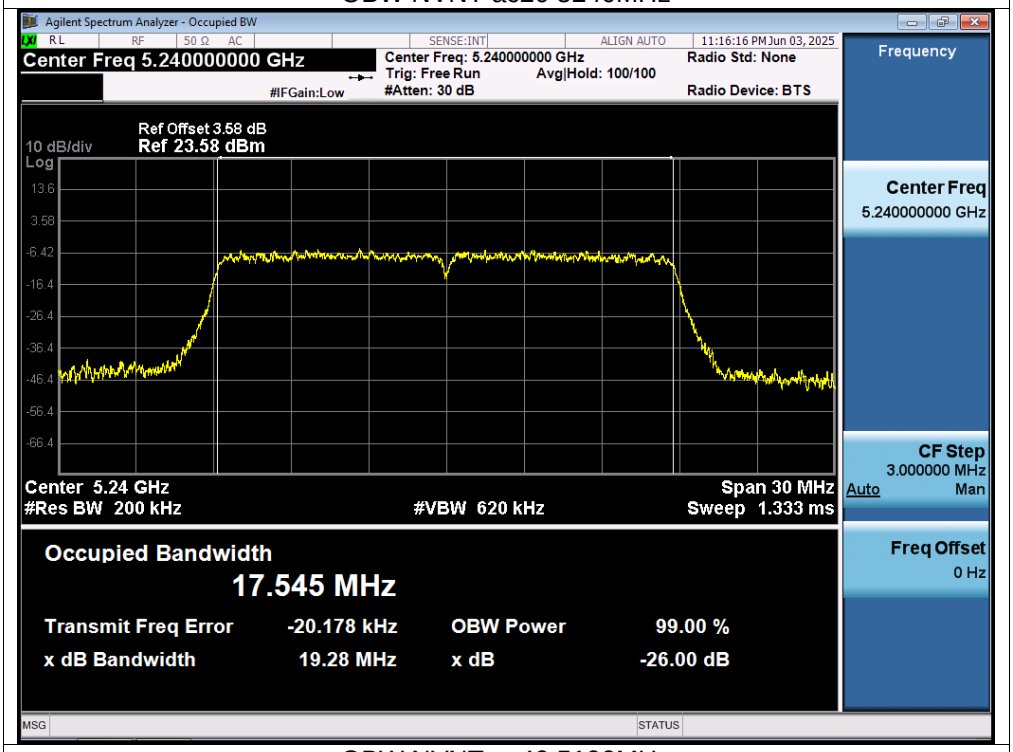
OBW NVNT ac20 5180MHz



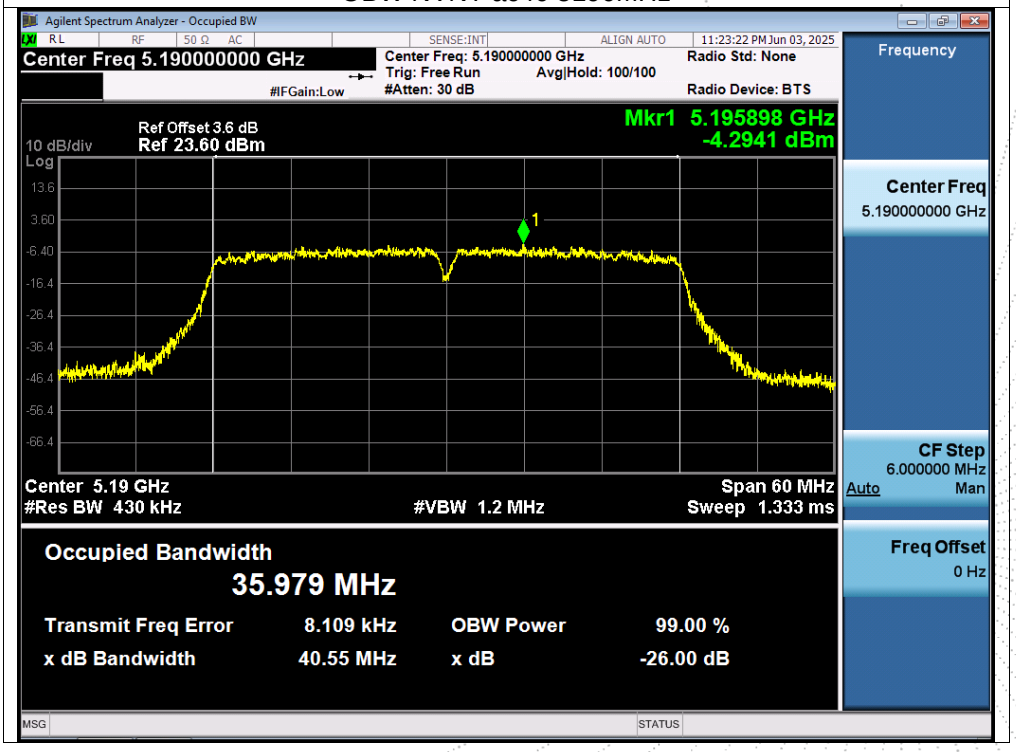
OBW NVNT ac20 5200MHz



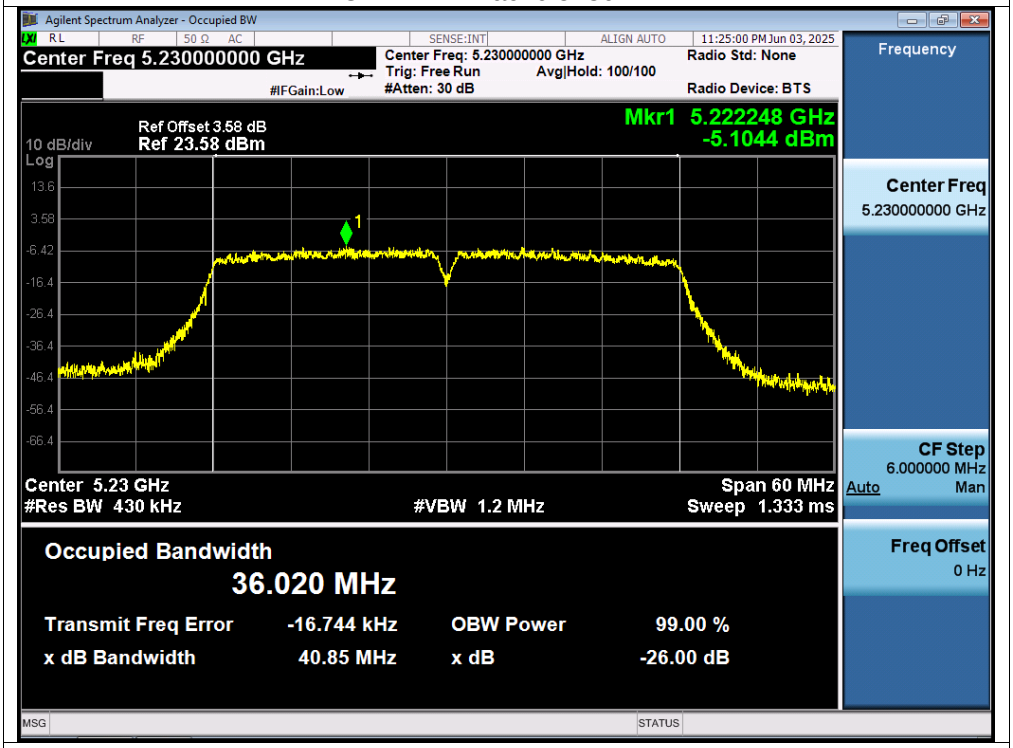
OBW NVNT ac20 5240MHz



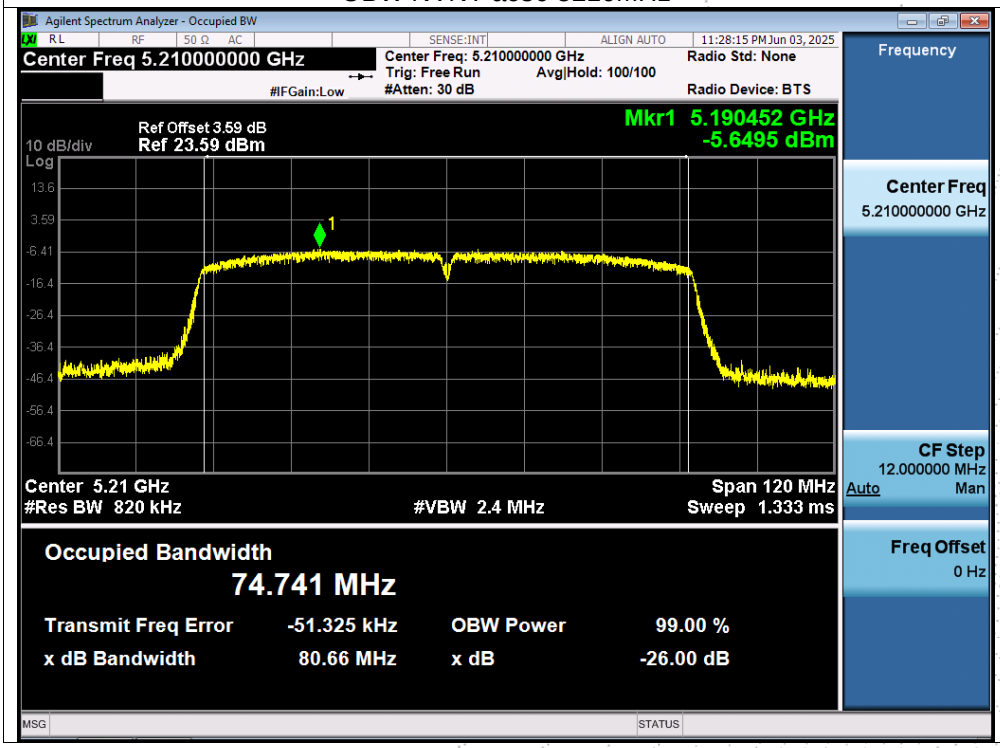
OBW NVNT ac40 5190MHz



OBW NVNT ac40 5230MHz

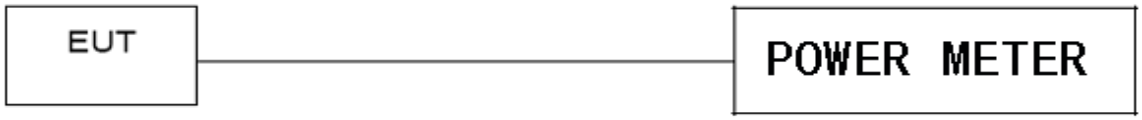


OBW NVNT ac80 5210MHz



10. Maximum Conducted Output Power

10.1 Block Diagram Of Test Setup



10.2 Limit

According to FCC §15.407
The maximum conduced output power should not exceed:

Frequency Band(MHz)	Limit
5150~5250	250mW
5725~5850	1W

10.3 Test Procedure

Maximum conducted output power may be measured using a spectrum analyzer/EMI receiver or an RF power meter.

1. Device Configuration
If possible, configure or modify the operation of the EUT so that it transmits continuously at its maximum power control level (see section II.B.).
a) The intent is to test at 100 percent duty cycle; however a small reduction in duty cycle (to no lower than 98 percent) is permitted if required by the EUT for amplitude control purposes. Manufacturers are expected to provide software to the test lab to permit such continuous operation.
b) If continuous transmission (or at least 98 percent duty cycle) cannot be achieved due to hardware limitations (e.g., overheating), the EUT shall be operated at its maximum power control level with the transmit duration as long as possible and the duty cycle as high as possible.

2. Measurement using a Spectrum Analyzer or EMI Receiver (SA)
Measurement of maximum conducted output power using a spectrum analyzer requires integrating the spectrum across a frequency span that encompasses, at a minimum, either the EBW or the 99-percent occupied bandwidth of the signal.1 However, the EBW must be used to determine bandwidth dependent limits on maximum conducted output power in accordance with § 15.407(a).
a) The test method shall be selected as follows: (i) Method SA-1 or SA-1 Alternative (averaging with the EUT transmitting at full power throughout each sweep) shall be applied if either of the following conditions can be satisfied:
• The EUT transmits continuously (or with a duty cycle ≥ 98 percent).
• Sweep triggering or gating can be implemented in a way that the device transmits at the maximum power control level throughout the duration of each of the instrument sweeps to be averaged. This condition can generally be achieved by triggering the instrument's sweep if the duration of the sweep (with the analyzer configured as in Method SA-1, below) is equal to or shorter than the duration T of each transmission from the EUT and if those transmissions exhibit full power throughout their durations.
(ii) Method SA-2 or SA-2 Alternative (averaging across on and off times of the EUT transmissions, followed by duty cycle correction) shall be applied if the conditions of (i) cannot be achieved and the transmissions exhibit a constant duty cycle during the measurement duration. Duty cycle will be considered to be constant if variations are less than ± 2 percent.

(iii) Method SA-3 (RMS detection with max hold) or SA-3 Alternative (reduced VBW with max hold) shall be applied if the conditions of (i) and (ii) cannot be achieved.

b) Method SA-1 (trace averaging with the EUT transmitting at full power throughout each sweep): (i) Set span to encompass the entire emission bandwidth (EBW) (or, alternatively, the entire 99% occupied bandwidth) of the signal.
(ii) Set RBW = 1 MHz.
(iii) Set VBW ≥ 3 MHz.
(iv) Number of points in sweep ≥ 2 Span / RBW. (This ensures that bin-to-bin spacing is ≤ RBW/2, so that narrowband signals are not lost between frequency bins.)
(v) Sweep time = auto.
(vi) Detector = RMS (i.e., power averaging), if available. Otherwise, use sample detector mode.
(vii) If transmit duty cycle < 98 percent, use a video trigger with the trigger level set to enable triggering only on full power pulses. Transmitter must operate at maximum power control level for the entire duration of every sweep. If the EUT transmits continuously (i.e., with no off intervals) or at duty cycle ≥ 98 percent, and if each transmission is entirely at the maximum power control level, then the trigger shall be set to “free run”.
(viii) Trace average at least 100 traces in power averaging (i.e., RMS) mode.
(ix) Compute power by integrating the spectrum across the EBW (or, alternatively, the entire 99% occupied bandwidth) of the signal using the instrument’s band power measurement function with band limits set equal to the EBW (or occupied bandwidth) band edges. If the instrument does not have a band power function, sum the spectrum

10.4 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.

10.5 Test Result

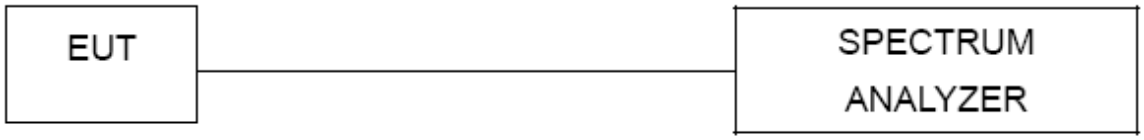
Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage:	AC 120V/60Hz
Test Mode:	TX Frequency U-NII-1 (5180-5240MHz)		

Mode	Channel	Frequency (MHz)	Conducted Power (dBm)			Limit (dBm)	Result
			ANT A	ANT B	Total		
NVNT	a	5180	11.05	11.08	/	24	Pass
NVNT	a	5200	11.27	10.93	/	24	Pass
NVNT	a	5240	10.43	10.03	/	24	Pass
NVNT	n20	5180	9.93	9.58	12.77	24	Pass
NVNT	n20	5200	9.89	9.47	12.70	24	Pass
NVNT	n20	5240	9.25	8.31	11.82	24	Pass
NVNT	n40	5190	8.95	8.53	11.76	24	Pass
NVNT	n40	5230	8.03	7.61	10.84	24	Pass
NVNT	ac20	5180	10.08	8.52	12.38	24	Pass
NVNT	ac20	5200	9.94	9.39	12.68	24	Pass
NVNT	ac20	5240	9.01	8.25	11.66	24	Pass
NVNT	ac40	5190	8.98	8.53	11.77	24	Pass
NVNT	ac40	5230	7.96	7.6	10.79	24	Pass
NVNT	ac80	5210	7.83	7.85	10.85	24	Pass

Note:
For power measurements,
The Array gain=0 for NANT≤4,
So the directional gain for Power measurements is 2.52 dBi.

11. Out Of Band Emissions

11.1 Block Diagram Of Test Setup



11.2 Limit

According to FCC §15.407(b)
Undesirable emission limits. Except as shown in paragraph (b)(7) of this section, the maximum emissions outside of the frequency bands of operation shall be attenuated in accordance with the following limits:
(1) For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.
(2) All emissions shall be limited to a level of −27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

11.3 Test Procedure

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT without connection to measurement instrument. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Then set it to any one measured frequency within its operating range, and make sure the instrument is operated in its linear range.
3. Set RBW of spectrum analyzer to 1 MHz with a convenient frequency span.
4. Measure the highest amplitude appearing on spectral display and set it as a reference level. Plot the graph with marking the highest point and edge frequency.
5. Repeat above procedures until all measured frequencies were complete.

11.4 EUT Operating Conditions

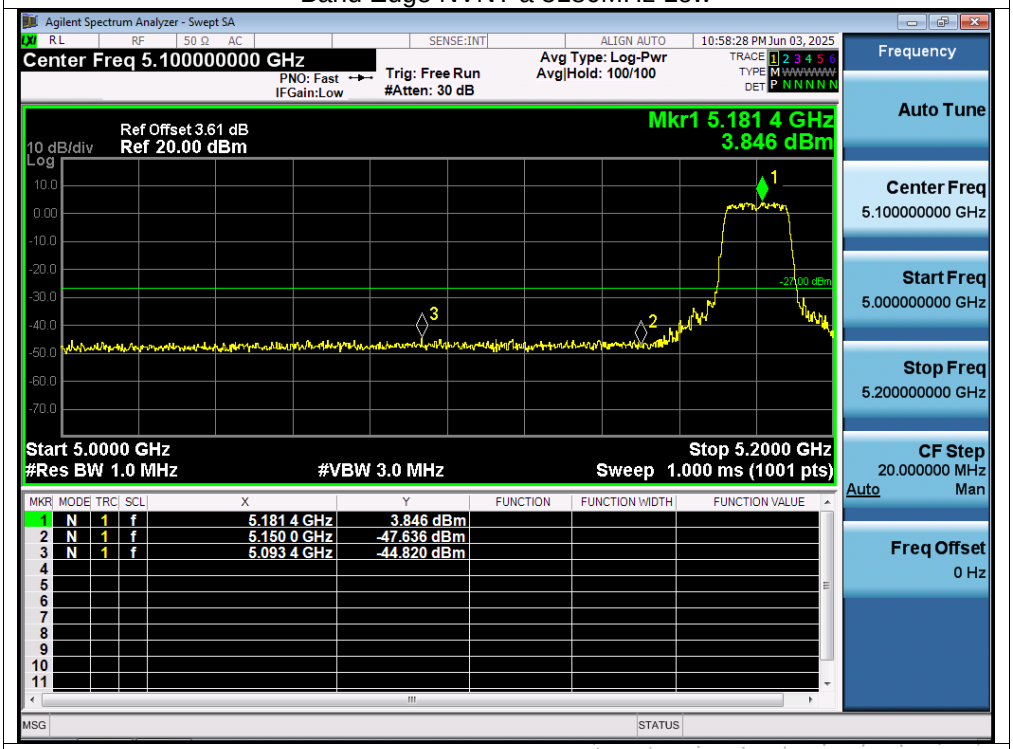
The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data

11.5 Test Result

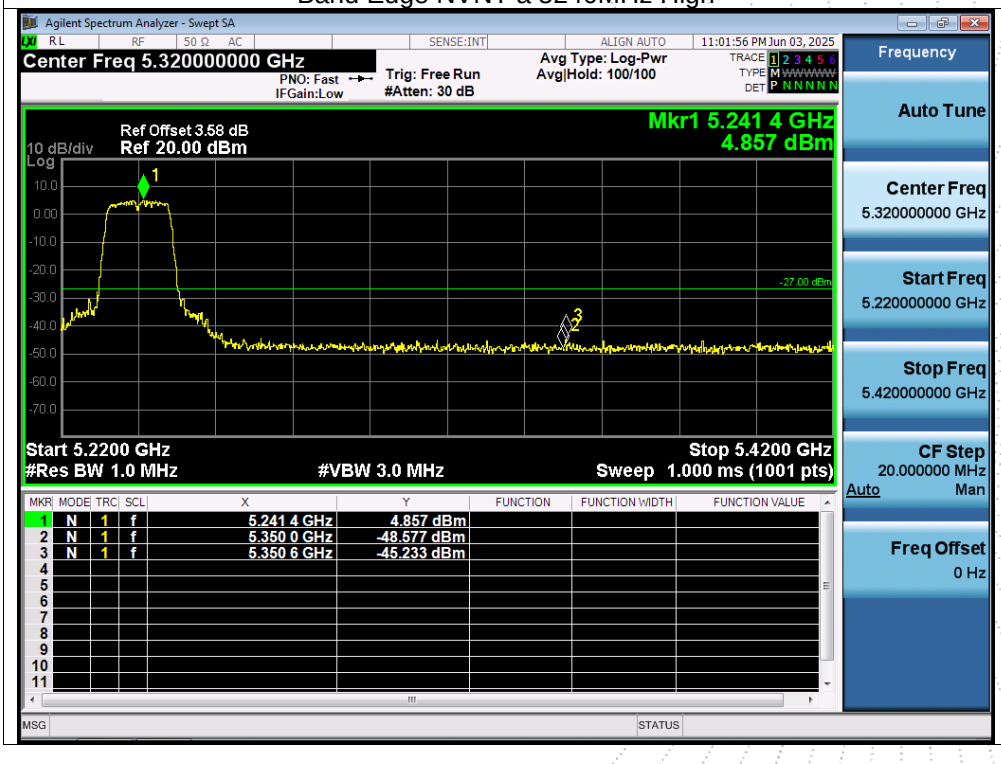
Note: A(B) Represent the value of antenna A and B, The worst data is Antenna A, only shown Antenna A Plot.

Test Graphs

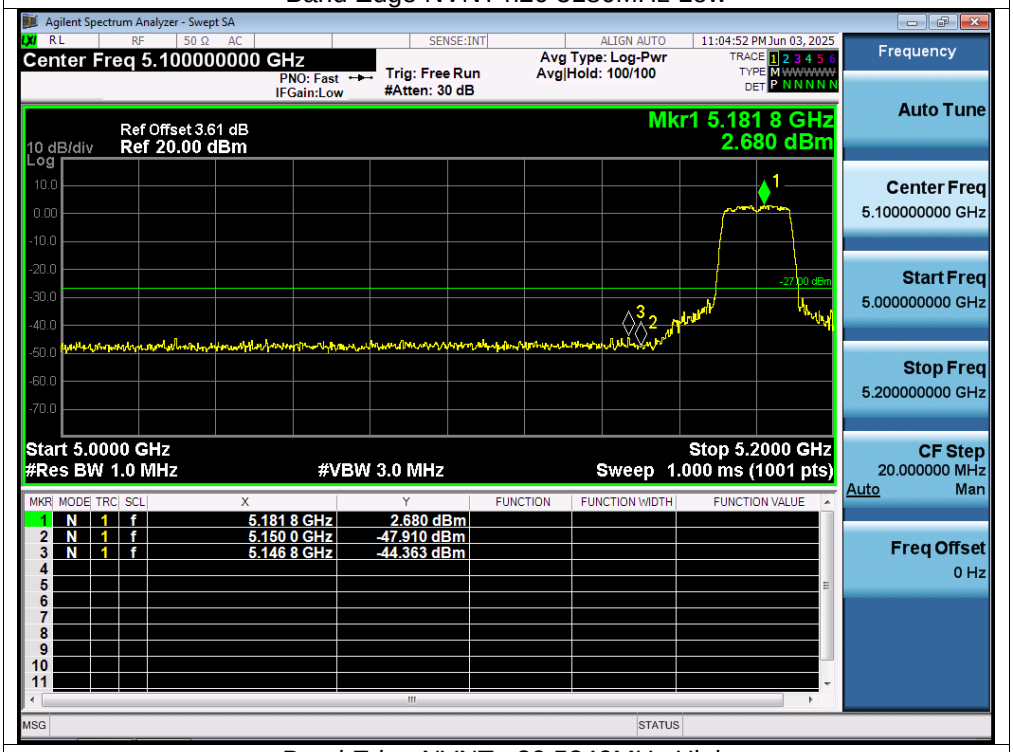
Band Edge NVNT a 5180MHz Low



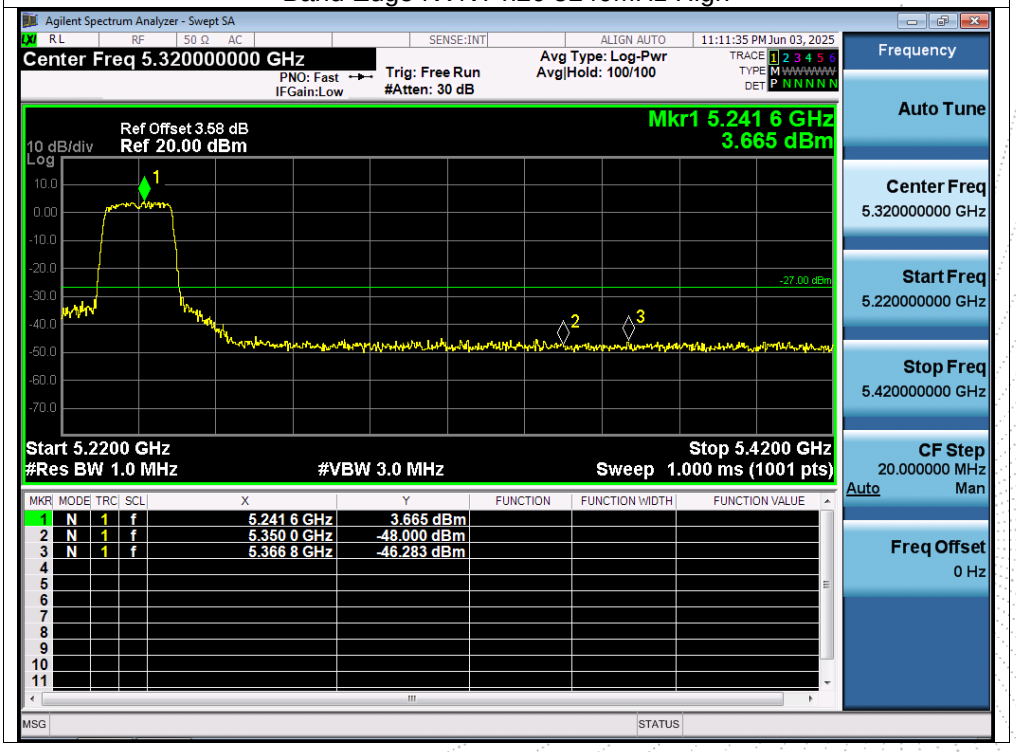
Band Edge NVNT a 5240MHz High



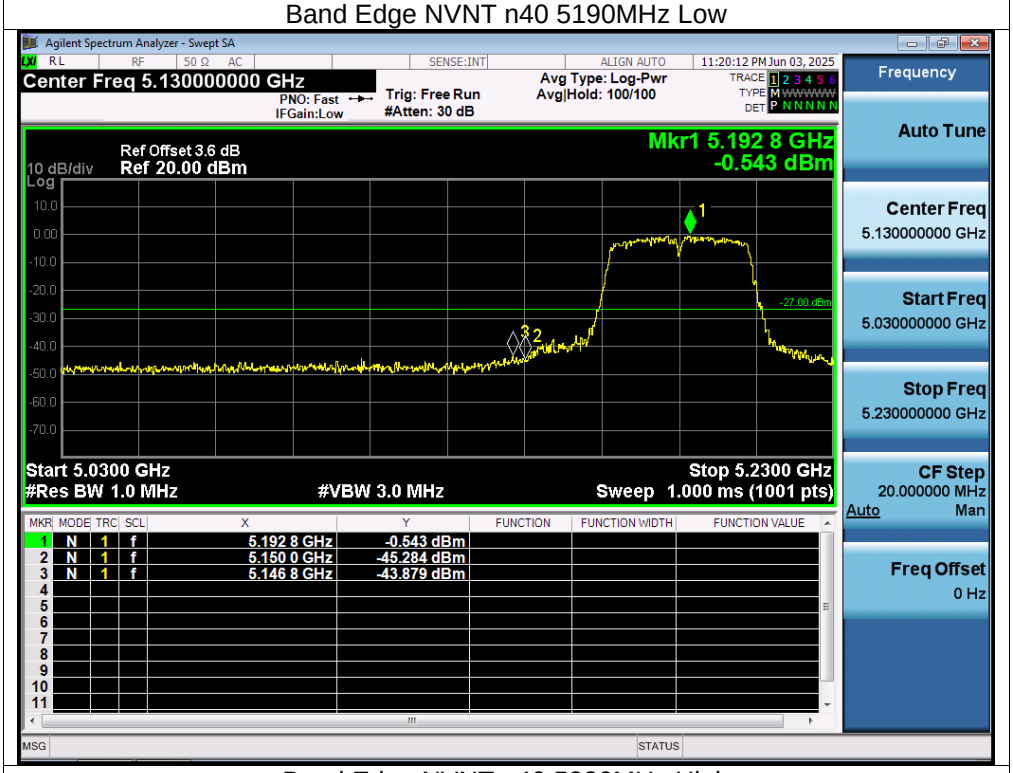
Band Edge NVNT n20 5180MHz Low



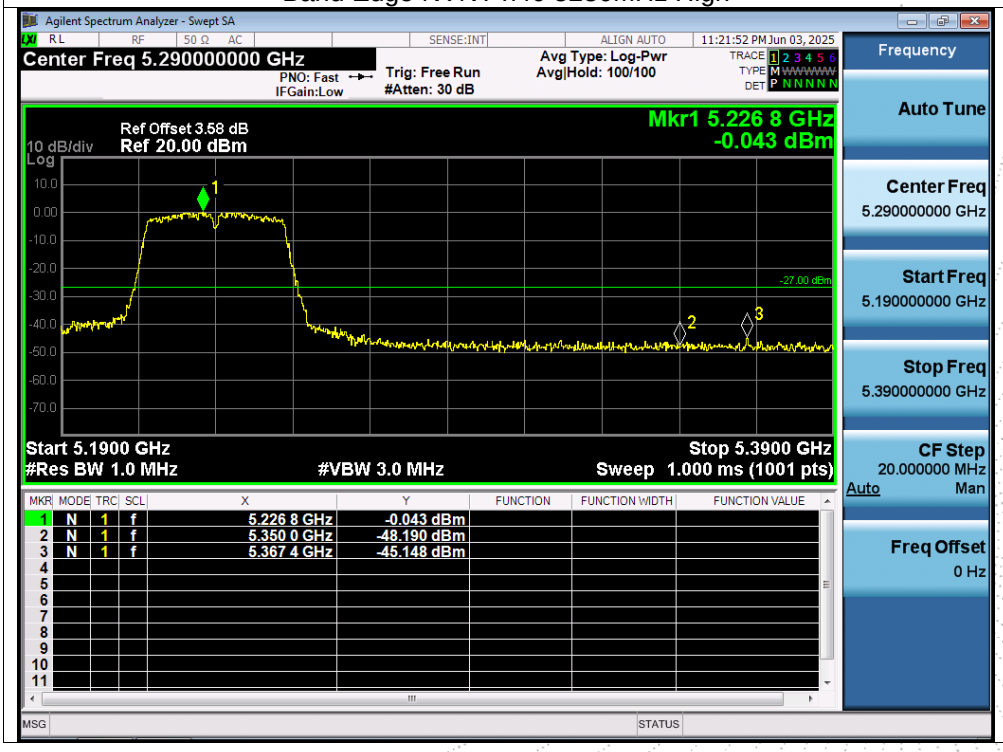
Band Edge NVNT n20 5240MHz High



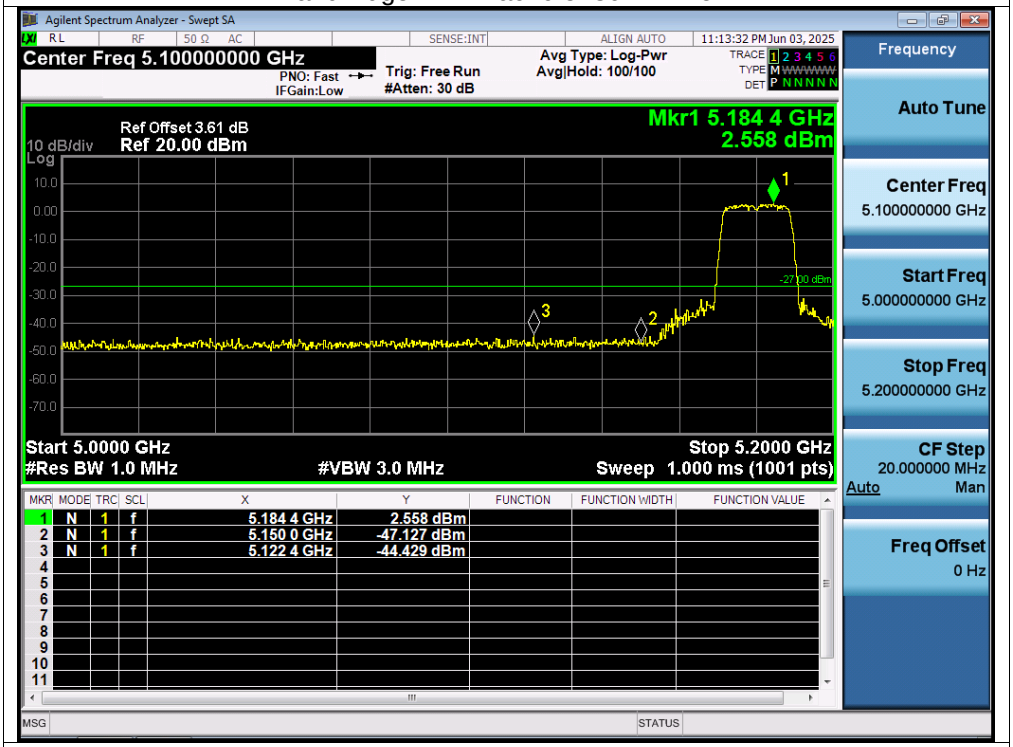
Band Edge NVNT n40 5190MHz Low



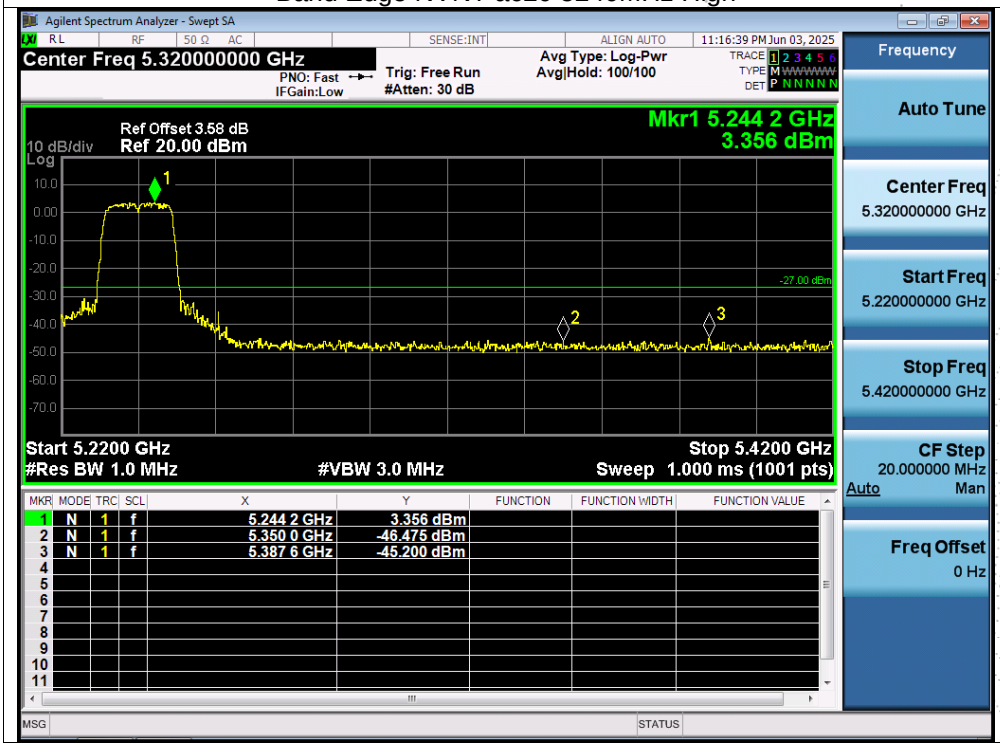
Band Edge NVNT n40 5230MHz High



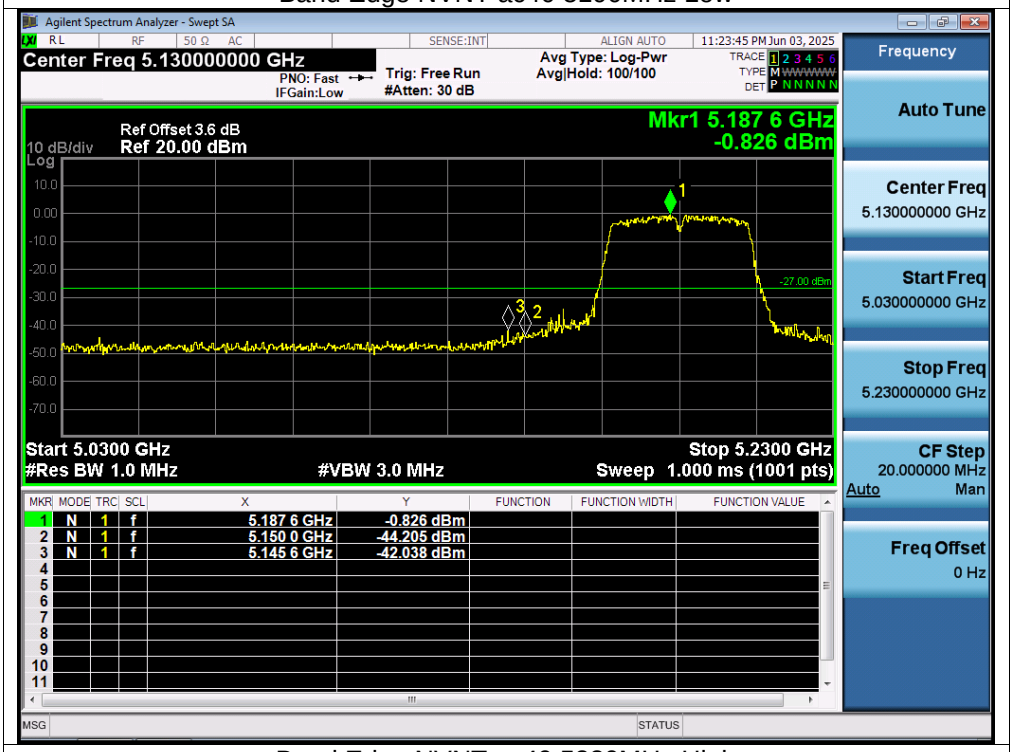
Band Edge NVNT ac20 5180MHz Low



Band Edge NVNT ac20 5240MHz High



Band Edge NVNT ac40 5190MHz Low



Band Edge NVNT ac40 5230MHz High