TEST REPORT

Report No.:	BCTC2305348149-2E
Applicant:	REOLINK INNOVATION LIMITED
Product Name:	WiFi IP Camera
Model/Type reference:	Argus 3 Ultra
Tested Date:	2023-05-18 to 2023-05-26
Issued Date:	2023-05-29

Shenzhen BCTC Testing Co., Ltd.

FCC ID: 2AYHE-2304A

Product Name:	WiFi IP Camera
Trademark:	reolink
Model/Type Ref.:	Argus 3 Ultra Argus 3 Plus 4K, A4K3
Prepared For:	REOLINK INNOVATION LIMITED
Address:	FLAT/RM 705 7/F FA YUEN COMMERCIAL BUILDING 75-77 FA YUEN STREET MONG KOK KL HONG KONG
Manufacturer:	REOLINK INNOVATION LIMITED
Address:	FLAT/RM 705 7/F FA YUEN COMMERCIAL BUILDING 75-77 FA YUEN STREET MONG KOK KL HONG KONG
Factory:	Shenzhen Reolink Technology Co., Ltd.
Address:	2-4th Floor, Building 2, YuanLing Industrial Park, ShangWu, Shiyan Street, Bao'an District, Shenzhen, China
Prepared By:	Shenzhen BCTC Testing Co., Ltd.
Address:	1-2/F., Building B, Pengzhou Industrial Park, No.158, Fuyuan 1st Road, Zhancheng, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, China
Sample Received Date:	2023-05-18
Sample tested Date:	2023-05-18 to 2023-05-26
Issue Date:	2023-05-29
Report No.:	BCTC2305348149-2E
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.

Table Of Content

(Note: N/A Means Not Applicable)

1. Version

Report No.	Issue Date	Description	Approved
BCTC2305348149-2E	2023-05-29	Original	Valid

2. Test Summary

The Product has been tested according to the following specifications:

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

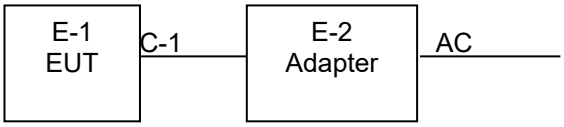
4.1 Product Information

Model/Type Ref.:	Argus 3 Ultra Argus 3 Plus 4K, A4K3
Model differences:	All the model are the same circuit and RF module, except model names.
Hardware Version:	N/A
Software Version:	N/A
IEEE 802.11 WLAN Mode Supported	802.11a/n (20MHz channel bandwidth)
Operation Frequency:	5180-5240MHz for 802.11a/n (HT20); 5260-5320MHz for 802.11a/n (HT20); 5500-5700MHz for 802.11a/n (HT20); 5745-5825 MHz for 802.11a/n (HT20);
Data Rate	802.11a: 6,9,12,18,24,36,48,54Mbps; 802.11n(HT20/HT40):MCS0-MCS15;
Type of Modulation:	OFDM with BPSK/QPSK/16QAM/64QAM/256QAM for 802.11a/n
Antenna installation:	Internal antenna
Antenna Gain:	4.35dBi
Ratings:	DC 5V from adapter

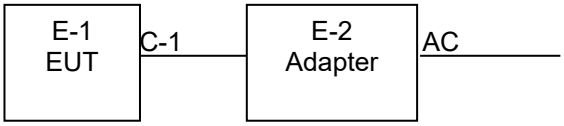
4.2 Test Setup Configuration

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

Conducted Emission:



Radiated Spurious Emission



4.3 Support Equipment

No.	Device Type	Brand	Model	Series No.	Note
E-1	WiFi IP Camera	reolink	Argus 3 Ultra	N/A	EUT
E-2	N/A	N/A	N/A	N/A	Auxiliary

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

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

4.4 Channel List

(U-NII-1) 5180MHz-5240MHz				
Bandwidth	Channel	Frequency (MHz)	Channel	Frequency (MHz)
20MHz	36	5180	40	5200
	44	5220	48	5240
(U-NII-2A) 5260MHz-5320MHz				
Bandwidth	Channel	Frequency (MHz)	Channel	Frequency (MHz)
20MHz	52	5260	56	5280
	60	5300	64	5320
(U-NII-2C) 5500MHz-5700MHz				
Bandwidth	Channel	Frequency (MHz)	Channel	Frequency (MHz)
20MHz	100	5500	105	5520
	108	5540	112	5560
	116	5580	120	5600
	124	5620	128	5640
	132	5660	136	5680
	140	5700		
(U-NII-3) 5745MHz-5825MHz				
Bandwidth	Channel	Frequency (MHz)	Channel	Frequency (MHz)
20MHz	149	5745	153	5765
	157	5785	161	5805
	165	5825		

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 20 CH36/ CH40/ CH 48 802.11a / n 20 CH52/ CH56/ CH 64 802.11a / n 20 CH100/ CH116/ CH 140 802.11a /n 20 CH149/ CH157/ CH 165
Mode 2	Link Mode

Conducted Emission	
Final Test Mode	Description
Mode 2	Link Mode

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	CMD		
Parameters	DEF	DEF	DEF

5. Test Facility And Test Instrument Used

5.1 Test Facility

All measurement facilities used to collect the measurement data are located at Shenzhen BCTC Testing Co., Ltd. Address: 1-2/F., Building B, Pengzhou Industrial Park, No.158, Fuyuan 1st Road, Zhancheng, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, China. The site and apparatus are constructed in conformance with the requirements of ANSI C63.4 and CISPR 16-1-1 other equivalent standards.
FCC Test Firm Registration Number: 712850
A2LA certificate registration number is: CN1212
ISED Registered No.: 23583
ISED CAB identifier: CN0017

5.2 Test Instrument Used

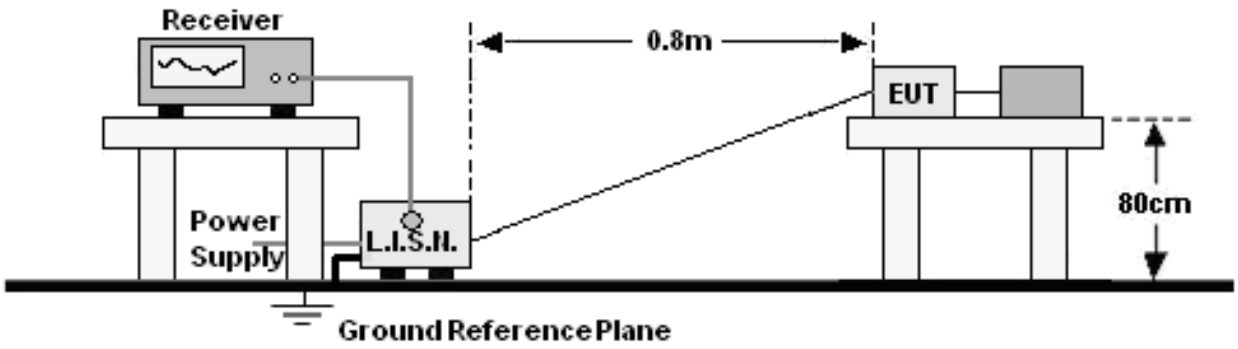
Conducted Emissions Test					
Equipment	**Manufacturer**	**Model#**	**Serial#**	**Last Cal.**	**Next Cal.**
Receiver	R&S	ESR3	102075	May 15, 2023	May 14, 2024
LISN	R&S	ENV216	101375	May 15, 2023	May 14, 2024
Software	Frad	EZ-EMC	EMC-CON 3A1	\	\
Attenuator	\	10dB DC-6GHz	1650	May 15, 2023	May 14, 2024

RF Conducted Test					
Equipment	**Manufacturer**	**Model#**	**Serial#**	**Last Cal.**	**Next Cal.**
Power Metter	Keysight	E4419	\	May 15, 2023	May 14, 2024
Power Sensor (AV)	Keysight	E9300A	\	May 15, 2023	May 14, 2024
Signal Analyzer20kHz-26.5GHz	Keysight	N9020A	MY49100060	May 15, 2023	May 14, 2024
Spectrum Analyzer9kHz-40GHz	R&S	FSP40	100363	May 15, 2023	May 14, 2024
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	Jun. 06. 2020	Jun. 05, 2023
Receiver	R&S	ESR3	102075	May 15, 2023	May 14, 2024
Receiver	R&S	ESRP	101154	May 15, 2023	May 14, 2024
Amplifier	Schwarzbeck	BBV9744	9744-0037	May 15, 2023	May 14, 2024
TRILOG Broadband Antenna	Schwarzbeck	VULB9163	942	May 15, 2023	May 14, 2024
Loop Antenna(9KHz -30MHz)	Schwarzbeck	FMZB1519B	00014	May 15, 2023	May 14, 2024
Amplifier	SKET	LAPA_01G18G-45dB	\	May 15, 2023	May 14, 2024
Horn Antenna	Schwarzbeck	BBHA9120D	1541	May 15, 2023	May 14, 2024
Amplifier(18GHz-40GHz)	MITEQ	TTA1840-35-HG	2034381	May 15, 2023	May 14, 2024
Horn Antenna(18GHz-40GHz)	Schwarzbeck	BBHA9170	00822	May 15, 2023	May 14, 2024
Spectrum Analyzer9kHz-40GHz	R&S	FSP40	100363	May 15, 2023	May 14, 2024
Software	Frad	EZ-EMC	FA-03A2 RE	\	\

6. Conducted Emissions

6.1 Block Diagram Of Test Setup



6.2 Limit

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

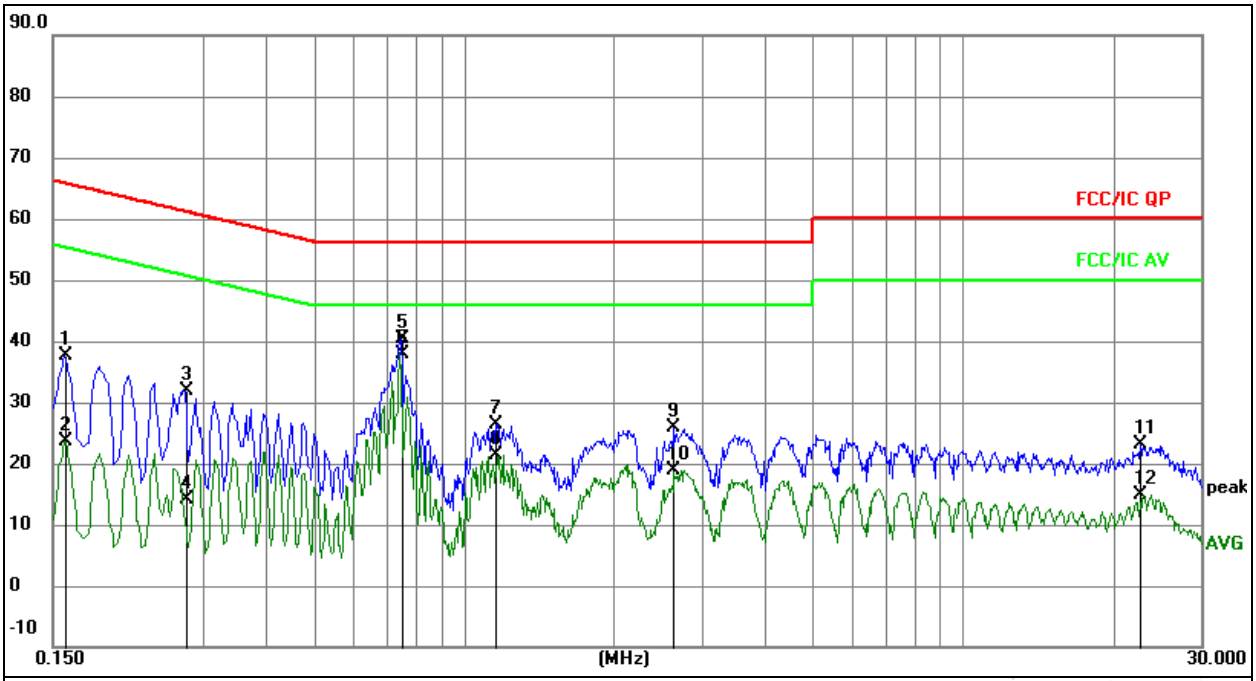
a. The Product was placed on a nonconductive table 0.8 m above the horizontal ground reference plane, and 0.4 m from the vertical ground reference plane, and connected to the main through Line Impedance Stability Network (L.I.S.N).
b. The RBW of the receiver was set at 9 kHz in 150 kHz ~ 30MHz with Peak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

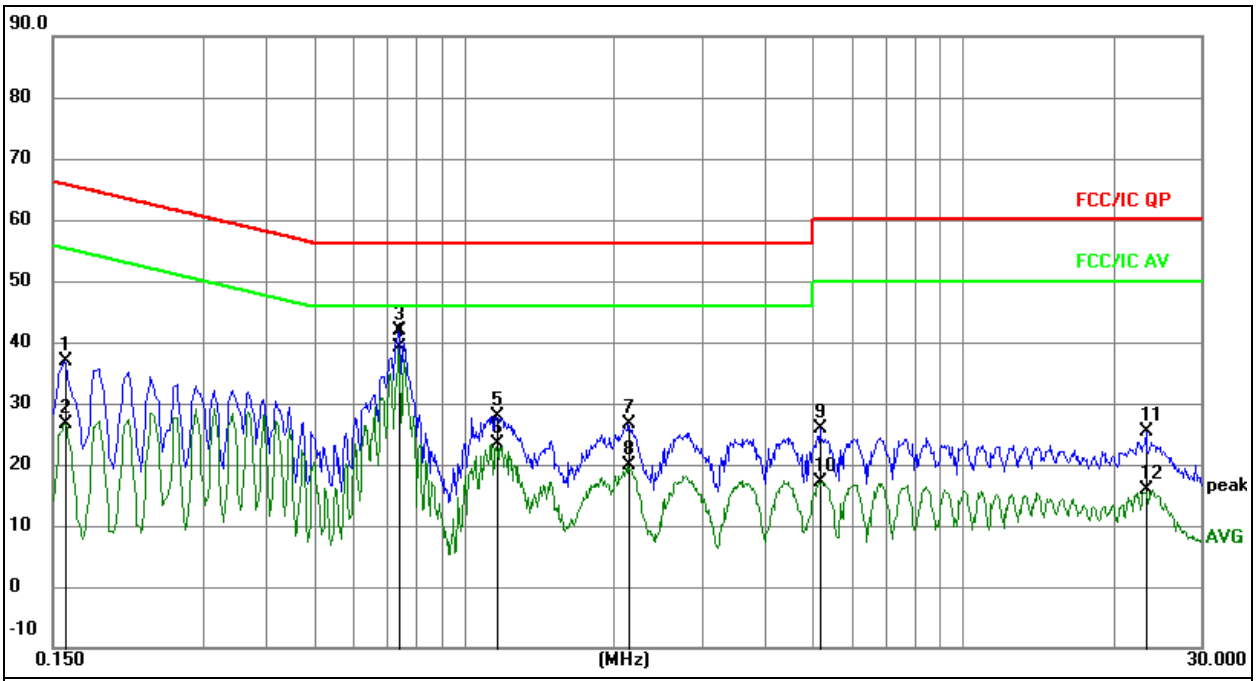
Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage ：	AC 120V/60Hz
Test Mode:	Mode 1	Polarization :	L



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		0.1582	17.98	19.69	37.67	65.56	-27.89	QP
2		0.1582	3.91	19.69	23.60	55.56	-31.96	AVG
3		0.2759	12.06	19.78	31.84	60.94	-29.10	QP
4		0.2759	-5.73	19.78	14.05	50.94	-36.89	AVG
5		0.7470	20.52	19.74	40.26	56.00	-15.74	QP
6	*	0.7470	18.09	19.74	37.83	46.00	-8.17	AVG
7		1.1595	6.56	19.78	26.34	56.00	-29.66	QP
8		1.1595	1.48	19.78	21.26	46.00	-24.74	AVG
9		2.6360	6.01	19.95	25.96	56.00	-30.04	QP
10		2.6360	-1.04	19.95	18.91	46.00	-27.09	AVG
11		22.6551	2.64	20.52	23.16	60.00	-36.84	QP
12		22.6551	-5.73	20.52	14.79	50.00	-35.21	AVG

Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage ：	AC 120V/60Hz
Test Mode:	Mode 1	Polarization :	N



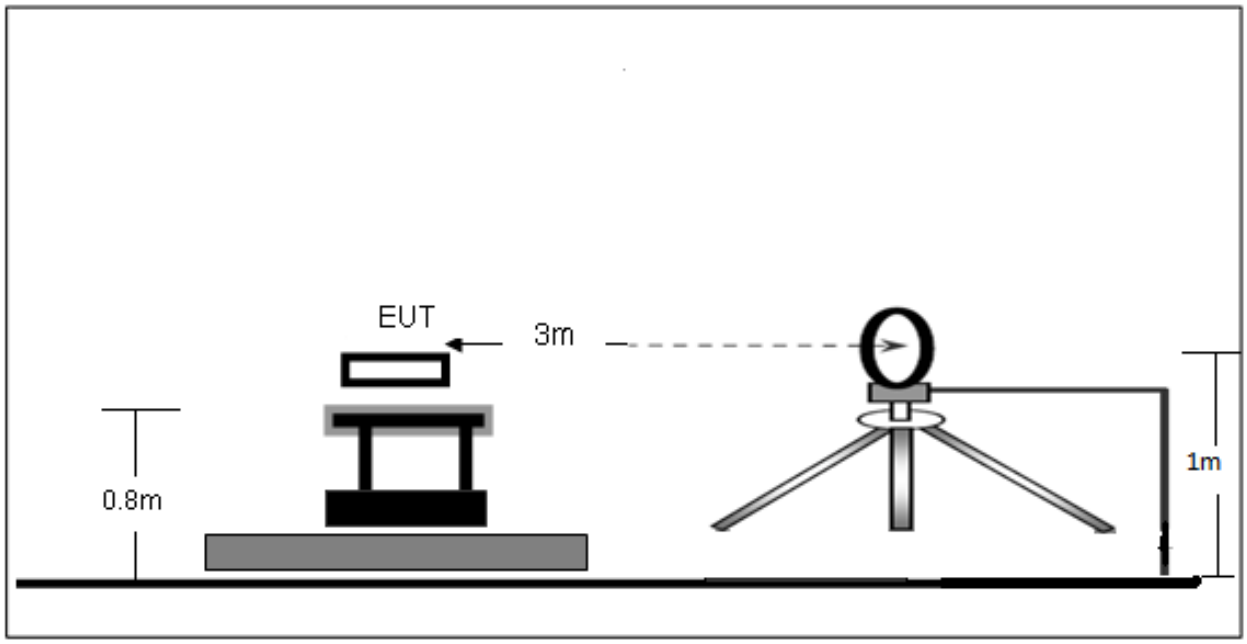
Remark:
1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.
3. Measurement = Reading Level + Correct Factor
4. Over = Measurement - Limit

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz		dB	dBuV	dBuV	dB	Detector
1		0.1590	17.22	19.69	36.91	65.52	-28.61	QP
2		0.1590	7.06	19.69	26.75	55.52	-28.77	AVG
3		0.7395	22.02	19.74	41.76	56.00	-14.24	QP
4	*	0.7395	19.51	19.74	39.25	46.00	-6.75	AVG
5		1.1625	8.21	19.78	27.99	56.00	-28.01	QP
6		1.1625	3.56	19.78	23.34	46.00	-22.66	AVG
7		2.1390	6.81	19.90	26.71	56.00	-29.29	QP
8		2.1390	-0.13	19.90	19.77	46.00	-26.23	AVG
9		5.1855	5.74	20.13	25.87	60.00	-34.13	QP
10		5.1855	-3.01	20.13	17.12	50.00	-32.88	AVG
11		23.2890	4.74	20.52	25.26	60.00	-34.74	QP
12		23.2890	-4.72	20.52	15.80	50.00	-34.20	AVG

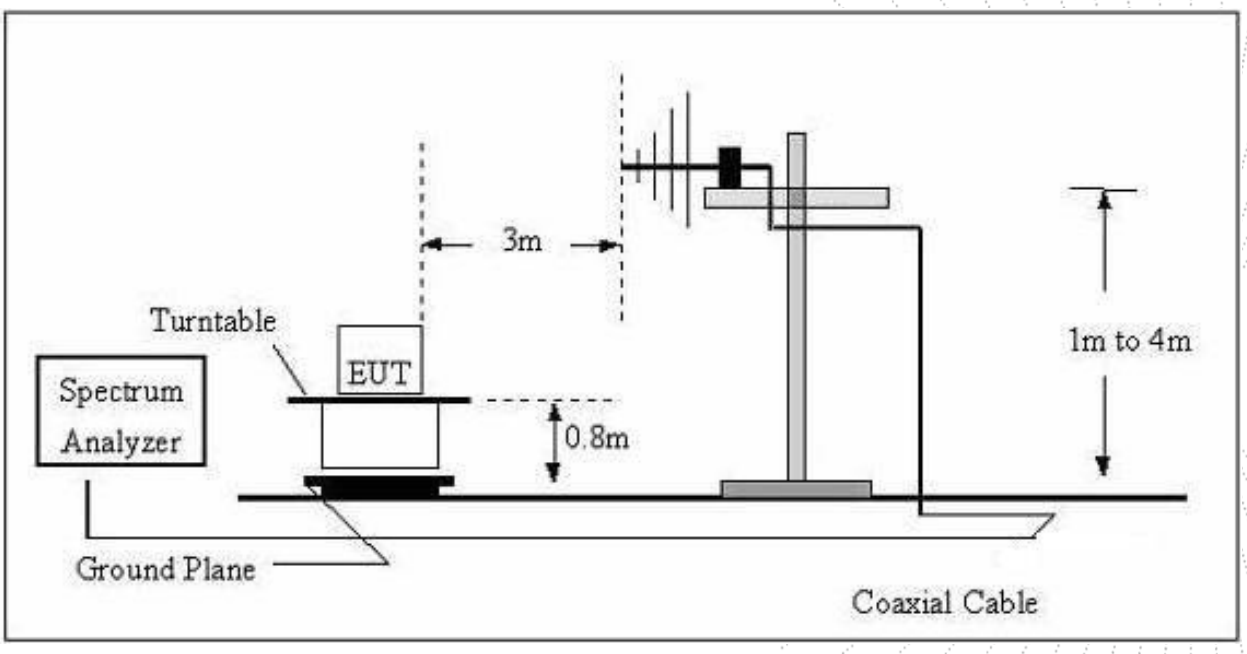
7. Radiated Emissions

7.1 Block Diagram Of Test Setup

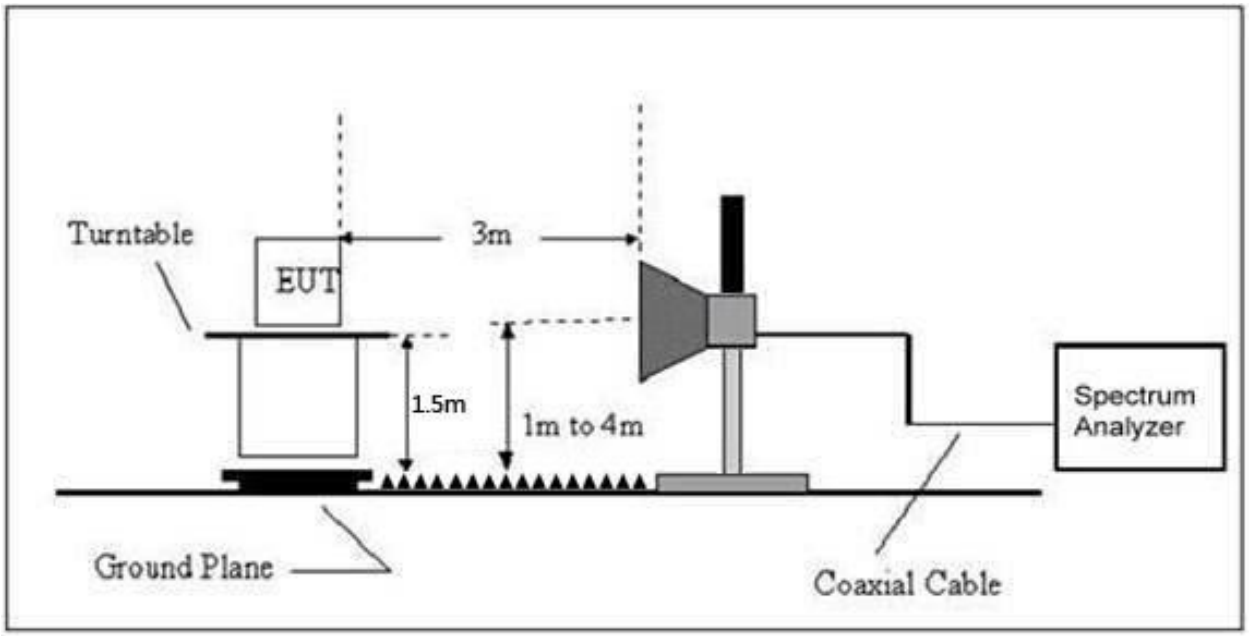
（A）Radiated Emission Test-Up Frequency Below 30MHz



（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

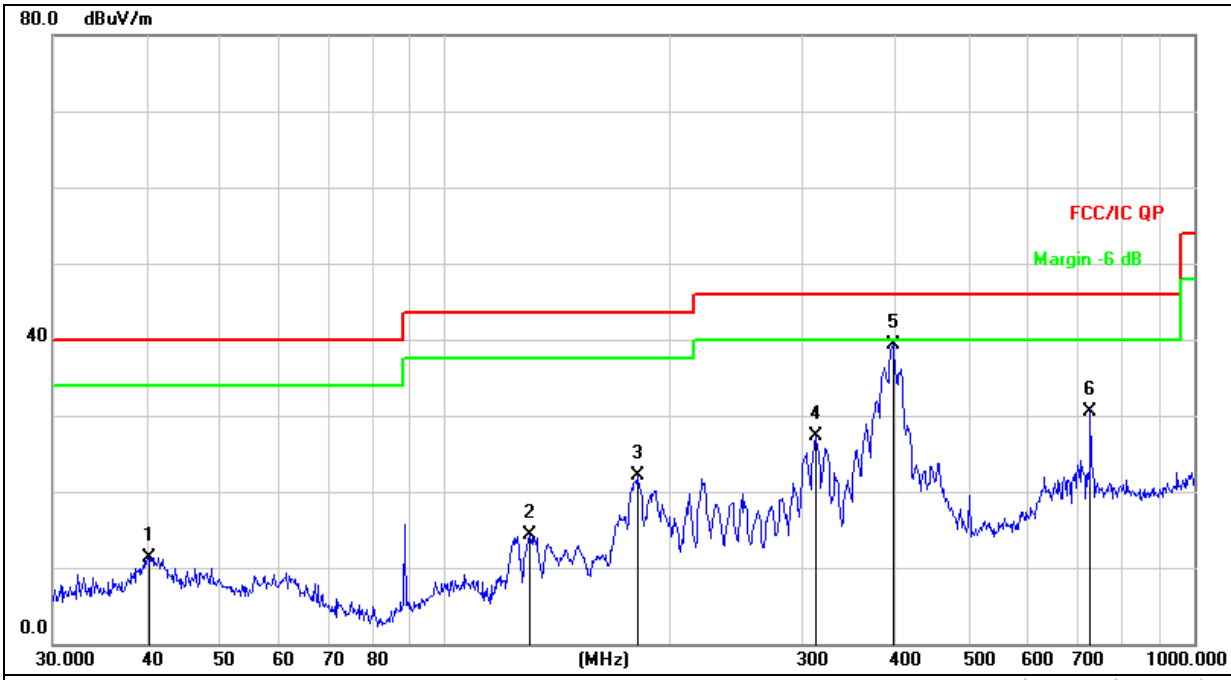
Temperature:	26℃	Relative Humidity:	24%
Pressure:	101 kPa	Test Voltage :	AC 120V/60Hz
Test Mode:	Mode 1	Polarization:	--

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

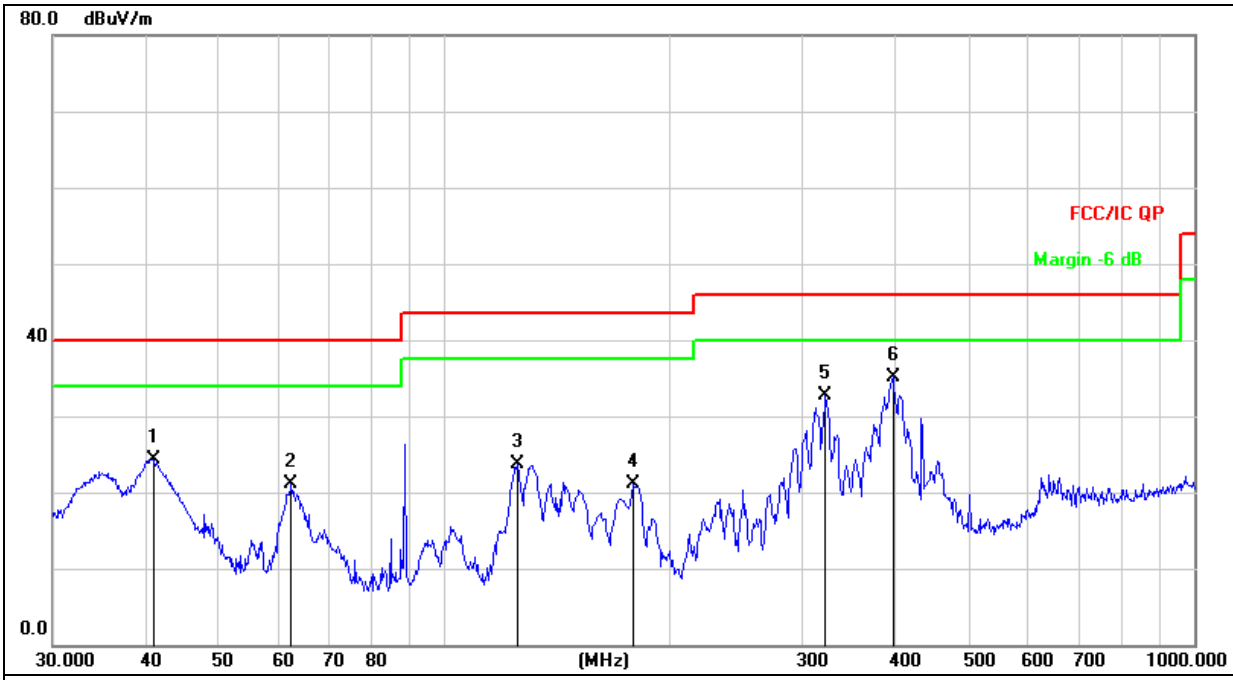
Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage ：	AC 120V/60Hz
Test Mode:	Mode 1	Polarization :	Horizontal



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

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector
1		40.2757	28.08	-16.69	11.39	40.00	-28.61	QP
2		129.9226	34.01	-19.73	14.28	43.50	-29.22	QP
3		180.6488	40.93	-18.79	22.14	43.50	-21.36	QP
4		312.1794	41.35	-14.14	27.21	46.00	-18.79	QP
5	*	396.2415	51.61	-12.25	39.36	46.00	-6.64	QP
6		726.8052	37.30	-6.75	30.55	46.00	-15.45	QP

Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage ：	AC 120V/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.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB	dBuV/m	dB/m	dB	Detector
1		40.8446	41.01	-16.62	24.39	40.00	-15.61	QP
2		62.4314	38.98	-17.79	21.19	40.00	-18.81	QP
3		125.0066	43.08	-19.41	23.67	43.50	-19.83	QP
4		178.7584	40.04	-18.93	21.11	43.50	-22.39	QP
5		322.1886	46.57	-13.79	32.78	46.00	-13.22	QP
6	*	396.2415	47.45	-12.25	35.20	46.00	-10.80	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	4434.108	63.93	5.94	35.40	44.00	61.27	68.2	-6.93	PK
V	4434.108	43.66	5.94	35.40	44.00	41.00	54	-13.00	AV
V	10360.030	61.20	8.46	39.75	44.50	64.91	68.2	-3.29	PK
V	10360.030	43.16	8.46	39.75	44.50	46.87	54	-7.13	AV
V	15540.021	60.56	10.12	38.80	44.10	65.38	74	-8.62	PK
V	15540.021	43.64	10.12	38.80	42.70	49.86	54	-4.14	AV
H	4434.027	65.00	5.94	35.18	44.00	62.12	68.2	-6.08	PK
H	4434.027	43.87	5.94	35.18	44.00	40.99	54	-13.01	AV
H	10360.010	50.50	8.46	38.71	44.50	53.17	68.2	-15.03	PK
H	10360.010	43.34	8.46	38.71	44.50	46.01	54	-7.99	AV
H	15540.112	50.54	10.12	38.38	44.10	54.94	74	-19.06	PK
H	15540.112	43.30	10.12	38.38	44.10	47.70	54	-6.30	AV
middle Channel (5200 MHz)-Above 1G									
V	4592.191	60.92	6.48	36.35	44.05	59.70	74	-14.30	PK
V	4592.191	43.85	6.48	36.35	44.05	42.63	54	-11.37	AV
V	10400.056	61.36	8.47	37.88	44.51	63.20	68.2	-5.00	PK
V	10400.056	43.93	8.47	37.88	44.51	45.77	54	-8.23	AV
V	15600.132	61.04	10.12	38.80	44.10	65.86	74	-8.14	PK
V	15600.132	43.08	10.12	38.80	42.70	49.30	54	-4.70	AV
H	4592.016	62.71	6.48	36.37	44.05	61.51	74	-12.49	PK
H	4592.016	43.58	6.48	36.37	44.05	42.38	54	-11.62	AV
H	10400.020	51.94	8.47	38.64	44.50	54.55	68.2	-13.65	PK
H	10400.020	43.56	8.47	38.64	44.50	46.17	54	-7.83	AV
H	15600.085	52.79	10.12	38.38	44.10	57.19	74	-16.81	PK
H	15600.085	40.11	10.12	38.38	44.10	44.51	54	-9.49	AV
High Channel (5240 MHz)-Above 1G									
V	4739.149	62.66	7.10	37.24	43.50	63.50	74	-10.50	PK
V	4739.149	43.82	7.10	37.24	43.50	44.66	54	-9.34	AV
V	10480.034	60.08	8.46	37.68	44.50	61.72	68.2	-6.48	PK
V	10480.034	43.12	8.46	37.68	44.50	44.76	54	-9.24	AV
V	15720.172	61.30	10.12	38.80	44.10	66.12	74	-7.88	PK
V	15720.172	43.43	10.12	38.80	42.70	49.65	54	-4.35	AV
H	4739.039	61.75	7.10	37.24	43.50	62.59	74	-11.41	PK
H	4739.039	43.28	7.10	37.24	43.50	44.12	54	-9.88	AV
H	10480.191	51.51	8.46	38.57	44.50	54.04	68.2	-14.16	PK
H	10480.191	44.16	8.46	38.57	44.50	46.69	54	-7.31	AV
H	15720.072	54.42	10.12	38.38	44.10	58.82	74	-15.18	PK
H	15720.072	41.83	10.12	38.38	44.10	46.23	54	-7.77	AV

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

Test Mode :	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	4434.058	64.63	5.94	35.40	44.00	61.97	68.2	-6.23	PK
V	4434.058	43.65	5.94	35.40	44.00	40.99	54	-13.01	AV
V	10360.154	61.12	8.46	39.75	44.50	64.83	68.2	-3.37	PK
V	10360.154	43.44	8.46	39.75	44.50	47.15	54	-6.85	AV
V	15540.097	60.38	10.12	38.80	44.10	65.20	74	-8.80	PK
V	15540.097	43.96	10.12	38.80	42.70	50.18	54	-3.82	AV
H	4434.093	62.90	5.94	35.18	44.00	60.02	68.2	-8.18	PK
H	4434.093	43.17	5.94	35.18	44.00	40.29	54	-13.71	AV
H	10360.011	50.14	8.46	38.71	44.50	52.81	68.2	-15.39	PK
H	10360.011	41.24	8.46	38.71	44.50	43.91	54	-10.09	AV
H	15540.042	53.12	10.12	38.38	44.10	57.52	74	-16.48	PK
H	15540.042	41.87	10.12	38.38	44.10	46.27	54	-7.73	AV
middle Channel (5200 MHz)-Above 1G									
V	4592.155	62.09	6.48	36.35	44.05	60.87	74	-13.13	PK
V	4592.155	43.11	6.48	36.35	44.05	41.89	54	-12.11	AV
V	10400.161	64.24	8.47	37.88	44.51	66.08	68.2	-2.12	PK
V	10400.161	43.58	8.47	37.88	44.51	45.42	54	-8.58	AV
V	15600.068	63.07	10.12	38.80	44.10	67.89	74	-6.11	PK
V	15600.068	43.14	10.12	38.80	42.70	49.36	54	-4.64	AV
H	4592.009	62.92	6.48	36.37	44.05	61.72	74	-12.28	PK
H	4592.009	43.06	6.48	36.37	44.05	41.86	54	-12.14	AV
H	10400.048	51.04	8.47	38.64	44.50	53.65	68.2	-14.55	PK
H	10400.048	42.04	8.47	38.64	44.50	44.65	54	-9.35	AV
H	15600.087	50.46	10.12	38.38	44.10	54.86	74	-19.14	PK
H	15600.087	40.86	10.12	38.38	44.10	45.26	54	-8.74	AV
High Channel (5240 MHz)-Above 1G									
V	4739.137	61.43	7.10	37.24	43.50	62.27	74	-11.73	PK
V	4739.137	43.33	7.10	37.24	43.50	44.17	54	-9.83	AV
V	10480.140	64.67	8.46	37.68	44.50	66.31	68.2	-1.89	PK
V	10480.140	43.07	8.46	37.68	44.50	44.71	54	-9.29	AV
V	15720.063	62.61	10.12	38.80	44.10	67.43	74	-6.57	PK
V	15720.063	43.33	10.12	38.80	42.70	49.55	54	-4.45	AV
H	4739.022	63.29	7.10	37.24	43.50	64.13	74	-9.87	PK
H	4739.022	43.94	7.10	37.24	43.50	44.78	54	-9.22	AV
H	10480.165	51.20	8.46	38.57	44.50	53.73	68.2	-14.47	PK
H	10480.165	43.56	8.46	38.57	44.50	46.09	54	-7.91	AV
H	15720.165	51.09	10.12	38.38	44.10	55.49	74	-18.51	PK
H	15720.165	41.24	10.12	38.38	44.10	45.64	54	-8.36	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:	TX(5.3G) - 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 (5260 MHz)-Above 1G									
V	4434.143	62.10	5.94	35.40	44.00	59.44	68.2	-8.76	PK
V	4434.143	43.74	5.94	35.40	44.00	41.08	54	-12.92	AV
V	10520.084	63.40	8.46	39.75	44.50	67.11	68.2	-1.09	PK
V	10520.084	43.69	8.46	39.75	44.50	47.40	54	-6.60	AV
V	15780.068	60.68	10.12	38.80	44.10	65.50	74	-8.50	PK
V	15780.068	43.31	10.12	38.80	42.70	49.53	54	-4.47	AV
H	4434.129	63.33	5.94	35.18	44.00	60.45	68.2	-7.75	PK
H	4434.129	43.70	5.94	35.18	44.00	40.82	54	-13.18	AV
H	10520.054	53.11	8.46	38.71	44.50	55.78	68.2	-12.42	PK
H	10520.054	42.96	8.46	38.71	44.50	45.63	54	-8.37	AV
H	15780.013	51.58	10.12	38.38	44.10	55.98	74	-18.02	PK
H	15780.013	44.09	10.12	38.38	44.10	48.49	54	-5.51	AV
middle Channel (5280 MHz)-Above 1G									
V	4592.199	62.28	6.48	36.35	44.05	61.06	74	-12.94	PK
V	4592.199	43.81	6.48	36.35	44.05	42.59	54	-11.41	AV
V	10560.163	61.68	8.47	37.88	44.51	63.52	68.2	-4.68	PK
V	10560.163	43.62	8.47	37.88	44.51	45.46	54	-8.54	AV
V	15840.110	64.20	10.12	38.80	44.10	69.02	74	-4.98	PK
V	15840.110	43.82	10.12	38.80	42.70	50.04	54	-3.96	AV
H	4592.056	62.91	6.48	36.37	44.05	61.71	74	-12.29	PK
H	4592.056	43.55	6.48	36.37	44.05	42.35	54	-11.65	AV
H	10560.013	51.93	8.47	38.64	44.50	54.54	68.2	-13.66	PK
H	10560.013	44.57	8.47	38.64	44.50	47.18	54	-6.82	AV
H	15840.114	50.04	10.12	38.38	44.10	54.44	74	-19.56	PK
H	15840.114	41.34	10.12	38.38	44.10	45.74	54	-8.26	AV
High Channel (5320 MHz)-Above 1G									
V	4739.079	60.47	7.10	37.24	43.50	61.31	74	-12.69	PK
V	4739.079	43.75	7.10	37.24	43.50	44.59	54	-9.41	AV
V	10640.150	60.04	8.46	37.68	44.50	61.68	68.2	-6.52	PK
V	10640.150	43.37	8.46	37.68	44.50	45.01	54	-8.99	AV
V	15960.196	63.92	10.12	38.80	44.10	68.74	74	-5.26	PK
V	15960.196	43.94	10.12	38.80	42.70	50.16	54	-3.84	AV
H	4739.093	63.56	7.10	37.24	43.50	64.40	74	-9.60	PK
H	4739.093	43.76	7.10	37.24	43.50	44.60	54	-9.40	AV
H	10640.004	54.01	8.46	38.57	44.50	56.54	68.2	-11.66	PK
H	10640.004	40.23	8.46	38.57	44.50	42.76	54	-11.24	AV
H	15960.195	53.10	10.12	38.38	44.10	57.50	74	-16.50	PK
H	15960.195	44.31	10.12	38.38	44.10	48.71	54	-5.29	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:	TX(5.3G) - 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 (5260 MHz)-Above 1G									
V	4434.113	60.42	5.94	35.40	44.00	57.76	68.2	-10.44	PK
V	4434.113	43.65	5.94	35.40	44.00	40.99	54	-13.01	AV
V	10520.063	62.06	8.46	39.75	44.50	65.77	68.2	-2.43	PK
V	10520.063	43.22	8.46	39.75	44.50	46.93	54	-7.07	AV
V	15780.131	61.75	10.12	38.80	44.10	66.57	74	-7.43	PK
V	15780.131	43.57	10.12	38.80	42.70	49.79	54	-4.21	AV
H	4434.078	62.98	5.94	35.18	44.00	60.10	68.2	-8.10	PK
H	4434.078	43.57	5.94	35.18	44.00	40.69	54	-13.31	AV
H	10520.174	54.36	8.46	38.71	44.50	57.03	68.2	-11.17	PK
H	10520.174	44.59	8.46	38.71	44.50	47.26	54	-6.74	AV
H	15780.021	53.69	10.12	38.38	44.10	58.09	74	-15.91	PK
H	15780.021	42.52	10.12	38.38	44.10	46.92	54	-7.08	AV
middle Channel (5280 MHz)-Above 1G									
V	4592.170	60.10	6.48	36.35	44.05	58.88	74	-15.12	PK
V	4592.170	43.36	6.48	36.35	44.05	42.14	54	-11.86	AV
V	10560.185	62.45	8.47	37.88	44.51	64.29	68.2	-3.91	PK
V	10560.185	43.03	8.47	37.88	44.51	44.87	54	-9.13	AV
V	15840.018	63.82	10.12	38.80	44.10	68.64	74	-5.36	PK
V	15840.018	43.85	10.12	38.80	42.70	50.07	54	-3.93	AV
H	4592.007	60.15	6.48	36.37	44.05	58.95	74	-15.05	PK
H	4592.007	43.85	6.48	36.37	44.05	42.65	54	-11.35	AV
H	10560.180	53.63	8.47	38.64	44.50	56.24	68.2	-11.96	PK
H	10560.180	44.43	8.47	38.64	44.50	47.04	54	-6.96	AV
H	15840.054	53.64	10.12	38.38	44.10	58.04	74	-15.96	PK
H	15840.054	42.80	10.12	38.38	44.10	47.20	54	-6.80	AV
High Channel (5320 MHz)-Above 1G									
V	4739.104	63.70	7.10	37.24	43.50	64.54	74	-9.46	PK
V	4739.104	43.47	7.10	37.24	43.50	44.31	54	-9.69	AV
V	10640.167	61.55	8.46	37.68	44.50	63.19	68.2	-5.01	PK
V	10640.167	43.21	8.46	37.68	44.50	44.85	54	-9.15	AV
V	15960.189	63.63	10.12	38.80	44.10	68.45	74	-5.55	PK
V	15960.189	43.25	10.12	38.80	42.70	49.47	54	-4.53	AV
H	4739.062	63.27	7.10	37.24	43.50	64.11	74	-9.89	PK
H	4739.062	43.40	7.10	37.24	43.50	44.24	54	-9.76	AV
H	10640.049	52.72	8.46	38.57	44.50	55.25	68.2	-12.95	PK
H	10640.049	43.60	8.46	38.57	44.50	46.13	54	-7.87	AV
H	15960.102	50.82	10.12	38.38	44.10	55.22	74	-18.78	PK
H	15960.102	40.95	10.12	38.38	44.10	45.35	54	-8.65	AV

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

Test Mode:	TX(5.6G) - 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 (5500 MHz)-Above 1G									
V	4434.032	60.96	5.94	35.40	44.00	58.30	68.2	-9.90	PK
V	4434.032	43.73	5.94	35.40	44.00	41.07	54	-12.93	AV
V	11000.187	62.05	8.46	39.75	44.50	65.76	68.2	-2.44	PK
V	11000.187	43.61	8.46	39.75	44.50	47.32	54	-6.68	AV
V	16500.068	64.89	10.12	38.80	44.10	69.71	74	-4.29	PK
V	16500.068	43.24	10.12	38.80	42.70	49.46	54	-4.54	AV
H	4434.134	60.68	5.94	35.18	44.00	57.80	68.2	-10.40	PK
H	4434.134	43.50	5.94	35.18	44.00	40.62	54	-13.38	AV
H	11000.082	53.17	8.46	38.71	44.50	55.84	68.2	-12.36	PK
H	11000.082	42.96	8.46	38.71	44.50	45.63	54	-8.37	AV
H	16500.070	53.84	10.12	38.38	44.10	58.24	74	-15.76	PK
H	16500.070	44.51	10.12	38.38	44.10	48.91	54	-5.09	AV
Middle Channel (5580 MHz)-Above 1G									
V	4592.105	61.30	6.48	36.35	44.05	60.08	74	-13.92	PK
V	4592.105	43.96	6.48	36.35	44.05	42.74	54	-11.26	AV
V	11160.060	63.57	8.47	37.88	44.51	65.41	68.2	-2.79	PK
V	11160.060	43.88	8.47	37.88	44.51	45.72	54	-8.28	AV
V	16740.154	64.85	10.12	38.80	44.10	69.67	74	-4.33	PK
V	16740.154	43.34	10.12	38.80	42.70	49.56	54	-4.44	AV
H	4592.166	60.21	6.48	36.37	44.05	59.01	74	-14.99	PK
H	4592.166	43.94	6.48	36.37	44.05	42.74	54	-11.26	AV
H	11160.049	54.34	8.47	38.64	44.50	56.95	68.2	-11.25	PK
H	11160.049	44.24	8.47	38.64	44.50	46.85	54	-7.15	AV
H	16740.143	54.47	10.12	38.38	44.10	58.87	74	-15.13	PK
H	16740.143	41.29	10.12	38.38	44.10	45.69	54	-8.31	AV
High Channel (5700 MHz)-Above 1G									
V	4739.090	64.71	7.10	37.24	43.50	65.55	74	-8.45	PK
V	4739.090	43.64	7.10	37.24	43.50	44.48	54	-9.52	AV
V	11400.014	62.81	8.46	37.68	44.50	64.45	68.2	-3.75	PK
V	11400.014	43.89	8.46	37.68	44.50	45.53	54	-8.47	AV
V	17100.113	61.83	10.12	38.80	44.10	66.65	74	-7.35	PK
V	17100.113	43.15	10.12	38.80	42.70	49.37	54	-4.63	AV
H	4739.190	63.65	7.10	37.24	43.50	64.49	74	-9.51	PK
H	4739.190	43.08	7.10	37.24	43.50	43.92	54	-10.08	AV
H	11400.160	54.77	8.46	38.57	44.50	57.30	68.2	-10.90	PK
H	11400.160	43.14	8.46	38.57	44.50	45.67	54	-8.33	AV
H	17100.042	52.74	10.12	38.38	44.10	57.14	74	-16.86	PK
H	17100.042	42.40	10.12	38.38	44.10	46.80	54	-7.20	AV

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

Test Mode:	TX(5.6G) - 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 (5500 MHz)-Above 1G									
V	4434.013	61.60	5.94	35.40	44.00	58.94	68.2	-9.26	PK
V	4434.013	43.70	5.94	35.40	44.00	41.04	54	-12.96	AV
V	11000.010	60.29	8.46	39.75	44.50	64.00	68.2	-4.20	PK
V	11000.010	43.41	8.46	39.75	44.50	47.12	54	-6.88	AV
V	16500.016	64.17	10.12	38.80	44.10	68.99	74	-5.01	PK
V	16500.016	43.11	10.12	38.80	42.70	49.33	54	-4.67	AV
H	4434.068	62.55	5.94	35.18	44.00	59.67	68.2	-8.53	PK
H	4434.068	43.76	5.94	35.18	44.00	40.88	54	-13.12	AV
H	11000.052	53.54	8.46	38.71	44.50	56.21	68.2	-11.99	PK
H	11000.052	42.80	8.46	38.71	44.50	45.47	54	-8.53	AV
H	16500.199	51.50	10.12	38.38	44.10	55.90	74	-18.10	PK
H	16500.199	43.34	10.12	38.38	44.10	47.74	54	-6.26	AV
Middle Channel (5580 MHz)-Above 1G									
V	4592.134	61.41	6.48	36.35	44.05	60.19	74	-13.81	PK
V	4592.134	43.03	6.48	36.35	44.05	41.81	54	-12.19	AV
V	11160.001	61.50	8.47	37.88	44.51	63.34	68.2	-4.86	PK
V	11160.001	44.00	8.47	37.88	44.51	45.84	54	-8.16	AV
V	16740.126	60.29	10.12	38.80	44.10	65.11	74	-8.89	PK
V	16740.126	43.06	10.12	38.80	42.70	49.28	54	-4.72	AV
H	4592.116	61.37	6.48	36.37	44.05	60.17	74	-13.83	PK
H	4592.116	43.13	6.48	36.37	44.05	41.93	54	-12.07	AV
H	11160.085	52.80	8.47	38.64	44.50	55.41	68.2	-12.79	PK
H	11160.085	40.34	8.47	38.64	44.50	42.95	54	-11.05	AV
H	16740.019	53.52	10.12	38.38	44.10	57.92	74	-16.08	PK
H	16740.019	43.33	10.12	38.38	44.10	47.73	54	-6.27	AV
High Channel (5700 MHz)-Above 1G									
V	4739.126	64.13	7.10	37.24	43.50	64.97	74	-9.03	PK
V	4739.126	43.22	7.10	37.24	43.50	44.06	54	-9.94	AV
V	11400.066	61.19	8.46	37.68	44.50	62.83	68.2	-5.37	PK
V	11400.066	43.47	8.46	37.68	44.50	45.11	54	-8.89	AV
V	17100.028	60.91	10.12	38.80	44.10	65.73	74	-8.27	PK
V	17100.028	43.75	10.12	38.80	42.70	49.97	54	-4.03	AV
H	4739.142	61.31	7.10	37.24	43.50	62.15	74	-11.85	PK
H	4739.142	43.38	7.10	37.24	43.50	44.22	54	-9.78	AV
H	11400.160	51.66	8.46	38.57	44.50	54.19	68.2	-14.01	PK
H	11400.160	41.56	8.46	38.57	44.50	44.09	54	-9.91	AV
H	17100.049	52.30	10.12	38.38	44.10	56.70	74	-17.30	PK
H	17100.049	42.45	10.12	38.38	44.10	46.85	54	-7.15	AV

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

Test Mode:	TX(5.8G) - 802.11a

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	4679.191	55.07	5.94	35.40	44.00	52.41	74	-21.59	PK
V	4679.191	43.07	5.94	35.40	44.00	40.41	54	-13.59	AV
V	11490.081	57.11	8.46	39.75	44.50	60.82	68.2	-7.38	PK
V	11490.081	43.29	8.46	39.75	44.50	47.00	54	-7.00	AV
V	17235.011	56.76	10.12	38.80	44.10	61.58	68.2	-6.62	PK
V	17235.011	43.50	10.12	38.80	42.70	49.72	54	-4.28	AV
H	4679.158	54.95	5.94	35.18	44.00	52.07	74	-21.93	PK
H	4679.158	43.68	5.94	35.18	44.00	40.80	54	-13.20	AV
H	11490.134	53.05	8.46	38.71	44.50	55.72	68.2	-12.48	PK
H	11490.134	43.79	8.46	38.71	44.50	46.46	54	-7.54	AV
H	17235.176	52.57	10.12	38.38	44.10	56.97	68.2	-11.23	PK
H	17235.176	43.96	10.12	38.38	44.10	48.36	54	-5.64	AV
Middle Channel (5785 MHz)-Above 1G									
V	4592.029	56.41	6.48	36.35	44.05	55.19	74	-18.81	PK
V	4592.029	44.00	6.48	36.35	44.05	42.78	54	-11.22	AV
V	11570.009	59.70	8.47	37.88	44.51	61.54	68.2	-6.66	PK
V	11570.009	43.85	8.47	37.88	44.51	45.69	54	-8.31	AV
V	17355.044	58.64	10.12	38.80	44.10	63.46	68.2	-4.74	PK
V	17355.044	39.31	10.12	38.80	42.70	45.53	54	-8.47	AV
H	4592.157	56.40	6.48	36.37	44.05	55.20	74	-18.80	PK
H	4592.157	43.96	6.48	36.37	44.05	42.76	54	-11.24	AV
H	11570.036	50.70	8.47	38.64	44.50	53.31	68.2	-14.89	PK
H	11570.036	43.47	8.47	38.64	44.50	46.08	54	-7.92	AV
H	17355.163	53.08	10.12	38.38	44.10	57.48	68.2	-10.72	PK
H	17355.163	41.49	10.12	38.38	44.10	45.89	54	-8.11	AV
High Channel (5825 MHz)-Above 1G									
V	6039.139	58.29	7.10	37.24	43.50	59.13	68.2	-9.07	PK
V	6039.139	43.35	7.10	37.24	43.50	44.19	54	-9.81	AV
V	11650.091	59.91	8.46	37.68	44.50	61.55	74	-12.45	PK
V	11650.091	43.83	8.46	37.68	44.50	45.47	54	-8.53	AV
V	17475.032	56.83	10.12	38.80	44.10	61.65	68.2	-6.55	PK
V	17475.032	43.53	10.12	38.80	42.70	49.75	54	-4.25	AV
H	6039.161	56.14	7.10	37.24	43.50	56.98	68.2	-11.22	PK
H	6039.161	43.81	7.10	37.24	43.50	44.65	54	-9.35	AV
H	11650.117	51.66	8.46	38.57	44.50	54.19	74	-19.81	PK
H	11650.117	44.74	8.46	38.57	44.50	47.27	54	-6.73	AV
H	17475.019	50.14	10.12	38.38	44.10	54.54	68.2	-13.66	PK
H	17475.019	40.82	10.12	38.38	44.10	45.22	54	-8.78	AV

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

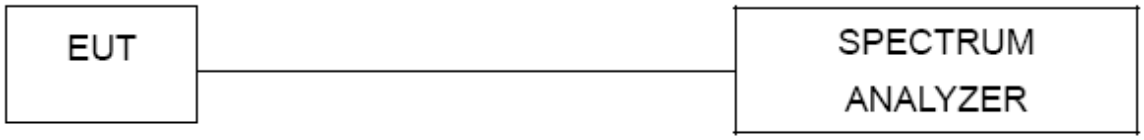
Test Mode:	TX(5.8G) - 802.11n-HT20

Polar (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	4679.070	58.89	5.94	35.40	44.00	56.23	74	-17.77	PK
V	4679.070	43.91	5.94	35.40	44.00	41.25	54	-12.75	AV
V	11490.026	53.27	8.46	39.75	44.50	56.98	68.2	-11.22	PK
V	11490.026	43.41	8.46	39.75	44.50	47.12	54	-6.88	AV
V	17235.144	57.11	10.12	38.80	44.10	61.93	68.2	-6.27	PK
V	17235.144	43.78	10.12	38.80	42.70	50.00	54	-4.00	AV
H	4679.053	57.41	5.94	35.18	44.00	54.53	74	-19.47	PK
H	4679.053	43.47	5.94	35.18	44.00	40.59	54	-13.41	AV
H	11490.197	51.56	8.46	38.71	44.50	54.23	68.2	-13.97	PK
H	11490.197	40.55	8.46	38.71	44.50	43.22	54	-10.78	AV
H	17235.066	51.28	10.12	38.38	44.10	55.68	68.2	-12.52	PK
H	17235.066	44.77	10.12	38.38	44.10	49.17	54	-4.83	AV
Middle Channel (5785 MHz)-Above 1G									
V	4592.066	61.22	6.48	36.35	44.05	60.00	74	-14.00	PK
V	4592.066	43.20	6.48	36.35	44.05	41.98	54	-12.02	AV
V	11570.116	56.28	8.47	37.88	44.51	58.12	68.2	-10.08	PK
V	11570.116	43.98	8.47	37.88	44.51	45.82	54	-8.18	AV
V	17355.032	58.07	10.12	38.80	44.10	62.89	68.2	-5.31	PK
V	17355.032	43.54	10.12	38.80	42.70	49.76	54	-4.24	AV
H	4592.009	60.68	6.48	36.37	44.05	59.48	74	-14.52	PK
H	4592.009	43.45	6.48	36.37	44.05	42.25	54	-11.75	AV
H	11570.104	51.56	8.47	38.64	44.50	54.17	68.2	-14.03	PK
H	11570.104	42.41	8.47	38.64	44.50	45.02	54	-8.98	AV
H	17355.030	50.15	10.12	38.38	44.10	54.55	68.2	-13.65	PK
H	17355.030	40.52	10.12	38.38	44.10	44.92	54	-9.08	AV
High Channel (5825 MHz)-Above 1G									
V	6039.171	55.74	7.10	37.24	43.50	56.58	68.2	-11.62	PK
V	6039.171	43.94	7.10	37.24	43.50	44.78	54	-9.22	AV
V	11650.002	59.71	8.46	37.68	44.50	61.35	74	-12.65	PK
V	11650.002	43.73	8.46	37.68	44.50	45.37	54	-8.63	AV
V	17475.114	57.09	10.12	38.80	44.10	61.91	68.2	-6.29	PK
V	17475.114	43.85	10.12	38.80	42.70	50.07	54	-3.93	AV
H	6039.058	56.57	7.10	37.24	43.50	57.41	68.2	-10.79	PK
H	6039.058	43.13	7.10	37.24	43.50	43.97	54	-10.03	AV
H	11650.113	54.06	8.46	38.57	44.50	56.59	74	-17.41	PK
H	11650.113	42.80	8.46	38.57	44.50	45.33	54	-8.67	AV
H	17475.073	50.81	10.12	38.38	44.10	55.21	68.2	-12.99	PK
H	17475.073	40.87	10.12	38.38	44.10	45.27	54	-8.73	AV

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

8. Power Spectral Density Test

8.1 Block Diagram Of Test Setup



8.2 Limit

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

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

(iv) For client devices in the 5.15-5.25 GHz band, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.
For the band 5.725-5.85 GHz

For the 5.25-5.35 GHz and 5.47-5.725 GHz bands
(b) (2) The maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in megahertz. In addition, 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.

(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.

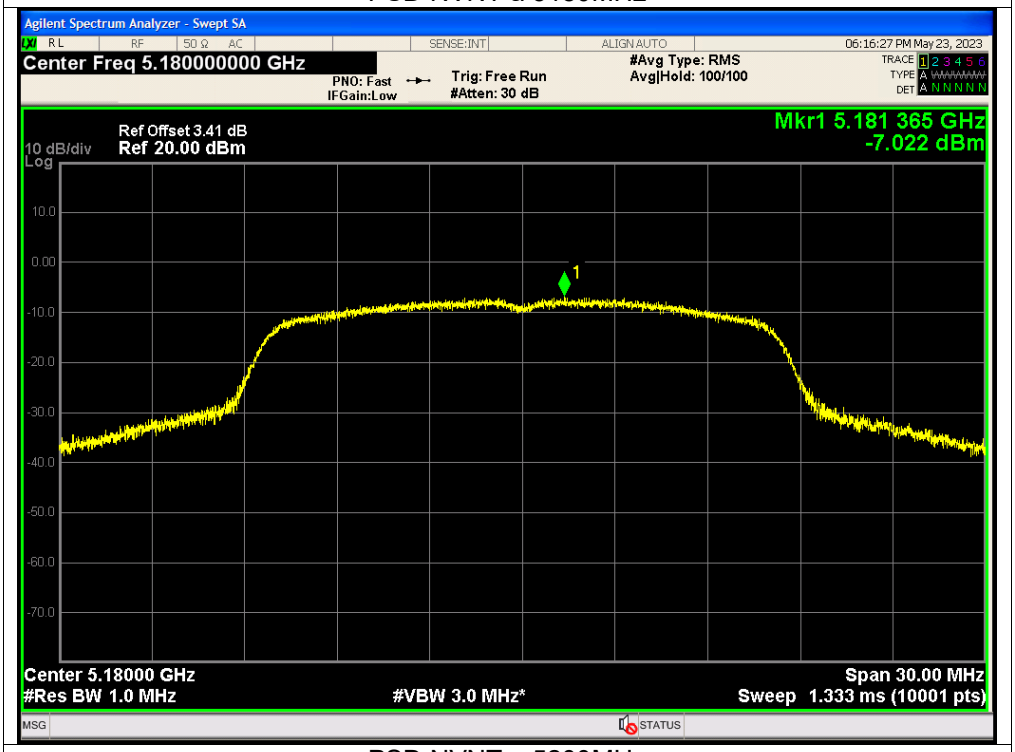
8.5 Test Result

Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage:	DC 5V
Test Mode:	(5180-5240MHz)		

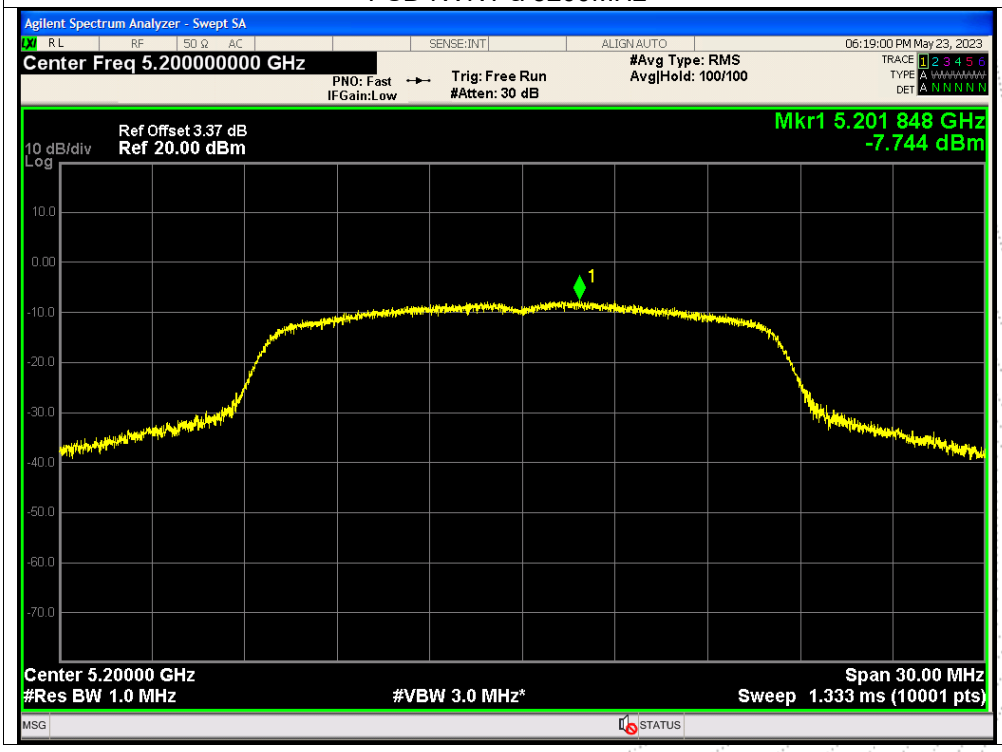
Condition	Mode	Frequency (MHz)	Conducted PSD (dBm)	Limit (dBm)	Verdict
NVNT	a	5180	-7.02	11	Pass
NVNT	a	5200	-7.74	11	Pass
NVNT	a	5240	-6.36	11	Pass
NVNT	n20	5180	-8.6	11	Pass
NVNT	n20	5200	-7.83	11	Pass
NVNT	n20	5240	-6.7	11	Pass

Test Graphs

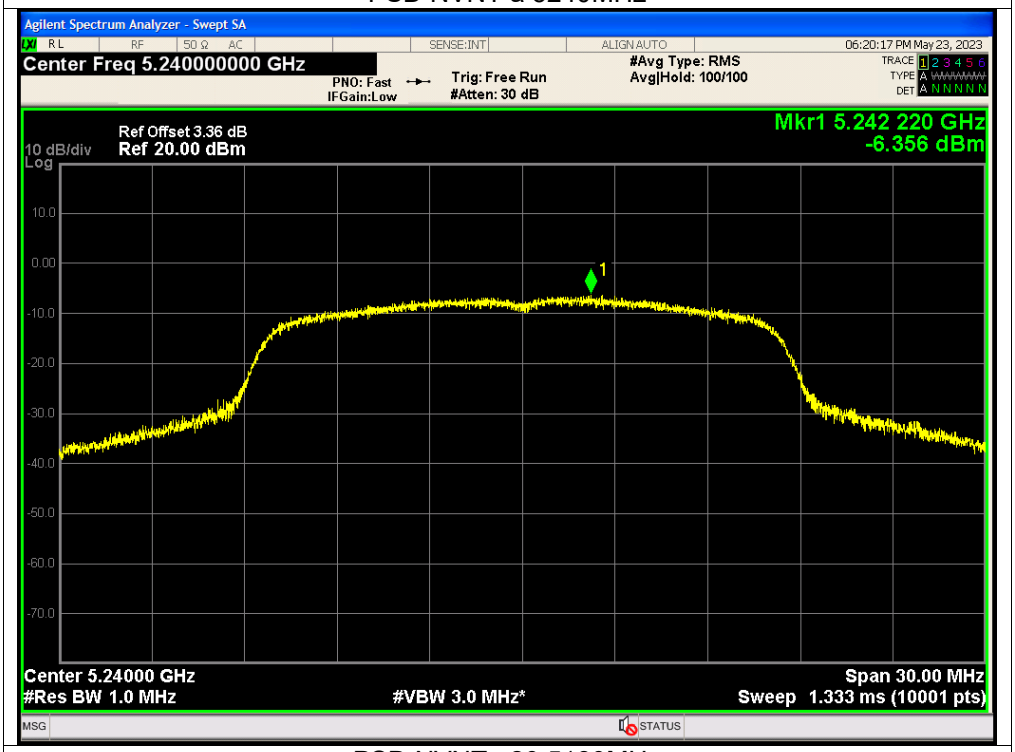
PSD NVNT a 5180MHz



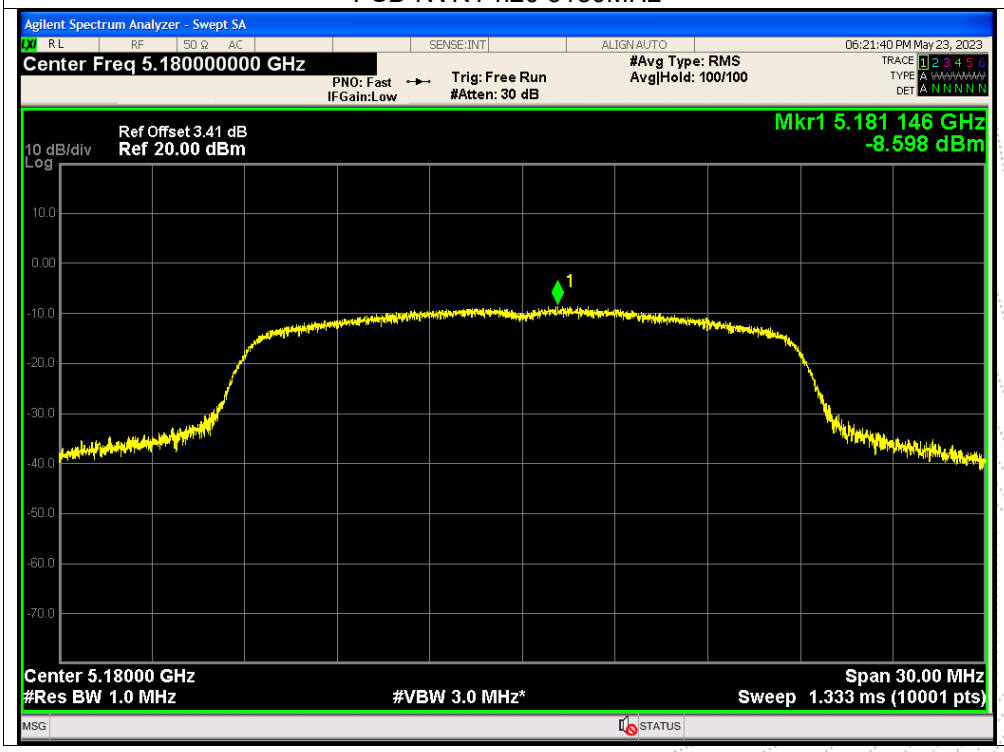
PSD NVNT a 5200MHz



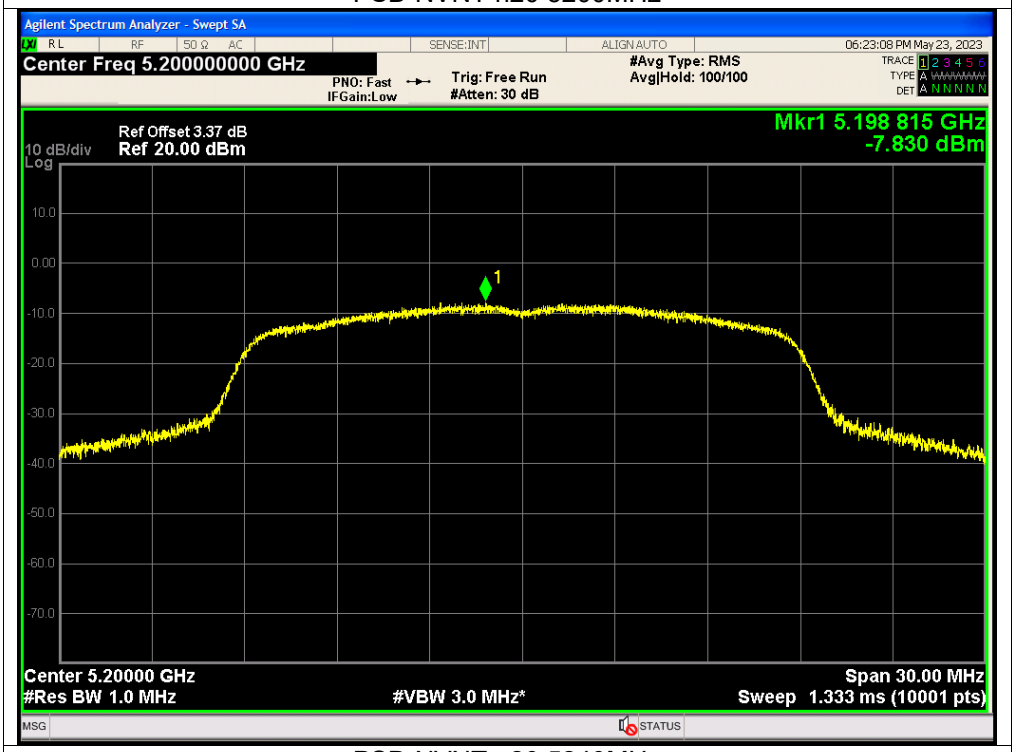
PSD NVNT a 5240MHz



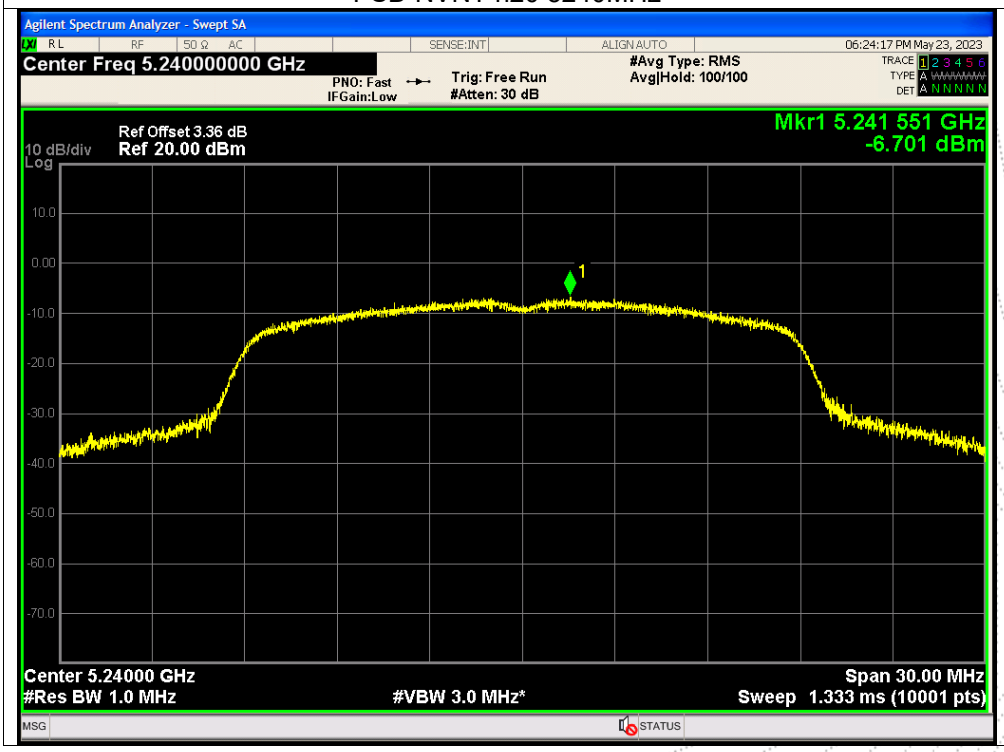
PSD NVNT n20 5180MHz



PSD NVNT n20 5200MHz



PSD NVNT n20 5240MHz

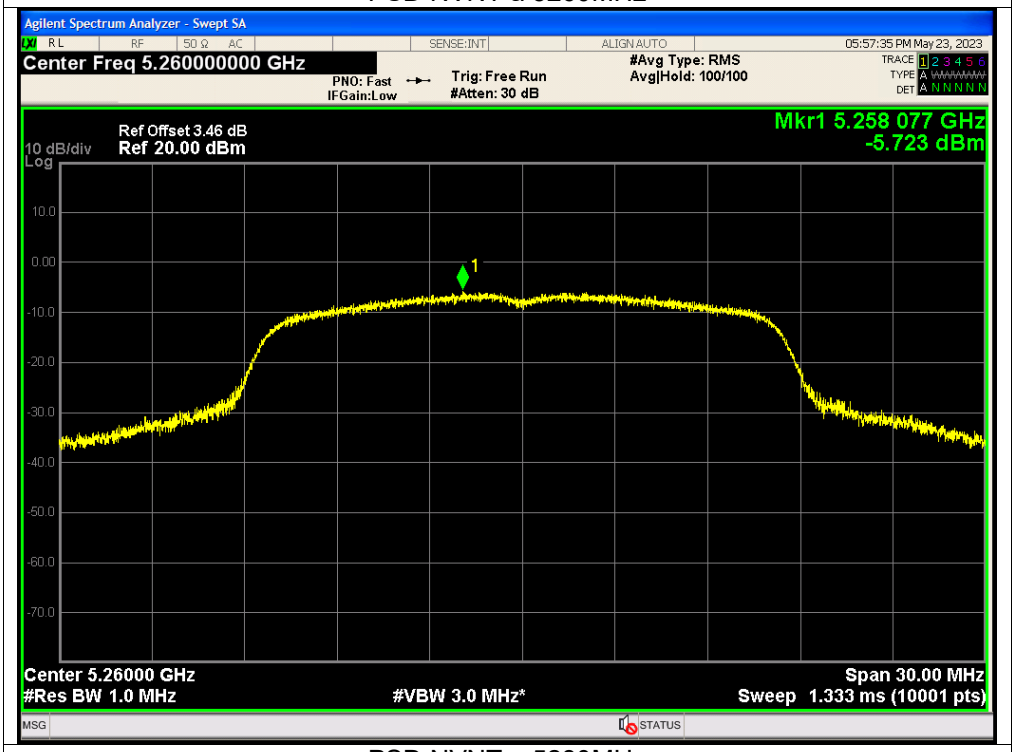


Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage:	DC 5V
Test Mode:	(5260-5320MHz)		

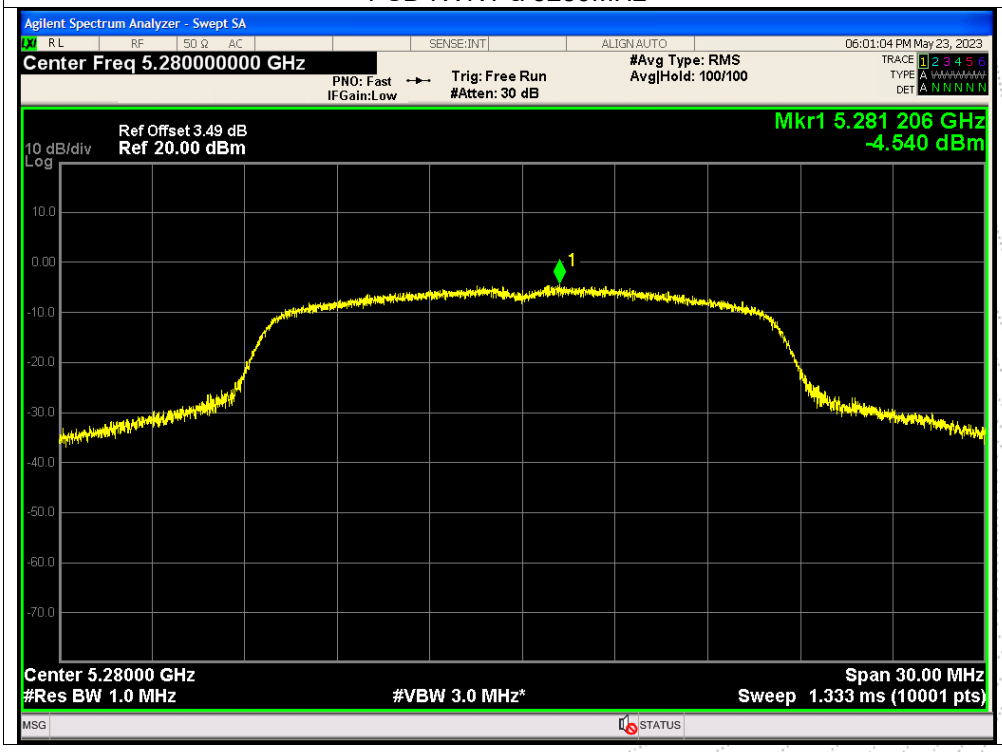
Condition	Mode	Frequency (MHz)	Conducted PSD (dBm)	Limit (dBm)	Verdict
NVNT	a	5260	-5.72	11	Pass
NVNT	a	5280	-4.54	11	Pass
NVNT	a	5320	-2.74	11	Pass
NVNT	n20	5260	-5.83	11	Pass
NVNT	n20	5280	-4.7	11	Pass
NVNT	n20	5320	-3.55	11	Pass

Test Graphs

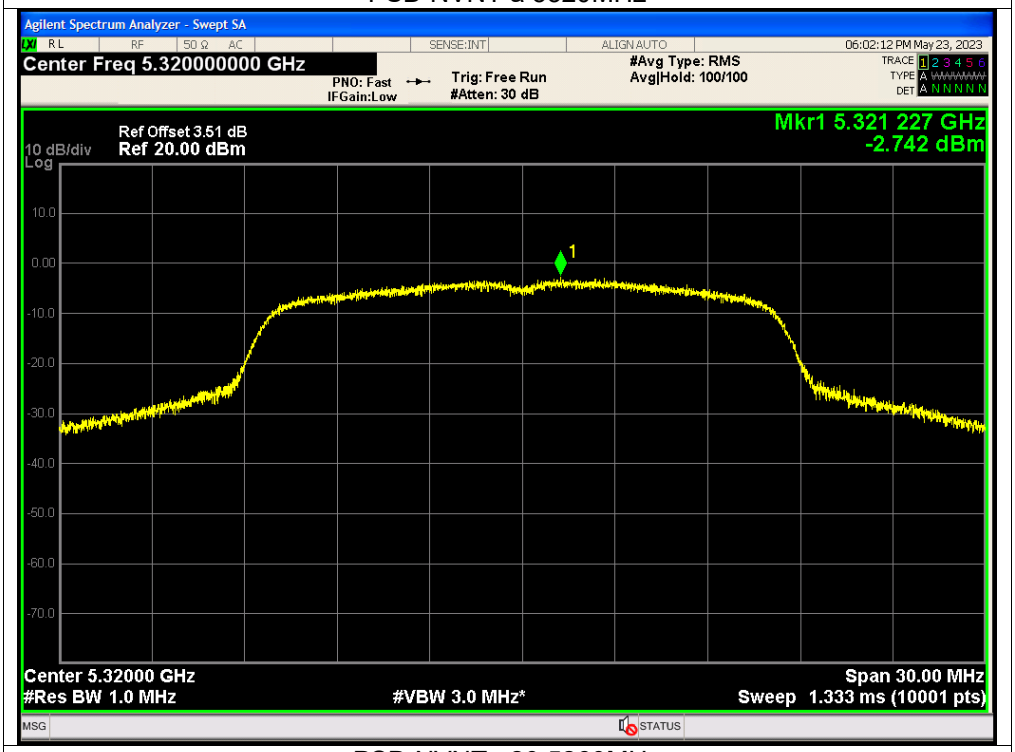
PSD NVNT a 5260MHz



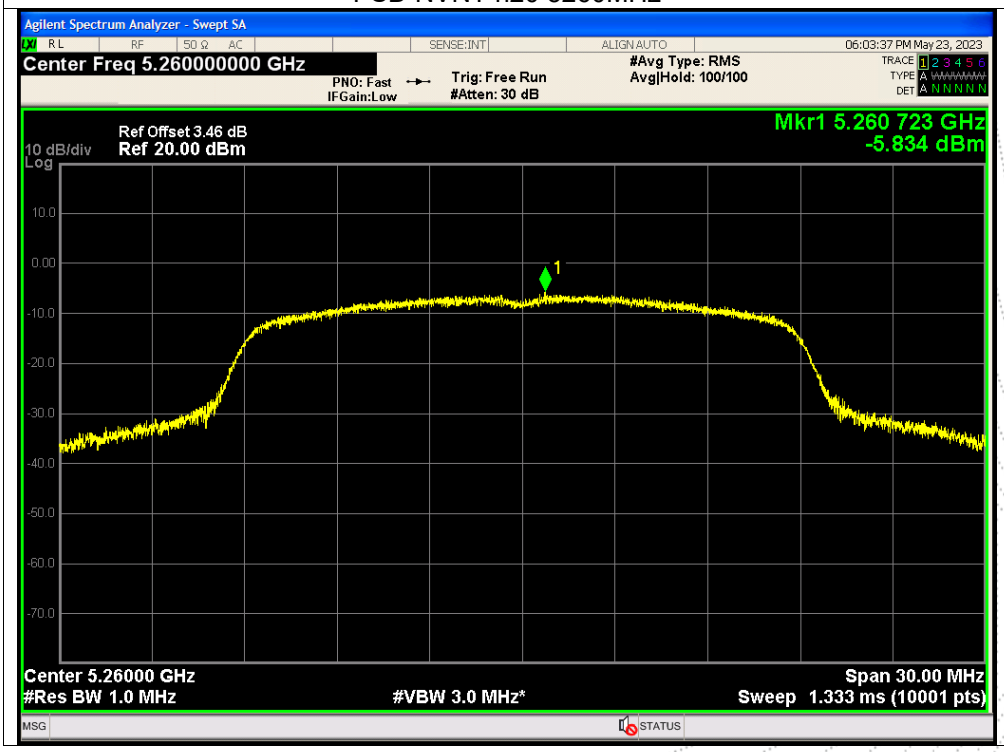
PSD NVNT a 5280MHz



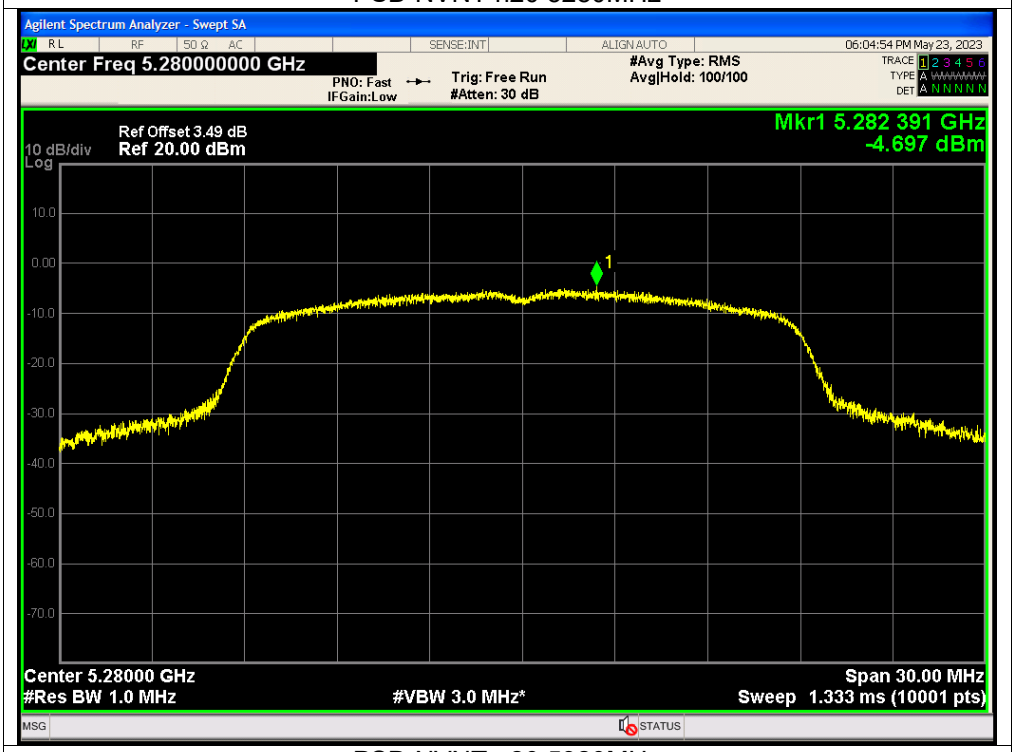
PSD NVNT a 5320MHz



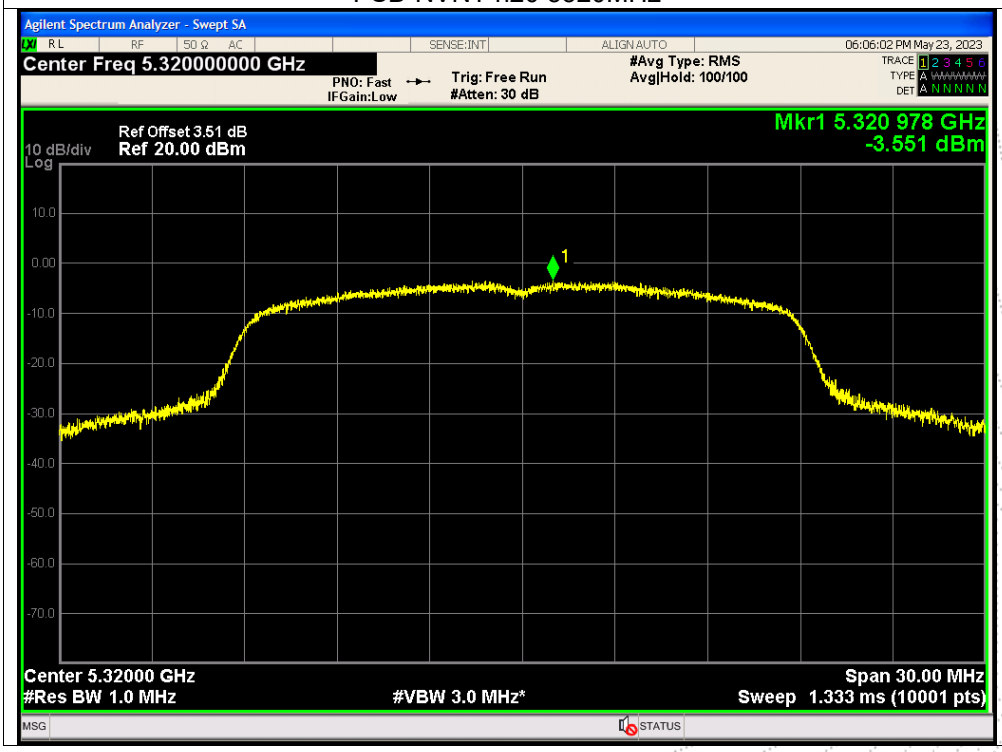
PSD NVNT n20 5260MHz



PSD NVNT n20 5280MHz



PSD NVNT n20 5320MHz

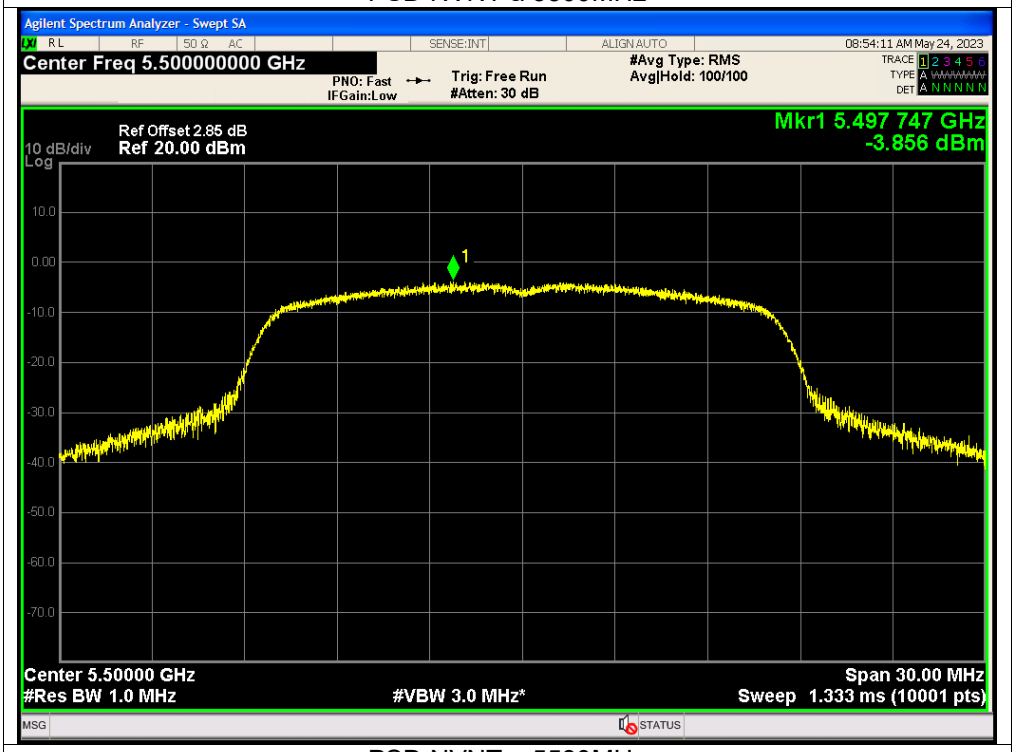


Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage:	DC 5V
Test Mode:	(5500-5700MHz)		

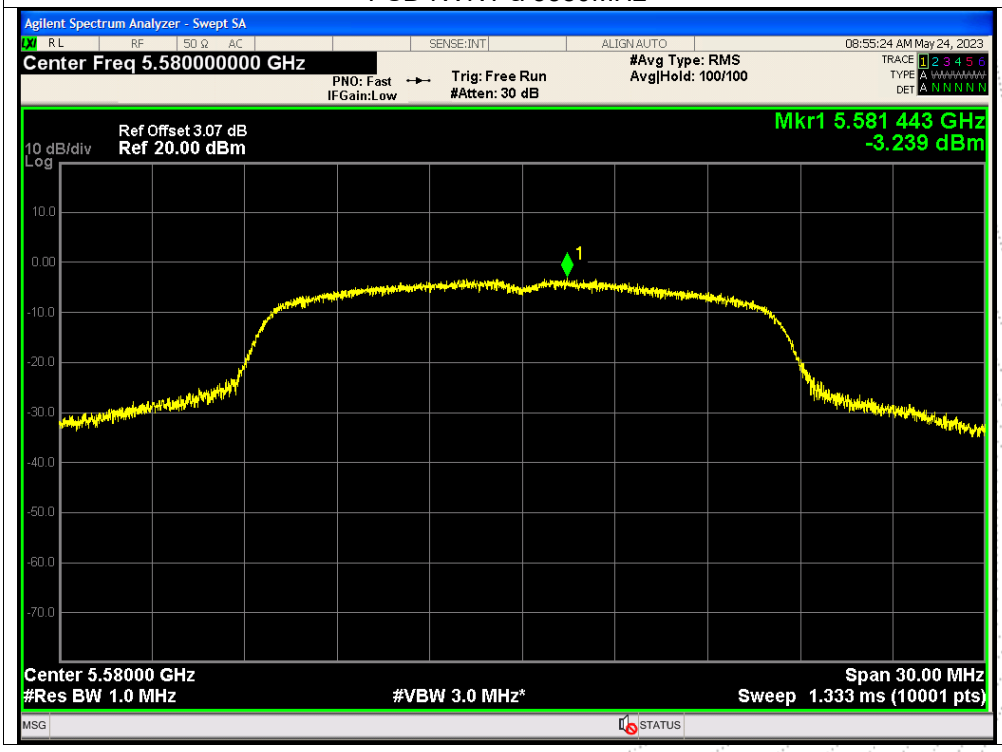
Condition	Mode	Frequency (MHz)	Conducted PSD (dBm)	Limit (dBm)	Verdict
NVNT	a	5500	-3.86	11	Pass
NVNT	a	5580	-3.24	11	Pass
NVNT	a	5700	-9.08	11	Pass
NVNT	n20	5500	-4.13	11	Pass
NVNT	n20	5580	-3.71	11	Pass
NVNT	n20	5700	-9.44	11	Pass

Test Graphs

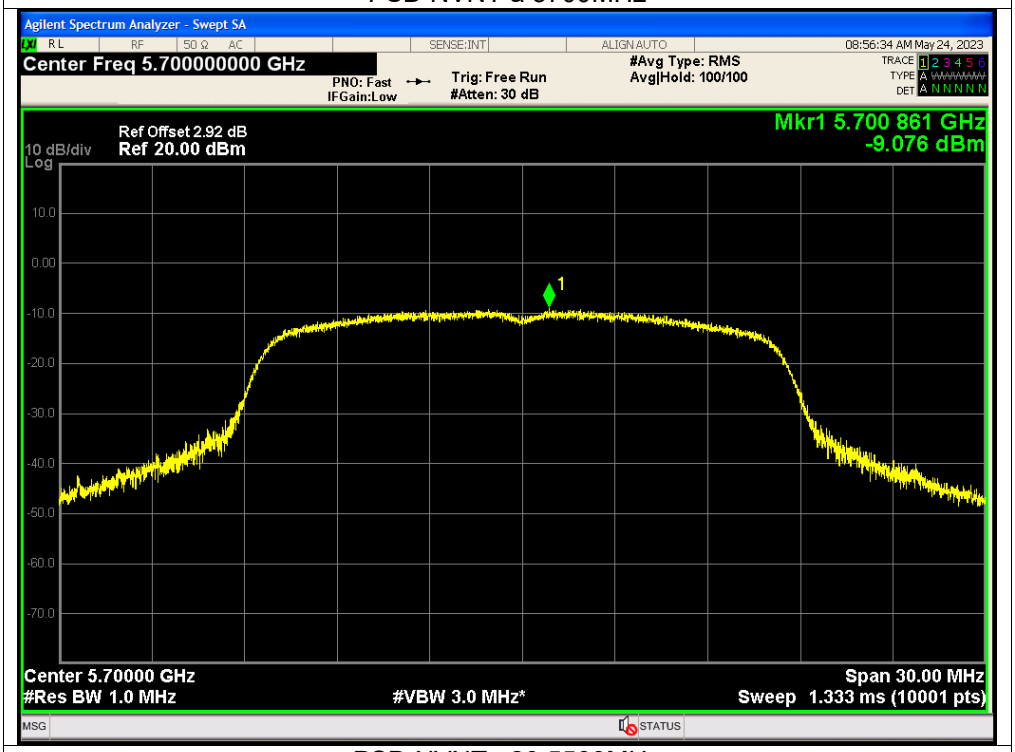
PSD NVNT a 5500MHz



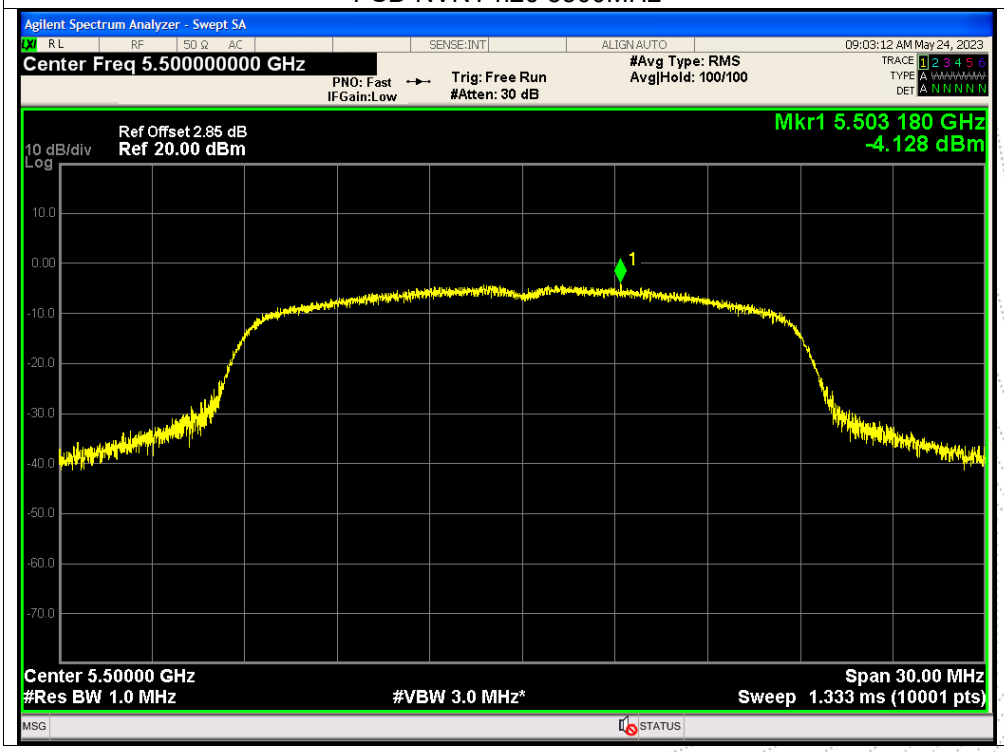
PSD NVNT a 5580MHz



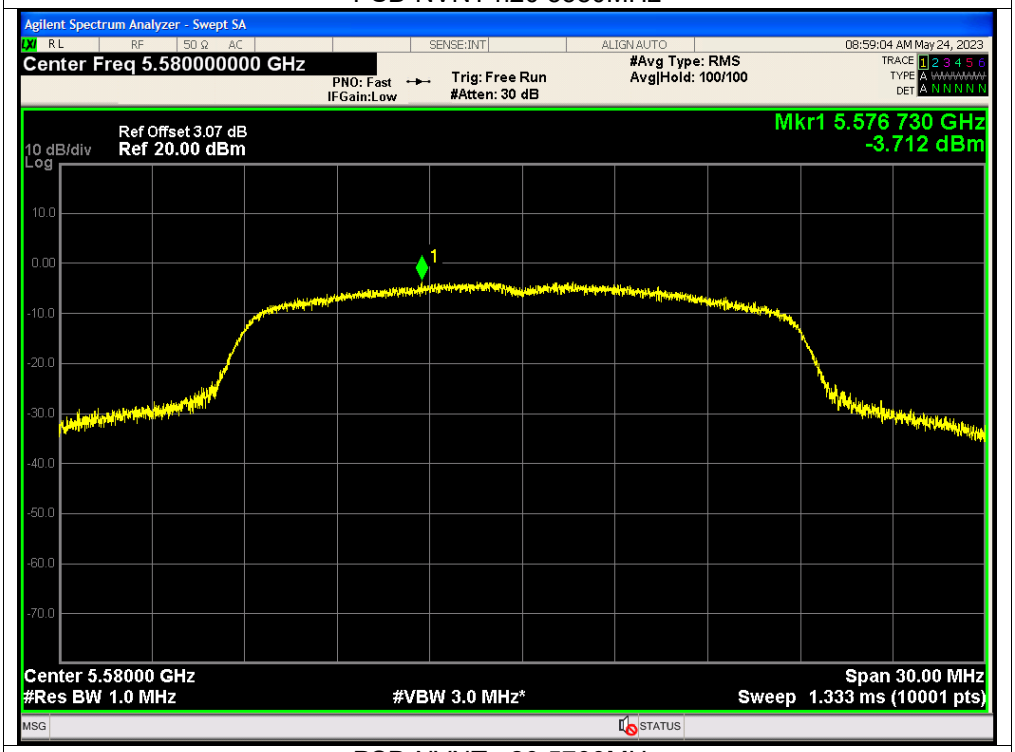
PSD NVNT a 5700MHz



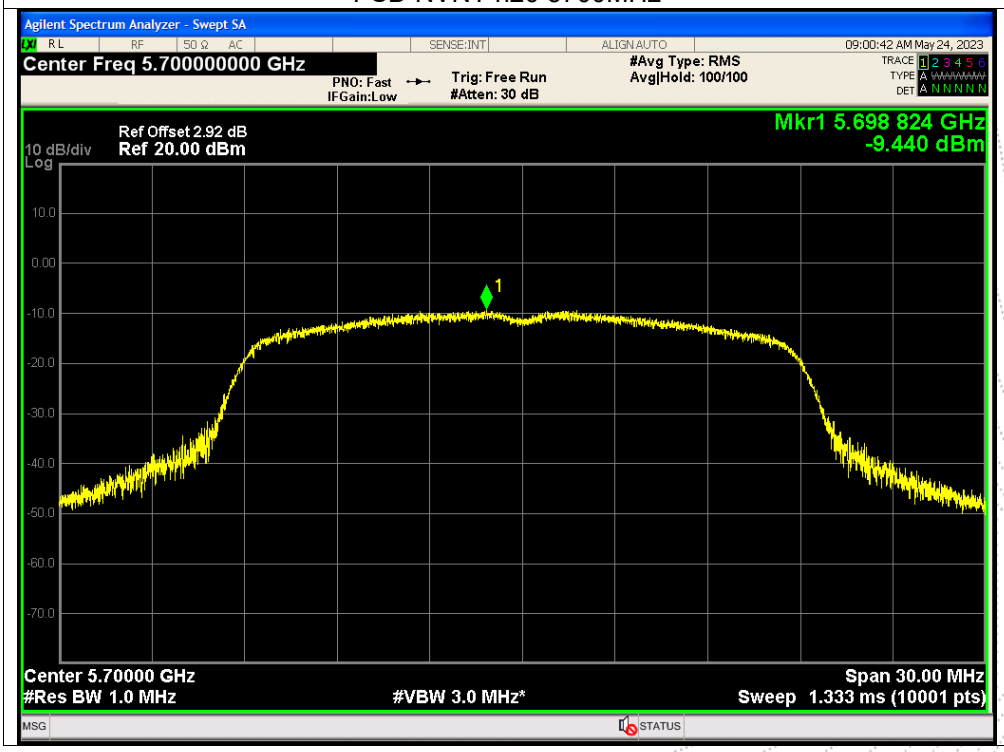
PSD NVNT n20 5500MHz



PSD NVNT n20 5580MHz



PSD NVNT n20 5700MHz

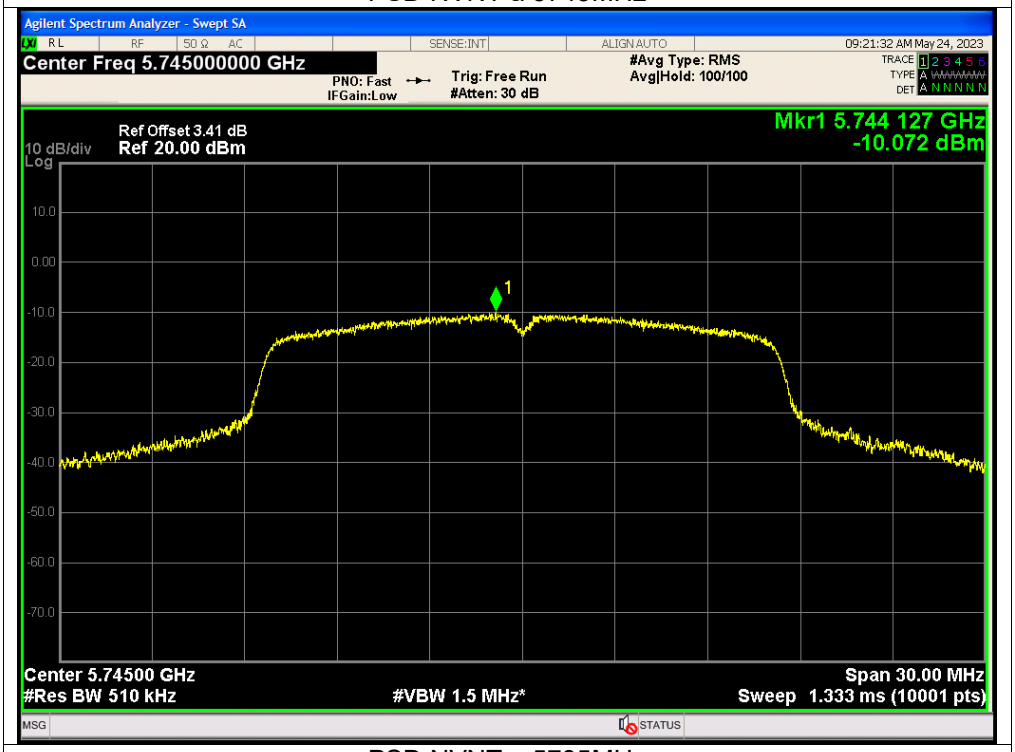


Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage:	DC 5V
Test Mode:	(5745-5825MHz)		

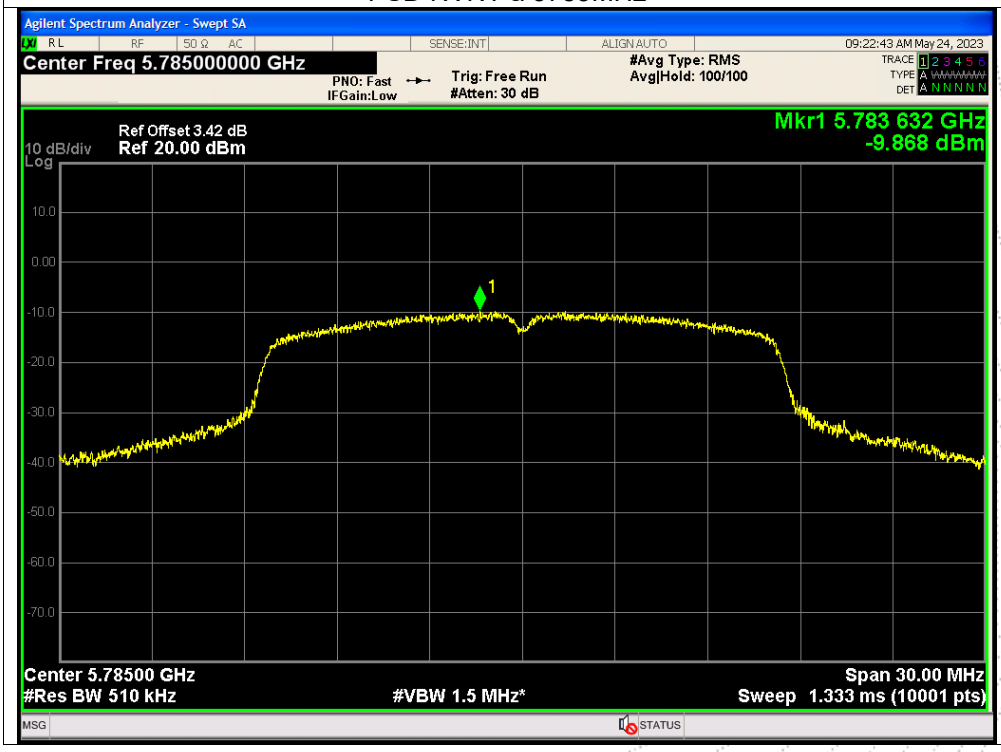
Condition	Mode	Frequency (MHz)	Conducted PSD (dBm)	Limit (dBm)	Verdict
NVNT	a	5745	-10.07	30	Pass
NVNT	a	5785	-9.87	30	Pass
NVNT	a	5825	-10.16	30	Pass
NVNT	n20	5745	-11.12	30	Pass
NVNT	n20	5785	-10.39	30	Pass
NVNT	n20	5825	-10.96	30	Pass

Test Graphs

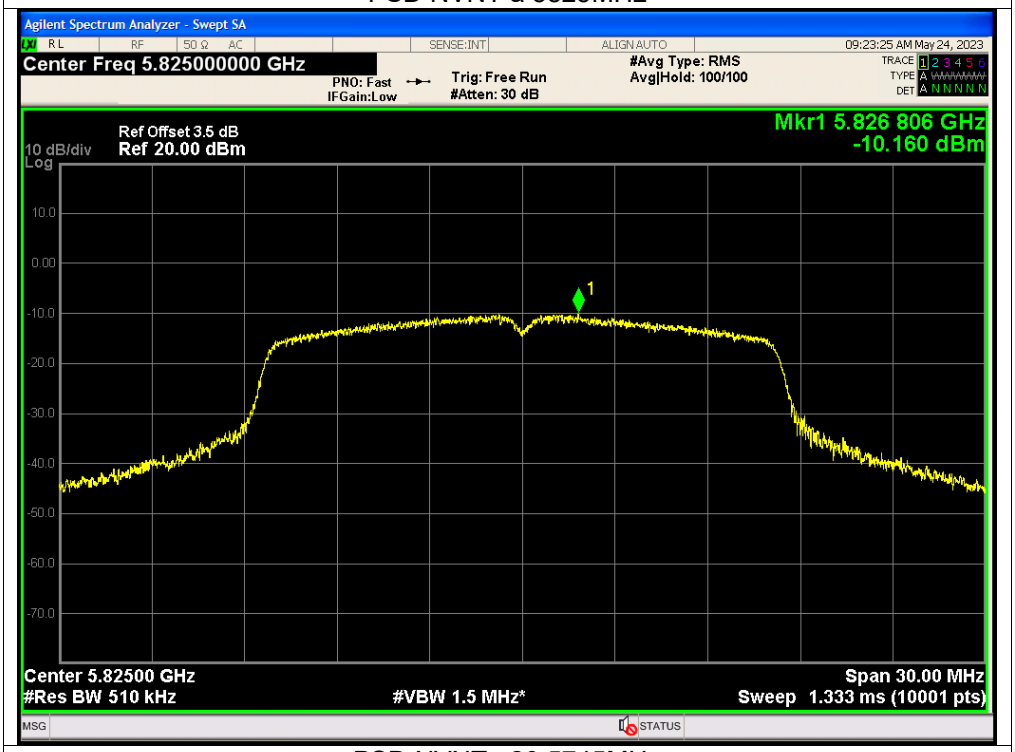
PSD NVNT a 5745MHz



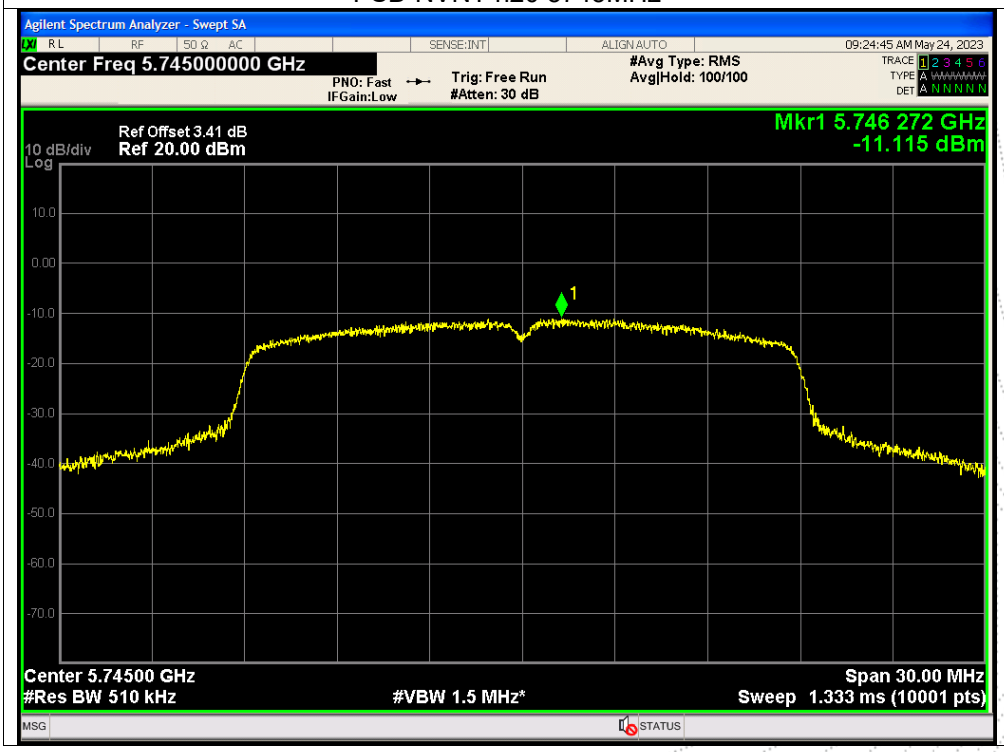
PSD NVNT a 5785MHz



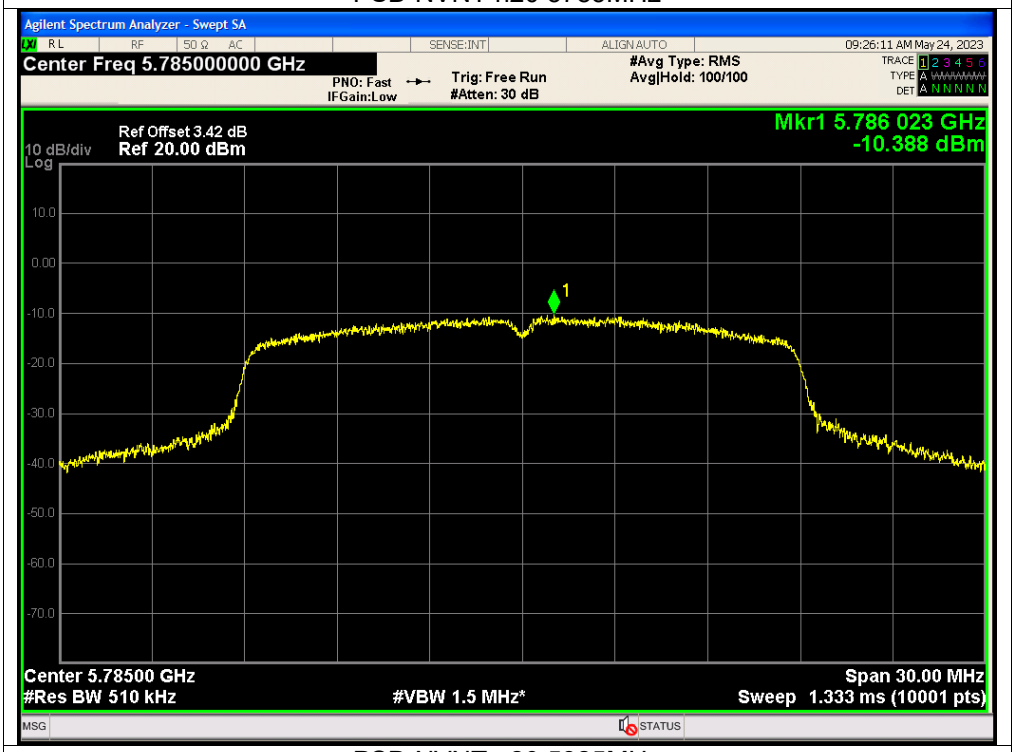
PSD NVNT a 5825MHz



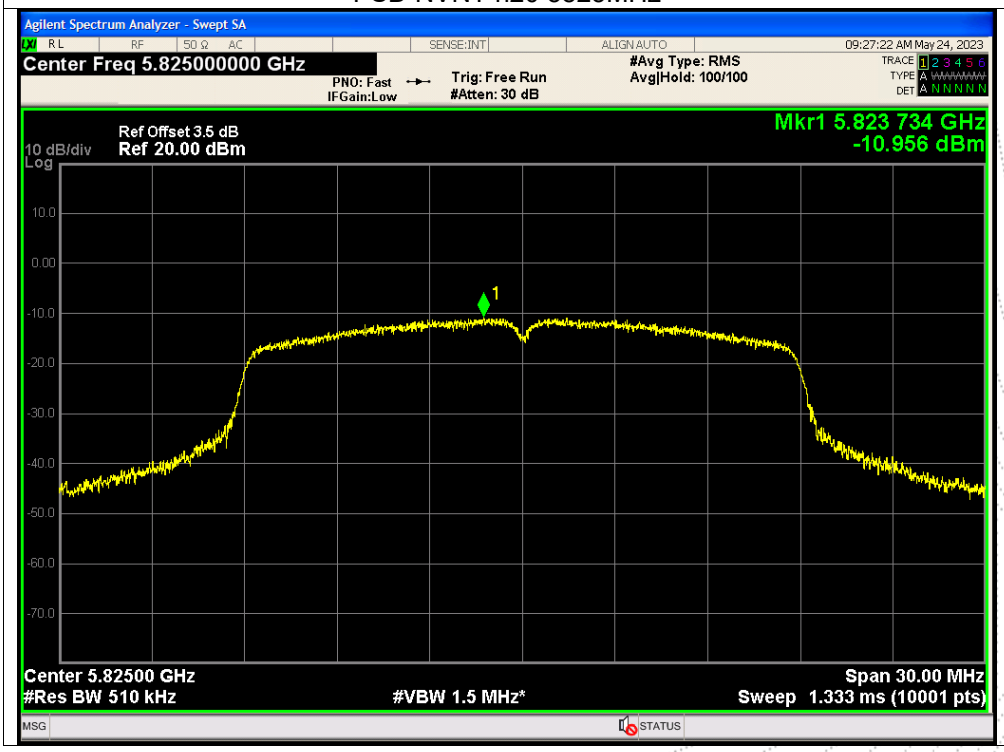
PSD NVNT n20 5745MHz



PSD NVNT n20 5785MHz

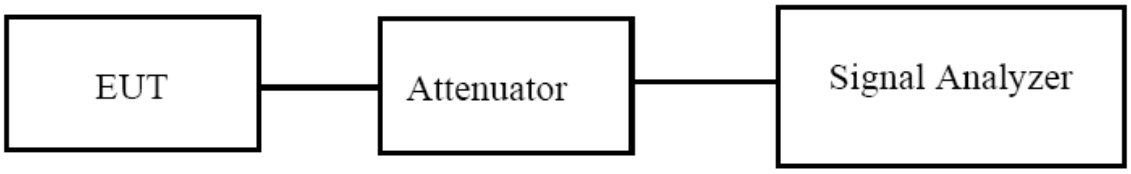


PSD NVNT n20 5825MHz



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

9.1 Block Diagram Of Test Setup



9.2 Limit

(1) For the band 5.15-5.25 GHz.
(iv) For mobile and portable client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, 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.

(2) For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in megahertz. In addition, 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.

(3) For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, 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. However, fixed point-to-point U-NII devices operating in this band may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted power. 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.

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.

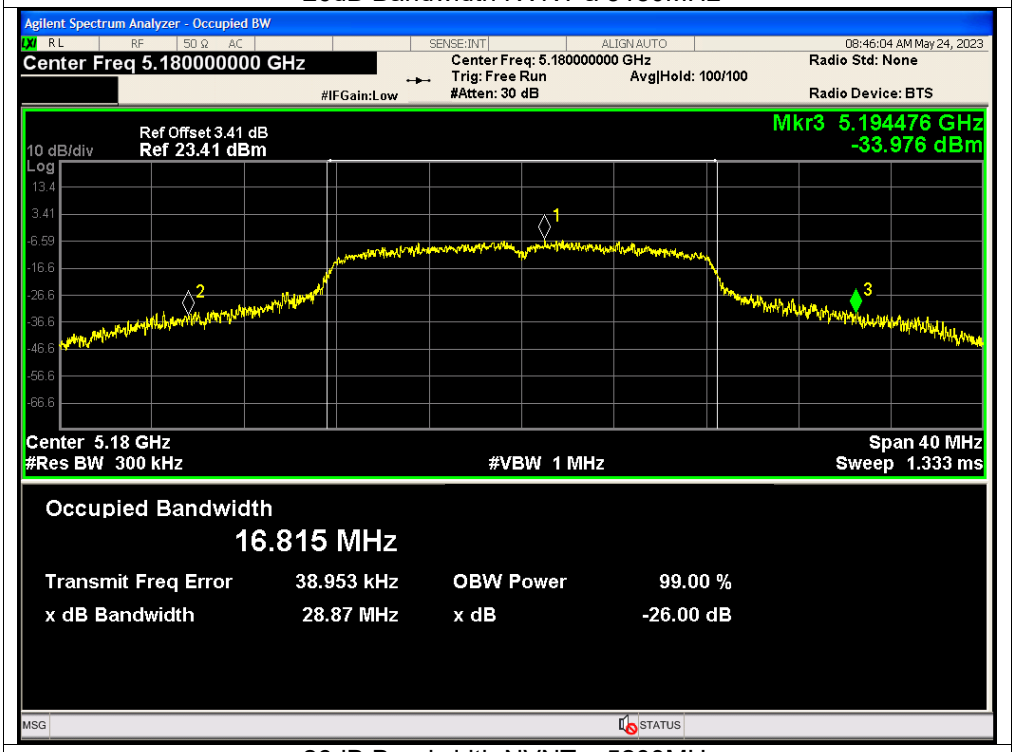
9.5 Test Result

Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage:	DC 5V
Test Mode:	(5180-5240MHz)		

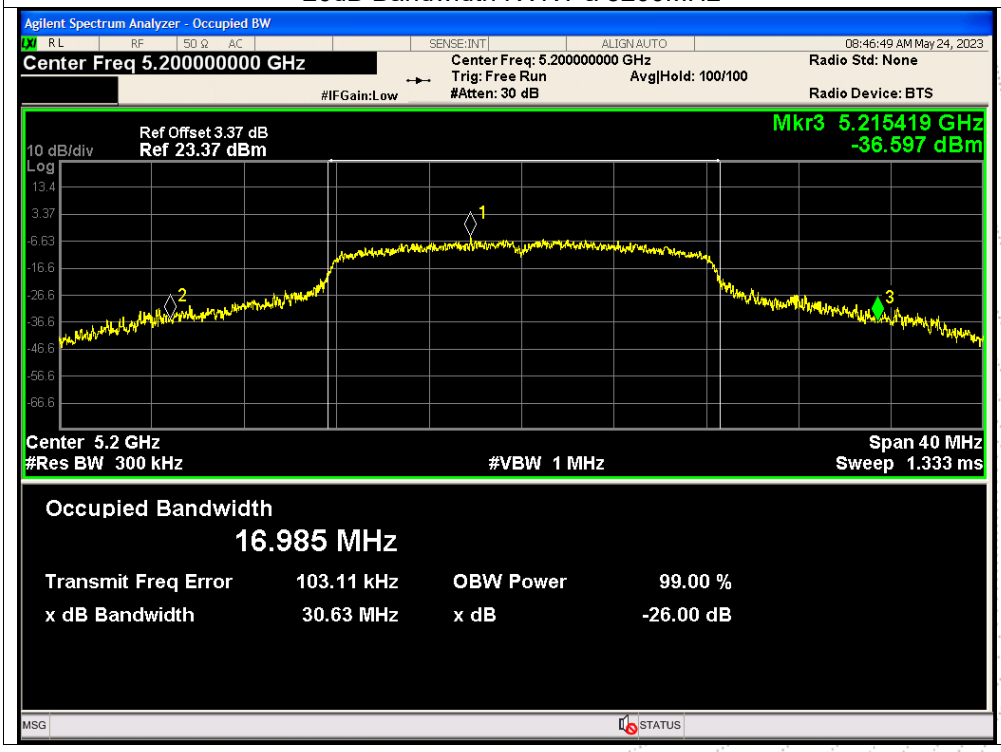
Condition	Mode	**Frequency (MHz)**	**99% bandwidth (MHz)**	**-26dB bandwidth (MHz)**	**Result**
NVNT	a	5180	16.634	28.875	Pass
NVNT	a	5200	16.556	30.631	Pass
NVNT	a	5240	16.601	28.884	Pass
NVNT	n20	5180	17.691	29.803	Pass
NVNT	n20	5200	17.696	30.081	Pass
NVNT	n20	5240	17.71	29.94	Pass

Test Graphs

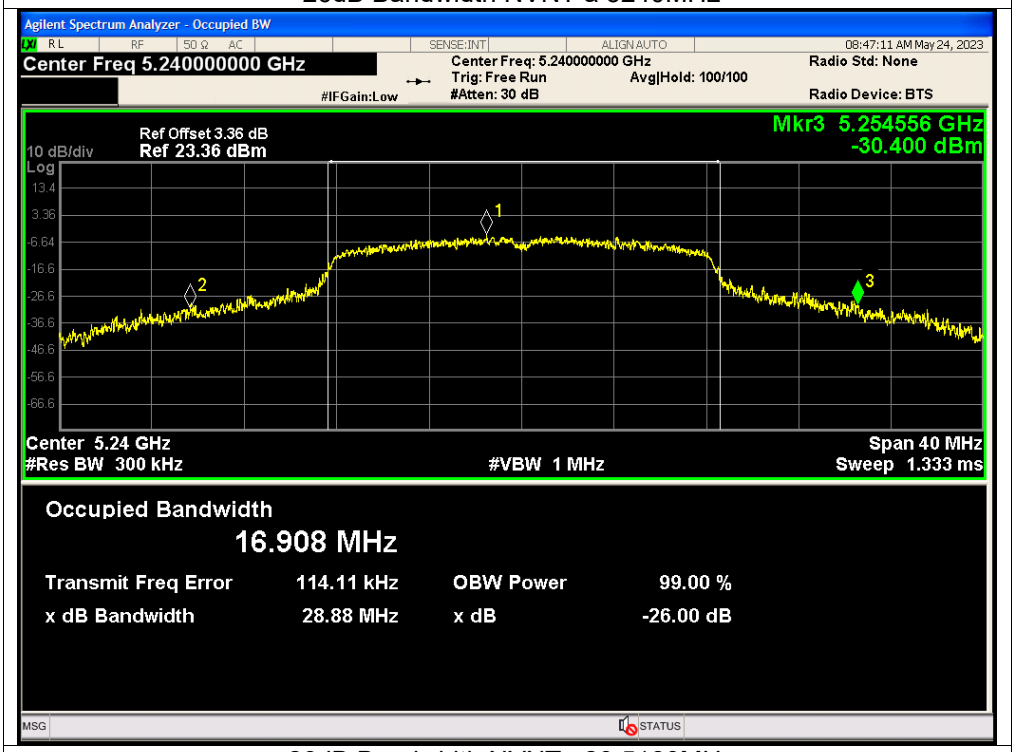
-26dB Bandwidth NVNT a 5180MHz



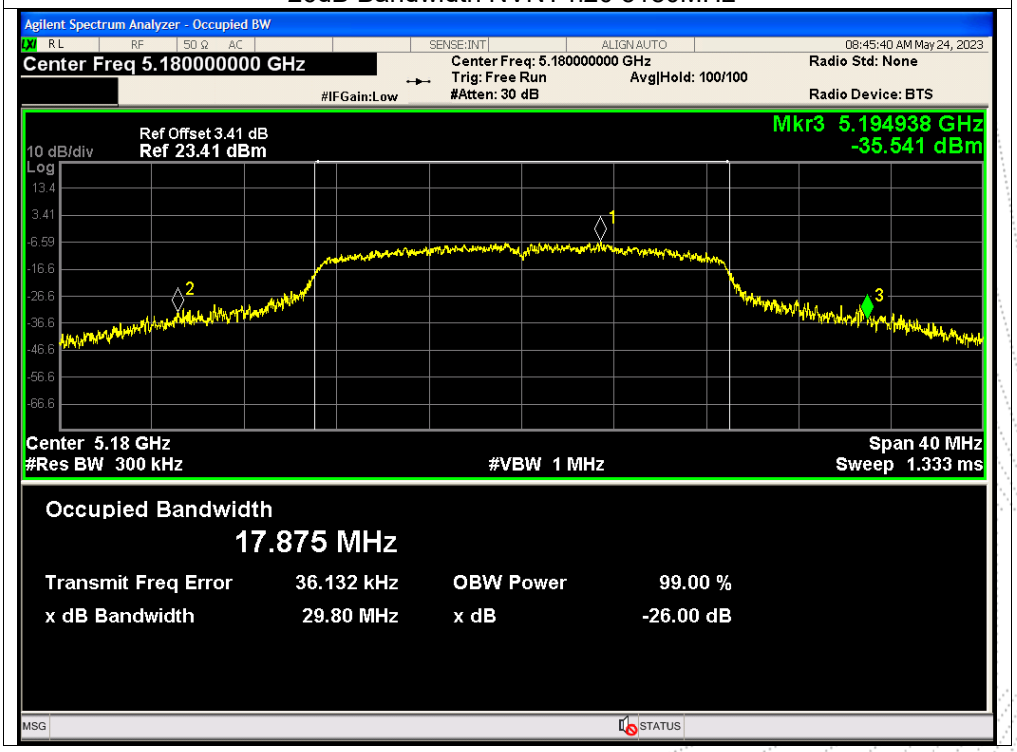
-26dB Bandwidth NVNT a 5200MHz



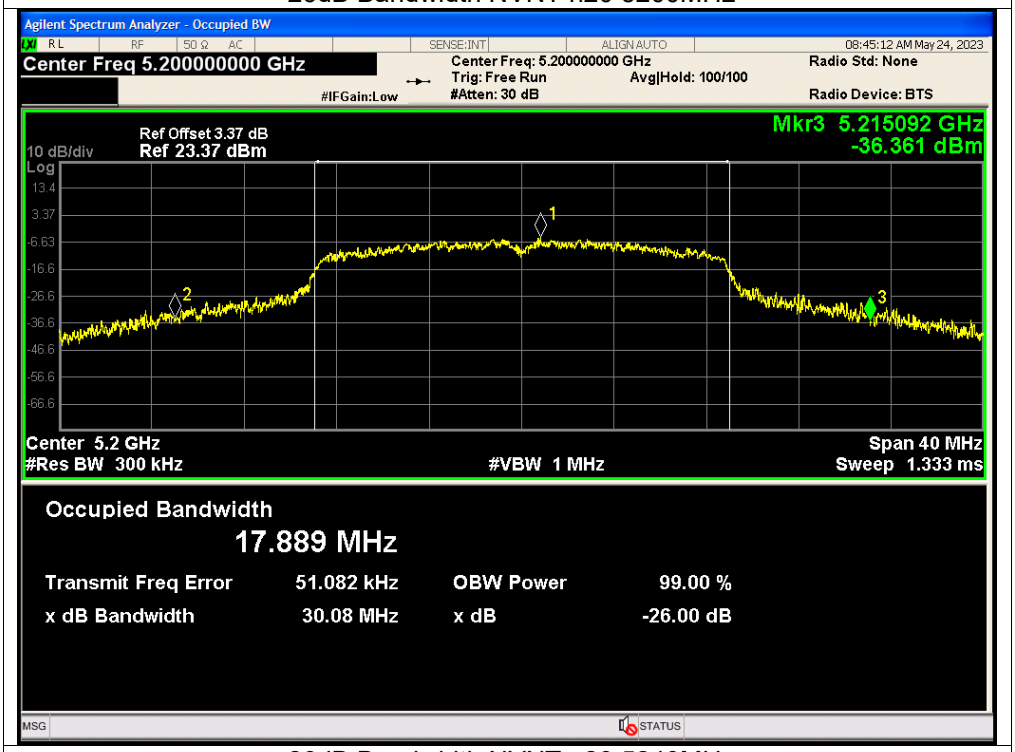
-26dB Bandwidth NVNT a 5240MHz



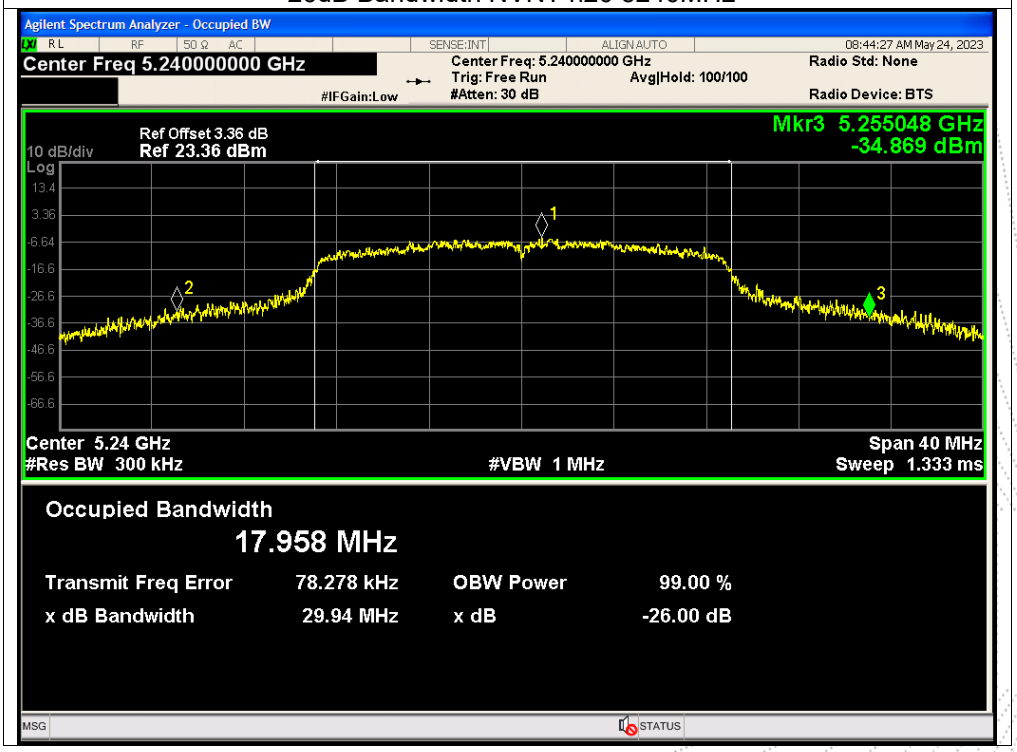
-26dB Bandwidth NVNT n20 5180MHz



-26dB Bandwidth NVNT n20 5200MHz

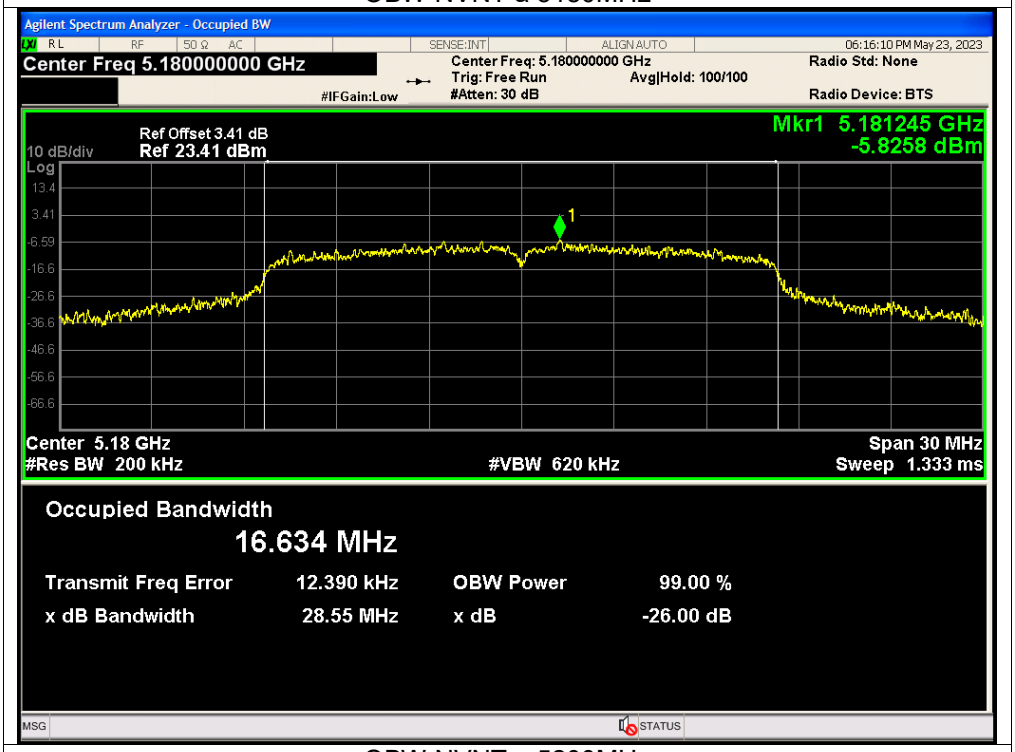


-26dB Bandwidth NVNT n20 5240MHz

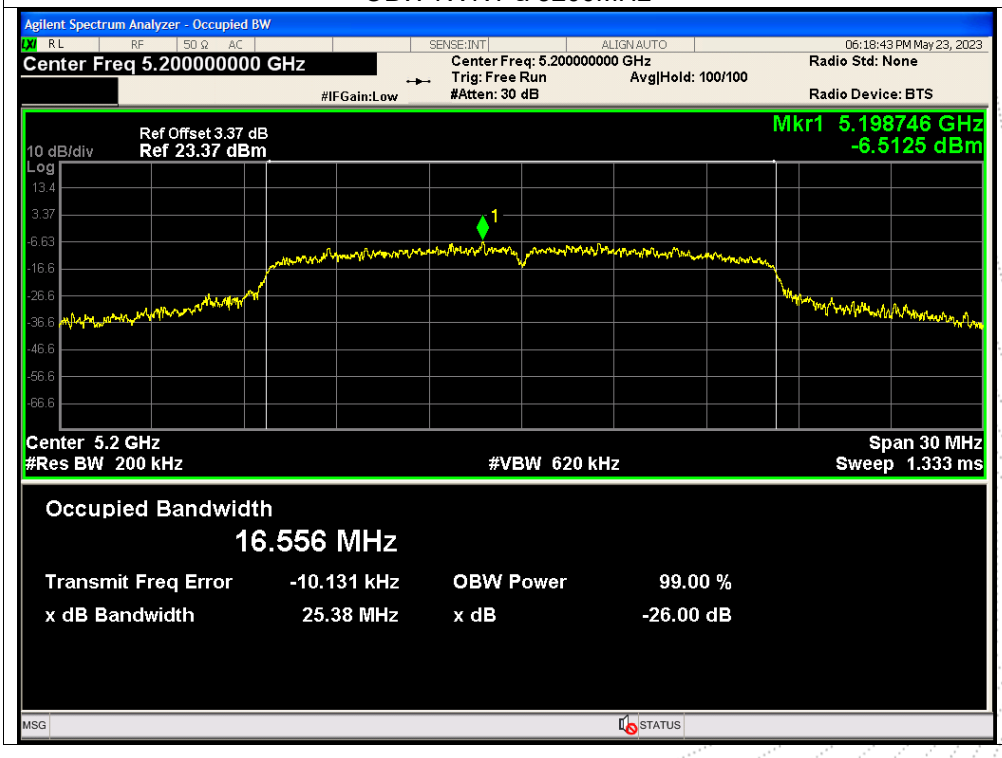


Test Graphs

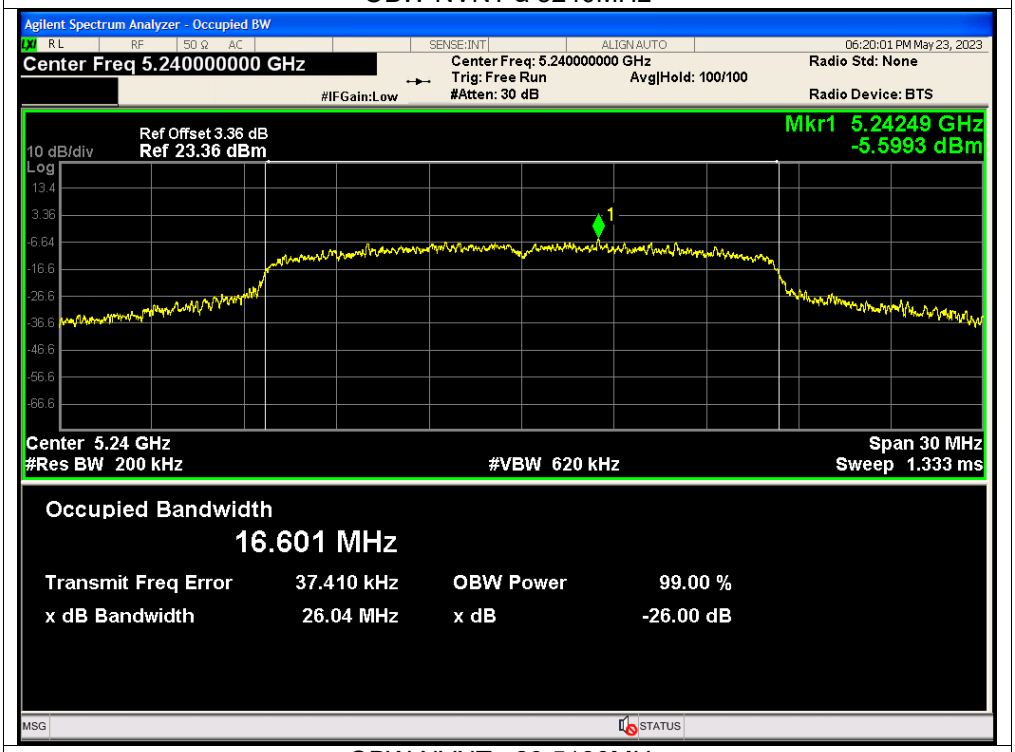
OBW NVNT a 5180MHz



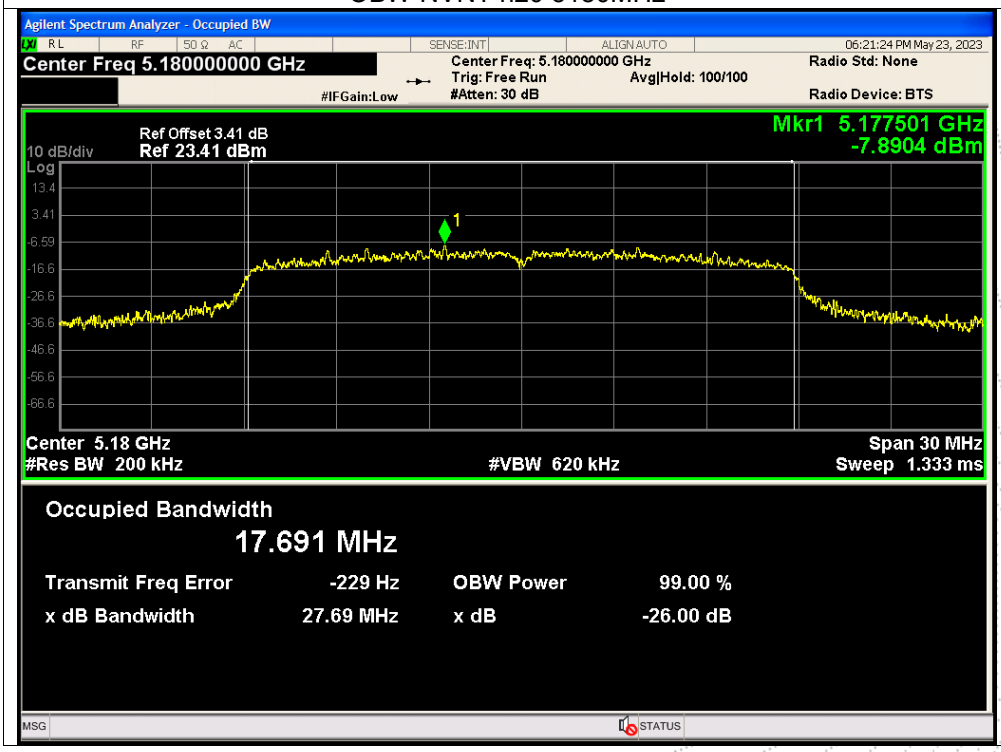
OBW NVNT a 5200MHz



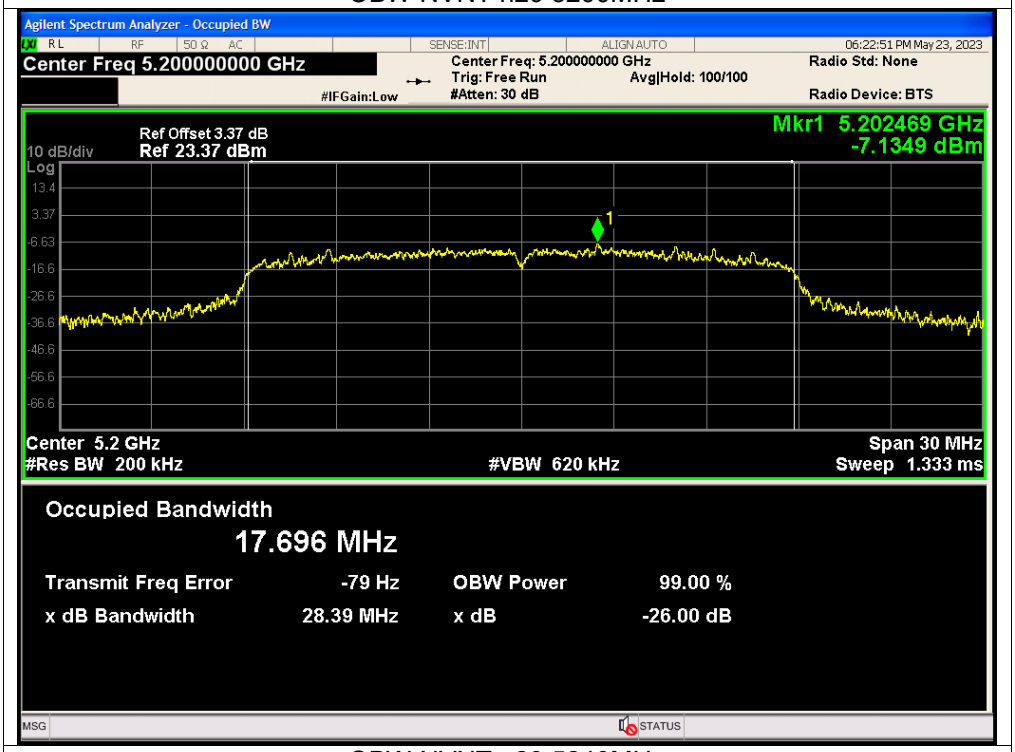
OBW NVNT a 5240MHz



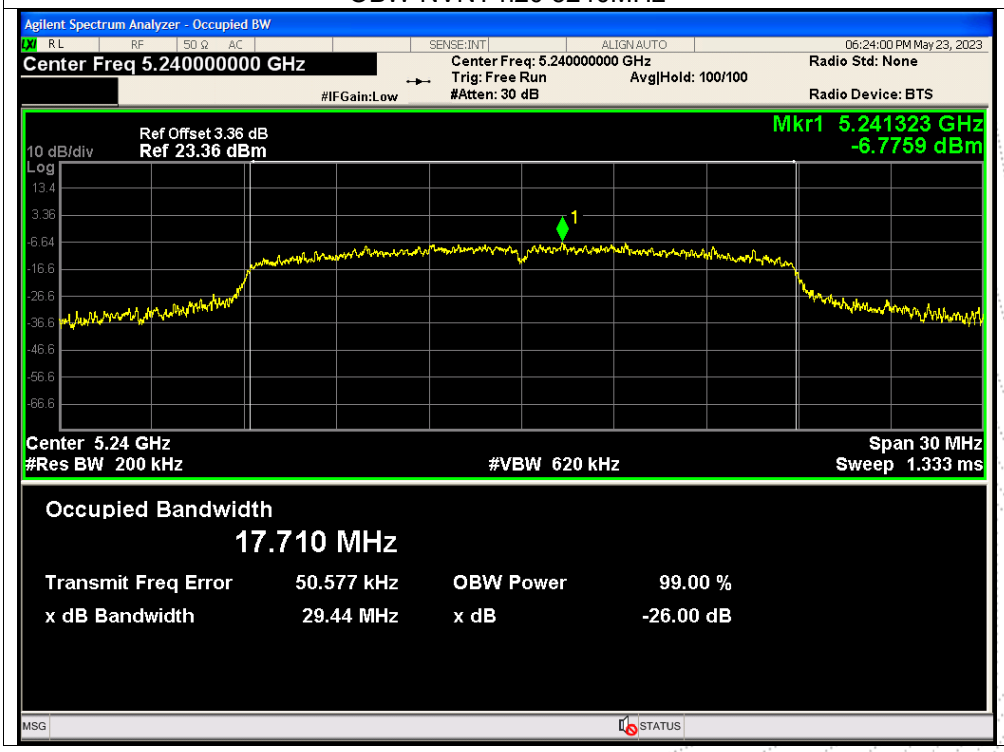
OBW NVNT n20 5180MHz



OBW NVNT n20 5200MHz



OBW NVNT n20 5240MHz

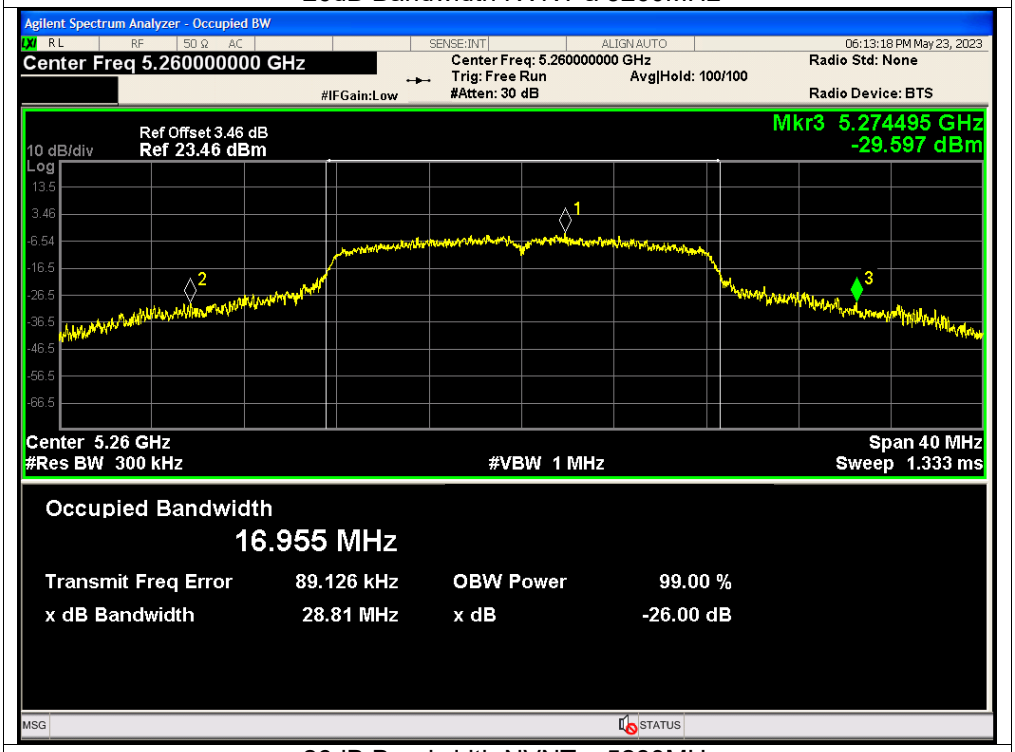


Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage:	DC 5V
Test Mode:	(5260-5320MHz)		

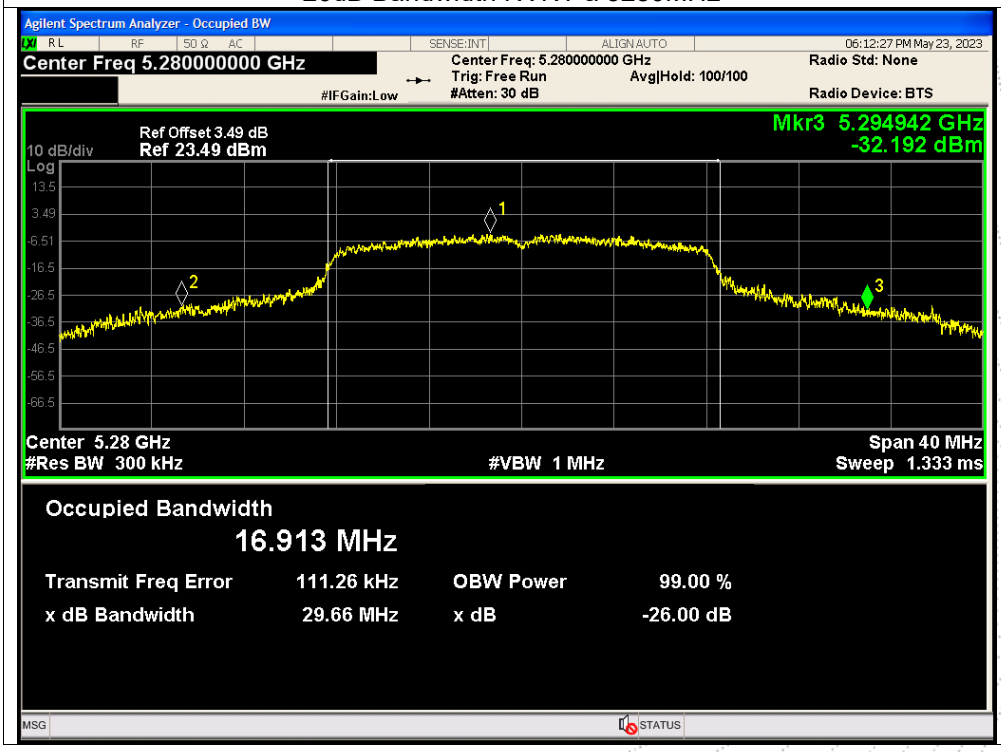
Condition	Mode	**Frequency (MHz)**	**99% bandwidth (MHz)**	**-26dB bandwidth (MHz)**	**Result**
NVNT	a	5260	16.655	28.812	Pass
NVNT	a	5280	16.629	29.661	Pass
NVNT	a	5320	16.684	30.801	Pass
NVNT	n20	5260	17.724	30.75	Pass
NVNT	n20	5280	17.739	31.053	Pass
NVNT	n20	5320	17.755	30.398	Pass

Test Graphs

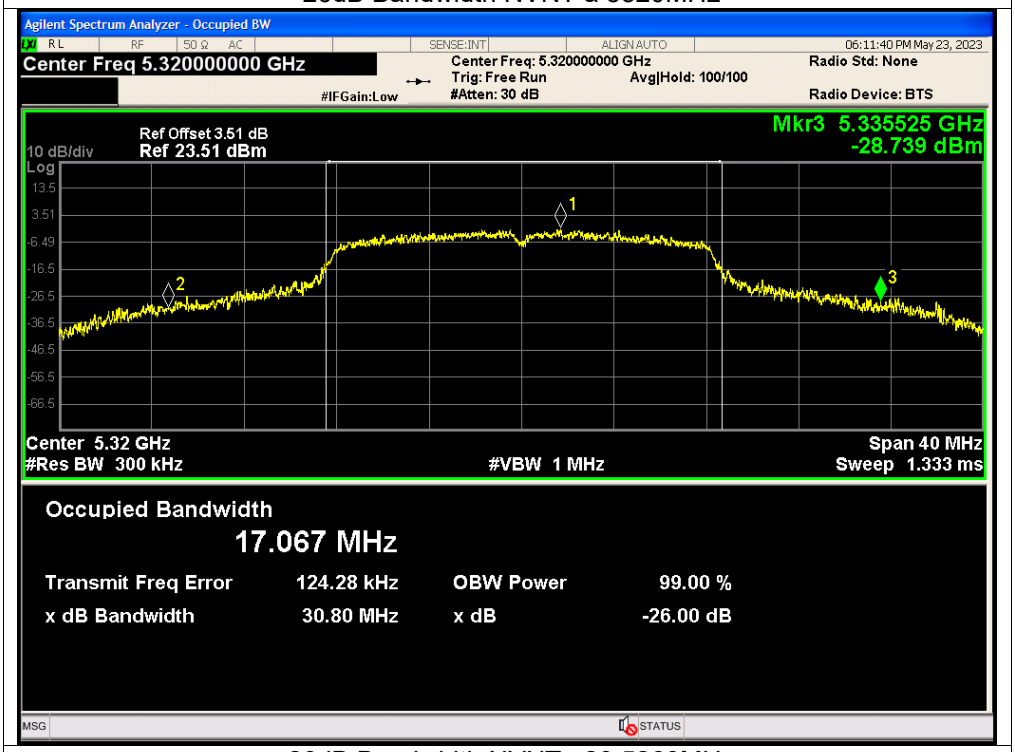
-26dB Bandwidth NVNT a 5260MHz



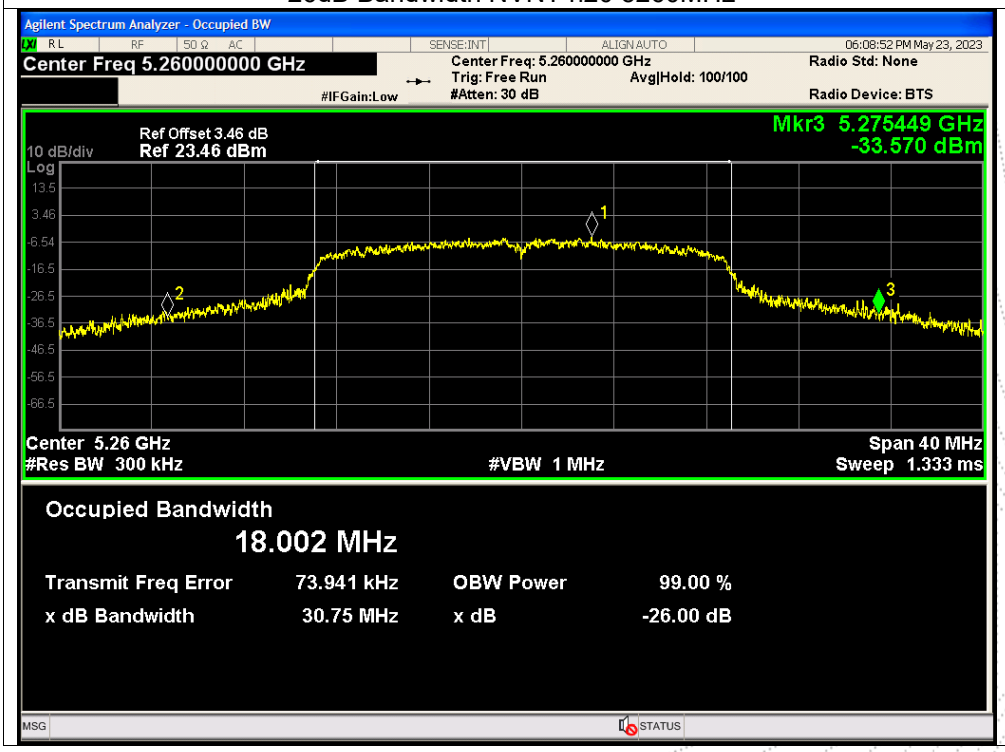
-26dB Bandwidth NVNT a 5280MHz



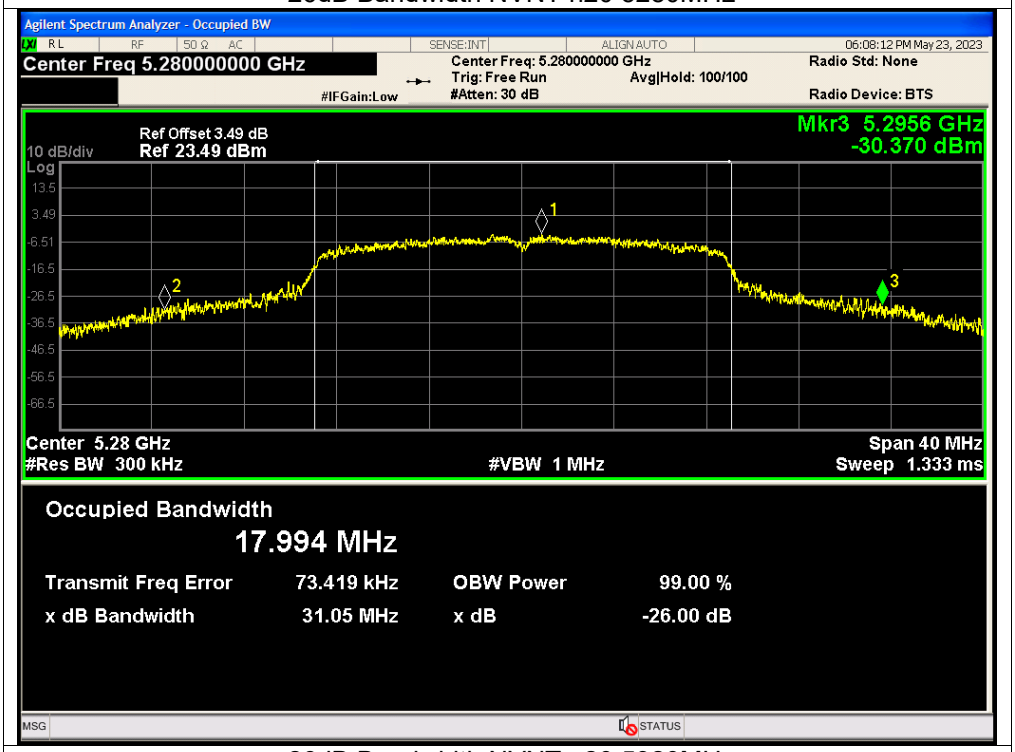
-26dB Bandwidth NVNT a 5320MHz



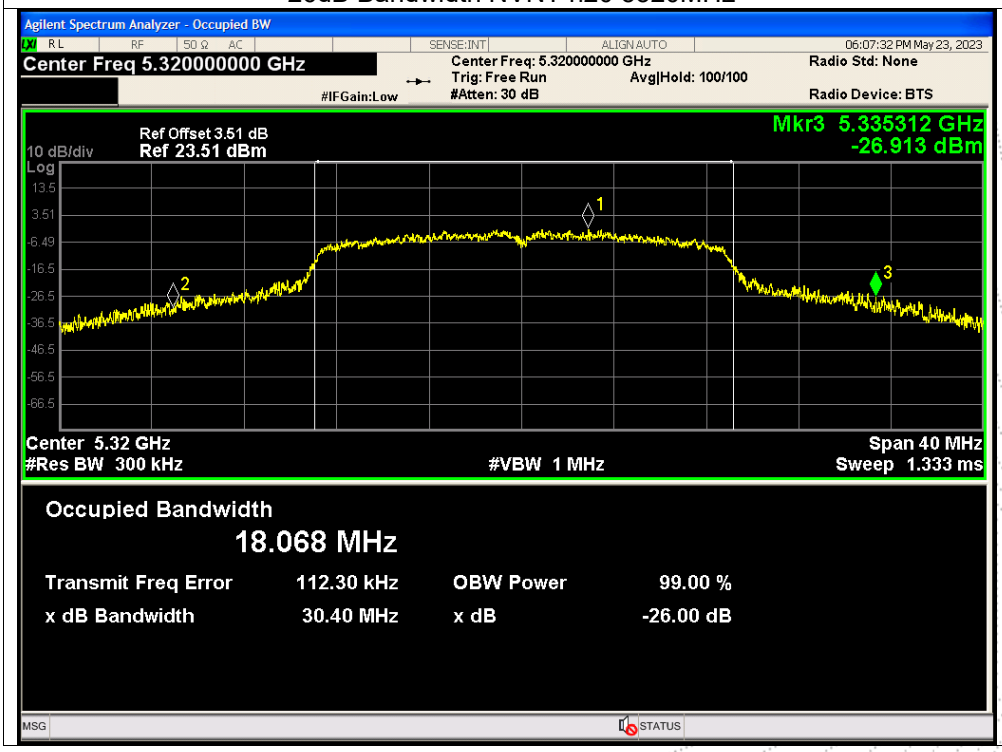
-26dB Bandwidth NVNT n20 5260MHz



-26dB Bandwidth NVNT n20 5280MHz

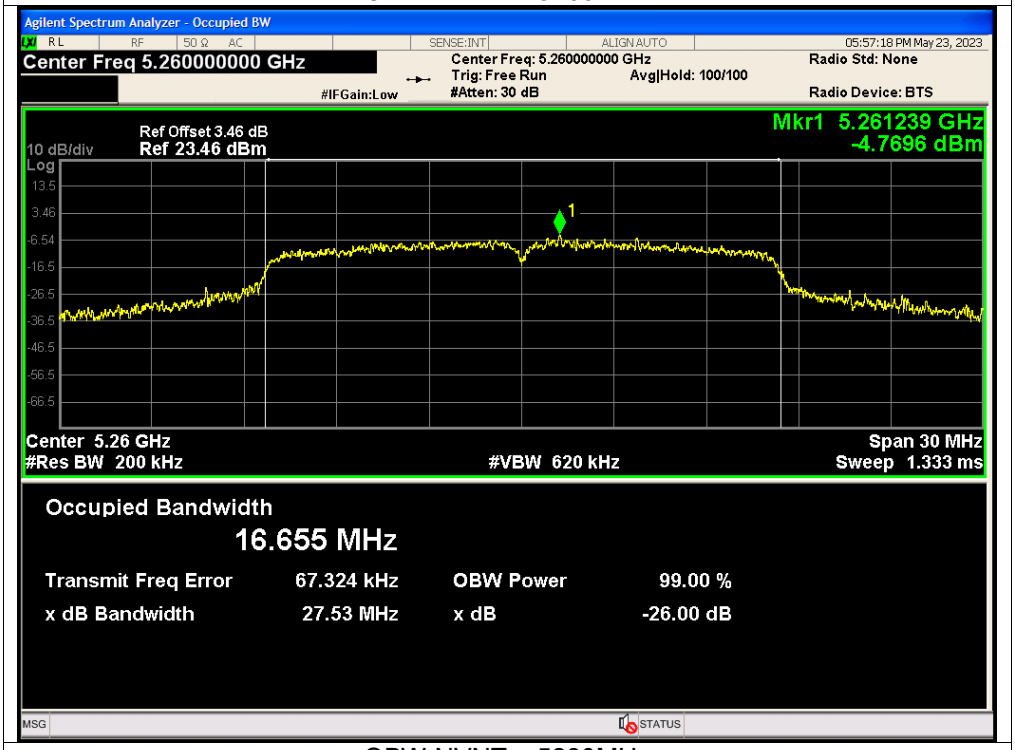


-26dB Bandwidth NVNT n20 5320MHz

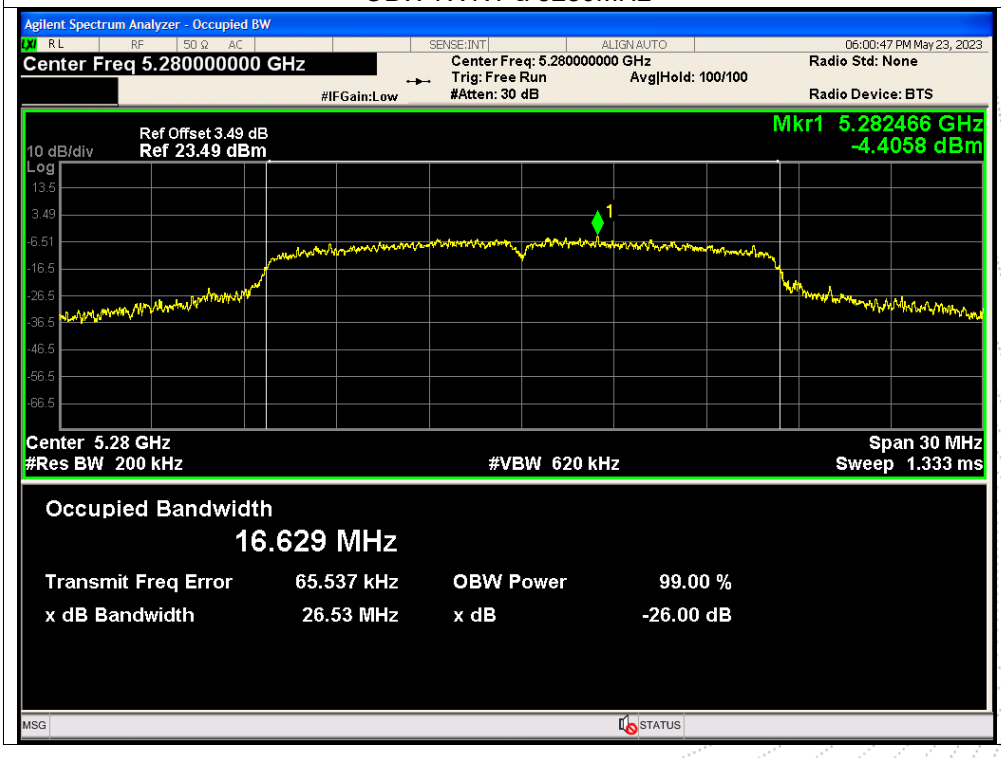


Test Graphs

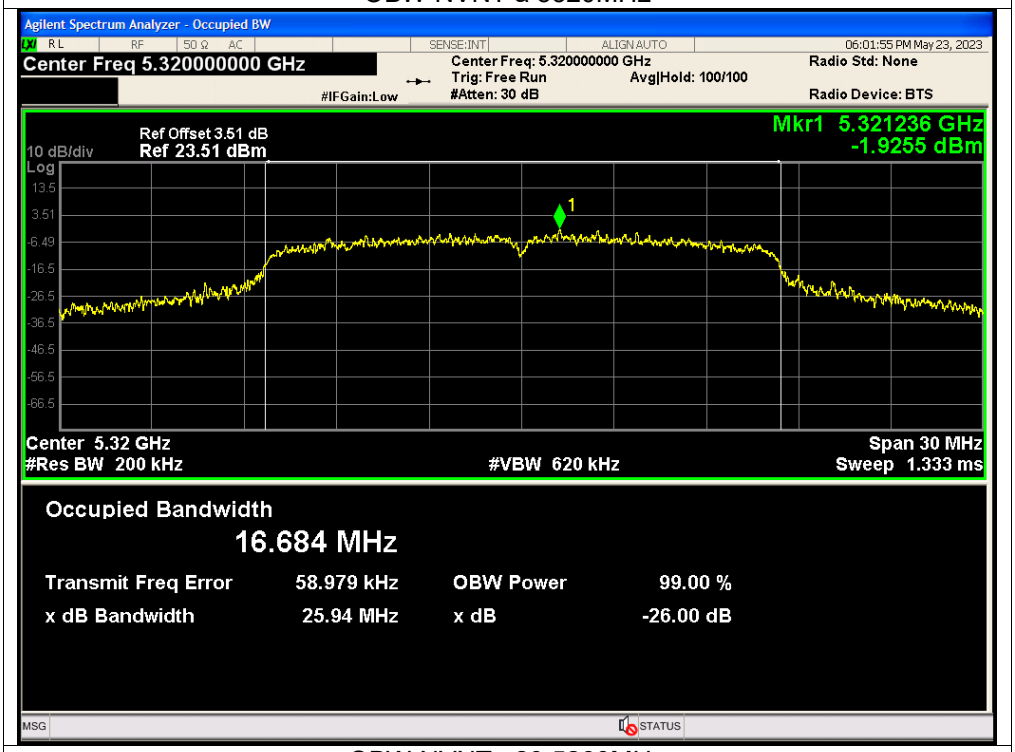
OBW NVNT a 5260MHz



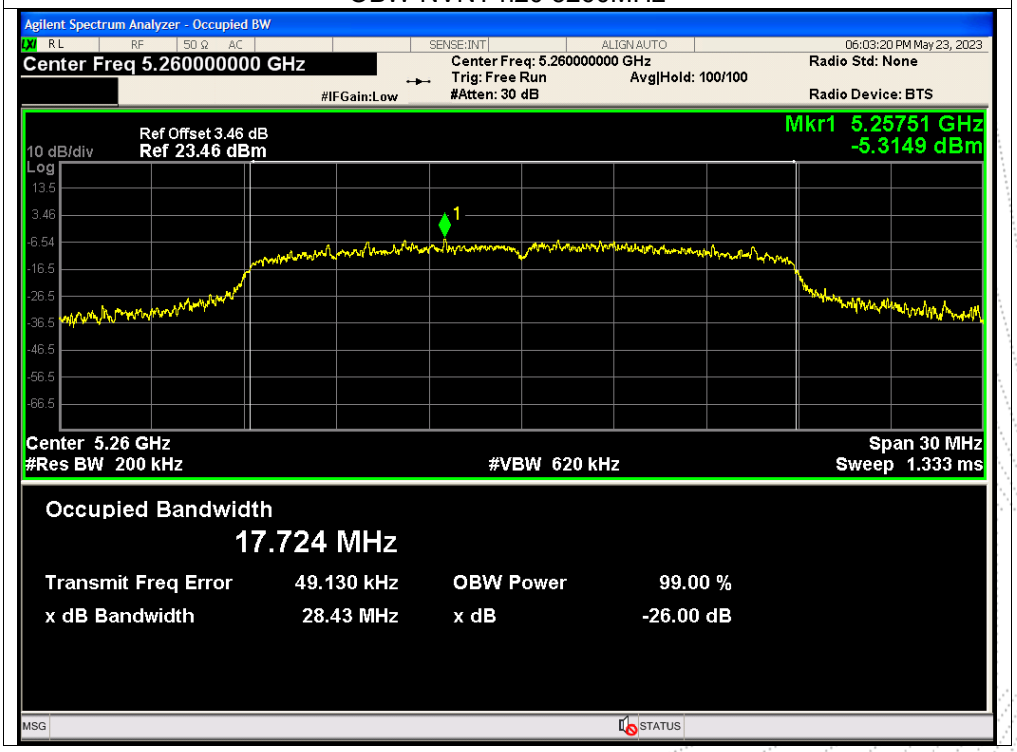
OBW NVNT a 5280MHz



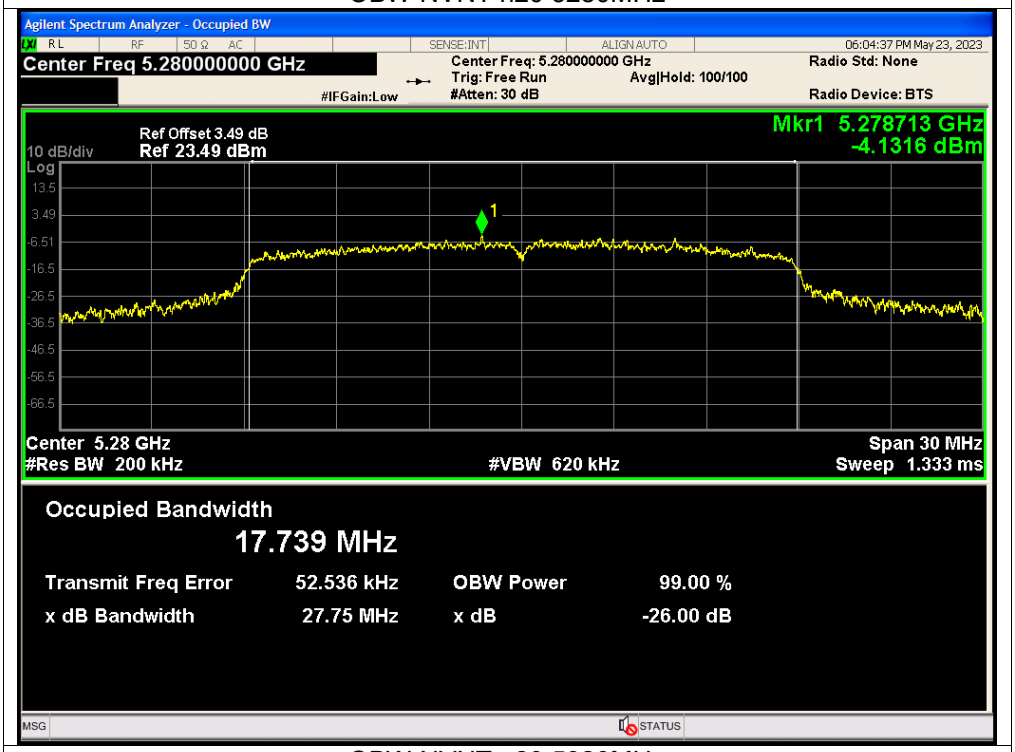
OBW NVNT a 5320MHz



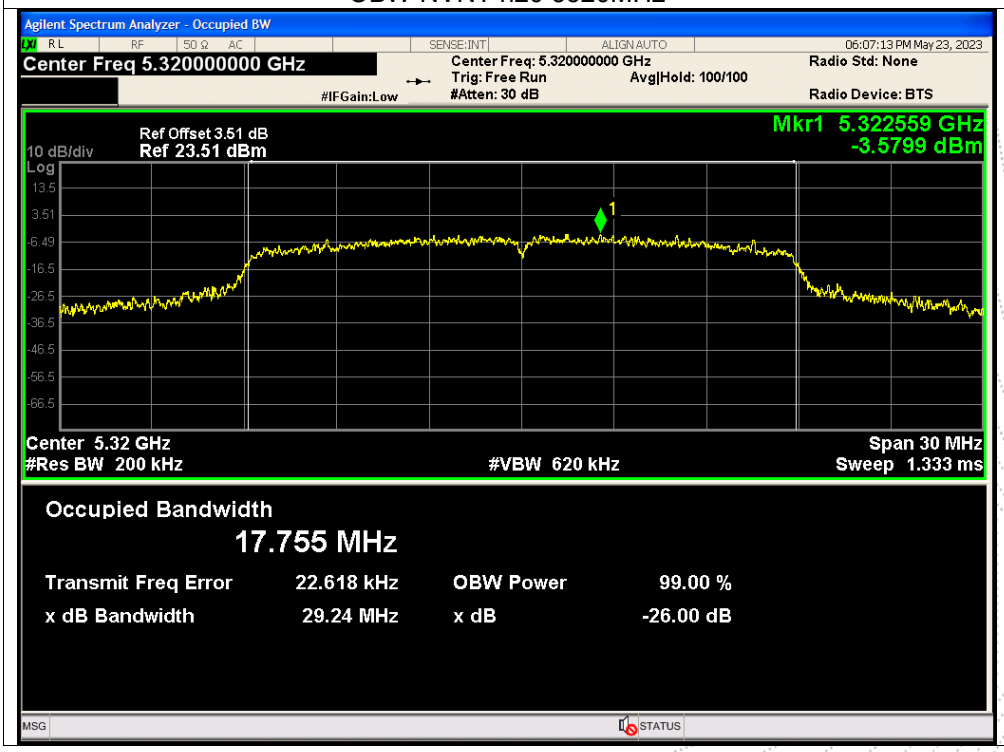
OBW NVNT n20 5260MHz



OBW NVNT n20 5280MHz



OBW NVNT n20 5320MHz

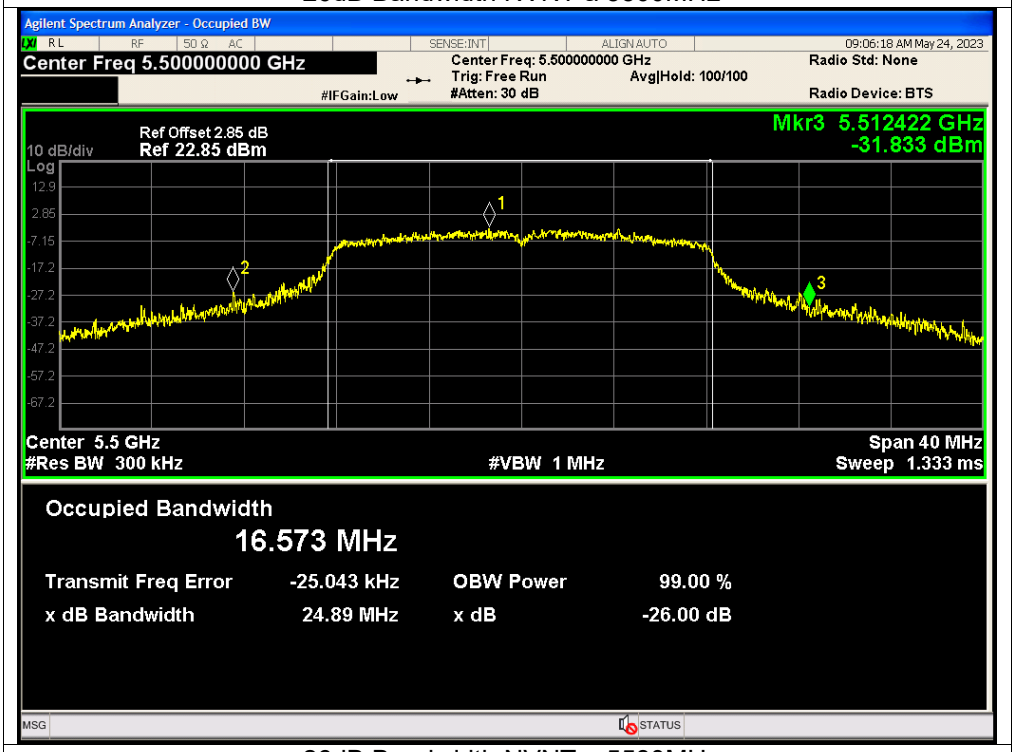


Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage:	DC 5V
Test Mode:	(5500-5700MHz)		

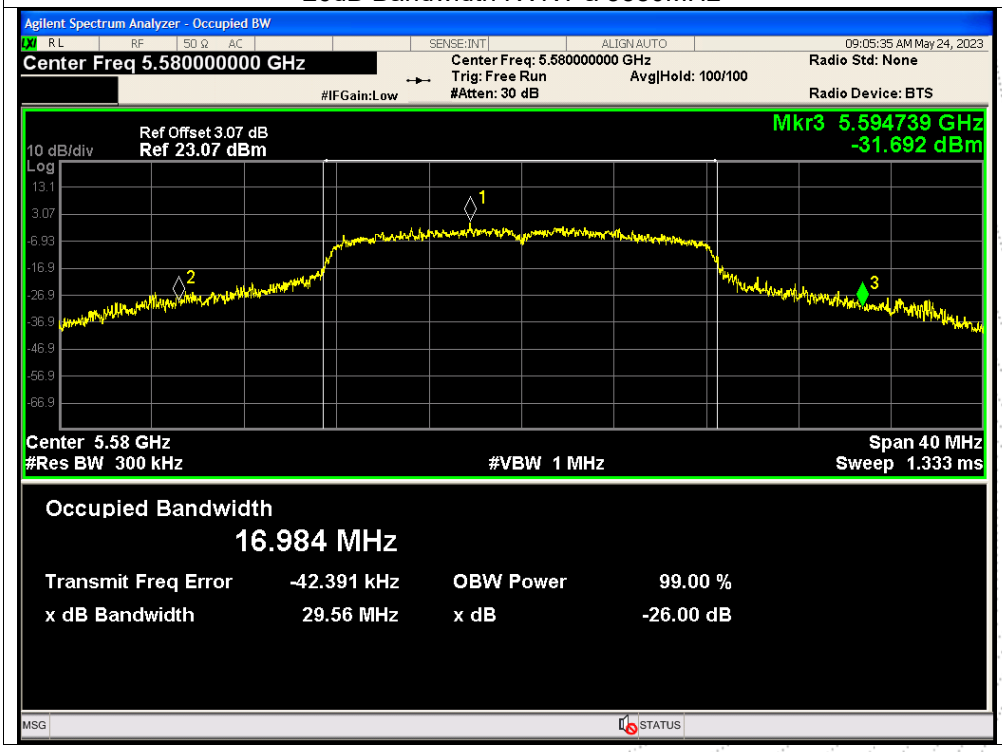
Condition	Mode	**Frequency (MHz)**	**99% bandwidth (MHz)**	**-26dB bandwidth (MHz)**	**Result**
NVNT	a	5500	16.365	24.894	Pass
NVNT	a	5580	16.703	29.562	Pass
NVNT	a	5700	16.339	21.813	Pass
NVNT	n20	5500	18.029	23.629	Pass
NVNT	n20	5580	17.759	31.925	Pass
NVNT	n20	5700	17.474	22.637	Pass

Test Graphs

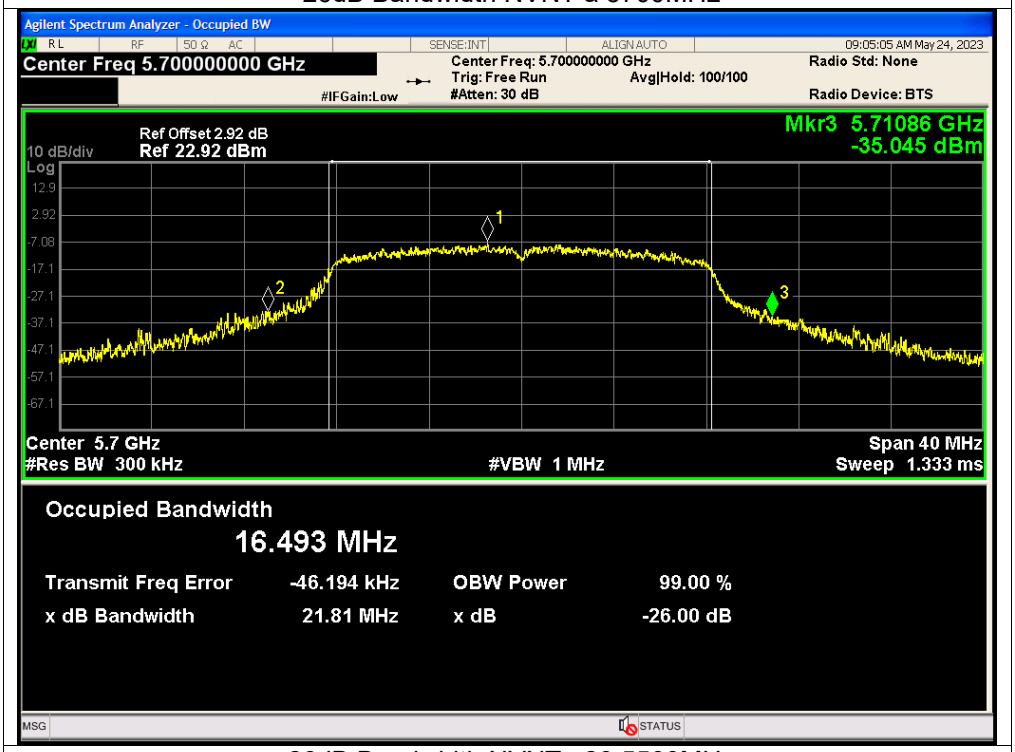
-26dB Bandwidth NVNT a 5500MHz



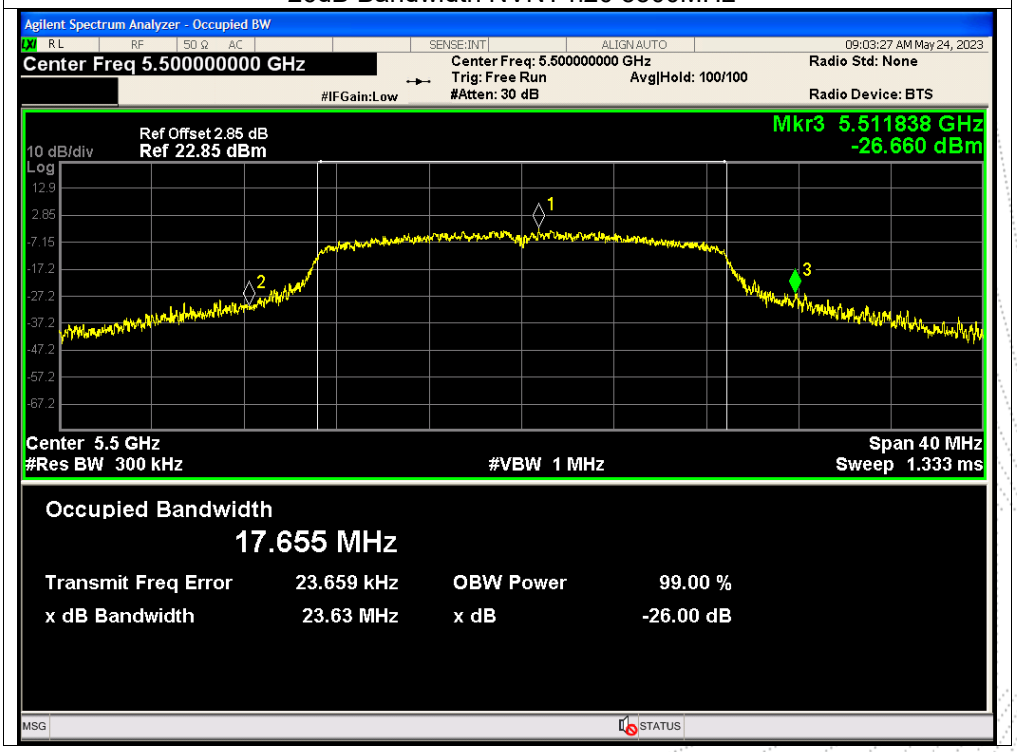
-26dB Bandwidth NVNT a 5580MHz



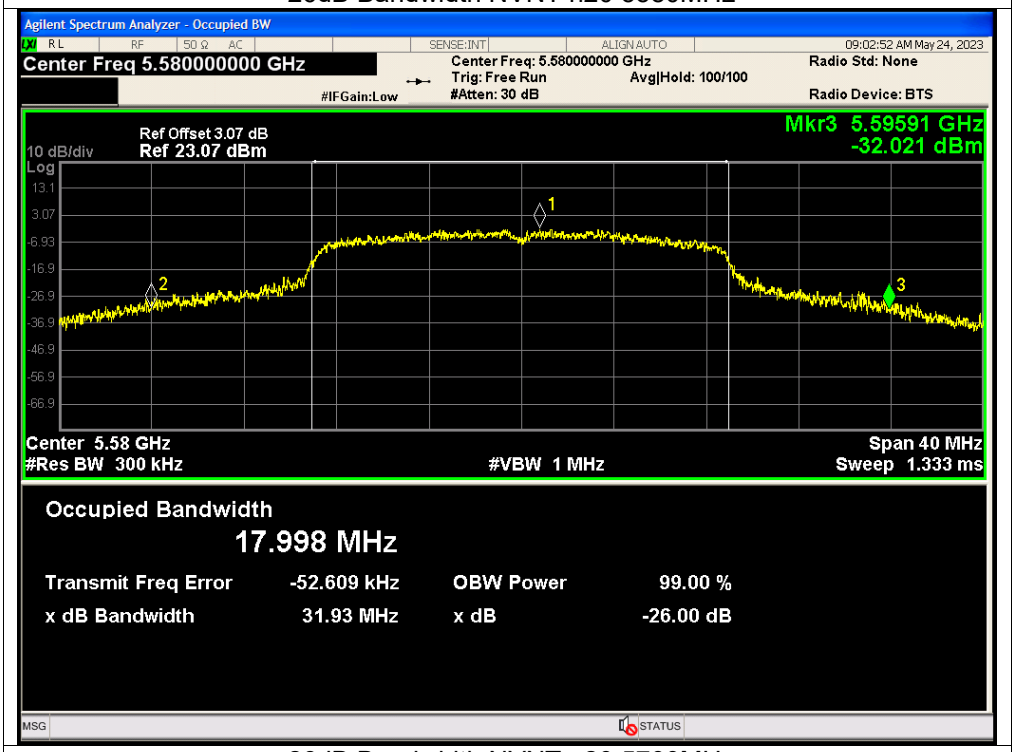
-26dB Bandwidth NVNT a 5700MHz



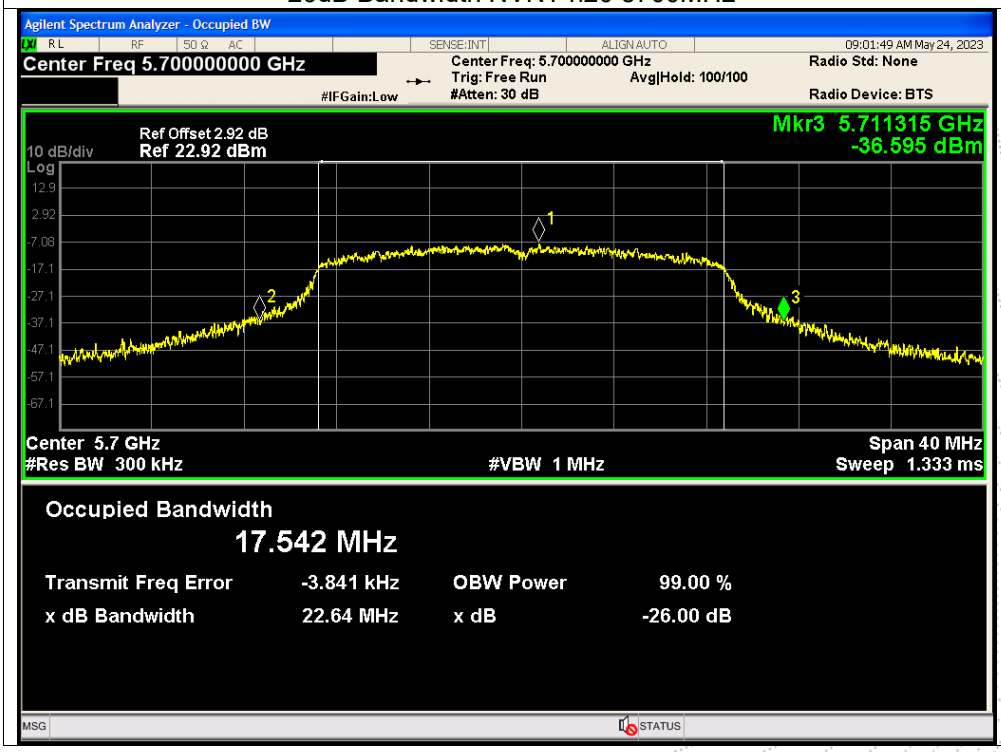
-26dB Bandwidth NVNT n20 5500MHz



-26dB Bandwidth NVNT n20 5580MHz

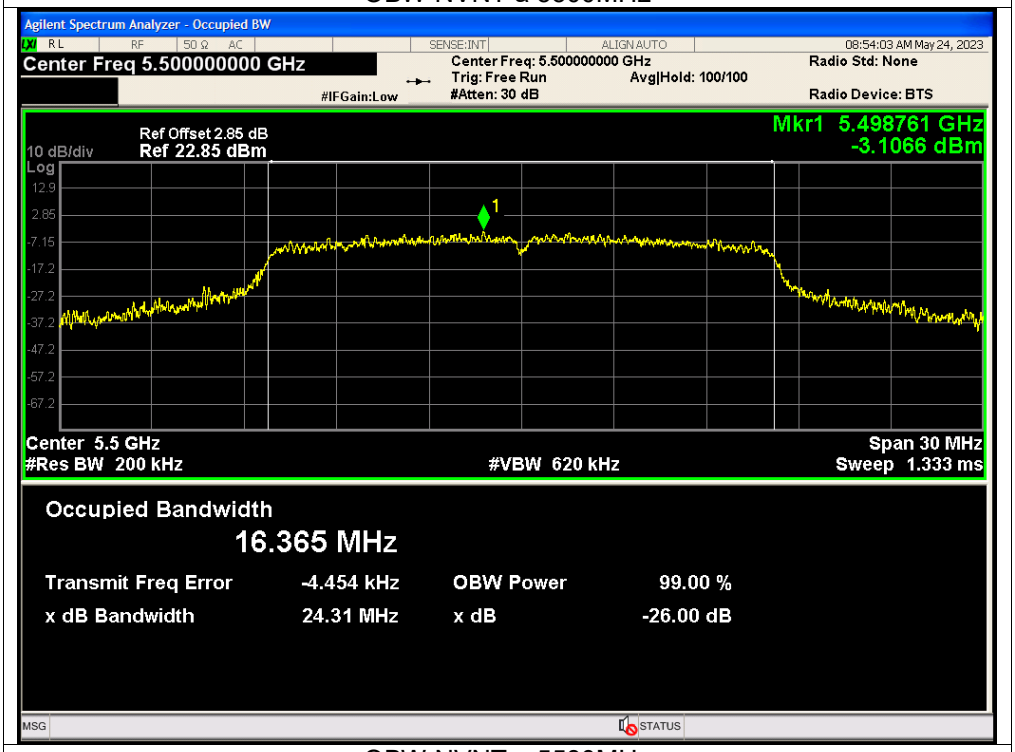


-26dB Bandwidth NVNT n20 5700MHz

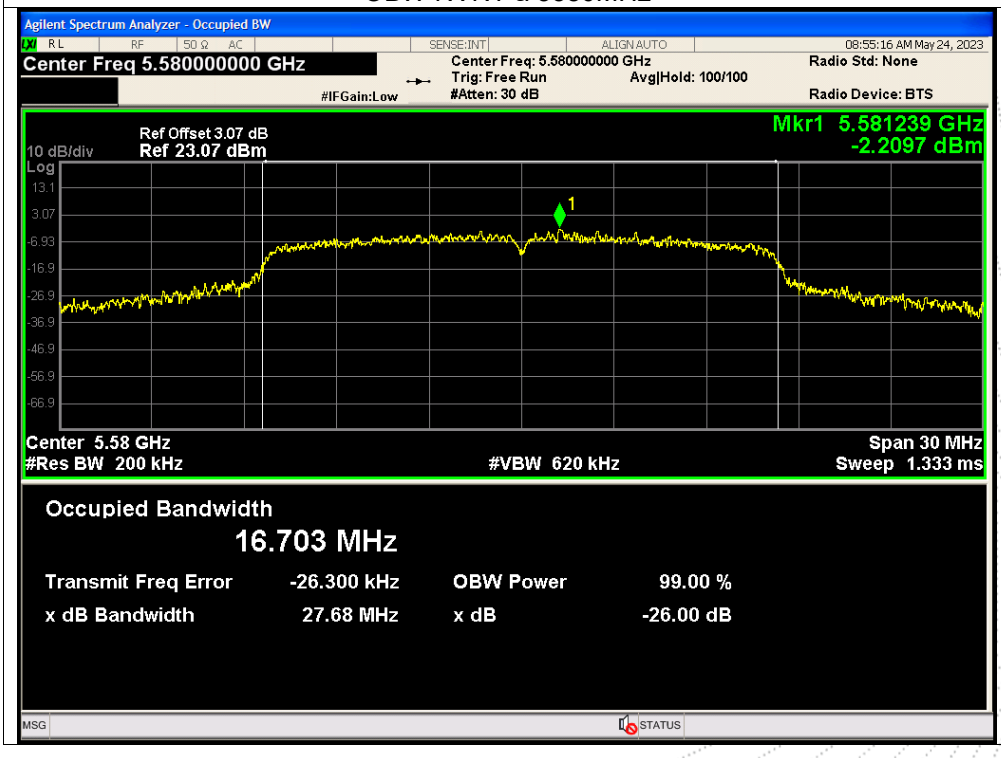


Test Graphs

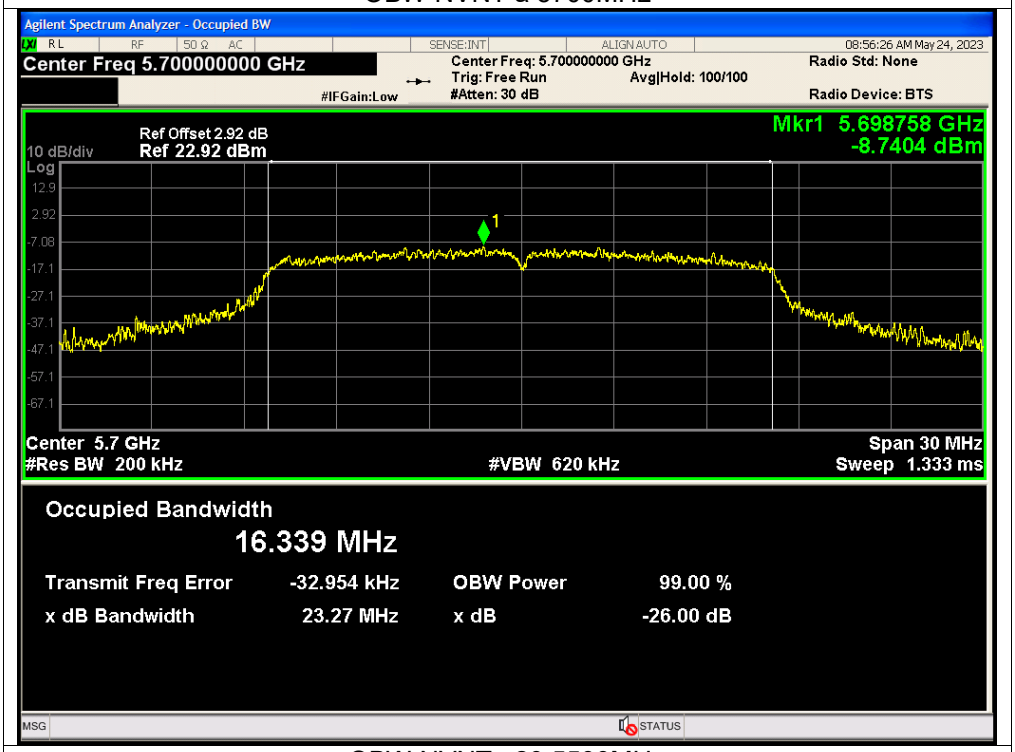
OBW NVNT a 5500MHz



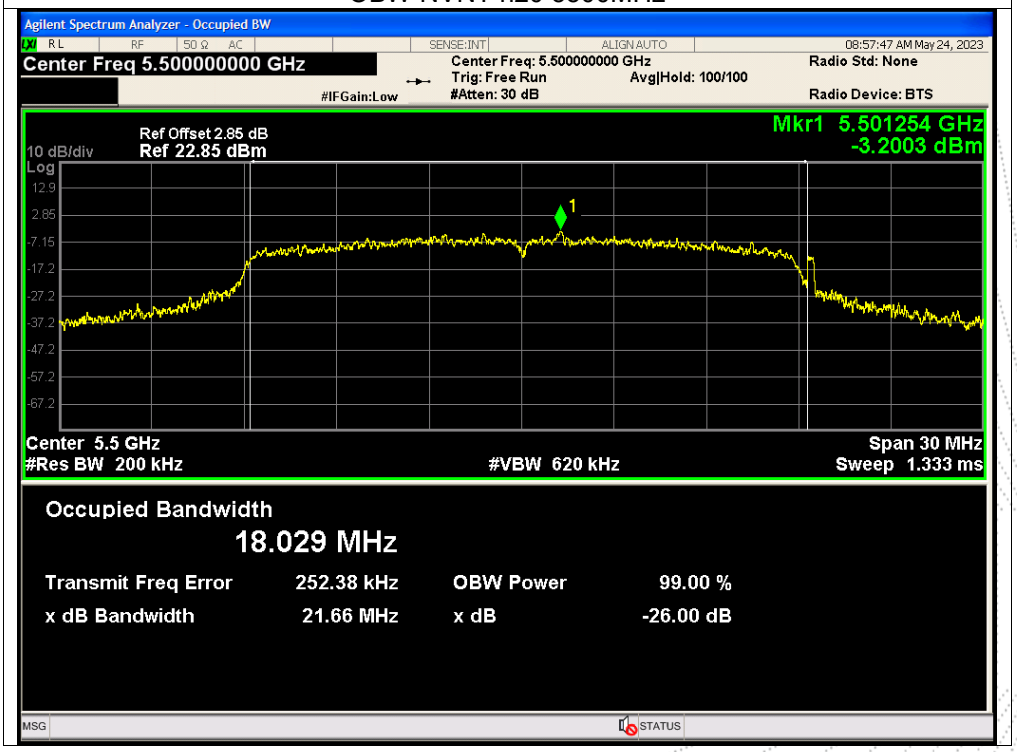
OBW NVNT a 5580MHz



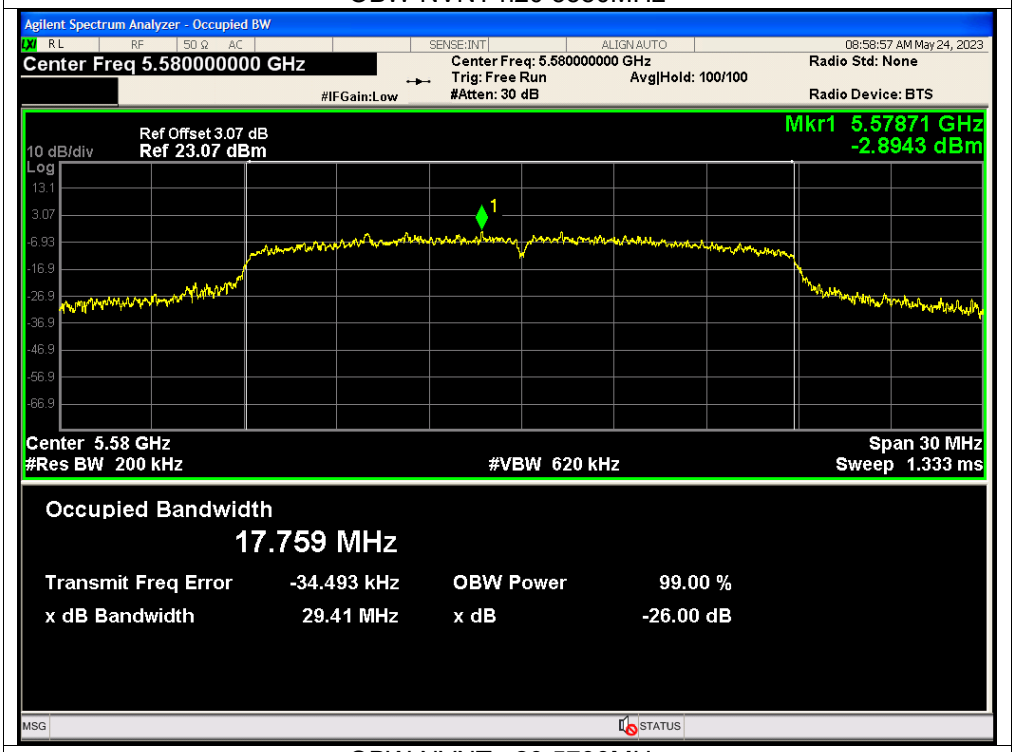
OBW NVNT a 5700MHz



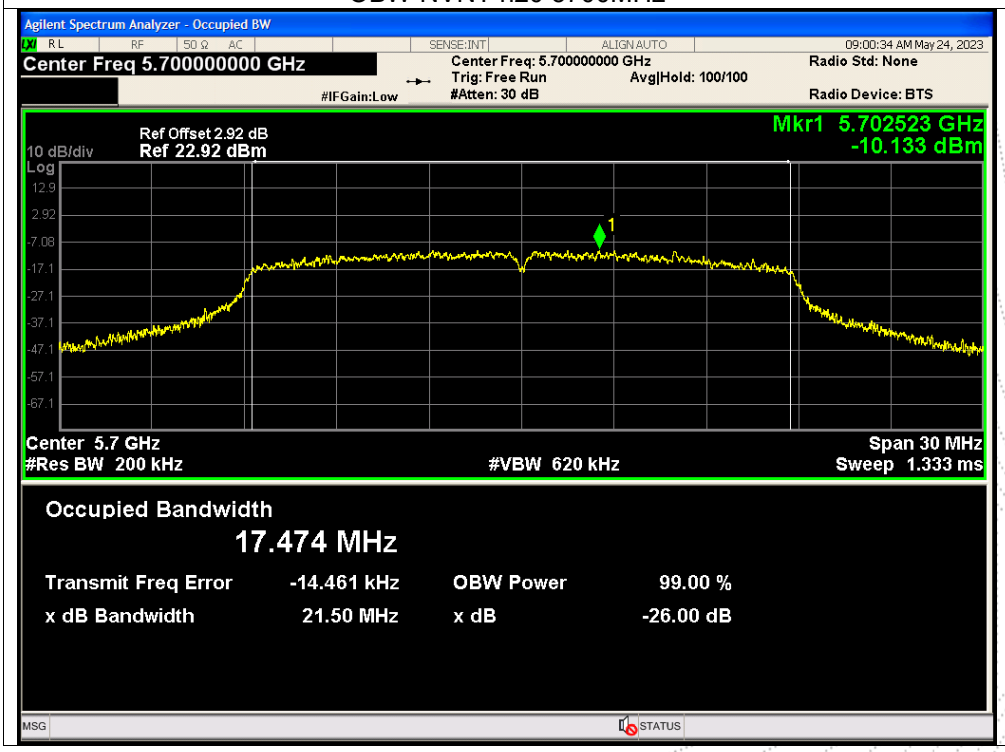
OBW NVNT n20 5500MHz



OBW NVNT n20 5580MHz



OBW NVNT n20 5700MHz

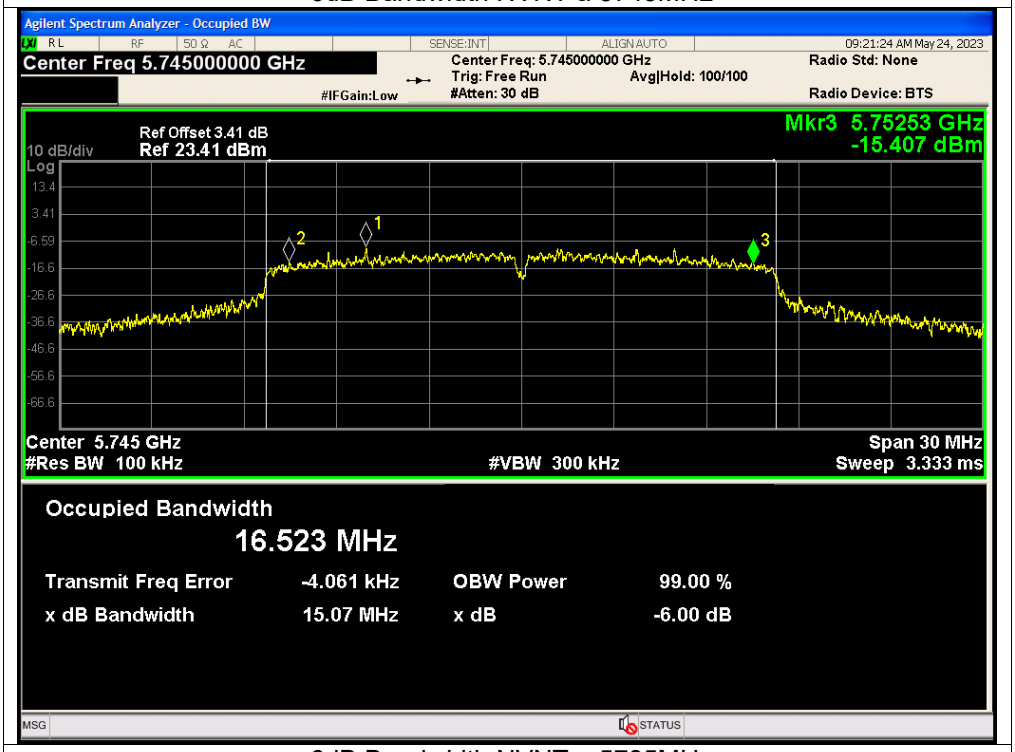


Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage:	DC 5V
Test Mode:	(5745-5825MHz)		

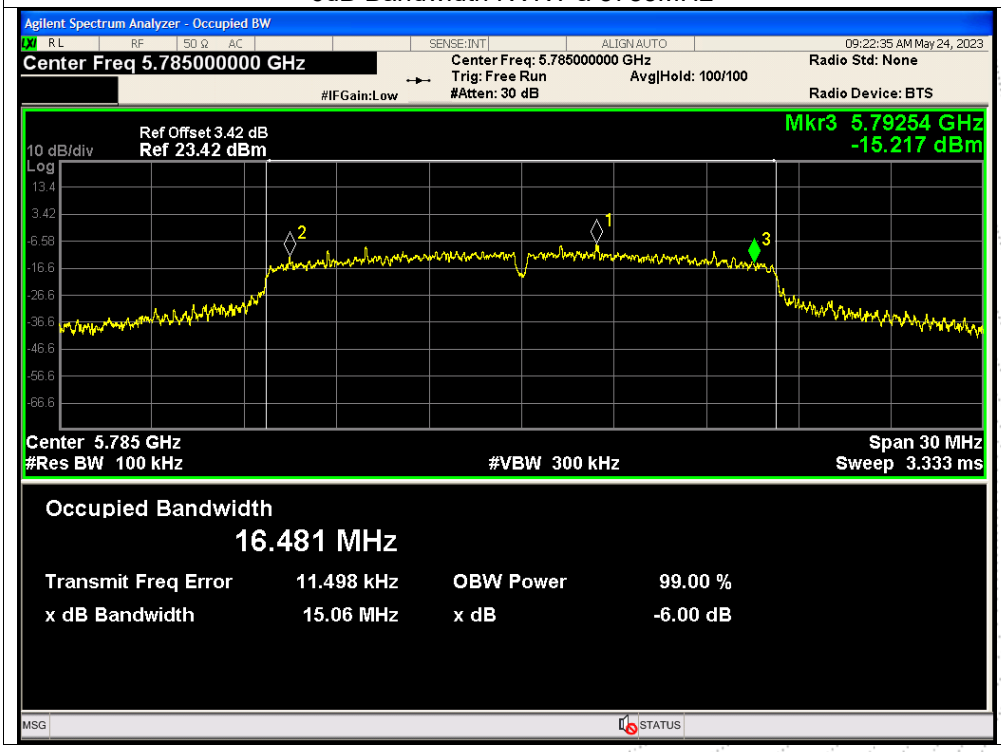
Condition	Mode	**Frequency (MHz)**	**99% bandwidth (MHz)**	**-6dB bandwidth (MHz)**	**Limit -6dB bandwidth MHz**	**Result**
NVNT	a	5745	16.654	15.068	≥500	Pass
NVNT	a	5785	16.607	15.057	≥500	Pass
NVNT	a	5825	16.368	15.092	≥500	Pass
NVNT	n20	5745	17.762	15.091	≥500	Pass
NVNT	n20	5785	17.737	13.041	≥500	Pass
NVNT	n20	5825	17.509	14.987	≥500	Pass

Test Graphs

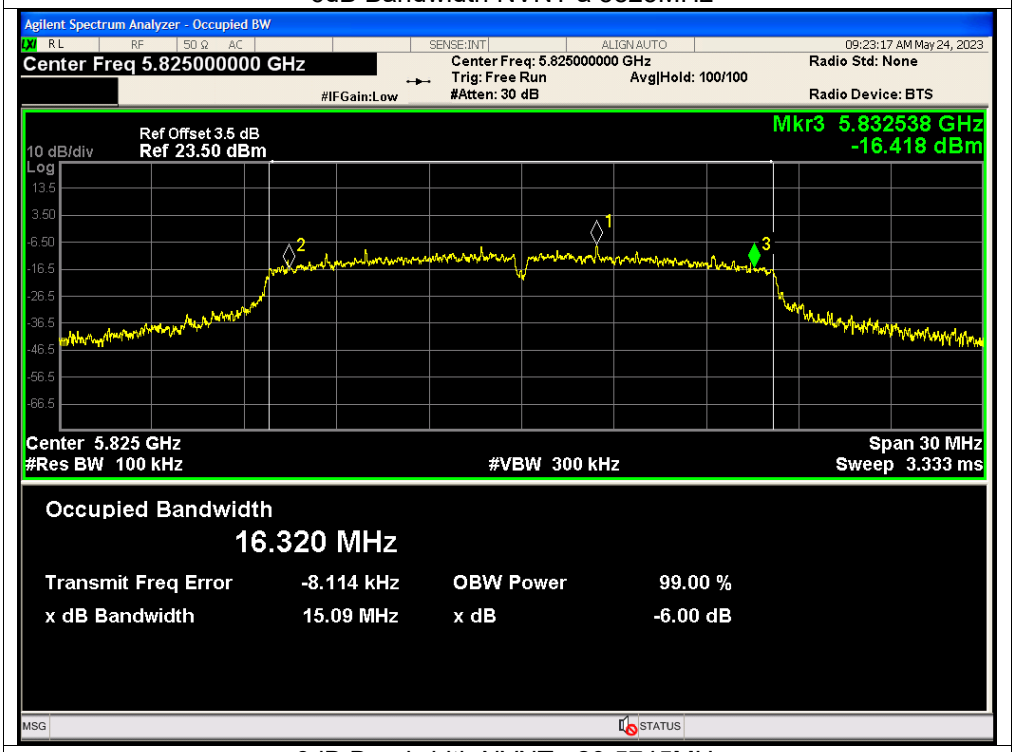
-6dB Bandwidth NVNT a 5745MHz



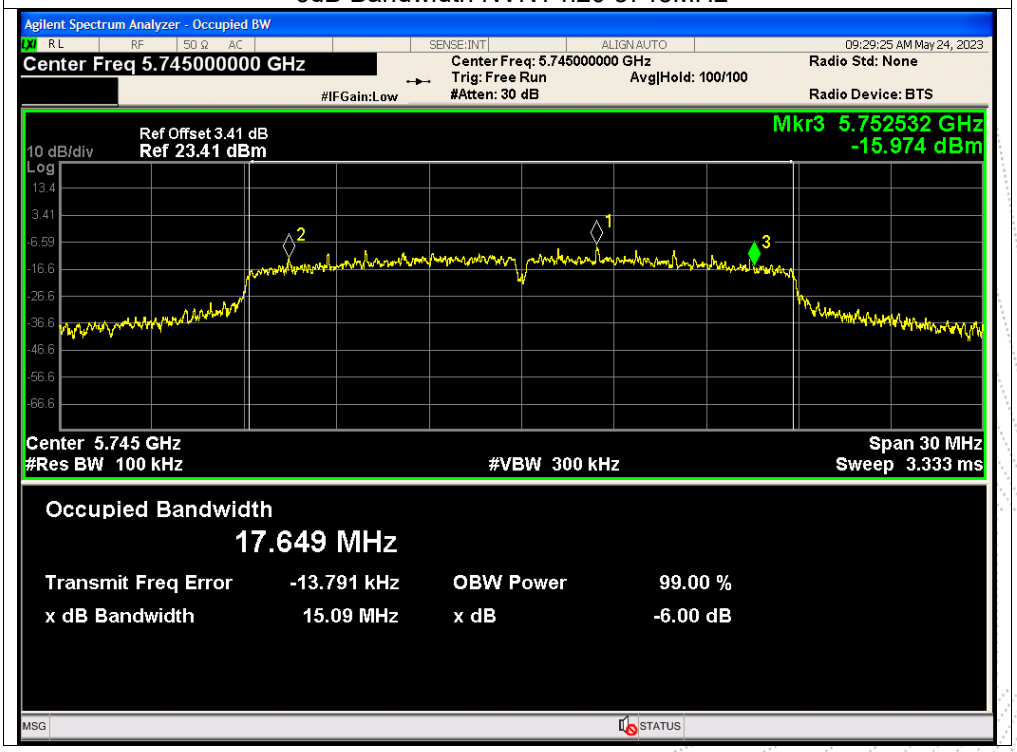
-6dB Bandwidth NVNT a 5785MHz



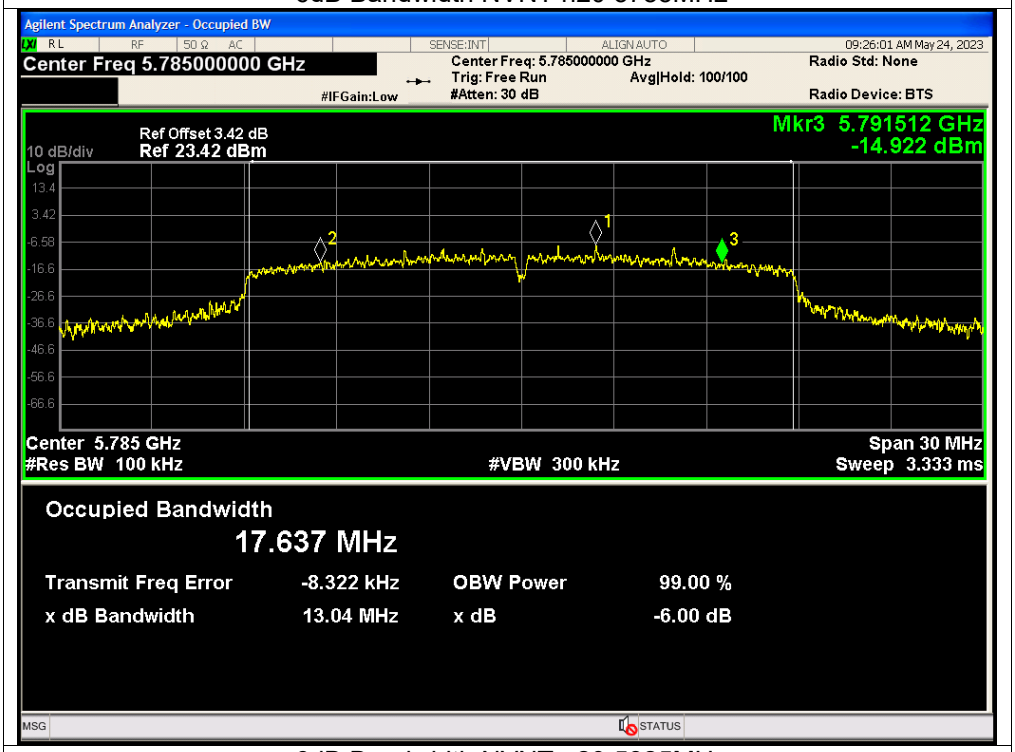
-6dB Bandwidth NVNT a 5825MHz



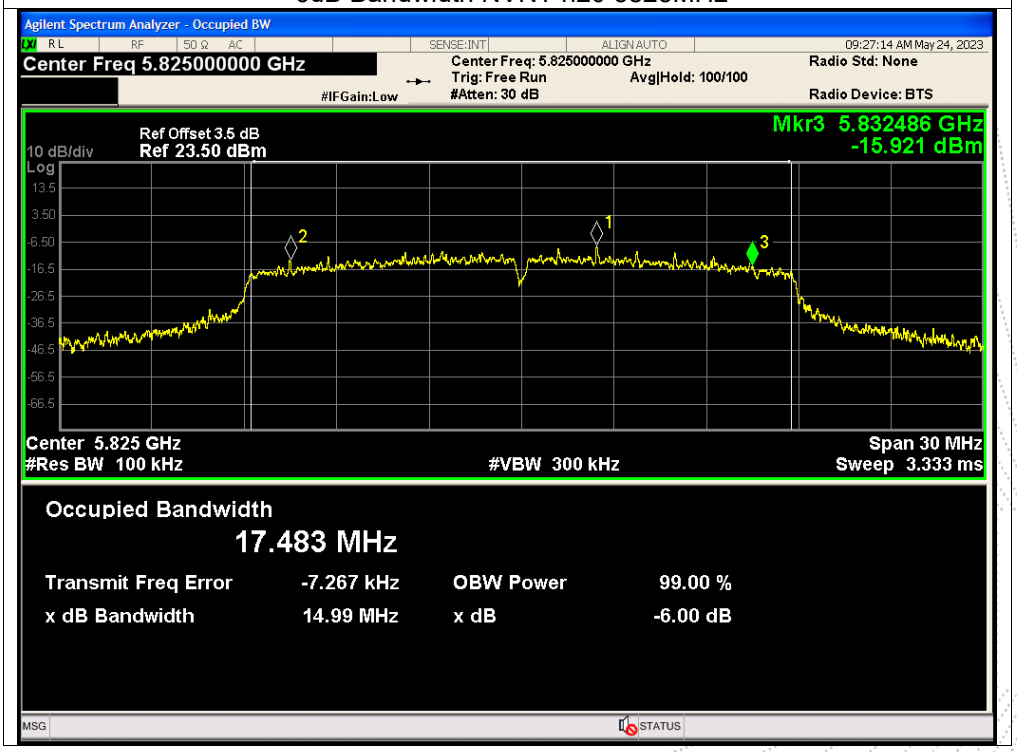
-6dB Bandwidth NVNT n20 5745MHz



-6dB Bandwidth NVNT n20 5785MHz

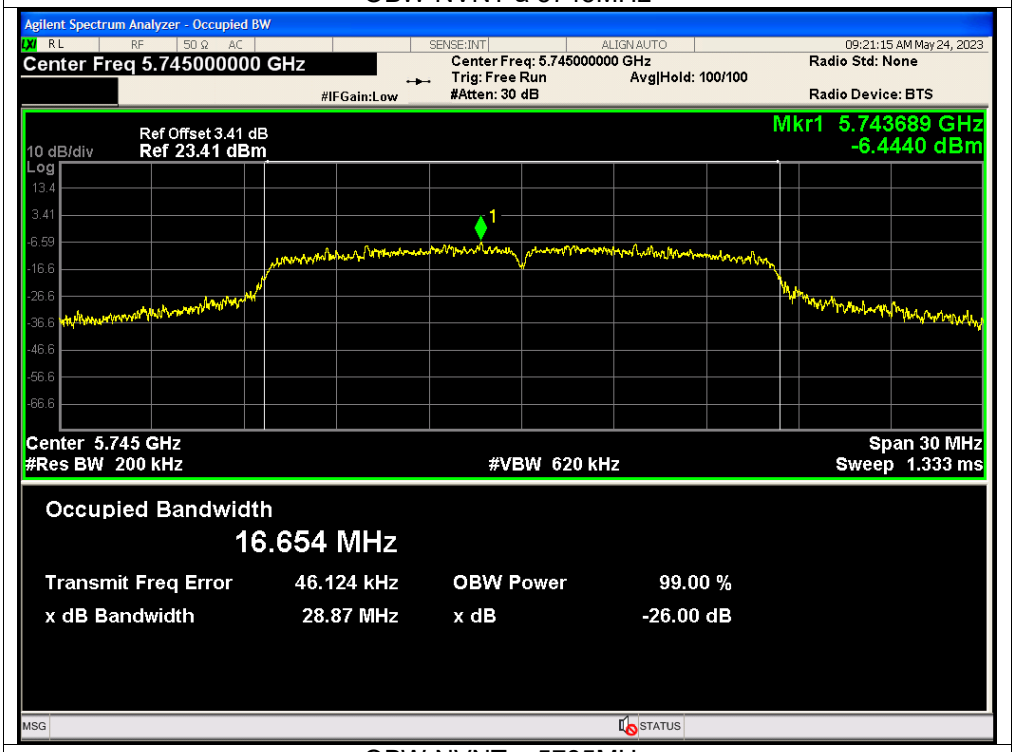


-6dB Bandwidth NVNT n20 5825MHz

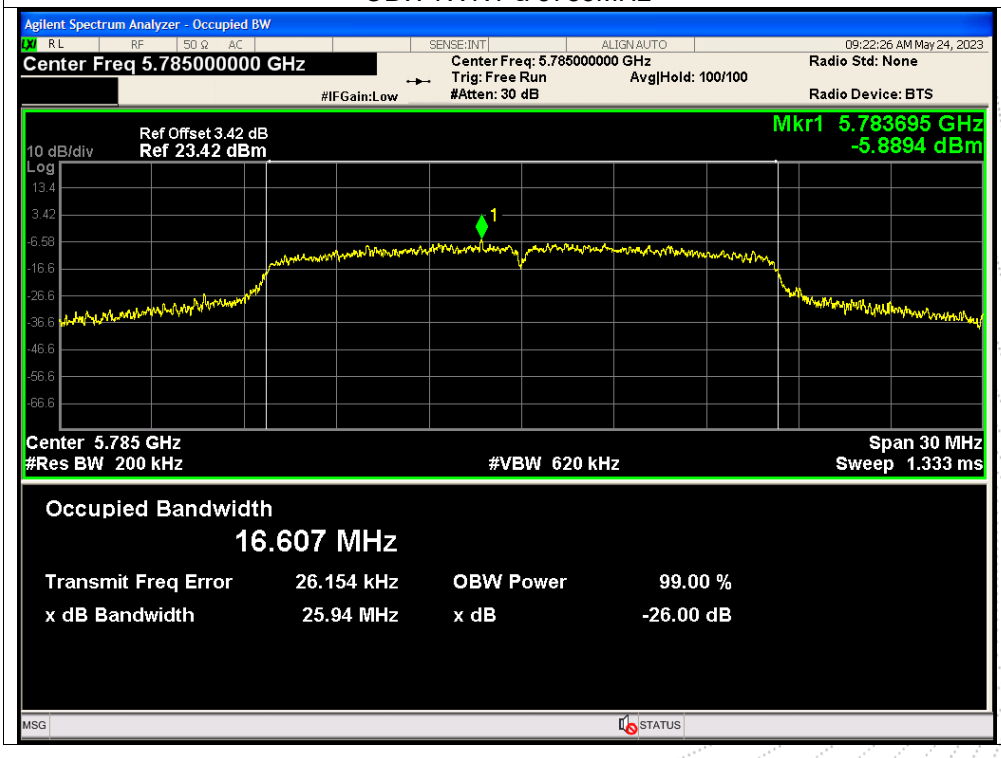


Test Graphs

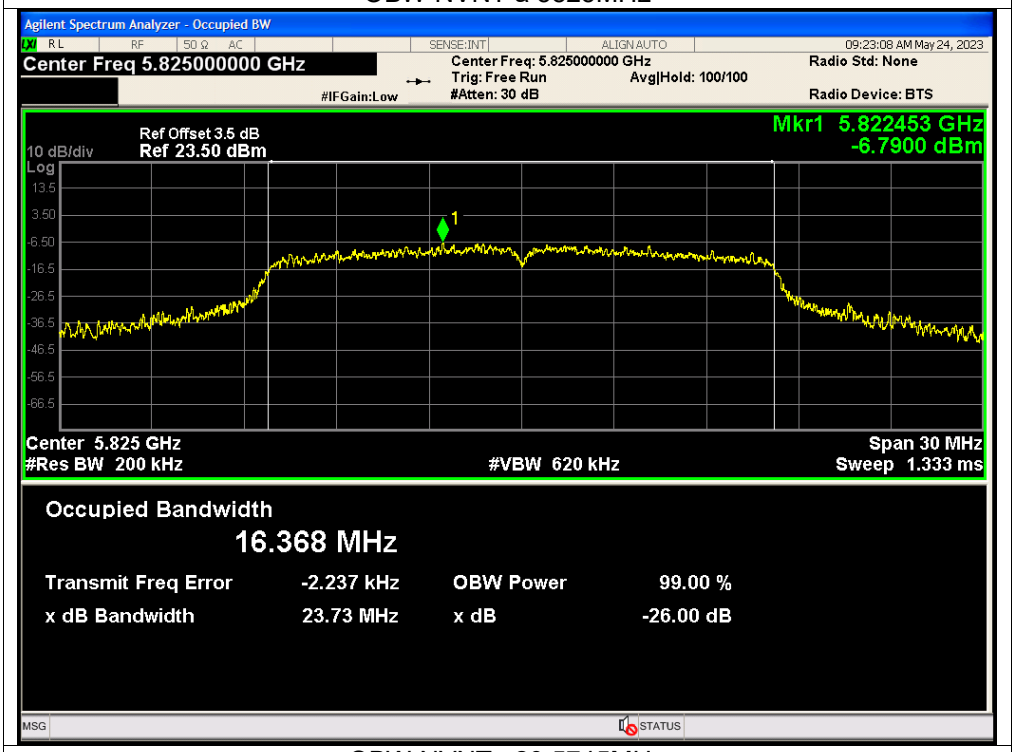
OBW NVNT a 5745MHz



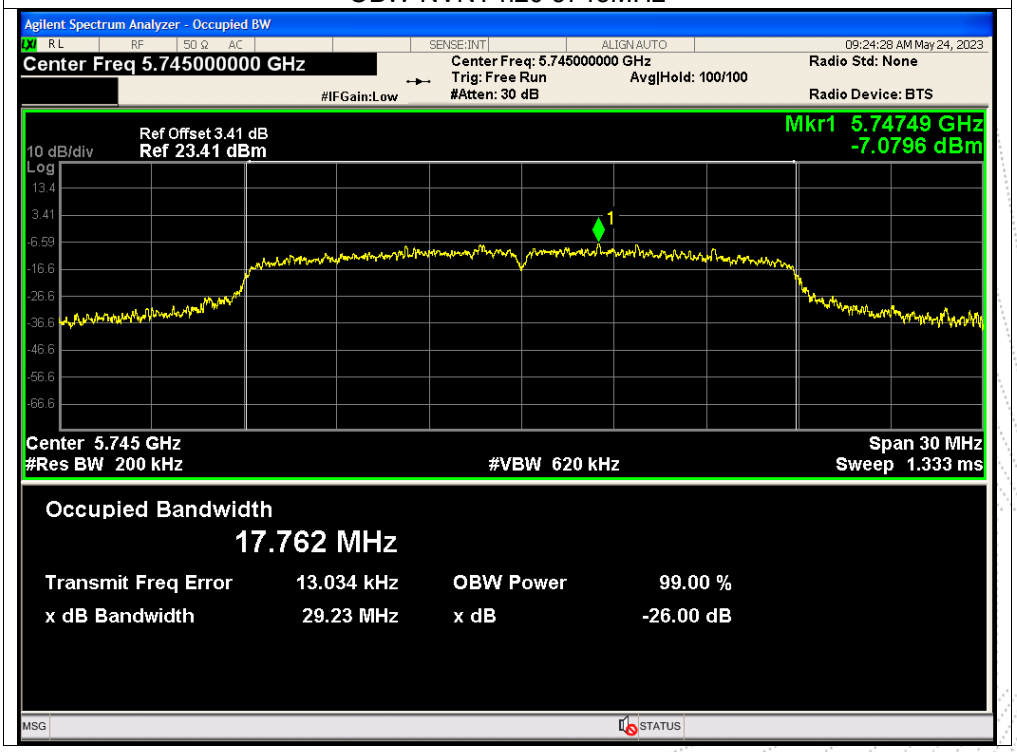
OBW NVNT a 5785MHz



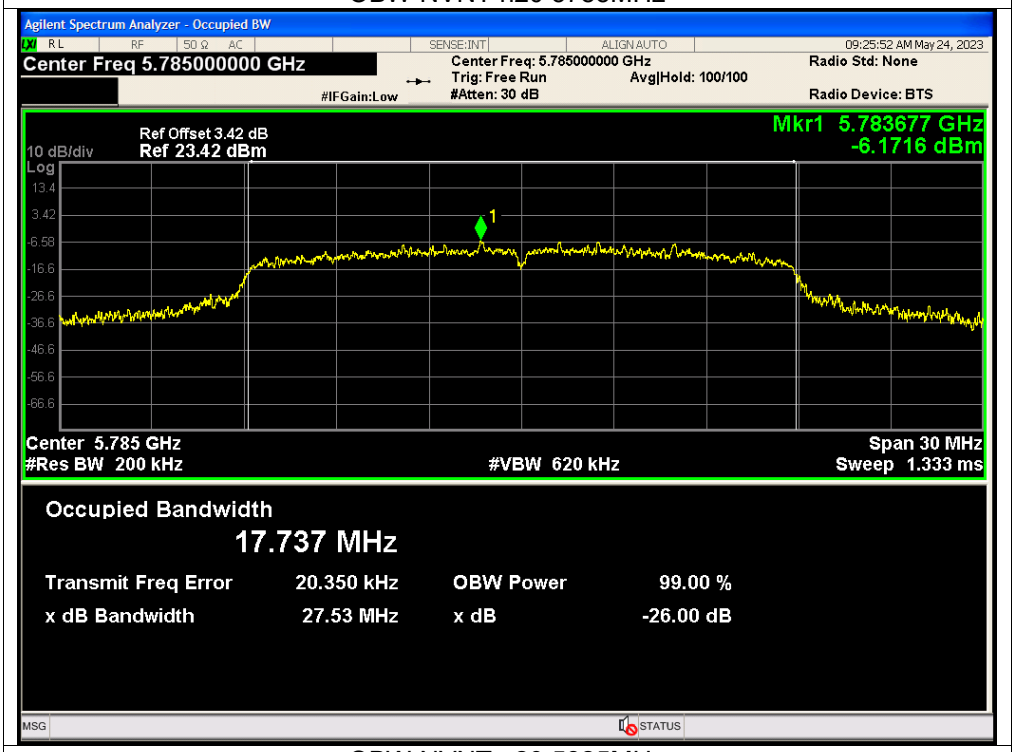
OBW NVNT a 5825MHz



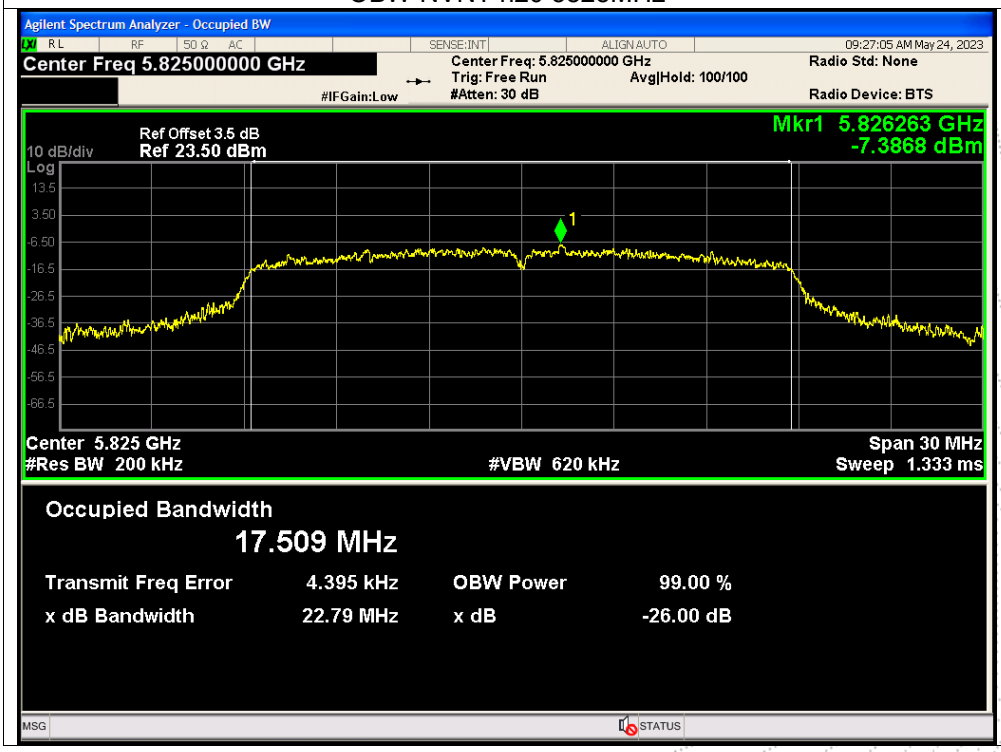
OBW NVNT n20 5745MHz



OBW NVNT n20 5785MHz

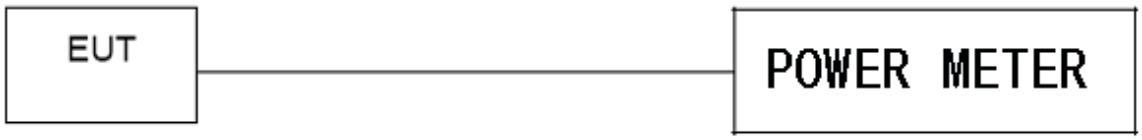


OBW NVNT n20 5825MHz



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	0.25W
5250~5350	0.25W
5500~5700	0.25W
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:	DC 5V
Test Mode:	5180-5240MHz		

Condition	Mode	Frequency (MHz)	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	a	5180	2.6	24	Pass
NVNT	a	5200	2.01	24	Pass
NVNT	a	5240	3.01	24	Pass
NVNT	n20	5180	1.19	24	Pass
NVNT	n20	5200	1.62	24	Pass
NVNT	n20	5240	2.74	24	Pass

Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage:	DC 5V
Test Mode:	5260-5320MHz		

Condition	Mode	Frequency (MHz)	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	a	5260	3.74	24	Pass
NVNT	a	5280	4.76	24	Pass
NVNT	a	5320	6.49	24	Pass
NVNT	n20	5260	3.66	24	Pass
NVNT	n20	5280	4.65	24	Pass
NVNT	n20	5320	6.27	24	Pass

Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage:	DC 5V
Test Mode:	5500-5700MHz		

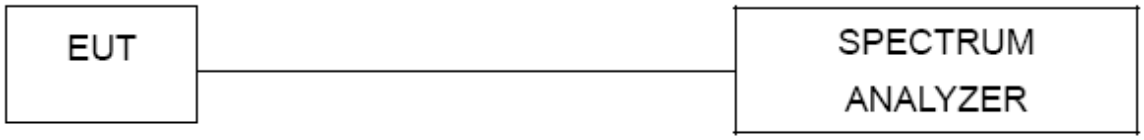
Condition	Mode	Frequency (MHz)	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	a	5500	5.87	24	Pass
NVNT	a	5580	6.44	24	Pass
NVNT	a	5700	0.73	24	Pass
NVNT	n20	5500	5.24	24	Pass
NVNT	n20	5580	5.98	24	Pass
NVNT	n20	5700	0.06	24	Pass

Temperature:	26 ℃	Relative Humidity:	54%
Pressure:	101KPa	Test Voltage:	DC 5V
Test Mode:	5745-5825MHz		

Condition	Mode	Frequency (MHz)	Conducted Power (dBm)	Limit (dBm)	Verdict
NVNT	a	5745	2.41	30	Pass
NVNT	a	5785	3.04	30	Pass
NVNT	a	5825	2.08	30	Pass
NVNT	n20	5745	1.83	30	Pass
NVNT	n20	5785	2.22	30	Pass
NVNT	n20	5825	1.9	30	Pass

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.
(3) For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.
(4) For transmitters operating in the 5.725-5.85 GHz band(i) All emissions shall be limited to a level of −27 dBm/MHz at 75 MHz or more above or below the band edge increasing

11.3 Test Procedure

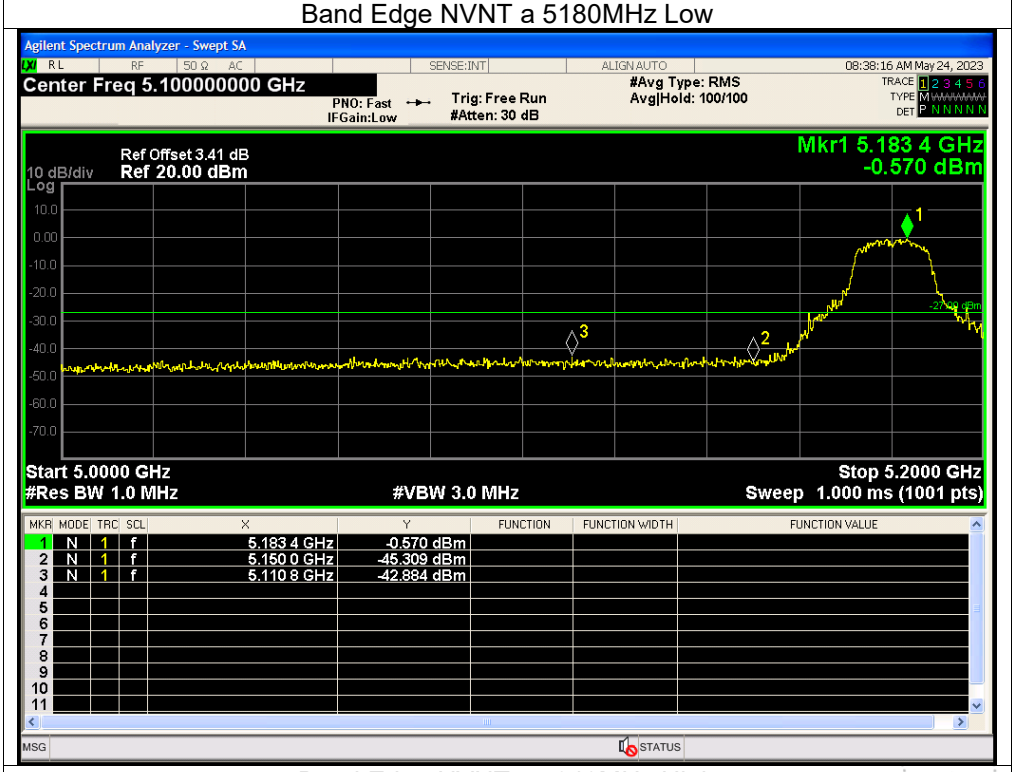
1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT without connection to measurement instrument. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Then 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

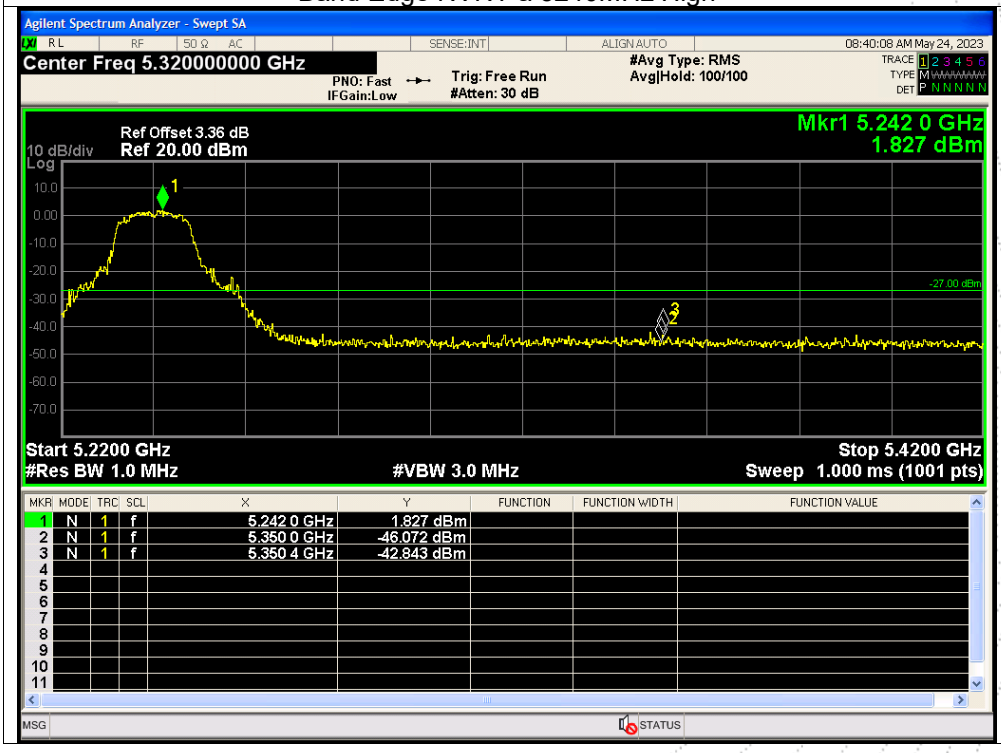
The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data

11.5 Test Result

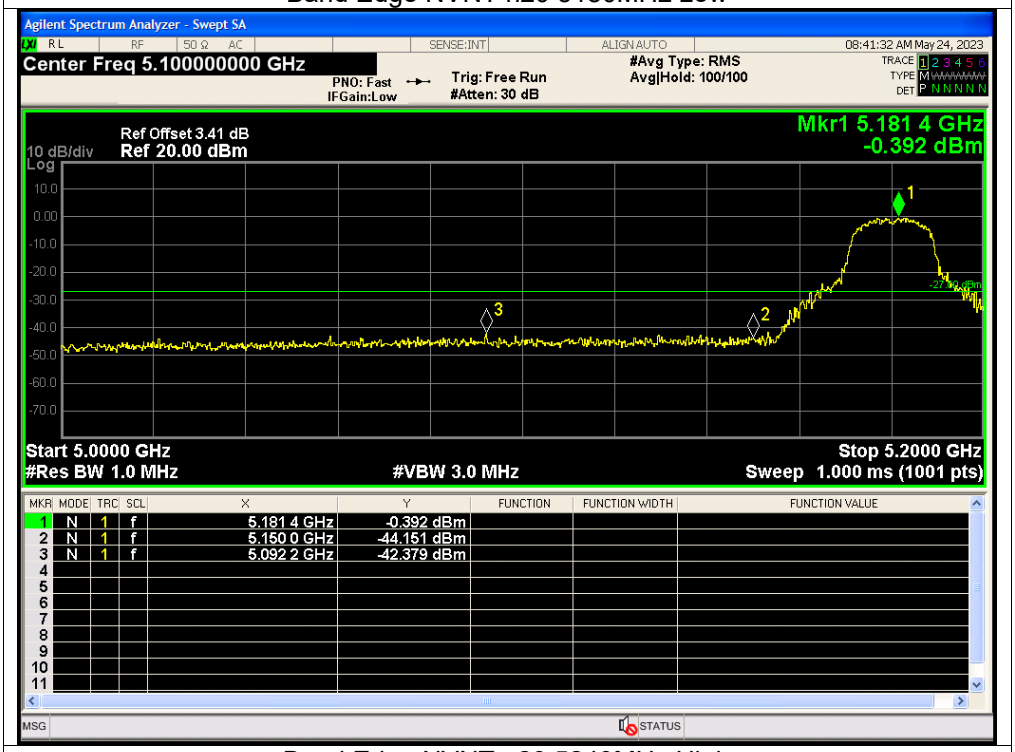
Test Graphs
Band Edge NVNT a 5180MHz Low



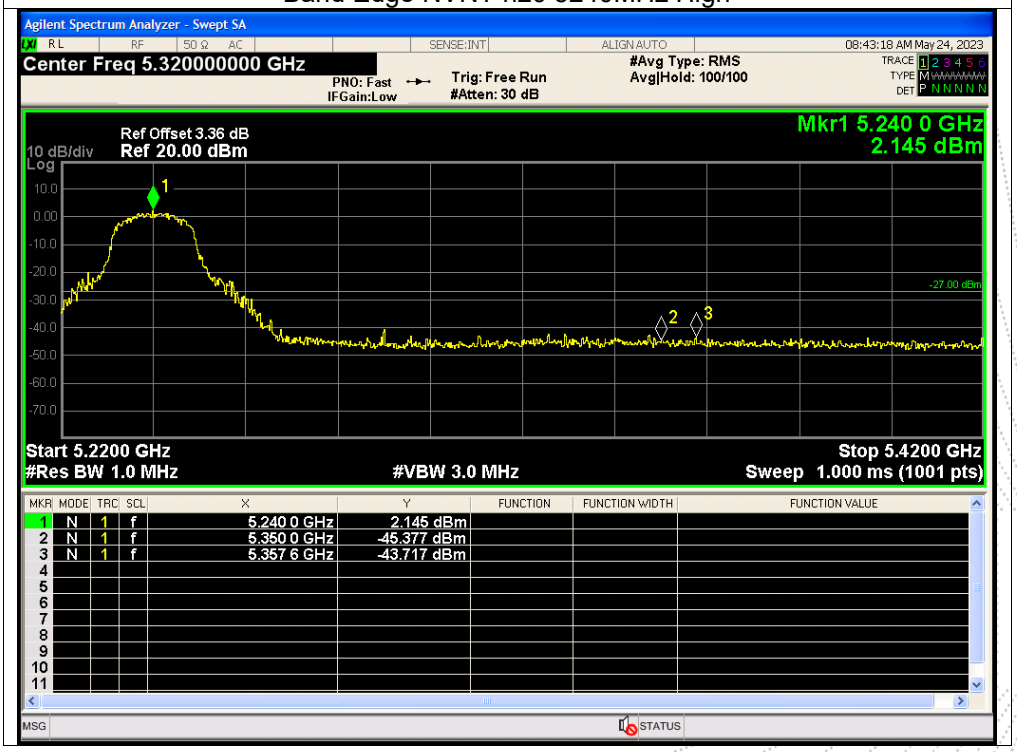
Band Edge NVNT a 5240MHz High



Band Edge NVNT n20 5180MHz Low

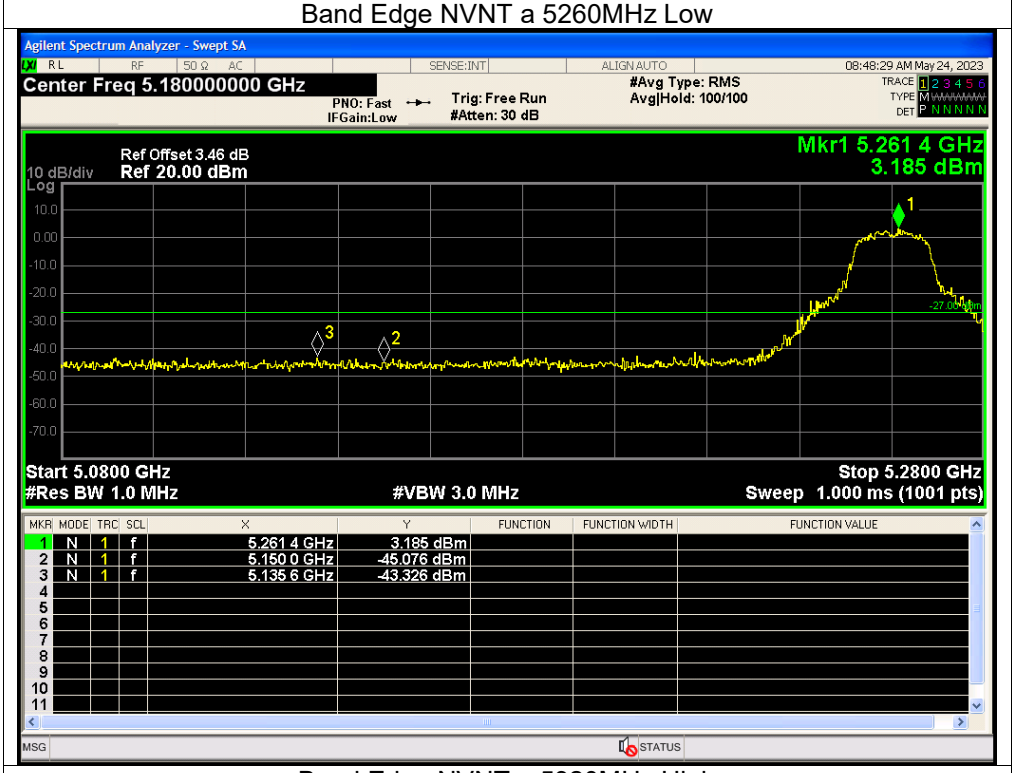


Band Edge NVNT n20 5240MHz High

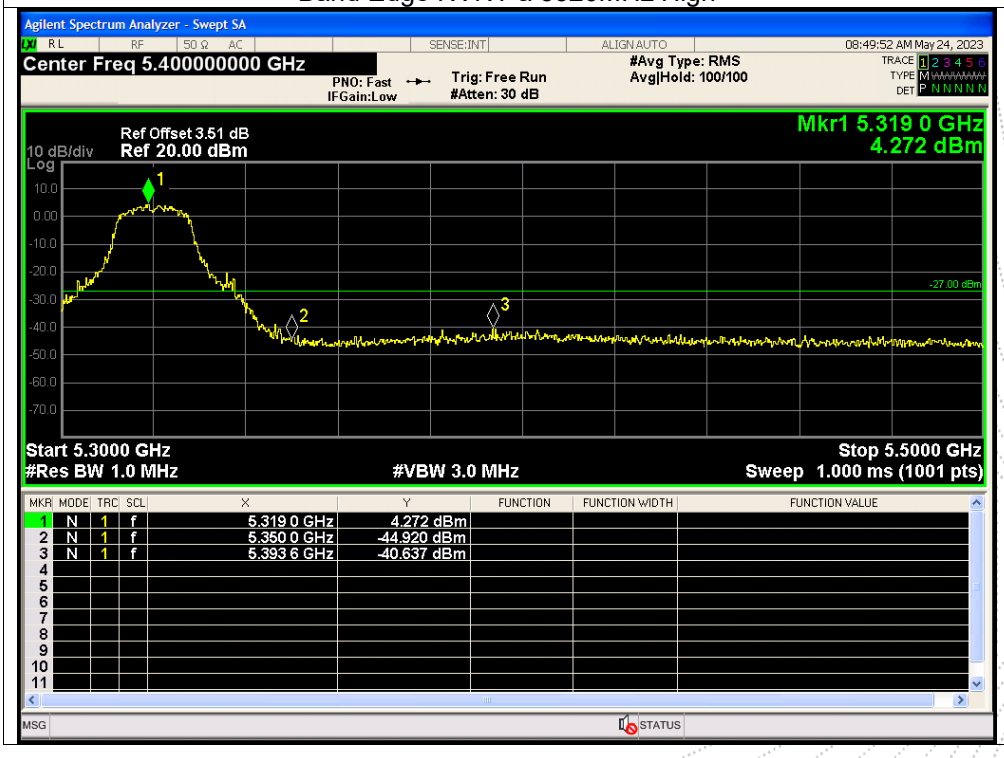


Test Graphs

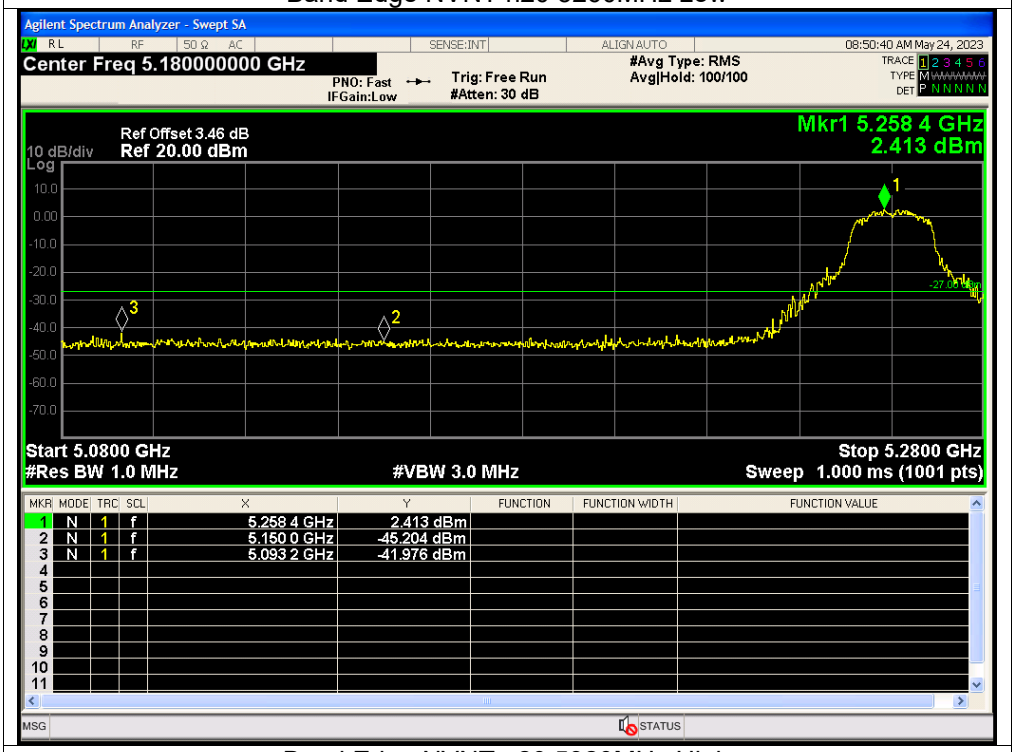
Band Edge NVNT a 5260MHz Low



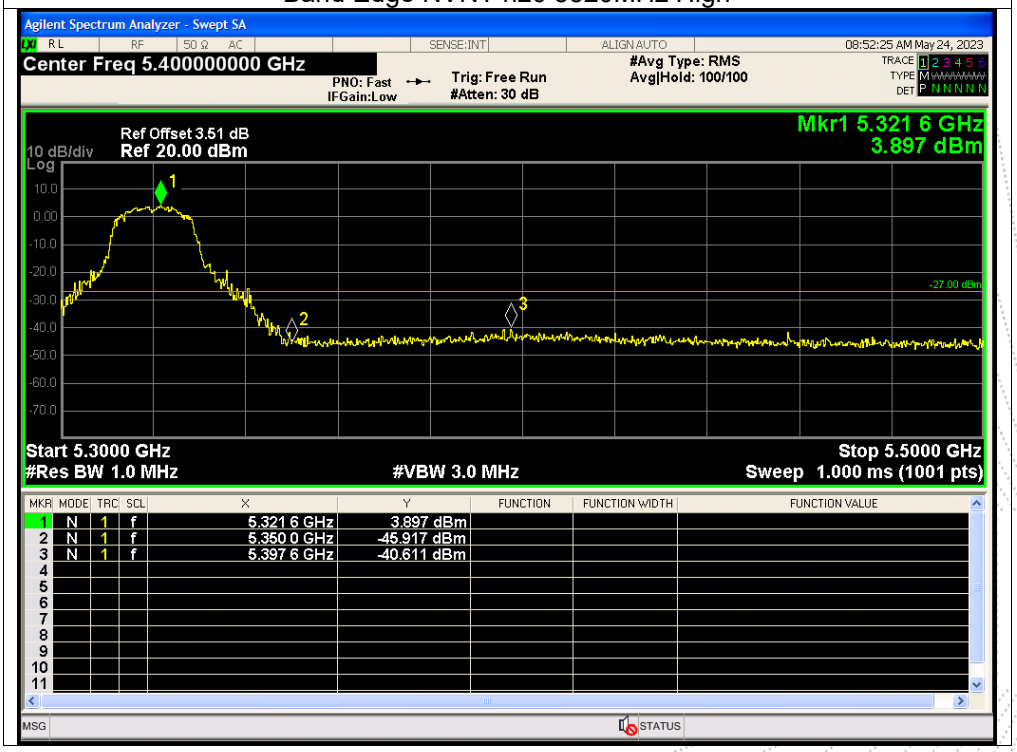
Band Edge NVNT a 5320MHz High



Band Edge NVNT n20 5260MHz Low

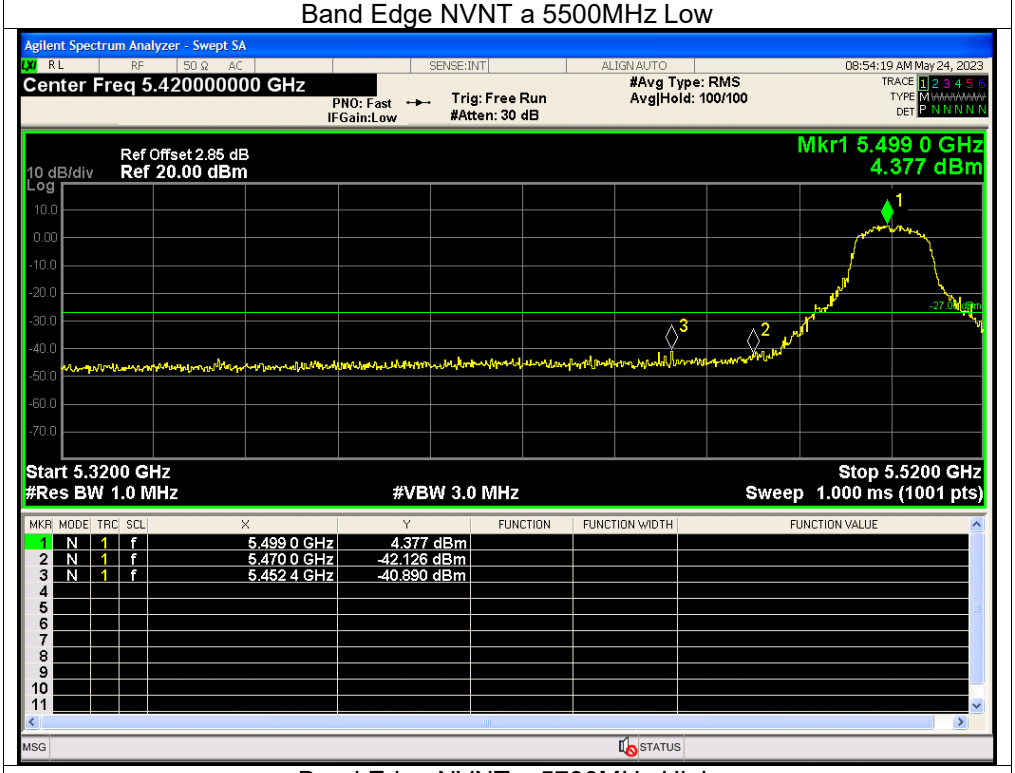


Band Edge NVNT n20 5320MHz High

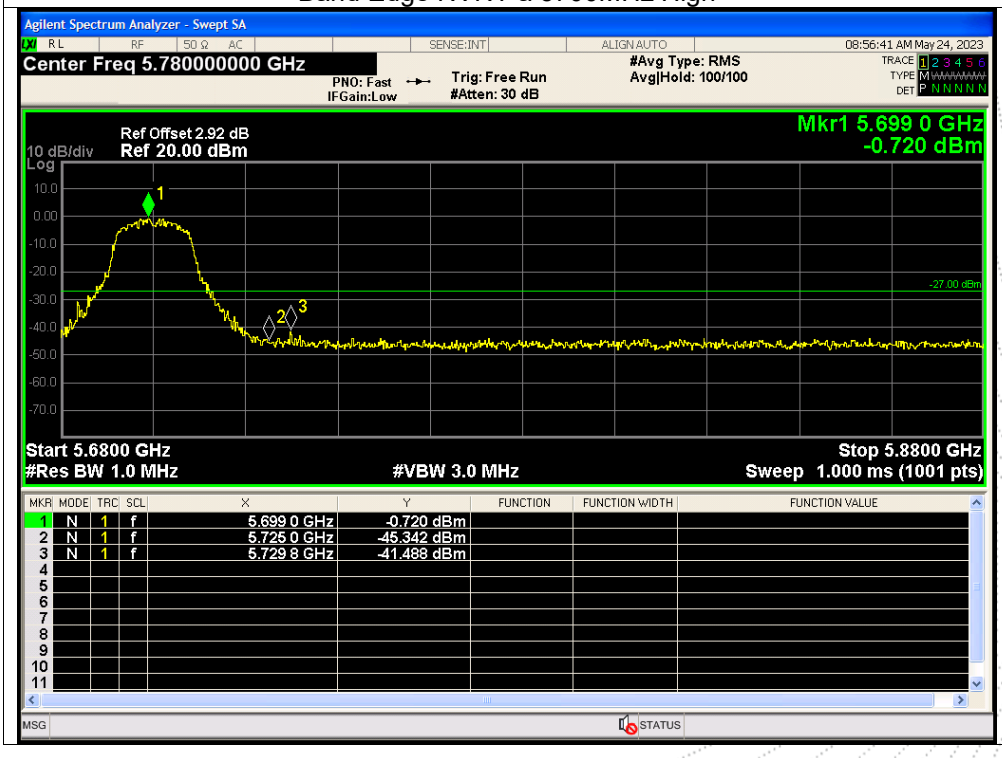


Test Graphs

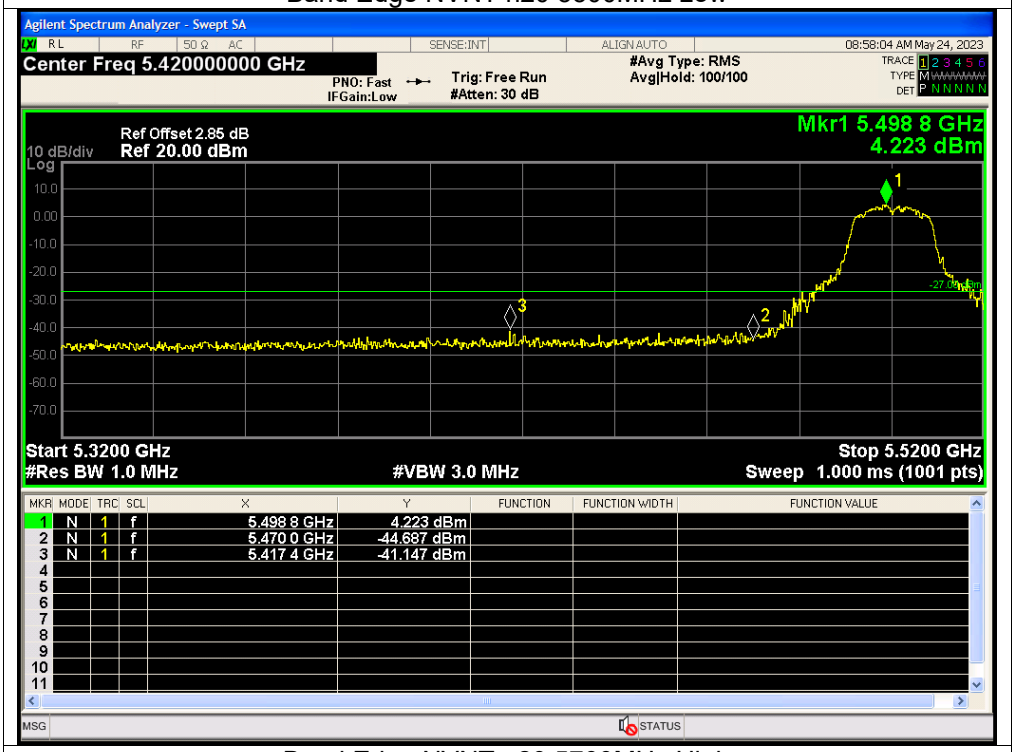
Band Edge NVNT a 5500MHz Low



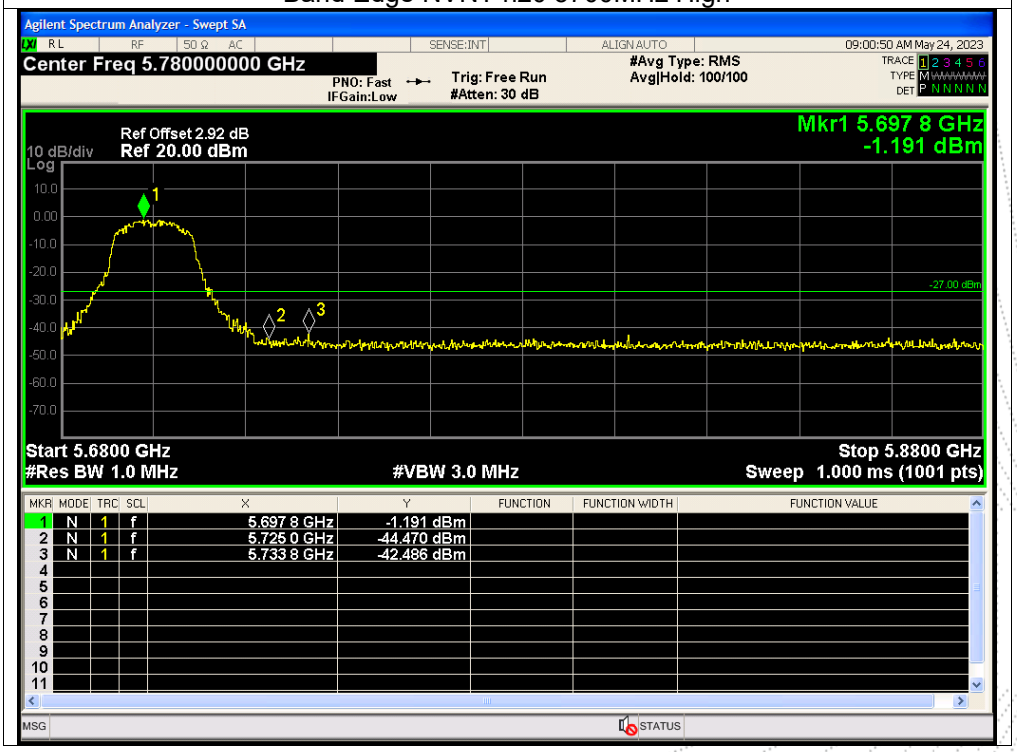
Band Edge NVNT a 5700MHz High



Band Edge NVNT n20 5500MHz Low

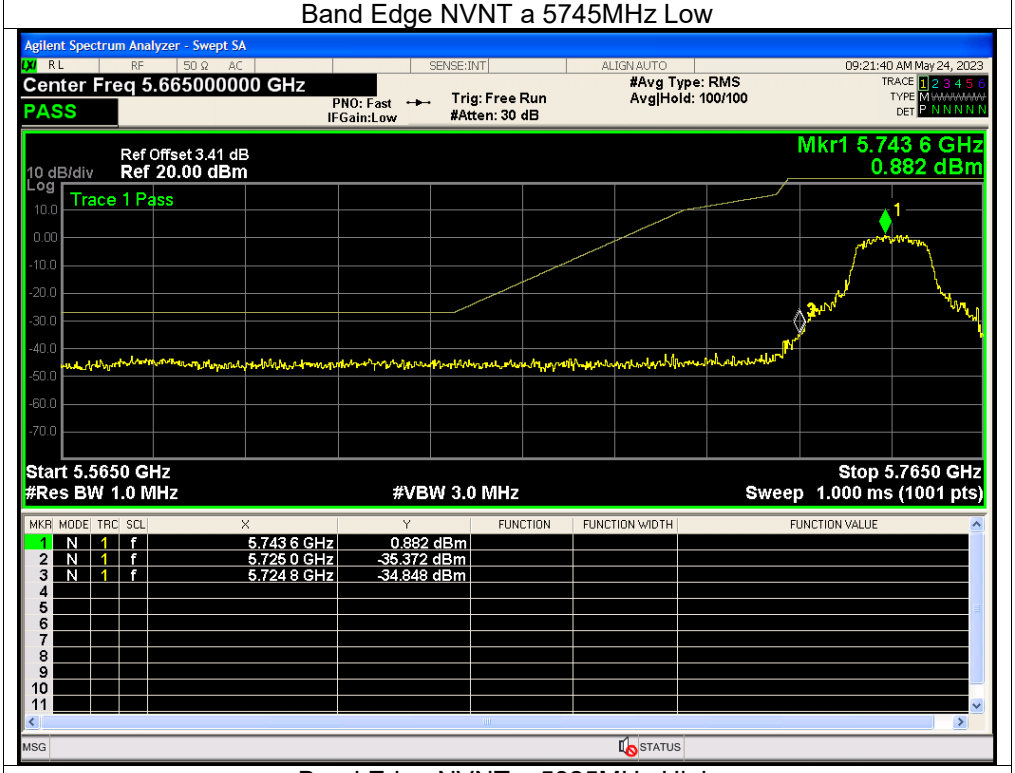


Band Edge NVNT n20 5700MHz High

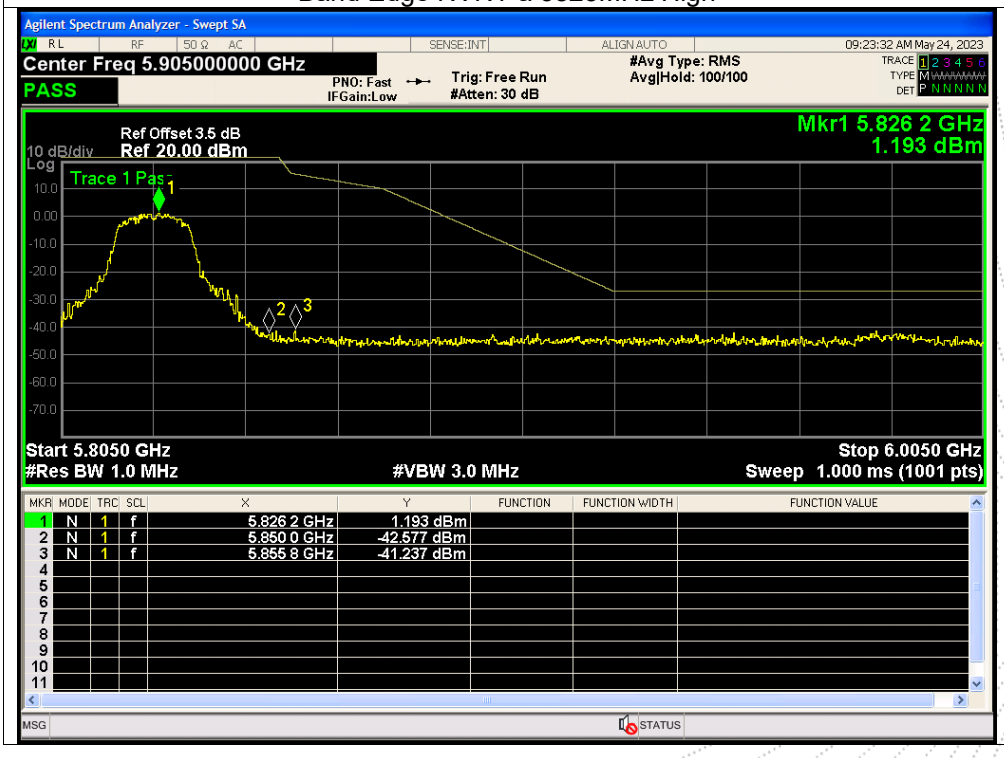


Test Graphs

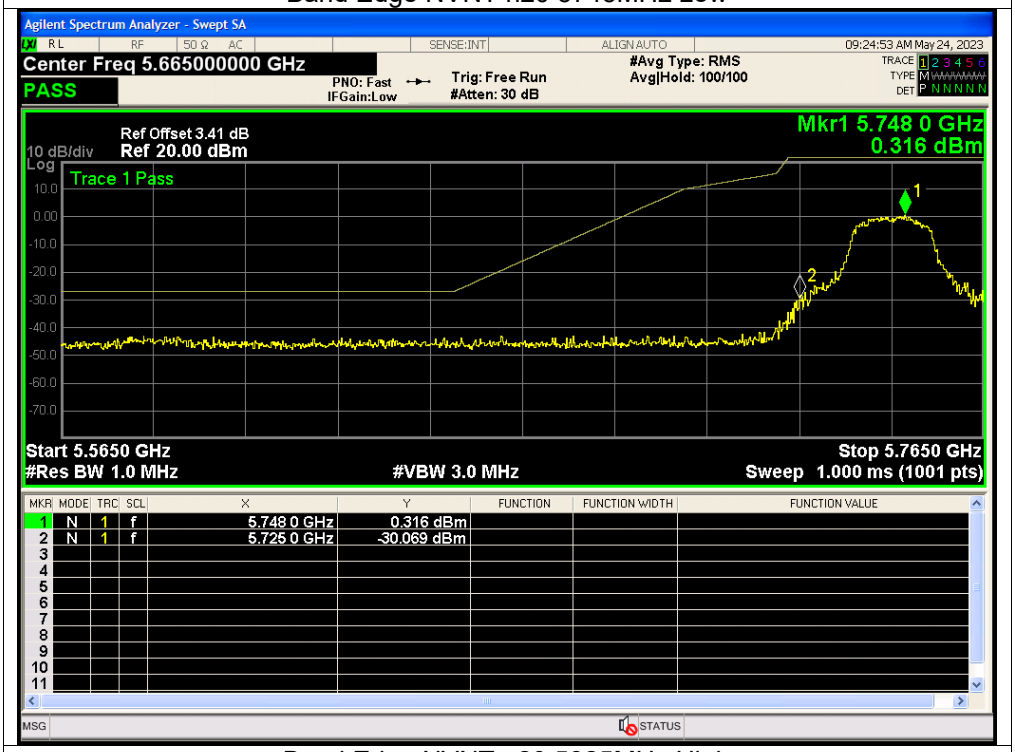
Band Edge NVNT a 5745MHz Low



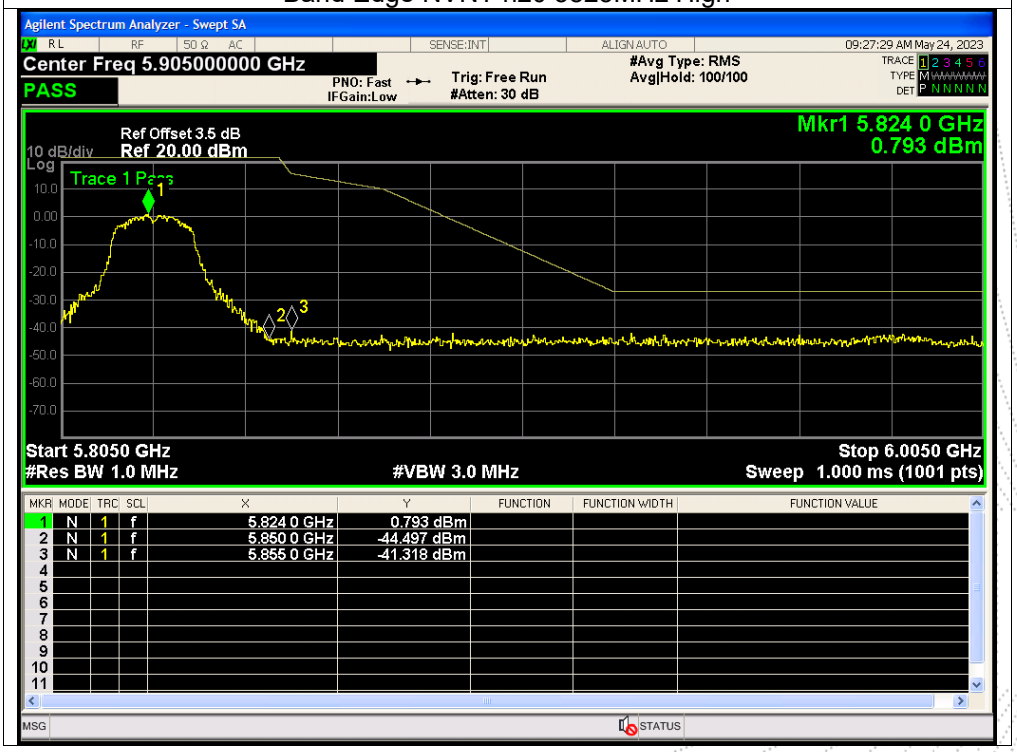
Band Edge NVNT a 5825MHz High



Band Edge NVNT n20 5745MHz Low

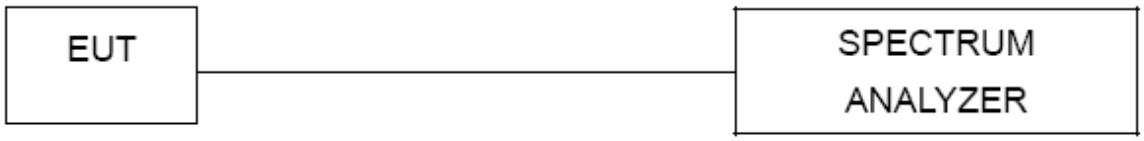


Band Edge NVNT n20 5825MHz High



12. Spurious RF Conducted Emissions

12.1 Block Diagram Of Test Setup



12.2 Limit

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)For transmitters operating in the 5.725-5.85 GHz band(i) 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..
(3)For transmitters operating in the 5.25-5.35 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.
(4)For transmitters operating in the 5.47-5.725 GHz band: All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of −27 dBm/MHz.

12.3 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.

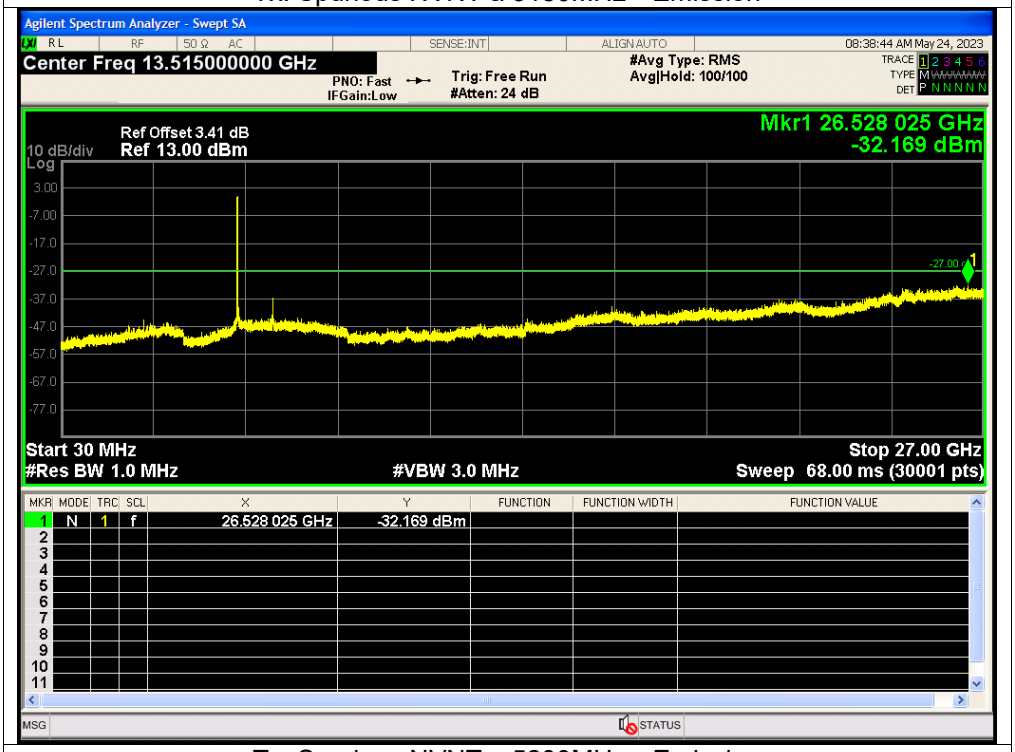
12.4 Test Result

Remark: The measurement frequency range is from 9KHz to the 10th harmonic of the fundamental frequency. The lowest, middle and highest channels are tested to verify the spurious emissions and bandege measurement data.

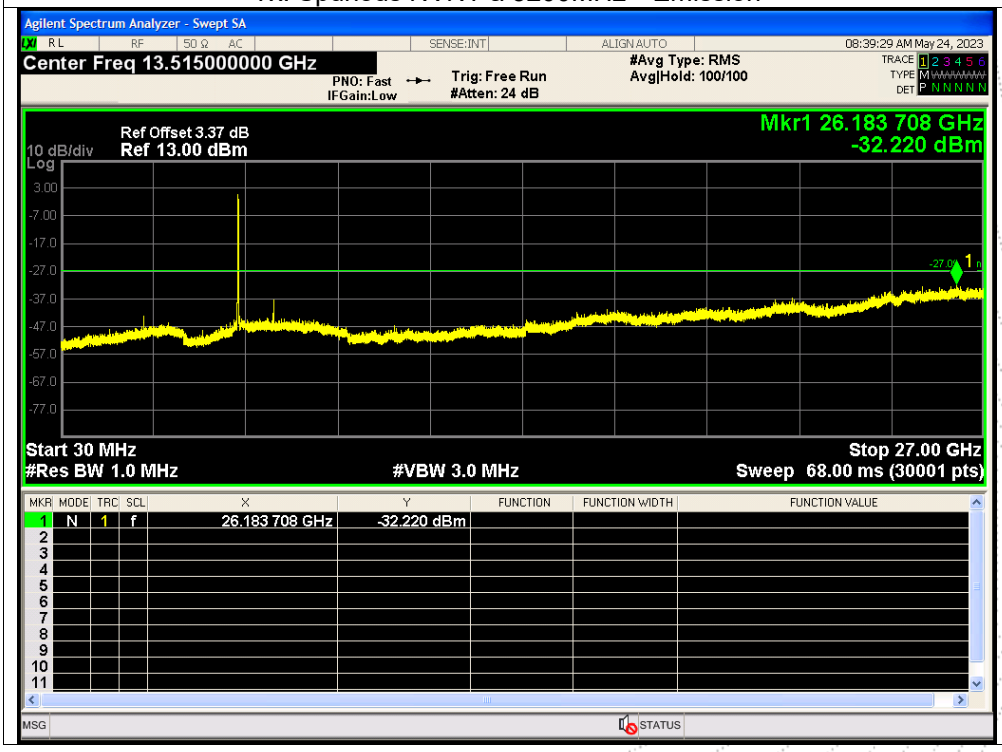
About:26.5GHz-40GHz, The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

Test Graphs

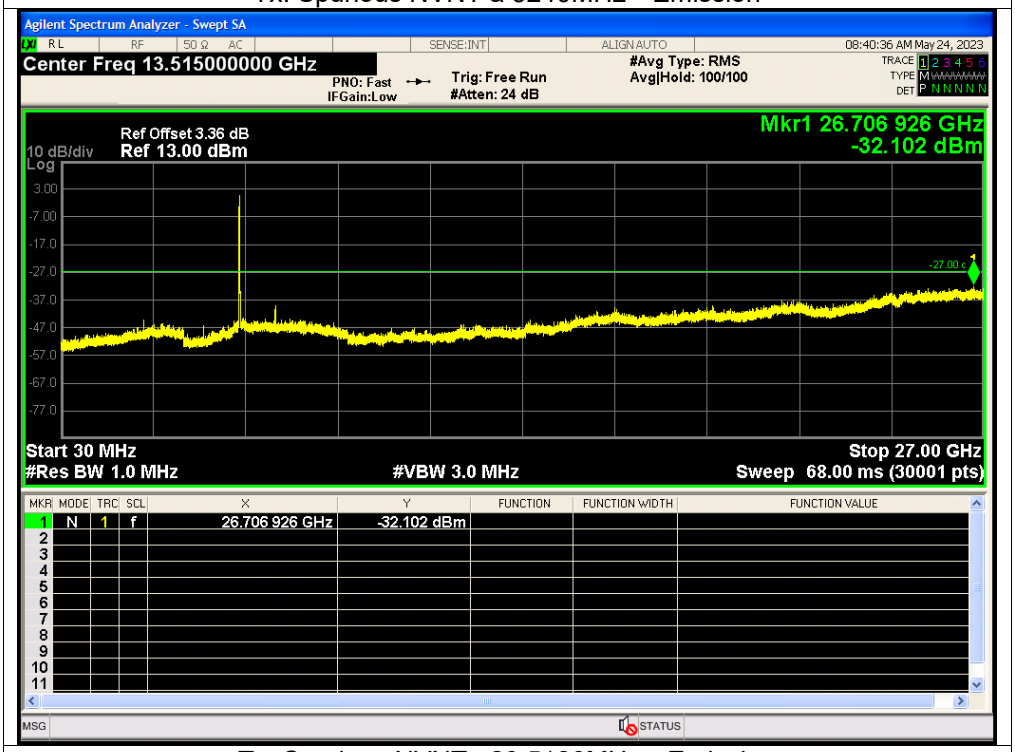
Tx. Spurious NVNT a 5180MHz Emission



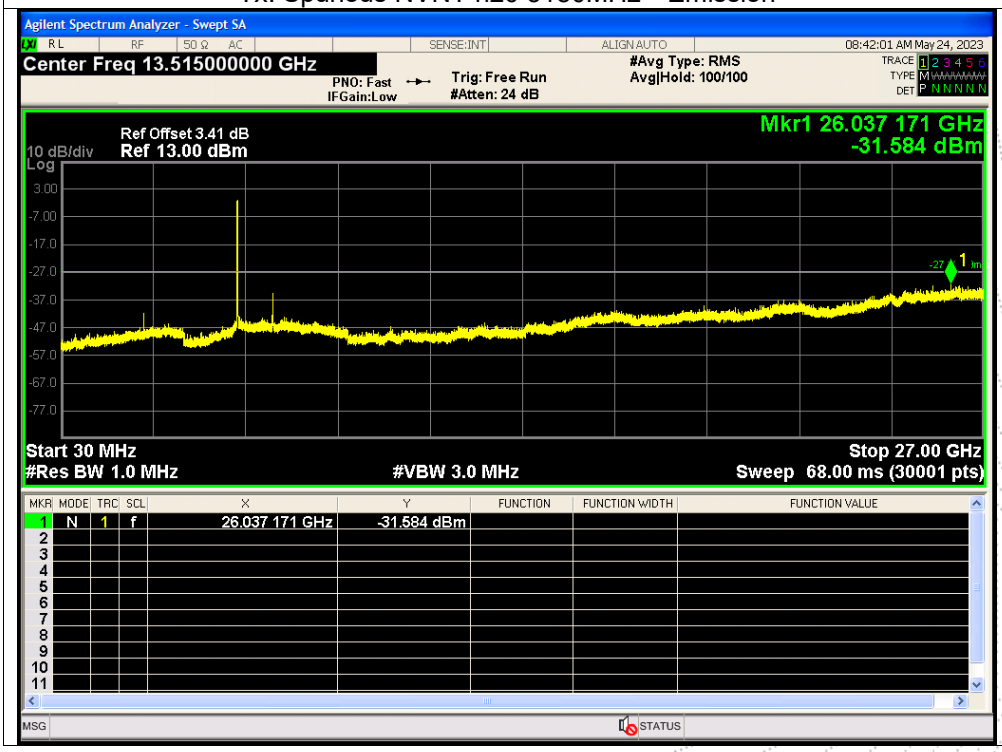
Tx. Spurious NVNT a 5200MHz Emission



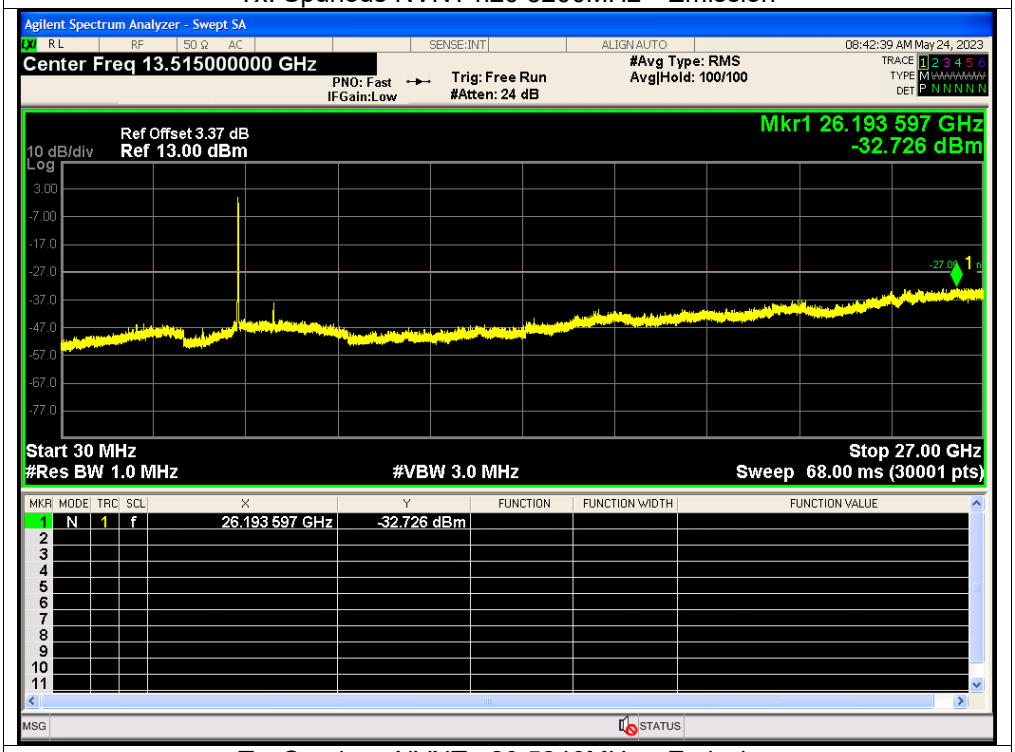
Tx. Spurious NVNT a 5240MHz Emission



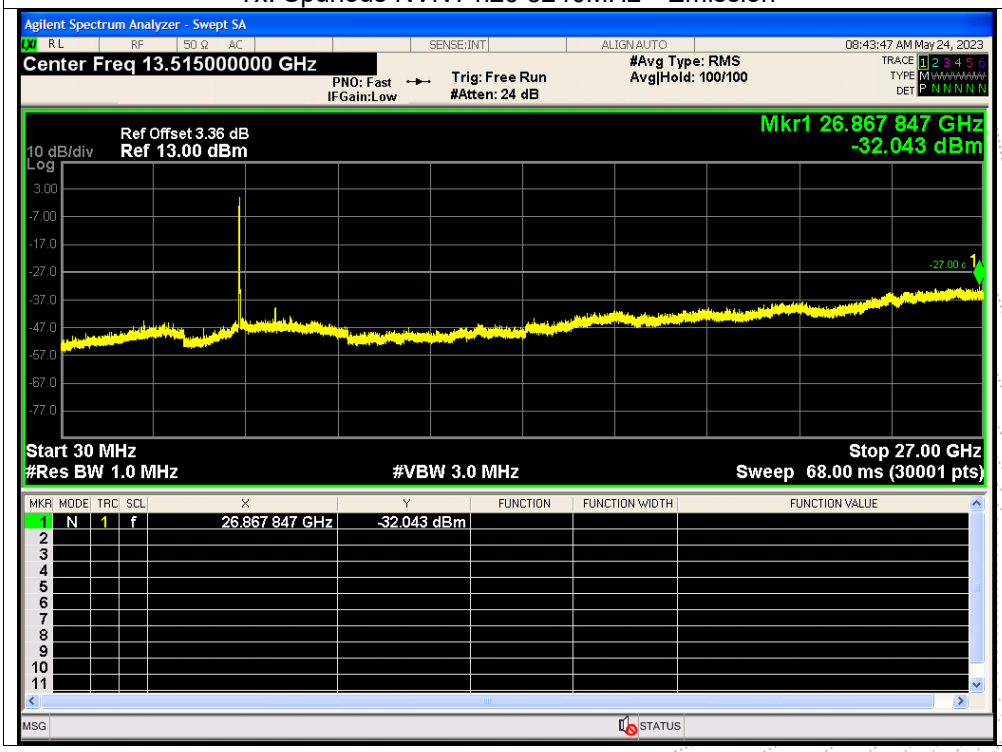
Tx. Spurious NVNT n20 5180MHz Emission



Tx. Spurious NVNT n20 5200MHz Emission

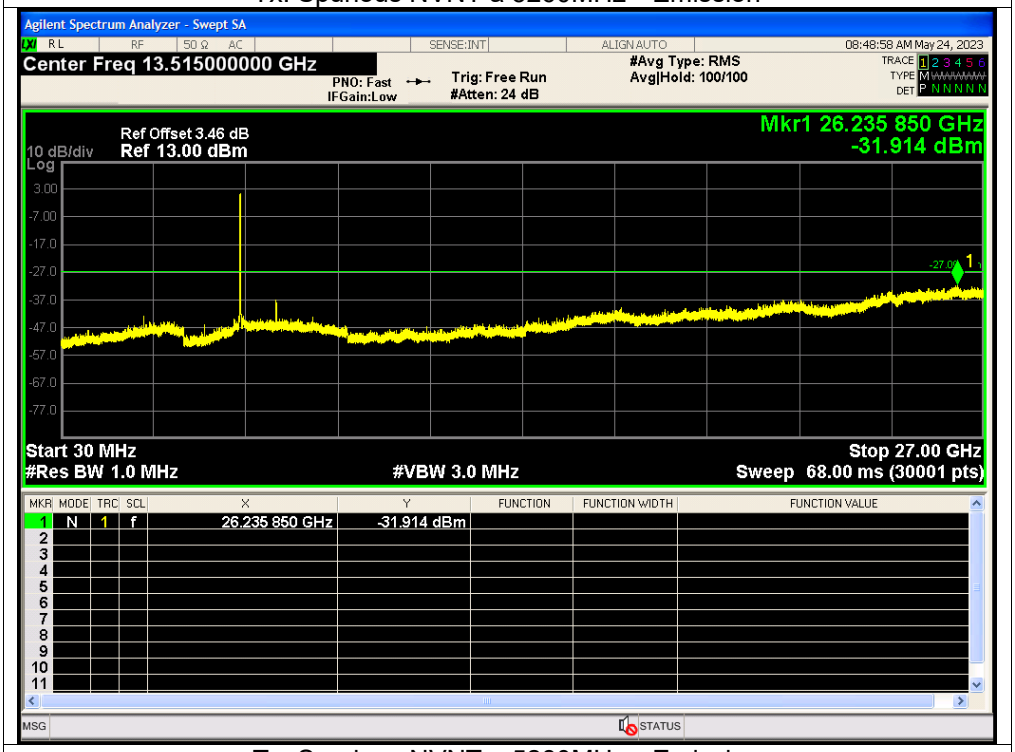


Tx. Spurious NVNT n20 5240MHz Emission

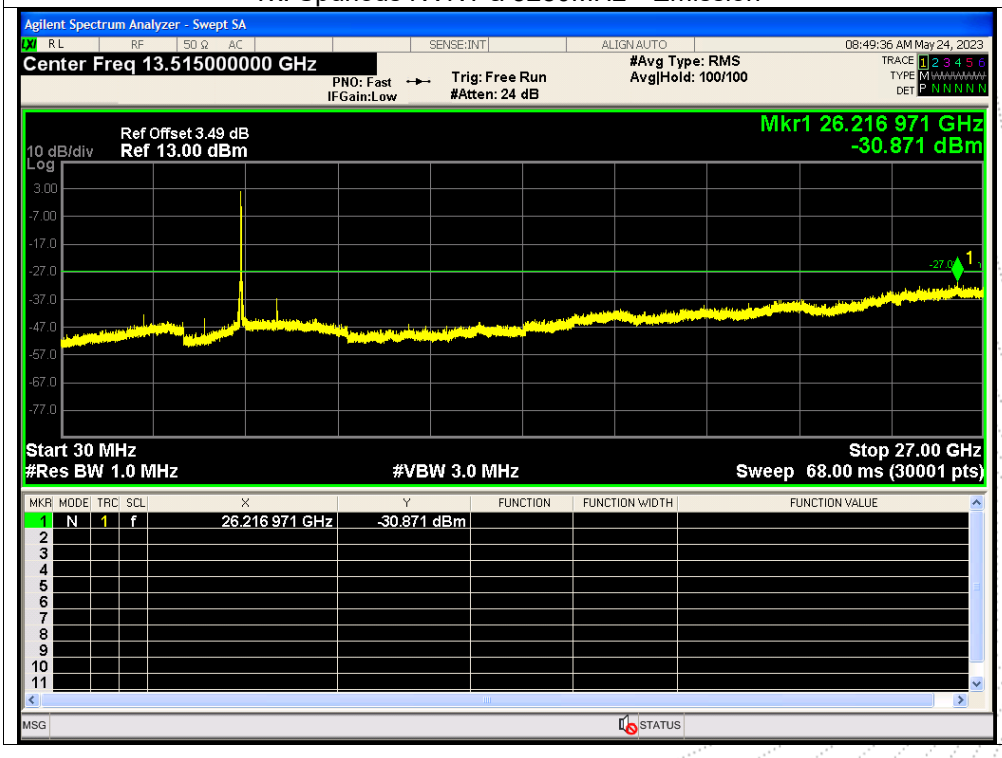


Test Graphs

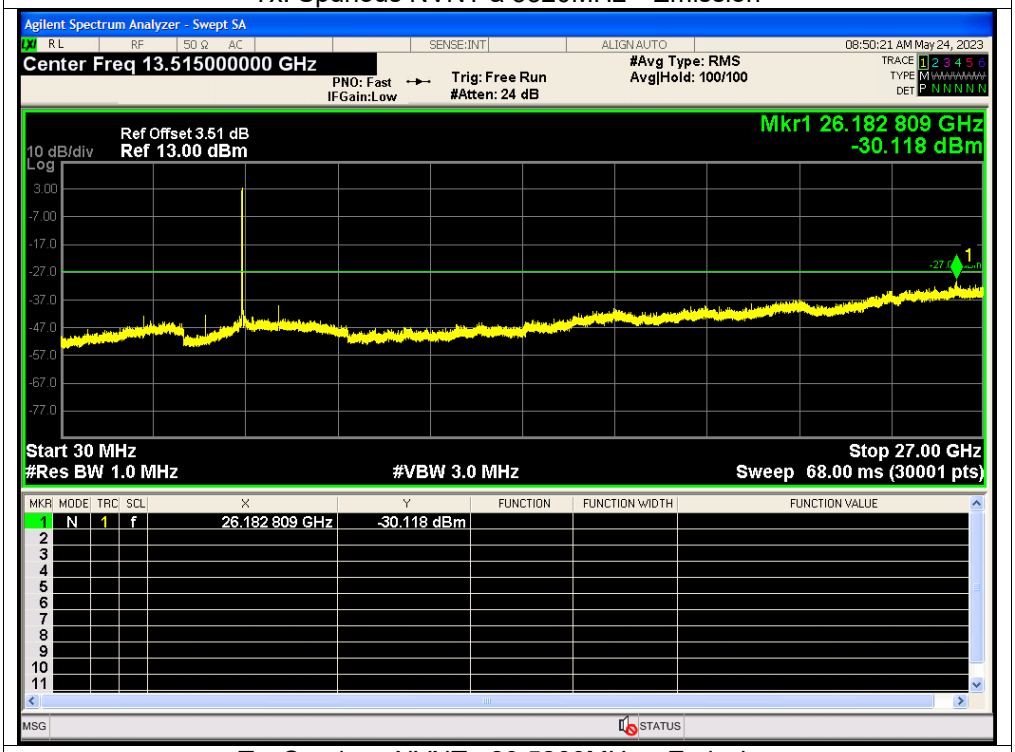
Tx. Spurious NVNT a 5260MHz Emission



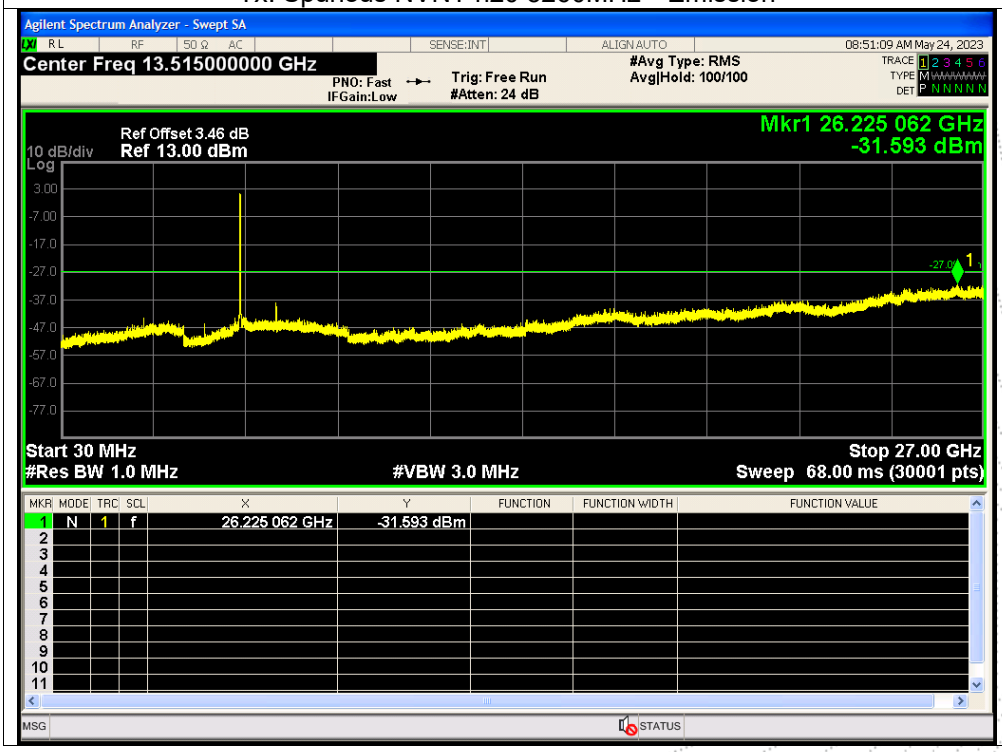
Tx. Spurious NVNT a 5280MHz Emission



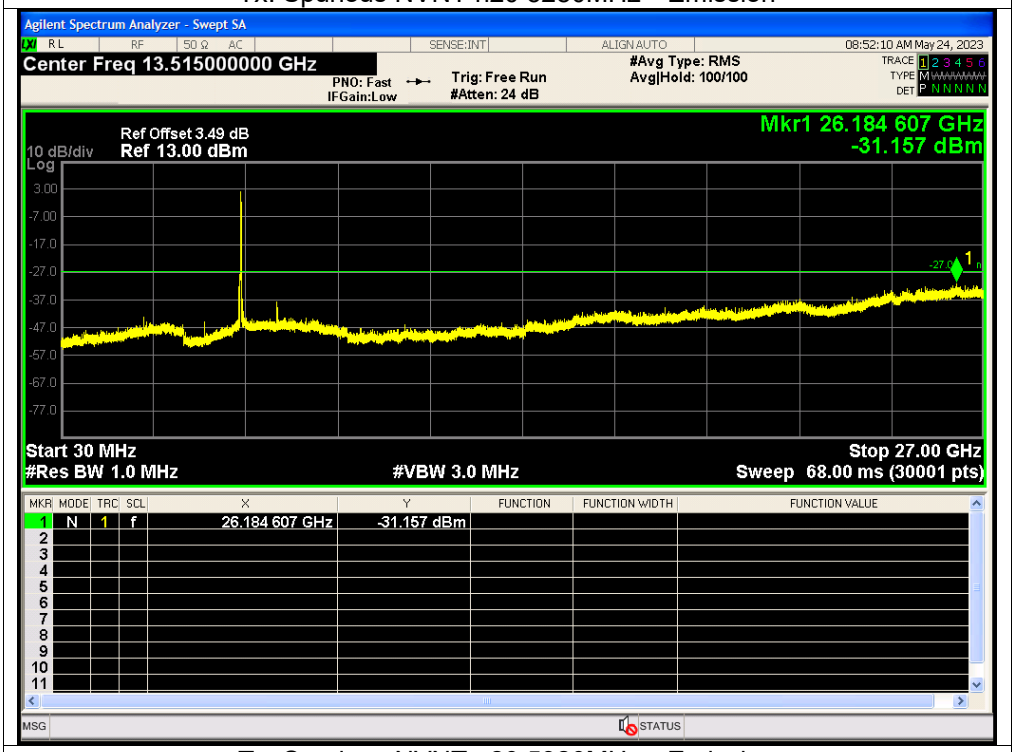
Tx. Spurious NVNT a 5320MHz Emission



Tx. Spurious NVNT n20 5260MHz Emission



Tx. Spurious NVNT n20 5280MHz Emission



Tx. Spurious NVNT n20 5320MHz Emission